G series

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Rossi
Habasit Group

Helical and bevel helical gear reducers and gearmotors

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Rossi for You

Innovation
Rossi offers a wide range of **solutions for an evolving industry**, flexible and innovative gearboxes and gearmotors for customer tailored solutions to maximize performance and minimize the total cost of ownership.

High quality, 3 years warranty
Our drive is to innovate and boost operations by manufacturing performing, precise, reliable and high-quality products all over the world. We are always one step forward in offering and developing solutions that can satisfy an unlimited number of application needs, even in the most demanding conditions.

Reliability
We are a reliable company with the right flexibility and know-how to respond to worldwide market requests, in all application fields, without leaving aside our commitment for the environment and value on human safety, to protect everyone's future.

Tools and processes
We continue to invest in new tools and processes, so our highly skilled specialist team in different fields are supporting you to find the best solution suitable for your demands, always by your side on every step of the project.

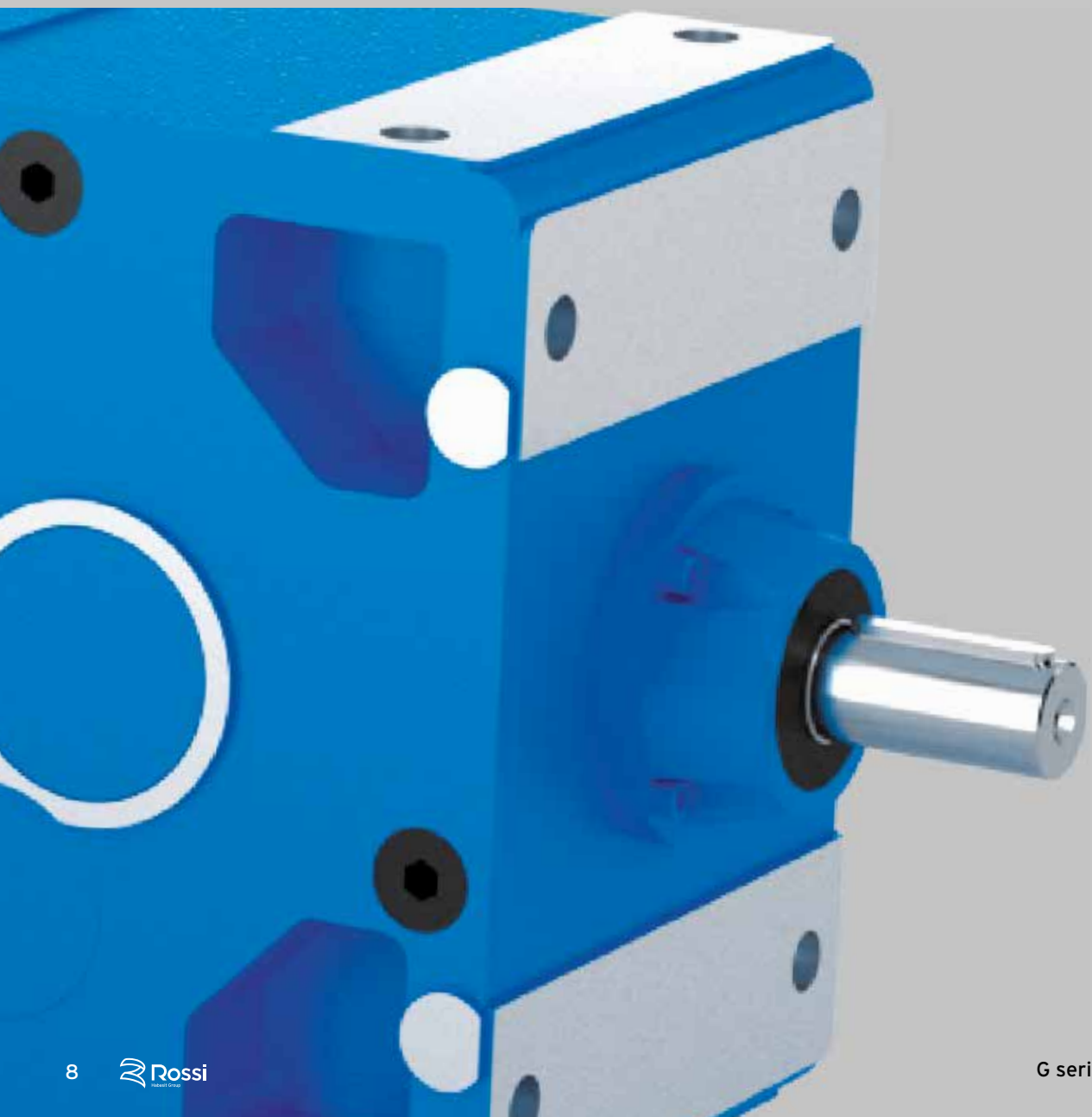
After-sale service
Highly trained mechanics and support teams can ensure a fast and efficient after-sale service providing support worldwide.

Digital support
Alongside our 24/7 **Rossi for You** support portal you have a suite of digital support tools enabling real time access to your order tracking, invoices, spare part tables download and contact to our service.

Experience
Shaped by more than 60 years of history Rossi meets your unique needs whether you need a standard design or a customized solution.

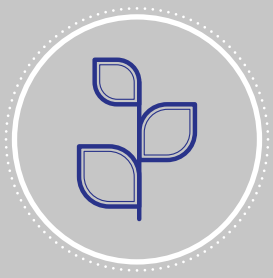
60 YEARS

Features and benefits



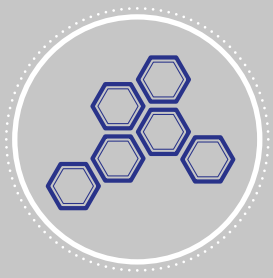
Maximum performance

We drive the heaviest applications worldwide



Sustainability

We care about environment



Modular system

For cost-effective and high quality solutions

Innovation

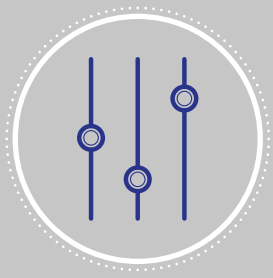
We are constantly thinking forward, solutions for an evolving industry

Digitalization

Rossi for You is always at your disposal for any info

Know-how

We support you through interdisciplinary know-how



Customization

Cost-effective solutions starting from standard products

Symbols and units of measure

Symbols used in the catalog and formulae, in alphabetical order, with relevant units of measure.

Symbol	Definition	Units of measure			Notes
		In the catalog	In the formulae		
			Technical System	SI[1] System	
	dimensions	mm	–		1 inch (in) = 24,5 mm; 1 foot (ft) 30,48 cm
a	acceleration	–	m/s^2		
d	diameter	–	m		
f	frequency	Hz	Hz		
*f*s	service factor				
*f*t	thermal factor				
F	force	–	kgf	N[2]	1 kgf ≈ 9,81 N ≈ 0,981 daN
F_r	radial load	N	–		
F_a	axial load	N	–		
g	acceleration of gravity	–	m/s^2		normal value 9,81 m/s^2
G	weight (weight force)	–	kgf	N	1 pound (lbf) = 4,4482 N
Gd^2	dynamic moment	–	kgf m^2	–	
i	transmission ratio				$i = \frac{n_1}{n_2}$
I	electric current	–	A		
J	moment of inertia	kg m^2	–	kg m^2	
L_h	bearing life	h	–		
m	mass	kg	kgf s^2/m	kg[3]	
M	torque	N m	kgf m	N m	1 kgf m ≈ 9,81 N m ≈ 0,981 daN m
*M*f	braking torque	N m	kgf m	N m	1 kgf m ≈ 9,81 N m ≈ 0,981 daN m
n	angular speed	min^{-1}	rev/min	–	1 min^{-1} ≈ 0,105 rad/s
P	power	kW	CV	W	1 CV ≈ 736 W ≈ 0,736 kW
*P*t	thermal power	kW	–		
r	radius	–	m		
R	variation ratio				$R = \frac{n_{2\,max}}{n_{2\,min}}$
s	distance	–	m		
t	Celsius temperature	°C	–		1 °F = 1,8 · °C + 32
t	time	s min h d	s		1 min = 60 s 1 h = 60 min = 3 600 s 1 d = 24 h = 86 400 s
U	voltages	V	V		
v	velocity	–	m/s		
W	work, energy	MJ	kgf m	J[4]	
z	frequency of starting	starts/h	–		
α	angular acceleration	–	rad/s^2		
η	efficiency				
η_s	static efficiency				
μ	friction coefficient				
φ	plane angle	°	rad		1 rev = 2 π rad $1° = \frac{\pi}{180}$ rad
ω	angular velocity	–	–	rad/s	1 rad/s ≈ 9,55 min^{-1}

Additional indexes and other signs

Ind.	Definition
max	maximum
min	minimum
N	nominal
1	relating to high speed shaft (input)
2	relating to low speed shaft (output)
÷	from ... to
≈	approximately equal to
≥	greater than or equal to
≤	less than or equal to

1) SI are the initials of the International Unit System, defined and approved by the General Conference on Weights and Measures as the only system of units of measure.
See CNR UNI 10 003-84 (DIN 1 301-93 NF X 02.004, BS 5 555-93, ISO 1 000-92).
UNI: Ente Nazionale Italiano di Unificazione.
DIN: Deutscher Normenausschuss (DNA).
NF: Association Française de Normalisation (AFNOR).
BS: British Standards Institution (BSI).
ISO: International Organization for Standardization.

2) Newton [N] is the force imparting an acceleration of 1 m/s^2 to a mass of 1 kg.

3) Kilogramme [kg] is the mass of the prototype kept at Sèvres (i.e. 1 dm^3 of distilled water at 4 °C).
Joule [J] is the work done when the point of application of a force of 1 N is displaced through a distance of 1 m.

G series
40 ... 360

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1 - General specifications

Universal «symmetrical» mounting: suitable for horizontal or vertical mounting

Rigid and precise cast iron single-piece housing; high oil capacity

Standard hollow low speed shaft, prearranged for installation of backstop device, option of double extension high speed shaft

Possibility of fitting particularly powerful motors and capability of withstanding high loads on the shaft end

Possibility of obtaining multiple drivers without restrictions on direction of rotation

Intermediate sizes 140, 180, 225, 280, 360 – dimensions similar to previous sizes 125, 160, 200, 250, 320 – **conceived to be also a supporting series in particular applications; three size pairs**, standard and strengthened, **63** and **64**, **80** and **81**, **320** and **321**

Manufacturing and product management flexibility

High manufacturing quality standards

Minimum maintenance requirements

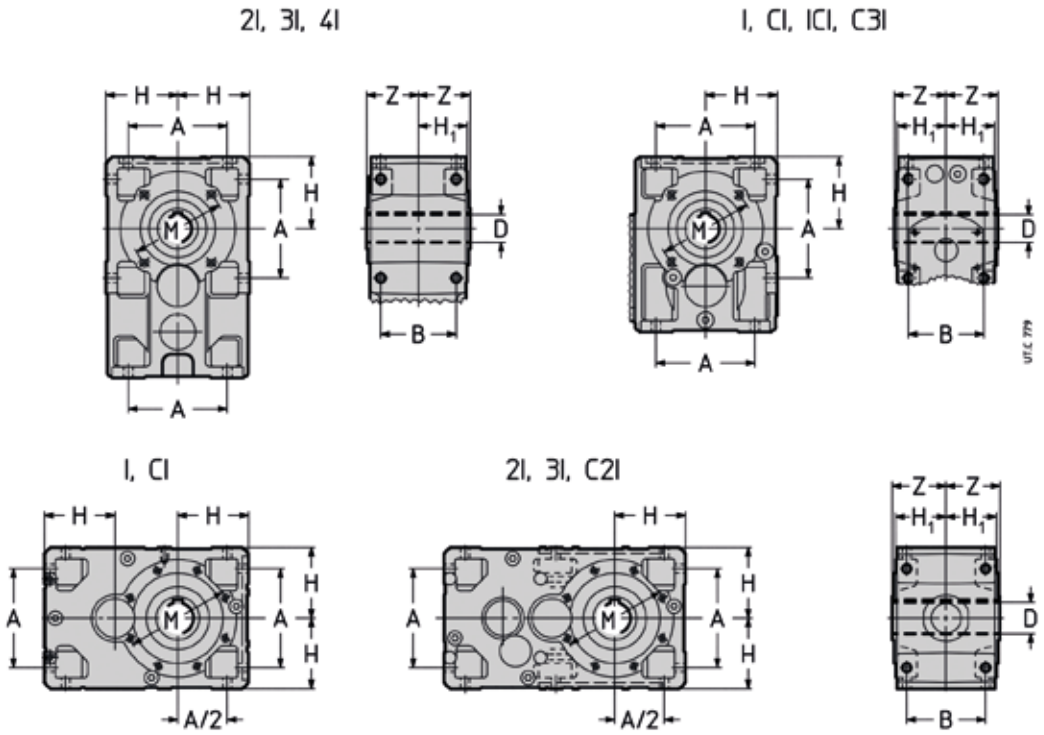
IEC motor

High, reliable and tested performance

Wide range of sizes, trains of gears and solutions.

"Long" series of helical gear reducers and gearmotors for applications with U position of motor/machine shaft and considerable distance between input and output shafts; same input and output coupling dimensions, same transmission ratios and performances, same combinations of motors and gear reducers as the standard series (**patent pending**).

This series of gear reducers and gearmotors combines and exalts the traditional qualities of helical and bevel helical gear reducers – **strength**, **accuracy**, and **reliability** – with advantages derived from modern design, manufacturing and operating criteria – **suitability for the heaviest duties**, **universality and ease of application**, **comprehensive size range**, **service**, **economy** – the advantages typically associated with high quality gear reducers produced in large series.



Fully interchangeable gear reducers – of the same size – independently from train of gears.

1.1 - Gear reducer

Main structural features

- **universal** mounting having feet integral with housing on 4 faces (3 faces for train of gears: I sizes 63 ... 100, CI sizes 40 ... 100, C3I, ICI) and B14 flange on 2 faces (1 face for standard model 2I, 3I and 4I sizes 40 ... 125); gear reducers and gearmotors 2I, 3I sizes 40 ... 125 and 4I sizes 63 ... 125 having reaction recess for shaft mounting arrangement (see ch. 6), B5 flange with spigot recess mountable on the faces with B14 flange (see ch. 17); the drawing and the strength of housing allow **interesting shaft mounting arrangements**, foot mounted motor coupling arrangement (see ch. 18) and attachments points for a variety of equipment;
- gear reducer overall dimensions are suitable to be equipped with large motor sizes transmitting **high nominal and maximum torques**, supporting **high loads on low and high speed shaft ends**;
- standard hollow low speed shaft in steel, with keyway and retaining ring grooves for extraction (excluding sizes 40 ... 63); standard (left or right hand extension) or double extension low speed shaft (see ch. 17).

1 - General specifications

- gearmotors MR 4I (sizes 63 ... 125), MR C3I (sizes 50 ... 125) with **first reduction stage** including **2** coaxial cylindrical gear pairs in order to get high transmission ratio, with standardized motor, in an economic and compact way;
- improved and upgraded modular construction both for component parts and assembled product;
- standardized dimensions and compliance with standards;
- gear reducers: input face with machined surface (flange for R 3I 63 ... 125, R ICI) with fixing holes, high speed shaft end with key;
- gearmotors MR 3I 40 ... 125, MR 4I, MR ICI and MR C3I: first reduction pinion gear directly keyed onto the shaft end of **IEC standard motor**;

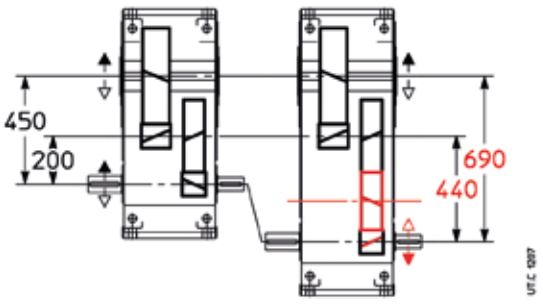
  gearmotors MR 2I, MR 3I 140 ... 360, MR CI, MR C2I: **IEC standard motor** directly fitted into hollow high speed shaft; with **motor size** ⩾ **200**, to obtain easier installing and removal and avoid fretting corrosion, bevel helical gearmotors (CI, C2I) have a keying system with key and bronze bushing whereas helical gearmotors (2I, 3I) have a keying system with hollow high speed shaft with longitudinal cuts, shrink disc and key for a perfect alignment;
- possibility of **second high speed shaft extension** (or intermediate shaft extension for train of gears 3I 40 ... 125, 4I, ICI, C3I);
- taper roller bearings, excluding some shafts (high speed shaft) on which bearings are cylindrical roller or ball type;
- **cast iron** single-piece housing 200 UNI ISO 185 (**spheroidal** UNI ISO 1083 for sizes 140, 180, 225, 280, 360) with **stiffening ribs and high oil capacity**;
- oil bath lubrication; synthetic oil, providing lubrication «**for life**» and 1 plug (sizes 40 ... 64) or 2 plugs (sizes 80 and 81), **filled with oil** (sizes 40 ... 81); synthetic or mineral oil (ch. 18) with filler plug and valve, level and drain plug, supplied **without oil** (sizes 100 ... 360); sealed;
- additional bearings lubrication through proper pipelines or pump (sizes 100 ... 360);
- natural or forced cooling (fan – also in **flange** mounting – and/or coil, see ch. 17);
- **paint**: **external** coating in epoxy powder paint (sizes 40 ... 81) or water based dual compound polyurethane enamel (sizes 100 ... 360) resistant to atmospheric and aggressive agents (corrosivity category C3 ISO 12944-2); suitable for further coats only with dual-compound products after degreasing and sanding; color blue RAL 5010 DIN 1843, other colors and/or painting cycles on request see ch. 17); **internal** protection with epoxy powder paint (sizes 40 ... 81) suitable to resist to synthetic oils or with synthetic paint (sizes 100 ... 360) suitable to resist polyalphaolefines based synthetic or mineral oils.
- possibility to obtaining combined gear reducer and gearmotor units providing high transmission ratios;
- non-standard designs: backstop device (always pre-arranged, excluding size 40 and helical size 50), stepped hollow low speed shaft, supplementary cooling and lubrication systems, shaft mounting arrangements, special paints, Ex **ATEX II 2 GD** and **3 GD**, design for agitators, etc. (ch. 17).
- **helical «long» model**: it is derived from the standard one (completing it) through the addition of an **idle gear** between wheel and pinion of the second-last reduction stage (first reduction stage for 2I train of gears) hence allowing to **distance considerably** the input and output shafts, whilst maintaining the same **specifications and performances** as the standard model. In particular:
- same **input and output coupling dimensions** (shafts and B14 output flange, motor sizes);
- same high speed shaft **bearing** (shafts and bearings) with the same transmission ratio;
- same **foot mounting dimensions** (A_1 dimension excluded);
- same **transmission ratios and performances**;
- same **combinations of motors and gear reducers**;
- same **thermal power** (thanks to the greater length of the housing);
- same **accessories** and non-standard **designs**;
- same **high quality level** (design solutions, production processes and tests, components, single-piece housing, modular and aesthetic design).

The «long» gear reducer obtained through this new design concept, makes possible also very low transmission ratios with proportioned and generous bearings in terms of high speed shaft roller bearings and shaft diameters.

Everything stated in this catalog is to be intended **valid both for standard and long model**, except otherwise stated.

Comparison between gear reducer R 2I 250 standard type UP2D and relevant long type **UP4D** (**patent pending**): highlighting the extension of center distance, the presence of the idle gear and the reversing of rotation direction.

UP2D



UP4D

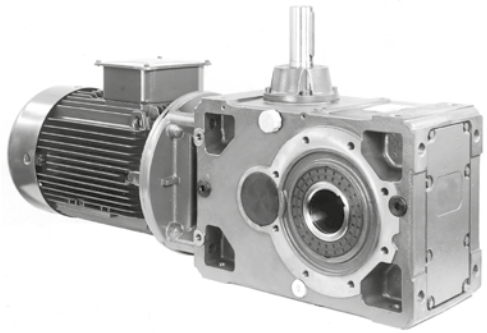
1 - General specifications

Train of gears

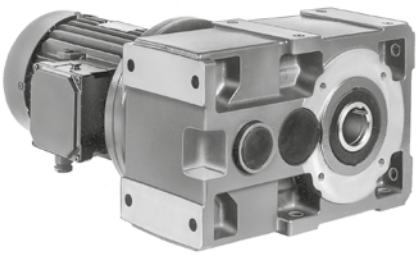
- 1, 2, 3, 4 helical gear pairs (helical gear reducers);
- 2, 3 helical gear pairs and **1 idle gear** («long» model, helical gear reducers);
- 1 bevel gear pair plus 1, 2, 3 helical gear pairs (bevel helical gear reducers);
- 6 sizes with final reduction center distance to R 10 (40 ... 125, with 2 size pairs: standard and strengthened); 9 sizes with final reduction center distance to R 20 (140 ... 360, with 1 size pair: standard and strengthened), for a total of **18 sizes**;
- nominal transmission ratios to R 10 (i_N = 2,5 ... 160; i_N = 80 ... 400 for 4I) for helical gear units; to R 10 (i_N = 5 ... 200; i_N = 80 ... 500 for C3I) for bevel helical gear units; to R 20 (i_N = 9 ... 90), excluding I and ICI, for all sizes 140 ... 360;
- casehardened and hardened gear pairs in 16 CrNi4 or 20 MnCr5 steel (depending on size) and 18 NiCrMo5 according to UNI EN 10084;
- helical gear pairs with **ground** profile;
- GLEASON spiral bevel gear pairs with **ground** or accurately lapped profile;
- gear load capacity calculated for tooth breakage and pitting.

Specific standards

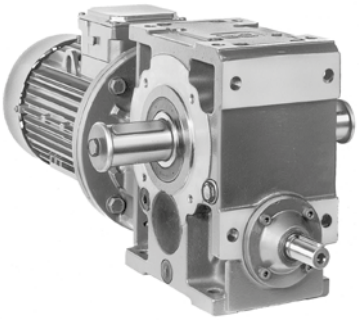
- nominal transmission ratios and principal dimensions according to UNI 2016 (DIN 323-74,NF X 01.001, BS 2045-65, ISO 3-73);
- toothing profile to UNI 6587-69 (DIN 867-86, NF E 23.011, BS 436.2-70, ISO 53-74);
- shaft heights to UNI 2946-68 (DIN 747-76, NF E 01.051, BS 5186-75, ISO 496-73);
- fixing flanges B14 and B5 (the latter with spigot «recess») taken from UNEL 13501-69 (DIN 42948-65, IEC 72.2);
- medium series fixing holes to UNI 1728-83 (DIN 69-71, NF E 27.040, BS 4186-67, ISO/R 273);
- helical shaft ends (long or short) to UNI ISO 775-88 (DIN 748, NF E 22.051, BS 4506-70, ISO/R775) with tapped butt-end hole to UNI 9321 (DIN 332 BI. 2-70, NF E 22.056) excluding correspondence d-D;
- parallel keys UNI 6604-69 (DIN 6885 BI. 1-68, NF E 27.656 and 22.175, BS 4235.1-72, ISO/R/773-69) except for specific cases of motor-to-gear reducer coupling where key height is reduced;
- mounting positions derived from CEI 2-14 (DIN EN 60034-7, IEC 34.7);
- load capacity verified according to UNI 8862, DIN 3990, AFNOR E 23-015, ISO 6336; thermal capacity verified.



Bevel helical gearmotor CI (also C2I) with high speed shaft for **90° multiple drives**.



Helical gearmotor with **backstop device** (always prearranged)



Bevel helical gearmotor ICI (also CI) with double extension low speed shaft and **high speed shaft extension** (design UO3D).

1.2 - Electric motor

Gearmotor dimensions and masses of present catalog (see ch. 12 and 14) refer to motor catalog TX.

Main structural features

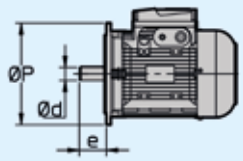
- motor **standardized to IEC**;
- asynchronous three-phase, totally-enclosed, externally ventilated, with cage rotor;
- single polarity, frequency 50 Hz, voltage Δ 230 V Y 400 V (size ⩽ 132), Δ 400 V (size ⩾ 160);
- **IP 55** protection, **insulation class F**, temperature rise class **B**;
- rated power delivered on continuous duty S1 (excluding some cases of motor sizes with power not according to standard; see specific documentation) and referred to nominal voltage and frequency; maximum ambient temperature 40 °C and altitude 1 000 m;
- capacity to withstand one or more overloads up to 1,6 times the nominal load for a maximum total period of 2 min per single hour;
- starting torque with direct on-line start at least 1,6 times the nominal one (it is usually higher);
- mounting position B5 and derivates as shown in the following table;
- **suitable for inverter duty** (generous electromagnetic sizing, low-loss electrical stamping, phase separators, etc.)
- designs available for every application need: flywheel, independent cooling fan, independent cooling fan and encoder, etc.

Constructive features of HBZ brake motor

- particularly strong construction to withstand braking stresses; **maximum reduction of noise level**;
- spring-loaded d.c. electromagnetic brake; feeding from the terminal box; brake can also be independently fed directly from the line;
- braking torque proportioned to motor torque (usually $M_f \approx 2\ M_N$) and adjustable by adding or removing spring pairs;
- possibility of high frequency of starting;
- quick and rapid stop;
- hand lever for manual release with automatic return (on request for size ⩽ 160S); removable lever rod.

For other specifications and details see **specific documentation of cat. TX**.

Main coupling dimensions



IEC 60072
(UNEL 13117-17, DIN 43677 Bl. 1.A-65)
Motorbauform

Motorgröße	IM **B5** Ød × e - ØP	**B5R** Ød × e - ØP	**B5A** Ød × e - ØP
63	11 × 23 - 140	-	-
71	14 × 30 - 160	11 × 23 - 140	14 × 30 - 140
80	19 × 40 - 200	14 × 30 - 160	19 × 40 - 160
90	24 × 50 - 200	19 × 40 - 200	-
100, 112	28 × 60 - 250	24 × 50 - 200	-
132	38 × 80 - 300	28 × 60 - 250	-
160	42 × 110 - 350	38 × 80 - 300	-
180	48 × 110 - 350	-	-
200	55 × 110 - 400	48 × 110 - 350	-
225	60 × 140 - 450	-	-
250	65 × 140 - 550	60 × 140 - 450	-
280	75 × 140 - 550	-	-
315	80 × 170 - 660	75 × 140 - 550	-

Short time duty (S2) and intermittent periodic duty (S3); duty cycles S4 ... S10

In case of a duty-requirement type S2 ... S10 the motor power can be increased as per the following table; starting torque keeps unchanged.

Short time duty (S2). – Running at constant load for a given period of time less than that necessary to reach normal running temperature, followed by a rest period long enough for motor's return to ambient temperature.

Intermittent periodic duty (S3). – Succession of identical work cycles consisting of a period of running at constant load and a rest period. Current peaks on starting are not to be of an order that will influence motor heat to any significant extent.

$$\text{Cyclic duration factor} = \frac{N}{N+R} \cdot 100\%$$

where: N being running time at constant load,
R the rest period and N + R = 10 min (if longer consult us).

Duty			Motor size[1] 63 ... 90	100 ... 132	160 ... 315
S2	duration of running	90 min	1	1	1,06
		60 min	1	1,06	1,12
		30 min	1,25	1,18	1,25
		10 min	1,25	1,25	1,32
S3	cyclic duration factor	60%	1,12		
		40%	1,18		
		25%	1,25		
		15%	1,32		
S4 ... S10			consult us		

1) For motor sizes 90LC 4, 112MC 4, 132MC 4, consult us.

Frequency 60 Hz

Normal motors up to size 132 wound for 50 Hz can be fed at 60 Hz; in this case speed increases by 20%. If input-voltage corresponds to winding voltage, power remains unchanged, providing that higher temperature rise values are acceptable and that the power requirement is not unduly demanding, whilst starting and maximum torques decrease by 17%. If input-voltage is 20% higher than winding voltage, power increases by 20% whilst starting and maximum torques keep unchanged.

For brake motors, **see specific literature**.

From size 160 upwards motors – both standard and brake ones – should be wound for 60 Hz exploiting the 20% power increase as a matter of course.

Power available with high ambient temperature or high altitude

When motor has to run at an ambient temperature higher than 40 °C or at altitude above sea level higher than 1 000 m, it has to be derated according to the following tables:

Ambient temperature [°C]	**30**	**40**	**45**	**50**	**55**	**60**
P/P_N [%]	106	100	96.5	93	90	86,5

Altitude a.s.l. [m]	**1 000**	**1 500**	**2 000**	**2 500**	**3 000**	**3 500**	**4 000**
P/P_N [%]	100	96	92	88	84	80	76

1 - General specifications

Electric motor specific standards

- nominal powers and dimensions to CENELEC HD 231 (IEC 72-1, CNR-CEI UNEL 13117-71 and 13118-71, DIN 42677, NF C 51- 120, BS 5000-10 and BS 4999-141) for mounting positions IM B5, IM B14 and derivatives;
- nominal performances and running specifications to CENELEC EN 60034-1 (IEC 34-1, CEI EN 60034-1, DIN VDE 0530-1, NF C51- 111, BS EN 60034-1);
- protection to CENELEC EN 60034-5 (IEC 34-5, CEI 2-16, DIN EN 60034-5, NF C51-115, BS 4999-105);
- mounting positions to CENELEC EN 60034-7 (IEC 34-7, CEI EN 60034-7, DIN IEC 34-7, NF C51-117, BS EN 60034-7);
- sound levels to CENELEC 60034-9 (IEC 34.9, DIN 57530 pt. 9);
- balancing and vibration velocity (vibration under standard rating N) to CENELEC HD 53.14 S1 (IEC 34-14, ISO 2373 CEI 2-23, BS 4999-142); motors are balanced with half key inserted into shaft extension;
- cooling to CENELEC EN 60034-6 (CEI 2-7, IEC 34-6): standard type IC 411; type IC 416 for non-standard design with axial independent cooling fan.

Size [1] M_{N2} [N m] - F_{r2} [kN]	I [2]	CI [4]	ICI	2I [5]	3I	2I «long»	3I «long»	C2I
40 [3] 100 - 2,24								
50 206 - 3,15					[3]			
63 387 - 5								
64 487 - 5								
80 825 - 8							[3]	
81 975 - 8							[3]	
100 1 700 - 12,5							[3]	
125 3 450 - 20							[3]	
140 5 150 - 28								
160 7 750 - 35,5								
180 10 900 - 45								
200 15 500 - 56								
225 21 800 - 71								
250 31 500 - 90						[2]		
280 43 700 - 112						[2]		
320 54 500 - 140		[2]				[2]		
321 69 000 - 140		[2]				[2]		
360 87 500 - 180		[2]				[2]		

1) For bigger sizes see cat. H.
2) Gear reducers only.
3) Gearmotors only

4) Also **C3I grand. 50 ... 125** (gearmotors only).
5) Also **4I grand. 63 ... 125** (gearmotors).

2 - Designation

2 - Designation

Designation code

R	2I	320	U	P	2	D			-	10,3	B3			
MR	C2I	200	U	O	2	V	-	48 × 350	-	35,3	V5		HB3 180L4 400-50 B5	TB3

MOTOR TERMINAL BOX POSITION
(ref. page 22)

MOTOR DESIGNATION
(ref. page 22)

INPUT SPEED
(ref. page 22)

MOUNTING POSITION
(ref. page 21)

TRANSMISSION RATIO

IEC MOTOR COUPLING DIMENSIONS
Ød × **ØP** (ref. ch. 1.2)

DESIGN
A standard
... others (ref. ch. 8,10, 12, 14)

MODEL
2, 3 standard (ref. ch. 8, 10, 12, 14)
4 long (ref. ch. 8, 12)

SHAFT POSITION
P helical gear units
O bevel helical gear units

FASTENING
U universal

SIZE
40 ... 360 final center distance reduction [mm]

TRAIN OF GEARS

Helical gear pairs:
I 1 helical gear pair
2I 2 helical gear pairs
3I 3 helical gear pairs
4I 4 helical gear pairs

Bevel helical gear pairs:
CI 1 bevel and 1 helical gear pair
ICI 1 helical, 1 bevel and 1 helical gear pair
C2I 1 bevel and 2 helical gear pairs
C3I 2 helical, 1 bevel and 1 helical gear pair

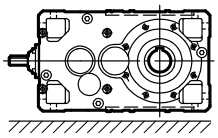
MACHINE
R gear reducer
MR gearmotor

Note: For ATEX environment see details at chapter 17(37).

Gear reducer mounting position

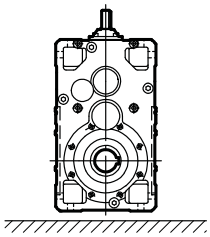
Gear reducer and gearmotor mounting positions are described in ch. **8**, **10**, **12**, **14** (the mounting position designation refers to foot mounting only, even if gear reducers are for universal mounting; e.g.: B14 flange fastening and derivatives; B5 flange fastening and derivatives, see ch. 17). Here following some designation examples of important mounting positions.

1. **Standard B3** mounting position; when having no particular needs, **prefer B3 mounting position** for its technical and economic cost effectiveness (maximum simplification of lubrication system, lower oil splash, lower gear reducer heating, stock availability).

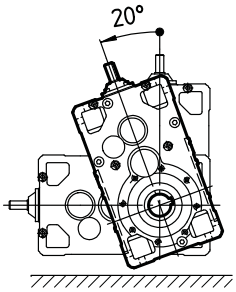


2. **Non-standard** mounting positions

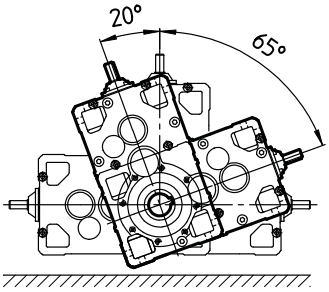
2a. Mounting position as per catalog (see ch. 8, 10, 12,14), **only one** and **fixed**, differing from B3; e.g.: mounting position **B6**



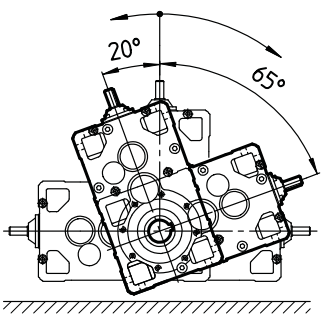
2b. **Inclined and fixed** mounting position; e.g.: mounting position **B6 - 20° B3**



2c. **One only** mounting position **but defined within a pre-determined angle**; e.g.: mounting position within **B6 - 20° B3 / B6 - 65° B8**



2d. **Oscillatory** mounting position (gear reducer oscillating when running); e.g.: mounting position B6 **- 20° B3 / B6 - 65° B8 oscillatory**



UT. C 2088

2 - Designation

Input speed

Complete the designation stating the input speed n_1, in the following cases:
- $n_1 > 1800$ min^{-1} or $n_1 \leqslant 355$ min^{-1};
- for cases highlighted with following symbols (▲, ,) (ch. 7, 8, 9, 10, 12, 14);
- when forced cooling is required.

Example:
R I 125 UP2A-2,53 **mounting position V6**, n_1= **900 min^{-1}**
R CI 360 UO2V-16 n_1= **2000 ÷ 600 min^{-1}**

Motor

When the gearmotor is supplied **equipped with a standard Rossi motor**, fill in the designation stating the motor designation (ref. cat. TX).
Examples:
MR ICI 200 UO3A - 42 x 350 - 50,3
HB3 160M 4 400-50 B5

MR ICI 200 UO3A - 42 x 350 - 50,3
HBZ 160L 4 400-50 B5

When the gearmotor is supplied **without motor**, omit the designation and add «without motor».
Example:
MR 2I 140 UP2A - 48 x 350 - 17,6 **without motor**

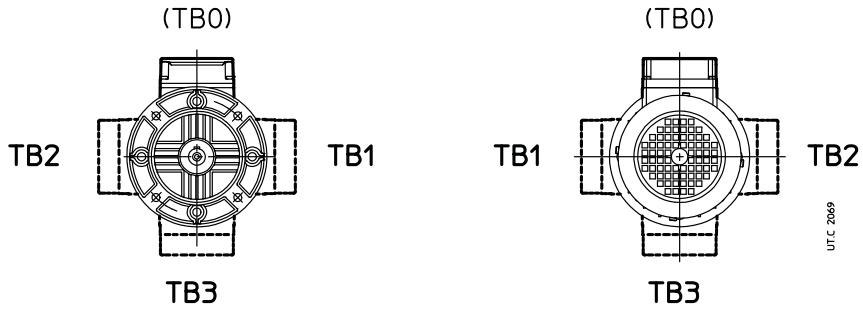
When motor is supplied by the **Buyer**[1], complete the designation by stating the description of «motor supplied by us».

1) The motor supplied by the Buyer must be to IEC with mating surfaces machined under accuracy rating IEC 60072-1 and is to be sent carriage and expenses paid to our factory for fitting to the gear reducer.

Example:
MR 2I 140 UP2A - 48 x 350 - 17,6
motor supplied by us

Motor terminal box position

Complete the designation stating the motor terminal box position if differing from the standard one (TB0; see ch.12, 14 and scheme below).
The cable input is Buyer's responsibility.
Example:
MR ICI 200 UO3A - 42 x 350 / 50,3
HB3 160M 4 400-50 B5 **TB3**



View from drive end (D) View from non-drive end (N)

Accessories and non-standard designs

In the event of a gear reducer or gearmotor being required in a design different from those stated above, specify it in detail (ch. 17).

3 – Service factor *fs*

3 - Service factor *fs*

Service factor ***fs*** takes into account the different running conditions (nature of load, running time, frequency of starting, speed n_2, other considerations) which must be referred to when performing calculations of gear reducer selection and verification.

The powers and torques shown in the catalog are nominal (i.e. valid for ***fs*** = 1) for gear reducers, corresponding to the ***fs*** indicated for gearmotors.

The **minimum service factor required** is given by:

$$\textbf{fs required} \geqslant \textbf{fs}_1 \cdot \textbf{fs}_2 \cdot \textbf{fs}_3 \cdot \textbf{fs}_4 \cdot \textbf{fs}_5$$

or, in case of selection according to $n_2 \cdot L_h$:

$$\textbf{fs required} \geqslant \textbf{fs}_1(8\ \text{h/d}) \cdot \textbf{fs}_2 \cdot \textbf{fs}_3 \cdot \textbf{fs}_4$$

Service factor $\textbf{fs}_1$ according to **nature of load** and to **running time**

Details and considerations about service factor.

Nature of load of driven machine[1]		fs_1[2] Running time [h/d] ⩽				
Ref.	Description	**2**	**4**	**8**	**16**	**24**
a	**Uniform**	0,8[3]	0,9[3]	1	1,18	1,32
b	**Moderate overloads** (1,6 x normal)	1	1,12	1,25	1,5	1,7
c	**Heavy overloads** (2,5 x normal)	1,32	1,5	1,7	2	2,24

Service factor $\textbf{fs}_2$ based on **nature of load** and of **frequency of starting**

Nature of load of driven machine[1]		fs_2 Frequency of starting ***z*** [starts/h]							
Ref.	Description	**2**	**4**	**8**	**16**	**32**	**64**	**125**	**250**
a	**Uniform**	1	1,06	1,12	1,18	1,25	1,32	1,4	1,5
b	**Moderate overloads** (1,6 x normal)	1	1	1,06	1,12	1,18	1,25	1,32	1,4
c	**Heavy overloads** (2,5 x normal)	1	1	1	1,06	1,12	1,18	1,25	1,32

Service factor $\textbf{fs}_3$ based on **motor type**

Motor type		fs_3
Description		
Electric three-phase	$P_1 \leqslant$ 9,2 kW	1
	$P_1 >$ 9,2 kW[4]	1,06[4]
Brake electric three-phase		1,06
Internal combustion	multi-cylinder	1,25
	single-cylinder	1,5

Service factor $\textbf{fs}_4$ based on **reliability level**

Reliability level[5]	fs_4
normal	1
medium	1,25
high	1,4

Service factor $\textbf{fs}_5$ based on **output angular speed** n_2

Output speed n_2 [min^{-1}]	fs_5
560 ÷ 355	1,25
355 ÷ 224	1,18
224 ÷ 140	1,12
140 ÷ 90	1,06
< 90	1

fs values stated above are valid for:

- maximum time on overload 15 s, on starting 3 s; if over and/or subject to heavy shock effect, consult us;
- a whole number of overload cycles (or start) **imprecisely** completed in 1, 2, 3 or 4 revolutions of low speed shaft; if **precisely** a continuous overload should be assumed;

Motors having a starting torque not exceeding nominal values (star-delta starting, particular types of motor operating on direct current, and single-phase motors), and particular types of coupling between gear reducer and motor, and gear reducer and driven machine (flexible, centrifugal, fluid and safety couplings, clutches and belt drives) affect service factor favourably, allowing its reduction in certain heavy-duty applications; consult us if need be.

1) For indication on the type of load of the driven machine according to the application, see table on next page.
2) When selecting with $n_2 \cdot L_h$. use exclusively the column 8 h/d.
3) Verify that the torque M_2 is lower than or equal to M_{N2} valid for $n_1 \leqslant 90$ min^{-1} (see pages 107 and 195); when having variable load verify each load cycle interval (see ch. 5.2).
4) For Y-Δ starts, running with inverter or «soft start» devices, fs_3=1.
5) Reliability degrees higher than normal are required in presence of: very difficult maintenance, great importance of gear reducer in the production cycle, safety, etc.

3 - Service factor *fs*

Classification of nature of load according to application

Application	Ref. load *
Stirrers and mixers	
Liquids:	
– constant density	a
– varying density, solids in suspension, high viscosity	b
concrete mixers, mullers, flash mixers	c
Feeders and batchers	
rotary (roller, table, sector)	a
belt, screw, plate	a, b
reciprocating, shaker	c
Compressors	
centrifugal (single-stage, multi-stage)	a
rotary (vane, lobe, screw)	b
axial	b
reciprocating:	
– multi-cylinder	b
– single-cylinder	c
Elevators	
belt, centrifugal or gravity discharge, screw jacks, escalators	a, b
bucket, arm and tray elevators, paddle wheel, hoists, skips	b
man lifts, mobile scaffolding, passenger transport (cable cars, chair, ski, gondola lifts etc.)	a, b
Excavators and dredges	
cable reels, conveyors, pumps, winches (manoeuvring and utility), stackers, draining wheels	b
cutter head drives, cutters, excavators (bucket ladder, paddle wheel, cutter)	c
vehicles:	
– on rails	b
– crawlers	c
Crushers and granulators	
sugar cane, rubber, plastics	b
minerals, stone	c
Cranes, winches and travelling lifts	
travel (bridge, trolley, forks)[1]	b
slewing	b
hoist[2]	a, b
Food industry	
cookers (cereals and malt), mash tubs	a
slicers, dough mixers, meat grinders, beet slicers, centrifuges, peelers, winemaking plant, bottle/bin/cratewashers, rinsers, fillers, corkers, cappers, extruders, crate filling and emptying equipment	b
Paper mills	
winders, suction rolls, dryers, embossing machinery, bleachers, press rolls, coating rolls, paper rolls, beaters, and pulpers	a
agitators, mixers, extruders, chip feeders, calenders, felt dryers and stretchers, rag grinders, washers, thickeners	b
cutters, chippers, calenders (super), felt whippers, glazing machines, presses	c
Lumber and woodworking industries	
mechanical loaders, pallet stackers	
conveyors for:	a, b
– boards, chips, waste	
– logs	b
machine tools (planing, cutting, cross-cut and re-sawing, tenoning, bevelling, moulding, sanding, sizing and scratch-brushing machinery etc.):	c
– feed drive	
– cutter drive	b
barkers:	b, c
– mechanical and hydraulic	
– drum	b
	c
Oil industry	
paraffin filter presses, chillers	
rotary drilling equipment	b
pumping equipment	c
Textile industry	
calenders, cards, pickers, dryers, nappers, spinners, slashers, pads, soapers, washers, mangles, tenter frames, looms (Jacquard), warping machines, winders, knitting machines, dyeing machines, twisting frames, gig mills, cutters	b
Clay working machinery	
pug mills, extruders, rotary deslimers	b
brick and tile presses	c
Rubber and plastics industries	
extruders:	
– plastics	b
– rubber	c
mixing mills, warming mills, friction calenders, refiners, tubers and strainers, rolling mills	b
crackers, masticators	c
Wrapping and stacking machinery	
wrapping (film, cardboard), binding, strapping and labelling equipment	a
palletizing/depalletizing and stacking/unstacking machinery, palletizing robots	b
Engineering machine tools	
boring, shaping, planing, broaching, gear cutting and FMS machines, etc.:	
– main drivers (cut and feed)	b
auxiliary drives (tools magazine, chip conveyor, workpiece infeed)	a
Mechanisms	
indexing, crank and slotted link, Maltese cross, articulated parallelogram	b
rod and crank, cam control (cam and tappet, cam and rocker)	
Metal mills	c
shears:	
– trimming, cropping, facing	
– for sheet/plate, ingots, billets	b
	c
transverse drive rollers, draw benches, coilers, inverter, draglines, flattening rolls, bending rolls	b
pushers, descaling equipment, pipe welders, mill roll train drives, rolling mills, forging presses, billet croppers, power hammers, punches, impact extruders, tapping machines, straightening presses	c
Rollerways	b, c
Mills	
rotary (rod, roller, pebble, ball)	b
hammer, pin crusher, centrifugal, impact, rolling (ball or roller)	c
Pumps	
rotary (gear, screw, lobe, vane) and axial	a, b
centrifugal:	a
– liquids, constant density	
– liquids, variable density or high viscosity	b
proportioning	b
alternative:	
– single acting (≥ 3 cylinders), double acting (≥ 2 cylinders)	b
– single acting (≤ 2 cylinders), double acting single cylinder	c
Rotating drums	
dryers, chillers, rotary kilns, washing machines	b
tumblers, cement kilns	c
Transport conveyors	
belts (plastic, rubber, metal) for:	
– fine grade loose material	a
– coarse grade loose material or discrete items	b
belt, apron, bucket, slat, tray, roller, screw, chain, overhead rail, assembly	b
drag (slat, flight, chain, Redler, etc.) ground level chain, flow accumulating	b
reciprocating, shaker	c
overhead power rail	
Sewage treatment	
biological tanks (revolving disk)	a
dewatering screws, collectors, rotary screens, thickeners, vacuum filters, anaerobic digestion tanks	b
aerators, rotary breakers	c
Screen and riddles	
air washing, travelling water intake	a
rotary (stone, gravel, cereals)	b
vibrating screens, riddles, jigs	c
Fans	
small diameter (centrifugal, axial-flow)	a
large diameter (mines, furnaces, etc.) cooling towers (inducted or forced draft), ducted, piston	b

* Nature of load reference admits of modification where precise knowledge of duty is available.
1) In the traverse movement of the bridge usually it is necessary to have at least fs > 1,6 and in the storeyard cranes fs > 2 (container handling).
2) For selection of fs to F.E.M./I-10.1987, consult us.

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4 - Thermal power *Pt* [kW]

4 - Thermal power *P*t [kW]

Nominal thermal power Pt_N, written in red in the table, is that which can be applied at the gear reducer input, also for long model, without exceeding 95 °C[1] approximately oil temperature when operating in following running conditions:
- input speed n_1 = 1 400 min^{-1};
- mounting position B3;
- continuous duty S1;
- maximum ambient temperature 20 °C (in the table, values referred to 40 °C are stated as well);
- maximum altitude 1 000 m above sea level;
- air speed ⩾ 1,25 m/s (Value typical in presence of an gearmotor with self cooled motor).

T_{amb}	Gear red. size	Gear reducer size														
		Pt_N[2] kW														
°C		40	50	63, 64	80, 81	100	125	140	160	180	200	225	250	280	320,321	360
20	I	-	-	15	22,4	33,5	50	67	75	106	118	170	190	265	300	425
	2I	4,5	6,7	10	15	22,5	33,5	37,5	50	56	80	90	125	140	200	224
	3I	3,35	5	7,5	11,2	17	25	28	37,5	42,5	60	67	95	106	150	170
	4I	-	-	5,6	8,5	12,5	19	-	-	-	-	-	-	-	-	-
	CI	4	6,3	9,5	14	21,2	31,5	42,5	47,5	67	75	106	118	170	190	265
	ICI	2,8	4,25	6,3	9,5	14	21,2	23,6	31,5	35,5	50	-	-	-	-	-
	C2I	-	-	-	-	-	-	28	37,5	42,5	60	67	95	106	150	170
	C3I	-	3,15	4,75	7,1	10,6	16	-	-	-	-	-	-	-	-	-
40	I	-	-	11,2	17	25	37,5	50	56	80	90	125	140	200	224	315
	2I	3,35	5	7,5	11,2	17	25	28	37,5	42,5	60	67	95	106	150	170
	3I	2,5	3,75	5,6	8,5	12,5	19	21,2	28	31,5	45	50	71	80	112	125
	4I	-	-	4,25	6,3	9,5	14	-	-	-	-	-	-	-	-	-
	CI	3	4,75	7,1	10,6	16	23,6	31,5	35,5	50	56	80	90	125	140	200
	ICI	2,12	3,15	4,75	7,1	10,6	16	18	23,6	26,5	37,5	-	-	-	-	-
	C2I	-	-	-	-	-	-	21,2	28	31,5	45	50	71	80	112	125
	C3I	-	2,36	3,55	5,3	8	11,8	-	-	-	-	-	-	-	-	-

Always verify that power applied P_1 is lower than or equal to gear reducer nominal thermal power Pt_N multiplied by the corrective coefficients ft_1, ft_2, ft_3, ft_4, ft_5 (stated in the following tables) considering the several operational conditions:

$$P_1 \leqslant Pt_N \cdot ft_1 \cdot ft_2 \cdot ft_3 \cdot ft_4 \cdot ft_5$$

When the power applied is not constant and when the exact load cycle is given, it is possible, or advisable, to calculate the equivalent power applied, according to the formula:

$$P_{1th} = \frac{1}{\eta} \cdot \sqrt[3]{\frac{P^3_{2_1} \cdot t_1 + P^3_{2_2} \cdot t_2 + \ldots + P^3_{2_i} \cdot t_i + \ldots + P^3_{2_n} \cdot t_n}{t_c}}$$

where:
η is the efficiency of gear reducer (see ch. 6);
P_{2i} [kW] is the power, referred to the gear reducer output, required in the time interval t_i [s];
$t_c = t_1 + t_2 + \ldots + t_i + \ldots + t_n$ is the total duration of load cycle [s].

In these cases choose factor ft_2 from the continuous duty column S1.

Whenever the thermal verification should not be satisfied, in spite the prearrangement of cooling system, it is possible to install an **independent cooling unit with heat exchanger** (see ch. 17); consult us.

Thermal power needs not be taken into account when maximum duration of continuous running time is 1 ÷ 3 h (from small to large gear reducer sizes) followed by rest periods long enough to restore the gear reducer to near ambient temperature (likewise 1 ÷ 3 h).

In case of maximum ambient temperature above 50 °C or below 0 °C consult us.

Thermal factor ft_1 (= $ft_{1a} \cdot ft_{1b}$) according to **cooling system** and **input speed** n_1

Cooling system				ft_{1a}, ft_{1b} input speed n_1 [min^{-1}] ⩾				
				710	900	1 120	1 400	1 800
ft_{1a}	Natural convection	train of gears	I	1,4	1,25	1,12	1	0,71
			2I, CI	1,18	1,12	1,06	1	0,85
			3I, 4I, ICI, C2I, C3I	1,06	1,06	1,03	1	0,95
ft_{1b}	Fan cooling[3) 4) 6)]	with 1 radial fan (helical gear unit)		1,12	1,18	1,25	1,32	1,4
		with 2 radial fans (helical gear unit) with 1 radial fan (bevel helical gear unit)		1,25	1,4	1,6	1,8[5)]	2
	with water coil[4)]			2				
	with internal exchanger[4)]			see ch. 17				

1) Corresponding to a mean temperature of the housing external surface approx. equal to 85°C (locally this temperature may also reach the oil one).
2) For bevel helical gear reducers and gearmotors with double extension high speed shaft multiply Pt_N by **0,85**.
3) With simultaneous water cooling by coil, values are multiplied by 1,8.
4) Refer to ch. 17 about positions, overall dimensions and design verification.
5) Value valid also for proper electric fan (installation by Customer).
6) With axial fan, the values are to be multiplied by 1,12. Consult us.

4 - Thermal power *P*t [kW]

Thermal factor ft_2 according to **ambient temperature** and **service**

Maximum ambient temperature °C	ft_2 Continous duty	Intermittent duty S3 ... S6 Cyclic duration factor [%] for 60 min running[1]			
	S1	**60**	**40**	**25**	**15**
50	0,6	0,71	0,8	0,95	1
40	0,75	0,9	1	1,12	1,25
30	0,9	1,06	1,18	1,32	1,5
20	**1**	1,18	1,32	1,5	1,7
10	1,12	1,32	1,5	1,7	1,9

Thermal factor ft_4 according to **installation altitude**

Altitude a.s.l. m	ft_4
⩽ 1 000	1
1 000 ÷ 2 000	0,95
2 000 ÷ 3 000	0,9
3 000 ÷ 4 000	0,85
› 4 000	0,8

Thermal factor ft_3 according to **mounting position** (see also ch. 8, 10, 12, 14); **where it is not specified ft_3 = 1**

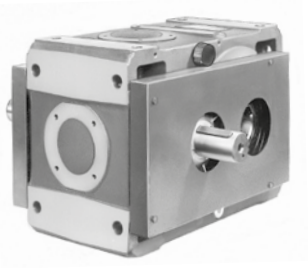
Train of gears	Mounting position		ft_3 140	160	180	200	225	250	280	320, 321	360
R I	**B6**		1	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71
	B7		0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85
	B8		0,85	1	0,85	1	0,85	1	0,85	1	0,85
R 2I MR 2I	**B6**	$i_N \leqslant 14$ $i_N \geqslant 16$	1 1	1 1	1 1	0,85 1	0,85 1	0,85 1	0,85 1	0,85 0,85	0,85 0,85
	B7	$i_N \leqslant 14$ $i_N \geqslant 16$	1 1	0,71 1	0,71 1	0,71 1	0,71 1	0,71 0,71	0,71 0,71	0,71 0,71	0,71 0,71
	V5	$i_N \leqslant 14$ $i_N \geqslant 16$	1 1	1 1	1 1	0,71 1	0,71 1	0,71 1	0,71 1	0,71 0,71	0,71 0,71
	V6	$i_N \leqslant 14$	1	1	1	1	1	1	1	0,85[2]	0,85[2]
R 3I MR 3I	**B6**	$i_N \leqslant 63$	1	1	1	1	1	0,85	0,85	0,85	0,85
	B7	$i_N \leqslant 63$ $i_N \geqslant 71$	1 1	1 1	1 1	0,71 1	0,71 1	0,71 1	0,71 1	0,71 0,71	0,71 0,71
	V5	$i_N \leqslant 63$	1	1	1	1	1	1	1	0,71	0,71
	V6	$i_N \leqslant 63$	1	1	1	1	1	0,85	0,85	0,85	0,85
R CI	**B6**	$i_N \leqslant 8$	1	1	1	1	1	0,85	0,85	0,85	0,85
	B7		1	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71
	B8		0,85	1	0,85	1	0,85	1	0,85	1	0,85
	V5, V6	• below • above	1 1	1 0,71	1 0,71	1 0,71	1 0,71	0,85 0,71	0,85 0,71	0,85 0,71	0,85 0,71
MR CI	**B7**		1	1	1	1	1	0,85	0,85	-	-
	B8		0,85	1	0,85	1	0,85	1	0,85	-	-
	V5, V6	• above	1	1	1	1	1	0,85	0,85	-	-
R C2I	**B6**	$i_N \leqslant 28$	1	1	1	1	1	1	1	0,85	0,85
	B7		1	1	1	0,71	0,71	0,71	0,71	0,71	0,71
	V5, V6	• below • above	1 1	1 1	1 1	0,71 1	0,71 1	0,71 1	0,71 1	0,71 0,85	0,71 0,85
MR C2I	**B7**		1	1	1	1	1	1	1	0,85	0,85

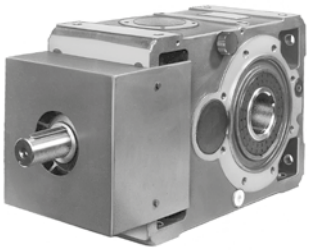
Thermal factor ft_5 as dependent on air speed on the housing

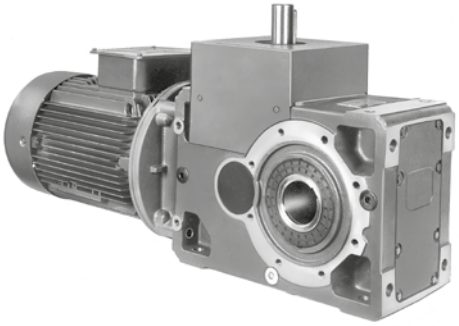
Air speed m/s	Working environment	ft_5
< 0,63	very small no air movement gear reducer shielded	Consult us
0,63	small and with limited air movement	0,71
1	large and without ventilation	0,90
1,25	large and with slight ventilation (e.g. gearmotor with self-cooled motor)	1,00
2,5	outdoor ventilated	1,18
4	strong air movement	1,32

1) (Durating of running on load [min] / 60)·100 [%].
2) For MR 2I, ft_3 = 1.
● Position of reference groove (see ch. 6).

4 - Thermal power *P*t [kW]







Fan cooling for helical and bevel helical gear reducers, respectively.
With double extension high speed shaft designs, (**... D**, **... H** and **... R**) both extensions are **accessible** even with fan fitted: **personal safety-guards are the Buyer's responsibility (2006/42/EC).**

5 - Selection

5 - Selection

5.1 - Preliminary considerations

Motor power

Taking into account the efficiency of the gear reducer, and other drives – if any – motor power is to be as near as possible to the power rating required by the driven machine: accurate calculation is therefore recommended.

The power required by the machine can be calculated, seeing that it is related directly to the power-requirement of the work to be carried out, to friction (starting, sliding of rolling friction) and inertia (particularly when mass and/or acceleration or deceleration are considerable). It can also be determined experimentally on the basis of tests, comparisons with existing applications, or readings taken with amperometers or wattmeters.

An oversized motor would involve: a greater starting current and consequently larger fuses and heavier cable; a higher running cost as power factor (cos φ) and efficiency would suffer; greater stress on the drive, causing danger of mechanical failure, drive being normally proportionate to the power rating required by the machine, not to motor power.

In such cases, a detailed description of duty requirement must be made available: duration and frequency per hour of work cycle, acceleration and deceleration requirements if any, inertia, loads deriving from friction and work. In the absence of such data it is essential to provide all details which will permit their determination.

Only high values of ambient temperature, altitude, frequency of starting or other particular conditions require an increase in motor power.

Input speed n_1

For gear reducers, the maximum input speed, valid for **continuous duty S1**, is the one stated in the following table, according to train of gears and to gear reducer size; however, depending on the specific transmission ratio this limit may not be reacheable: for these cases, in the selection tables (see ch. 7, 9), the norminal power P_{N2} isn't stated and the given M_{N2} value is valid for the selection method type B (see ch. 5.2) only.

For intermittent duty or for particular needs, higher speeds may be possible, but always lower than values of n_{1peak}: consult us.

Peak speed is admitted for a maximum duration of 5s, including a proper rest period or a low speed period for the cooling of gear reducer, especially on high speed shaft side.

For variable n_1, the selection should be carried out on the basis of n_{1max}, but it should also be verified on the basis of n_{1min}.

When there is a belt drive between motor and gear reducer, different input speeds n_1 should be examined in order to select the most suitable unit from engineering and economy standpoints alike (our catalog favours this method of selection as it shows a number of input speed values n_1 relating to a determined output speed n_{N2} in the same section).

Input speed should not be higher than 1 800 min^{-1}, unless conditions make it necessary; better to take advantage of the transmission, and use an input speed lower than 900 min^{-1}.

Gear reducer size	Train of gear											
	I		2I		3I		CI		ICI		C2I	
	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}
50	–	–	2 800	3 500	–	–	2 800	3 500	2 800	3 500	–	–
63, 64	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	–	–
80, 81	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	–	–
100	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	–	–
125	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	–	–
140	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500
160	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500
180	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500
200	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500	2 800	3 500
225	2 500	3 500	2 800	3 500	2 800	3 500	2 800	3 500	–	–	2 800	3 500
250	2 000	2 360	2 800	3 500	2 800	3 500	2 360	3 350	–	–	2 800	3 500
280	2 000	2 360	2 800	3 500	2 800	3 500	2 360	3 350	–	–	2 800	3 500
320, 321	1 800	2 360	2 000	2 360	2 800	3 500	2 000	2 800	–	–	2 360	3 500
360	1 800	2 360	2 000	2 360	2 800	3 500	2 000	2 800	–	–	2 360	3 500

5.2 - Gear reducer

For the determination of gear reducer size it is possible to procede in two different ways:

A) considering **the daily running time** (**h/d**);

B) considering the **total running duration** request L_h

Method A) is easier but more generic and requires a good knowledge of the applications; on the contrary, method B) is more accurate, but more complex.

Attention: Concerning above mentioned points, the gear reducer nominal performance calculated in the two different ways could slightly differ; in these cases, however, method B), as it is more precise, will be considered valid.

Method A - Determining the gear reducer size considering the daily running time (h/d)

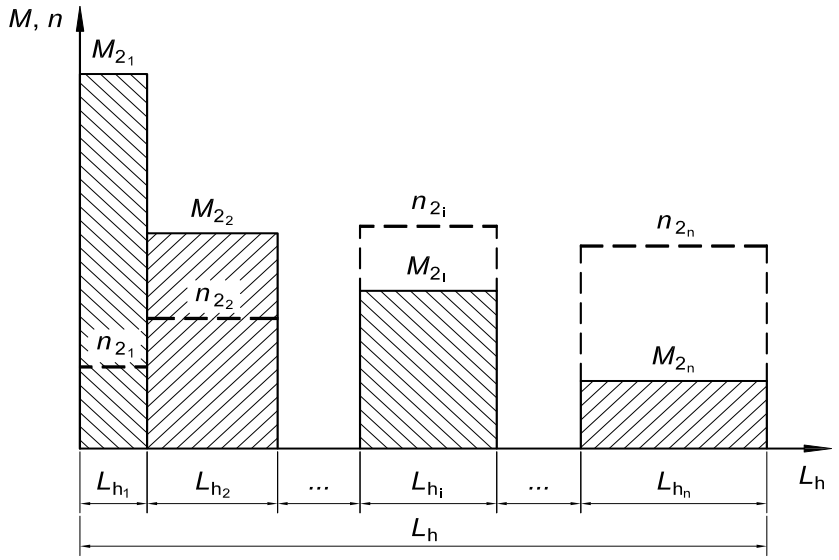
- Fill in the selection questionnaire in all its parts at page 36; in particular, make available the power P_2 required at gear reducer output, the angular speeds n_2 and n_1, the running conditions (nature of load, daily running time **h/d**, frequency of starting ***z***, other considerations) referring to ch. 3.
- Determine service factor ***f***s on the basis of running conditions (ch. 3).
- Select the gear reducer size (also, the train of gears and transmission ratio ***i*** at the same time) on the basis of n_2, n_1 and of a power P_{N2} greater than or equal to $P_2 \cdot f$s (ch. 7 and 9).
- Calculate power P_1 required at input side of gear reducer using the formula P_2 / η where η = 0,98 ÷ 0,92 is the efficiency of the gear reducer (ch. 6).

When for reasons of motor standardization, power P_1 applied at input side of gear reducer turns out to be higher than the power required (considering motor/gear reducer efficiency), it must be certain that this excess power applied will never be required, and frequency of starting ***z*** is so low as not to affect service factor (ch. 3).
Otherwise, make the selection by multiplying P_{N2} by P_1 applied / P_1 required.
Calculations can also be made on the basis of torque instead of power; this method is even preferable for low n_2 values.

Method B - Determining the gear reducer size considering the total running duration L_h

- Fill in the selection questionnaire in all its parts at page 36; in particular, make available the torque M_2, the angular speed n_2 required at gear reducer output, the running conditions (nature of load, **total running duration** foreseen L_h, frequency of starting ***z***, other considerations) referring to ch. 3.
- In presence of required torque M_2 and angular speed n_2 **variable in time**, according to a given load cycle, calculate the equivalent torque M_{2eq} and the equivalent angular speed n_{2eq} with the following formulae:

M_{2i}	[N m] is the torque required (constant) in the interval ***i***
n_{2i}	[min^{-1}] is the output shaft speed (constant) during interval ***i***
t_i	[s] is the duration of interval ***i***
n_{2eq}	[min^{-1}] is the equivalent speed in the cycle



$$M_{2eq} = \sqrt[p]{\frac{M_{2_1}^{p} \cdot n_{2_1} \cdot L_{h_1} + M_{2_2}^{p} \cdot n_{2_2} \cdot L_{h_2} + \ldots + M_{2_i}^{p} \cdot n_{2_i} \cdot L_{h_i} + \ldots + M_{2_n}^{p} \cdot n_{2_n} \cdot L_{h_n}}{n_{2_{eq}} \cdot L_h}}$$

$$n_{2eq} = \frac{n_{2_1} \cdot L_{h_1} + n_{2_2} \cdot L_{h_2} + \ldots + n_{2_i} \cdot L_{h_i} + \ldots + n_{2_n} \cdot L_{h_n}}{L_h}$$

where:

M_{2eq}	[N m] is the load cycle equivalent torque
M_{2i}	[N m] is the required torque (constant) on the low speed shaft during interval ***i***
n_{2eq}	[min^{-1}] is the load cycle equivalent speed
n_{2i}	[min^{-1}] is the speed (constant) of the low speed shaft in the interval ***i***
Lhi	[h] is the duration of interval ***i***
Lh	[h] Lh1 + ... + Lhi + ...+ Lhn is the total duration of load cycle
p =	3,33 if $n_{2eq} \cdot L$h **.** value stated in the following table according to the train of gears
p =	6,61 if $n_{2eq} \cdot L$h ⩽ value stated in the following table according to the train of gears

$n_{2eq} \cdot L_h$ [min^{-1} · h]					
R I	**R 2I**	**R 3I**	**R CI**	**R ICI**	**R C2I**
2 000 000	2 800 000	4 000 000	1 400 000	2 000 000	710 000

- Select the gear reducer size (also, the train of gears and trasmission ratio ***i*** at the same time) on the basis of $n_{N2} \cdot L_h$, i_N close to the values previously calculated and on the basis of a torque M_{N2} greater than or equal to $M_2 \cdot fs$ required (or $M_{2eq} \cdot fs$ required), see ch. 7 and 9.
- Calculate power P_1 required at input side of gear reducer using the formula P_2 / η where η = 0,98 ÷ 0,92 is the efficiency of the gear reducer (ch. 6).

When for reasons of motor standardization, power P_1 applied at input side of gear reducer turns out to be higher than the power required (considering motor/gear reducer efficiency), it must be certain that this excess power applied will never be required, and frequency of starting ***z*** is so low as not to affect service factor (ch. 3).

Otherwise, make the selection by multiplying P_{N2} by P_1 applied P_1 required.

Attention. The values of P_{N2} highlighted in the selection tables with grey background are valid only for the value of n_{N2} specified and therefore they are to be ignored for whatever value of $n_2 \cdot L_h$.

Verifications

- Verify possible radial loads F_{r1}, F_{r2} and axial load F_{a2} by referring to instructions and values given in ch. 16.
- When a load chart is available, and/or there are overloads – due to starting on full load (especially with high inertias and low transmission ratios), braking, shocks, gear reducers in which the low speed shaft becomes driving member due to driven machine inertia, or other static or dynamic causes - verify that the maximum torque peak (ch. 6) is always less than **1,6 · M_{N2}**; if it is higher or cannot be evaluated in the above cases, install a safety device so that **1,6 · M_{N2} will never be exceeded**.
- Verify, when $fs < 1$, that torque M_2 is less than or equal to M_{N2} value valid for $n_1 \leqslant 90$ min^{-1} (see pages 107 and 195),
- Verify that input speed is lower than or equal to n_{1max} (see ch. 5.1);
- Verify **for each single interval *i*** of the eventual load cycle that the torque required M_{2i} is lower than **1,6 · M_{N2}** and anyway never higher than M_{N2} valid for $n_1 \leqslant 90$ min^{-1} (see page 107 and 195) and that the input speed (relevant to the low speed shaft speed n_{2i}) is $n_{1i} \leqslant n_{1max}$ (see ch. 5.1);
- Verify, usually for sizes ⩾ 100, possible need for forced cooling (ch. 4 and 17).
- For gear reducers sizes 140, 180, 225, 280, 321, 360 with backstop device having particular i_N or low fs values, verify load capacity of backstop device according to the values given in the table «Backstop device load capacity» (ch. 17).

5.3 - Gearmotor

Determining the gearmotors size

- Fill in the selection questionnaire in all its parts at page 36; in particular, make available the necessary data: power P_2 required at gearmotor output, angular speed n_2, running conditions (nature of load, duration, frequency of starting ***z***, other considerations), referring to ch. 3.
- Determine service factor fs on the basis of running conditions (ch. 3).
- Select the gearmotor size on the basis of n_2, fs and of a power P_1 greater than or equal P_2 (ch. 11, 13). If power P_2 required is the result of a precise calculation, the gearmotor should be selected on the basis of a power P_1 equal to or greater than P_2 / η, where η = 0,96 ÷ 0,92 is gear reducer efficiency (ch. 6). The torque value M_2 stated in the tables (ch. 11, 13) has been calculated taking into account efficiency.

When for reasons of motor standardization, power P_1 available in catalog is much greater than the power P_2 required, the gearmotor can be selected on the basis of a lower service factor ($fs \cdot P_2 / P_1$) provided it is certain that this excess power available will never be required and frequency of starting ***z*** is low enough not to affect service factor (ch. 3).

Calculations can also be made on the basis of torque instead of power; this method is even preferable for low n_2 values.

Verifications

- Verify possible radial load F_{r2} and axial load F_{a2} referring to directions and values given in ch. 16.
- For the motor, verify frequency of starting ***z*** when higher than that normally permissible, referring to directions and values given in ch. 1.2; this will normally be required for brake motors only.
- Verify, in case of **motors supplied by the customer**, that the **static bending moment M_b** generated by motor weight on the counter flange of gear reducer is lower than the value allowed M_{bmax}, stated in the ch. 6.
  Loads higher than permissible loads may be present in dynamical applications where the gearmotor is subjected to translations, rotations or oscillations: consult us for the study of every specific case
- When a load chart is available, and/or there are overloads – due to starting on full load (especially with high inertias and low transmission ratios), braking, shocks, gear reducers in which the low speed shaft becomes driving member due to driven machine inertia, or other static or dynamic causes - verify that the maximum torque peak (ch. 6 is always less than 1,6 · M_{N2} ($M_{N2} = M_2 \cdot fs$, see ch. 11 and 13); if it is higher or cannot be evaluated in the above cases, install a safety device so that **1,6 · M_{N2} will never be exceeded**.
- Verify, usually for P_1 ⩾ 30 kW, possible need for forced cooling (ch. 4 and 17).

5.4 - Questionnaire for the selection

For the collection of data and of all information necessary for a correct selection of gear reducer or gearmotor, fill in the questionnaire at the following page.

Attach technical specifications, if any, concerning the gear reducer or the gearmotor excluding other parts of the machine or of the plant.

When it is possible, attach the questionnaire with drawings, pictures and any further information useful to facilitate the best selection from a technical and economic point of view.

5 - Selection

1 Conditions of application

Area of application/Industry sector

Type of machine to be driven

☐ new machine
☐ existing and running machine
gear reducer in use

Ambient temperature [°C]
min | normal | max

Altitude [m a.s.l.]

Ambient:
☐ normal (industrial) indoor
☐ normal (industrial) outdoor
☐ dusty
☐ corrosive / humid

Gear reducer position:
☐ tight space with insufficient air recycle (v_{air} < 0,63 m/s)
☐ wide space with free air recycle (v_{air} ⩾ 1,25 m/s)
☐ outdoor, protected against extremes of weather and radiation

2 Data of load

Output speed required [min^{-1}]
min | nominal | max

Output torque required [N m]
min | nominal | max

Power required on low speed shaft [kW]
min | nominal | max

Input speed (gear reducers) [min^{-1}]
min | nominal | max

Nature of load:
☐ uniform
☐ moderate overloads
☐ heavy overloads

Frequency of starting [starts/h]

Moment of inertia of machine [$kg\ m^2$]
min | normal | max

Running time [h/d]

Total duration [h]

Duty cycle (S1 ... S10)

Load cycle attached
☐ yes
☐ no

3 Motor

Motor type:
☐ asynchronous three-phase (a.c.)
☐ asynchronous three-phase + inverter
☐ d.c. + converter
☐ internal combust. (one - cylinder)
☐ internal combust. (multi-cylinder)

Power P_1 [kW]
min | nominal | max

Nominal speed n_1 [min^{-1}]
min | nominal | max

A.c. motor supply:
voltage [V] | frequency [Hz]

IEC motor size (a.c. motor)

A.c. motor connection:
☐ direct
☐ Y / Δ
☐ soft starter / inverter

Electromagnetic brake
☐ parking
☐ working
☐ safety
Braking torque [N m]

Starting torque [N m]

Moment of inertia [$kg\ m^2$]

Electric motor design (a.c. and d.c.):
☐ with fan cooling
☐ with encoder:
☐ with tachometer generator

Connection with gear reducer:
☐ with coupling
☐ with V-belt
section | No. | d_m [mm] | d_1 [mm]
☐ with toothed belt
section | No. | d_m [mm]

Eventual limitation of drive overall dimensions

4 Gear reducer

Mounting position

Output shaft direction of rotation
☐ white arrow
☐ black arrow
☐ black and white arrow

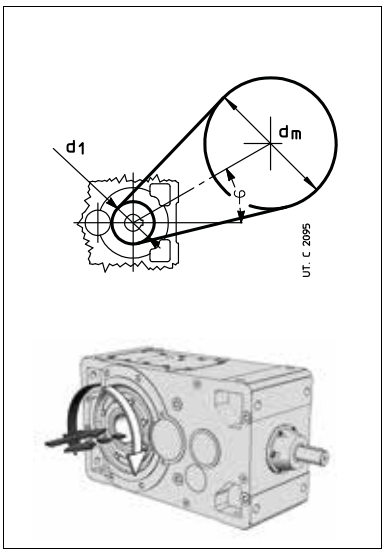
Backstop device (if any)
☐ white arrow free rotation
☐ black arrow free rotation

Type of cooling admitted
☐ fan cooling
☐ coil
☐ internal heat exchanger
☐ unit UR O/A
☐ unit UR O/W

Type of connection to machine
☐ shaft mounting
☐ flexible / semi-flexible coupling
☐ universal coupling
☐ timing belt
pitch | d_m | d_1 | φ
☐ chain
pitch | No. | z_2 | z_3 | overhang [mm] | φ
☐ straight tooth helical gear pair
pitch | No. | z_2 | z_3 | overhang [mm] | φ

Eventual axial load F_a [N]
← – – | →

Eventual reduction of drive overall dimensions



6 – Structural and operational details

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Sound levels L_{WA} and $\bar{L}_{pA}$

Standard production sound power level L_{WA} [dB(A)][1] and mean sound pressure level $\bar{L}_{pA}$ [dB(A)][2] assuming nominal load, and input speed n_1 = 1 400[3] min^{-1}. Tolerance +3 dB(A).

Gear reducer size	I				2I				3I, 4I				CI				ICI, C2I, C3I			
	$i_N \leq 3{,}55$		$i_N \geq 4$		$i_N \leq 14$		$i_N \geq 16$		$i_N \leq 90$		$i_N \geq 100$		$i_N \leq 18$		$i_N \geq 20$		$i_N \leq 80$ (ICI) $i_N \leq 71$ (C2I)		$i_N \geq 100$ (ICI, C3I) $i_N \geq 80$ (C2I)	
	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$	L_{WA}	$\bar{L}_{pA}$
40, 50	**-**	-	-	-	**75**	66	**72**	63	**71**	64	**-**	-	**73**	64	**71**	62	**71**	62	**71**	62
63, 64	**83**	74	**79**	70	**78**	69	**75**	66	**74**	64	**72**	62	**76**	67	**73**	64	**73**	64	**73**	64
80, 81	**86**	77	**82**	73	**81**	72	**78**	69	**77**	67	**75**	65	**79**	70	**75**	66	**75**	66	**75**	66
100	**89**	80	**85**	76	**84**	75	**81**	72	**80**	70	**78**	68	**82**	73	**78**	69	**78**	69	**76**	67
125, 140	**92**	83	**88**	79	**87**	77	**84**	74	**83**	73	**80**	70	**85**	76	**80**	71	**82**	72	**79**	69
160, 180	**95**	86	**91**	82	**90**	79	**87**	76	**86**	75	**83**	72	**88**	79	**83**	74	**84**	74	**82**	71
200, 225	**99**[4]	89[4]	**95**[4]	85[4]	**93**	82	**90**	79	**89**	78	**86**	75	**92**	82	**87**	77	**87**	76	**84**	73
250, 280	**102**[4]	92[4]	**98**[4]	88[4]	**96**	85	**93**	82	**92**	81	**89**	78	**94**	84	**89**	79	**90**	79	**88**	76
320 ... 360	**106**[4]	96[4]	**102**[4]	92[4]	**100**	89	**97**	86	**96**	85	**93**	82	**98**	88	**93**	83	**93**	82	**91**	80

1) To ISO/CD 8579.
2) Mean value of measurement at 1 m from external profile of gear reducer standing in free field on a reflecting surface.
3) For n_1 710 1 800 min^{-1}, modify tabulated values: thus n_1 = 710 min^{-1}, -3 dB(A); n_1 = 900 min^{-1}, -2 dB(A); n_1 = 1 120 min^{-1}, -1 dB(A); n_1 = 1 800 min^{-1}, +2 dB(A).
4) For sizes R I 225, 280 and 360, increase values of 1 dB(A).

In case of gearmotor (motor supplied by Rossi) add 1 dB(A) to the values in the table for 4 poles 50 Hz motors, and add 2 dB(A) for 4 poles 60 Hz motors.
If required, gear reducers can be supplied with reduced sound levels (normally 3 dB(A) less than tabulated values): consult us.
In case of gear reducers with fan cooling, add to the values in the table 3 dB(A) for 1 fan and 5 dB(A) for 2 fans.

Gear ratio of input helical train of gears

The partial transmission ratio of input helical train of gears is given in the table; this ratio may be useful when calculating the speed of the intermediate shaft extension for **... D** design (see ch. 8, 10, 12, 14).

Gear reducer size	Gear ratio		Gear ratio of input helical train of gears **Gearmotors** Motor size							
	$i_N \leq 80$	$i_N \geq 100$	**63, 71B5R**	**71, 80 B5R**	**80, 90 B5R**	**90, 100 B5R, 112 B5R**	**100, 112, 132 B5R**	**132, 160 B5R**	**160, 180, 200 B5R**	**200, 225**
3I 40			2,41	-	-	-	-	-	-	-
3I 50			2,59	1,89	-	-	-	-	-	-
3I 63, 64 ICI 40, 50	3,12		3,5	2,54	2,03	-	-	-	-	-
4I 63, 64 C3I 40,50	-		10,9	7,91	-	-	-	-	-	-
3I, ICI 80, 81 ICI 63, 64	3,18		-	3,18 (3,8)[1]	2,54	2	-	-	-	-
4I, C3I 80, 81 C3I 63, 64	-		-	10,1 (12,1)[1]	8,08	-	-	-	-	-
3I, ICI 100	3,18	6,38	-	-	3,18 (3,8)[1]	2,54	2	-	-	-
4I, C3I 100	-	-	-	-	10,1 (12,1)[1]	8,08	-	-	-	-
3I, ICI 125 ICI 140	3,13	6,36	-	-	-	3,13 (3,86)[1]	2,54 (3,13)[2]	2,03	-	-
4I, C3I 125	-	-	-	-	-	9,77 (12,1)[1]	7,92	-	-	-
ICI 160, 180	3,17	6,38	-	-	-	-	3,17 (4)[1]	2,56	2 (2,56)[3]	-
ICI 200	3,17	6,38	-	-	-	-	-	3,17 (3,8)[1]	2,56 (3,17)[2]	2 (2,56)[3]

1) Values valid for trains of gears: **3I** with $i_N \geq 100$, **ICI** with $i_N \geq 100$, **4I** with $i_N \geq 315$, **C3I** with i_N = 400.
2) Values valid for trains of gears: **3I** with i_N = 80, **ICI** with $i_N \geq 80$.
3) Values valid for train of gears: **ICI** with $i_N \geq 63$.

Efficiency

The efficiency stated in the table is indicative and referred to nominal running conditions (torque, speed, temperature); it is necessary to keep in mind that the efficiency value can diminish considerably for values of $M_2 \ll M_{N2}$

Model	Nominal efficiency η			
	I	**2I, CI**	**3I, ICI, C2I**	**C3I, 4I**
2, 3	0,98	0,96	0,94	0,92
4	-	0,95	0,935	-

Overloads

When a gear reducer is subjected to high static and dynamic overloads, the need arises for verifying that such overloads will always remain lower than **1,6 · M_{N2}** (see ch. 7, 9; see ch. 11, 13 where $M_{N2} = M_2 \cdot fs$).

Overloads are normally generated when one has:

- starting on full load (especially for high inertias and low transmission ratios), braking, shocks;
- gear reducers in which the low speed shaft becomes driving member due to driven machine inertia;
- applied power higher than that required; other static or dynamic causes.

The following general observations on overloads are accompanied by some formulae for carrying out evaluations in certain typical instances.

Where no evaluation is possible, install safety devices which will keep values within **1,6 · M_{N2}**.

Starting torque

When starting on full load (especially for high inertias and low transmission ratios) verify that **1,6 · M_{N2}** is equal to or greater than starting torque, by using the following formula:

$$M_2 \text{ start} = \left(\frac{M \text{ start}}{M_N} \cdot M_2 \text{ available} - M_2 \text{ required}\right) \frac{J}{J + J_0} + M_2 \text{ required}$$

where:

M_2 required is the torque absorbed by the machine through work and frictions;

M_2 available is the output torque due to motor nominal power;

J_0 is the moment of inertia (of mass) of the motor;

J is the external moment of inertia (of mass) in kg m² (gear reducers, couplings, driven machine) referred to the motor shaft;

NOTE: when seeking to verify that starting torque is sufficiently high for starting, take into account starting friction, if any, in evaluating M_2 required.

Stopping machines with high kinetic energy (high moments of inertia combined with high speeds) with brake motor

Verify braking stress by means of the formula:

$$\left(\frac{Mf}{\eta} \cdot i + M_2 \text{ required}\right) \frac{J}{J + J_0} - M_2 \text{ required} < 1{,}6 \cdot M_{N2}$$

where:

Mf is the braking torque setting (see table in ch. 1.2); for other symbols see above and ch. 1.

Operation with brake motor

Starting time ta and revolutions of motor φa_1

$$ta = \frac{(J_0 + J) \cdot n_1}{9{,}55 \left(M \text{ start} - \frac{M_2 \text{ required}}{i}\right)} \text{ [s]}; \qquad \varphi a_1 = \frac{ta \cdot n_1}{19{,}1} \text{ [rad]}$$

Braking time tf and revolutions of motor φf_1

$$\frac{(J_0 + J) \cdot n_1}{9{,}55 \left(Mf + \frac{M_2 \text{ richiesto}}{i}\right)} \text{ [s]}; \qquad \varphi f_1 = \frac{tf \cdot n_1}{19{,}1} \text{ [rad]} \qquad tf =$$

where:

M start [N m] is motor starting torque $\left(\frac{9550 \cdot P_1}{n_1} \cdot \frac{M \text{ start}}{M_N}\right)$ (see ch. 1.2);

Mf [N m] is the braking torque setting of the motor (see ch. 1.2);

for other symbols see above and ch. 1.

Assuming a regular air-gap and ambient humidity, and utilizing suitable electrical equipment, repetition of the braking action, as affected by variation in temperature of the brake and by the state of wear of friction surface, is approx ± 0,1 · φf_1.

Friction surface life

As a rough guide (see specific literature), the number of braking permissible between successive adjustments of the air-gap is given by the formula $\frac{W \cdot 10^5}{Mf \cdot \varphi f_1}$

where:

W [MJ] is the work of friction between successive adjustments of the airgap as indicated in the table; for other symbols see above.

The air-gap should measure between 0,25 minimum and 0,6 maximum; as a rough guide, 5 adjustments can be made.

Motor size	W [MJ]
63	10,6
71	14
80	18
90	24
100	24
112	45
132	67
160, 180M	90
180L, 200	125

Angular backlash and torsional stiffness

A rough guide for the angular backlash (high speed shaft being locked) is given in the table. It varies according to temperature and transmission ratio.

Also the **approx.** values for low speed shaft torsional stiffness – high speed shaft being locked – are given in the table according to the train of gears.

The values stated in the table, since necessarily estimated, are to be considered valid for long model too. On request, gear reducers with **reduced backlash** lower than or equal to the minimum table values are available.

Gear reducer size	Angular backlash[1]				Torsional stiffness[2]			
	[rad]		[arcmin]		[N m / arcmin]			
	min	max	min	max	I	2I, CI	3I, ICI, C2I	4I, C3I
40	0,0043	0,0085	15	29	-	4,8	2,4	-
50	0,0036	0,0071	12	24	-	8,5	4,8	2,8
63	0,0028	0,0056	9,6	19	31,5	18	10	5,6
64	0,0028	0,0056	9,6	19	35,5	19	10,6	5,6
80	0,0025	0,0050	8,6	17	63	35,5	20	11,2
81	0,0025	0,0050	8,6	17	71	37,5	21,2	11,2
100	0,0020	0,0040	6,9	14	125	70	40	22,4
125	0,0017	0,0034	5,8	12	250	140	80	45
140	0,0017	0,0034	5,8	12	355	200	112	-
160	0,0016	0,0032	5,5	11	500	280	160	-
180	0,0016	0,0032	5,5	11	710	400	224	-
200	0,0015	0,0030	5,2	10	1000	560	315	-
225	0,0015	0,0030	5,2	10	1400	800	450	-
250	0,0014	0,0028	4,8	9,6	2000	1120	630	-
280	0,0014	0,0028	4,8	9,6	2800	1600	900	-
320, 321	0,0013	0,0026	4,5	8,9	4000	2240	1250	-
360	0,0013	0,0026	4,5	8,9	5600	3150	1800	-

1) At the distance of 1 m from the low speed shaft centre, angular backlash expressed in mm is obtained in by multiplying the value in rad stated in the table by 1 000 (1 rad = 3438').

2) Values valid in condition of nominal load.

Moment of inertia (of mass) J_1 [kg m^2]

Train of gear i_N	Gear reducer size										
	100	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320, 321**	**360**
I											
2 ... 2,5	0,0026	0,0085	0,0140	0,0299	0,0505	0,0848	0,1484	0,2617	0,4380	0,8918	1,5290
2,8 ... 3,15	0,0020	0,0068	0,0110	0,0238	0,0399	0,0667	0,1160	0,2067	0,3411	0,6987	1,1885
3,55 ... 4	0,0015	0,0045	0,0085	0,0167	0,0309	0,0466	0,0872	0,1433	0,2599	0,4872	0,8992
4,5 ... 5	0,0011	0,0034	0,0057	0,0131	0,0213	0,0354	0,0613	0,1091	0,1823	0,3698	0,6344
2I											
6,3 ... 12,5	0,0009	0,0029	0,0031	0,0091	0,0102	0,0292	0,0325	0,0893	0,0987	0,2812	0,3158
6,3 ... 12,5[1]	0,0014	0,0043	0,0045	0,0133	0,0144	0,0430	0,0463	0,1279	0,1373	0,3967	0,4313
14 ... 28	-	0,0014	0,0017	0,0046	0,0055	0,0151	0,0185	0,0518	0,0566	0,1448	0,1747
14 ... 28[1]	-	0,0022	0,0025	0,0067	0,0086	0,0216	0,025	0,0709	0,0757	0,1981	0,2555
3I											
28 ... 63	-	-	-	0,0019	0,0020	0,0060	0,0063	0,0181	0,0190	0,0599	0,0631
28 ... 63[1]	-	-	-	0,0023	0,0024	0,0074	0,0077	0,0220	0,0229	0,0715	0,0747
71 ... 160	-	-	-	0,0009	0,0009	0,0027	0,0028	0,0083	0,0085	0,0270	0,0278
71 ... 160[1]	-	-	-	0,0010	0,0010	0,0031	0,0031	0,0093	0,0095	0,0303	0,0310
CI											
4 ... 8	0,0013	0,0038	0,0042	0,0123	0,0137	0,0369	0,0414	0,1093	0,1281	0,3372	0,4004
9 ... 11,2	0,0009	0,0025	0,0033	0,0072	0,0105	0,0223	0,0321	0,0706	0,1001	0,2214	0,3146
12,5 ... 16	-	0,0015	0,0018	0,0051	0,0061	0,0158	0,0187	0,0502	0,0589	0,1496	0,1929
18, 20	-	0,0008	0,0010	0,0029	0,0035	0,0085	0,0102	0,0279	0,0328	0,1140	0,1319
25 ... 31,5	-	-	-	0,0016	-	0,0047	-	0,0158	-	-	-
C2I											
20 ... 31,5	-	_	-	0,0039	0,0042	0,0125	0,0133	0,0375	0,0398	0,1131	0,1214
35,5 ... 63	-	_	-	0,0017	0,0018	0,0055	0,0058	0,0172	0,0179	0,0548	0,0574
71 ... 100	-	-	-	0,0007	0,0007	0,0025	0,0026	0,0074	0,0076	0,0240	0,0248
125 , 160	-	-	-	0,0004	0,0004	0,0013	0,0013	0,0038	0,0039	0,0133	0,0136
ICI											
31,5 ... 80	-	-	-	0,0010	0,0011	0,0032	-	-	-	-	-
100 ... 200	-	-	-	0,0005	0,0005	0,0015	-	-	-	-	-

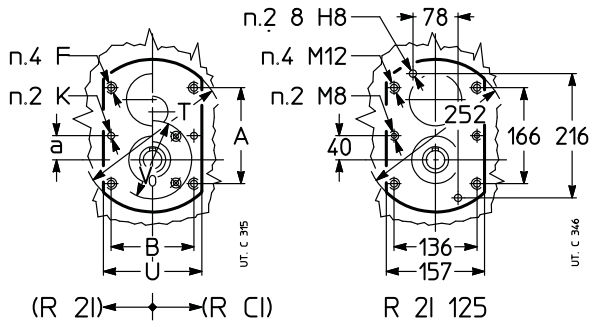
1) Values valid for long model.

6 - Structural and operational details

Gear reducer input face

Following gear reducers have a machined surface and threaded holes for an eventual motor support etc. on gear reducer input side (also on opposite side for R I, R 2I sizes ⩾ 140, R 3I sizes ⩾ 140, model 4 excluded, R CI, R C2I).

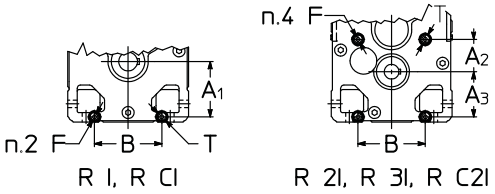
R 2I 50 ... 125
R CI 50 ... 100



Gear reducer size		a	A	B	F	K Ø H8	T Ø	U
R 2I	R CI				1)	2)		
50	**-**	16	72	54	M 5	5	103	66
63, 64	**50**	20	81,5	66,5	M 5	5	119	80
80, 81	**63 ... 81**	25	106	80	M 6	6	149	96
100	**100**	31,3	125	108	M 8	8	187	129

1) Working length of thread 2 · F.
2) Working length of thread 1,6 · K.
For dimension V_0 (R CI only) see ch. 10.

R I 125 ... 360
R 2I 140 ... 360
R 3I 140 ... 360
R CI 125 ... 360
R C2I 140 ... 360

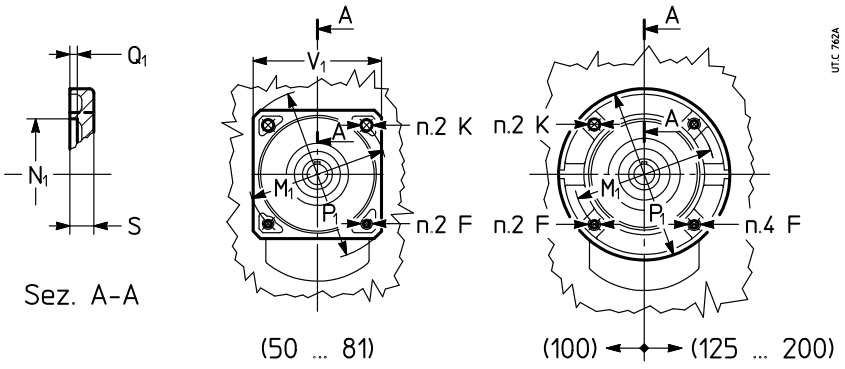


Gear reducer size		A_1	A_2	A_3	B	F Ø	T
R I, R CI	R 2I, R 3I, R C2I					1)	
125, 140	**140**	138	81	113	162	M 12	25
160, 180	**160, 180**	165	96	135	201	M 16	32
200, 225	**200, 225**	207	115	162	250	M 20	40
250, 280	**250, 280**	258	143	203	310	M 24	48
320 ... 360	**320 ... 360**	327	180	252	386	M 30	60

1) Working length of thread 1,25 · F.
If spigot is required, consult us.

The input face of gear reducers have a **machined flange** and **holes** for eventual motor fastening etc.

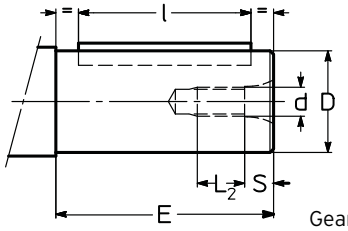
R 3I 63 ... 125
R ICI 50 ... 200



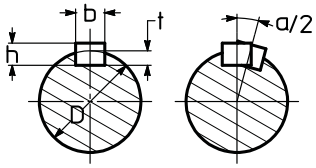
Gear reducer size		F	K Ø	M_1 Ø	N_1 Ø	P_1 Ø	V_1 □	Q_1	S
R 3I	R ICI	1)			H7				
63, 64	**50**	M 8	9,5	115	95	140	105	4	11
80, 81	**63 ... 81**	M 8	9,5	130	110	160	120	4,5	12
100	**100**	M 10	11,5	165	130	200	-	4,5	14
125	**125, 140**	M 10	-	165	130	200	-	4,5	16
-	**160, 180**	M 12	-	215	180	250	-	5	18
-	**200**	M 12	-	265	230	300	-	5	20

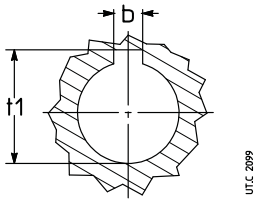
1) Working length of thread 1,25 · F.

High and low speed shaft end



Gear reducer shaft



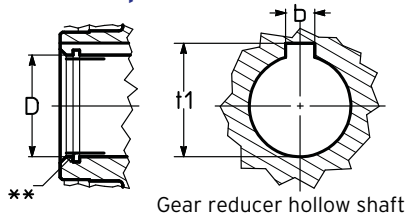


Machine shaft

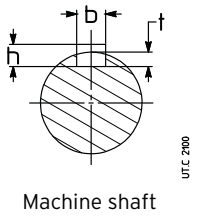
Shaft end									Key			Keyway		
D Ø [3]		**E** [1]		**d** Ø	**S**	**L_2** [1]		**α/2** [2] arc min	**b** h9 × **h** h11 × **l** [1]			**b** H9 hub N9 shaft	**t** shaft	**t_1** hub
11	j 6	23		M 5	3,6	9,4		-	4 × 4 × 18			4	2,5	12,7
14	j 6	30		M 6	4,6	11,4		-	5 × 5 × 25			5	3	16,2
16	j 6	30		M 6	4,6	11,4		-	5 × 5 × 25			5	3	18,2
19	j 6	40	(30)	M 6	4,6	11,4	(13,4)	5,43	6 × 6 × 36	(25)		6	3,5	21,8
24	j 6	50	(36)	M 8	5,9	15,1	(17,1)	5,16	8 × 7 × 45	(25)		8	4	27,2
28	j 6	60		M 8	5,9	15,1		-	8 × 7 × 45			8	4	31,2
30	-	58		M 10	7,6	20,4		4,13	8 × 7 × 45			8	4	33,2
32	k 6	80	(58)	M 10	7,6	18,4	(20,4)	3,87	10 × 8 × 70	(50)		10	5	35,3
38	k 6	80	(58)	M 10	7,6	18,4	(20,4)	3,27	10 × 8 × 70	(50)		10	5	41,3
40	-	58		M 10	7,6	20,4		3,7	12 × 8 × 50			12	5	43,3
42	k 6	110		M 12	9,5	22,5		-	12 × 8 × 90			12	5	45,3
45	k 6	110		M 12	9,5	22,5		-	14 × 9 × 90			14	5,5	48,8
48	k 6	110	(82)	M 12	9,5	22,5	(26,5)	3,08	14 × 9 × 90	(70)		14	5,5	51,8
55	m 6	110		M 12	9,5	22,5		-	16 × 10 × 90			16	6	59,3
60	m 6	140	(105)	M 16	12,7	27,3	(35,3)	2,46	18 × 11 × 110	(90)		18	7	64,4
70	m 6	140	(105)	M 16	12,7	27,3	(35,3)	2,55	20 × 12 × 125	(90)		20	7,5	74,9
75	m 6	140		M 16	12,7	27,3		-	20 × 12 × 125			20	7,5	79,9
80	-	130		M 20	16	44		2,23	22 × 14 × 110			22	9	85,4
90	m 6	170	(130)	M 20	16	34	(44)	1,99	25 × 14 × 140	(110)		25	9	95,4
95	m 6	170		M 20	16	34		-	25 × 14 × 140			25	9	100,4
100	-	165		M 24	19	41		1,79	28 × 16 × 140			28	10	106,4
110	m 6	210	(165)	M 24	19	41		1,63	28 × 16 × 180	(140)		28	10	116,4
125	-	200 [4]		M 30	22	45		1,71	32 × 18 × 180			32	11	132,4
140	-	200		M 30	22	45		1,52	36 × 20 × 180			36	12	148,4
160	-	240		M 36	27	54		1,33	40 × 22 × 220			40	13	169,4
180	-	240		M 36	27	54		1,18	45 × 25 × 220			45	15	190,4

1) Values in brackets are for short shaft end.
2) Maximum angular misalignement between double extension shaft keys.
3) Tolerance valid only for high speed shaft ends. For low speed shaft ends see ch. 17 (1) and (2).
4) Value **not to** standard.

Hollow low speed shafts



Gear reducer hollow shaft



Machine shaft

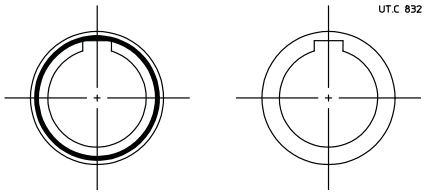
Hole	Parallel key			Keyway		
D Ø H7	**b** h9	× **h** h11	× **l**	**b** H9 hub N9 shaft	**t** shaft	**t_1** hub
19	6	6	50	6	3,5	21,8
24	8	7	63	8	4	27,3
30	8	7	63	8	4,5 [1]	32,7 [1]
32	10	8	70	10	5	35,3
38	10	8	90	10	5,5 [1]	40,7 [1]
40	12	8	90	12	5	43,3
48	14	9	110	14	5,5	51,8
60	18	11	140	18	7	64,4
70	20	12	180	20	8 [1]	74,3 [1]
80	22	14	200	22	9	85,4
90	25	14	200	25	9	95,4
100	28	16	250	28	10	106,4
110	28	16	250	28	10	116,4
125	32	18	320	32	11	132,4
140	36	20	320	36	12	148,4
160	40	22	400	40	14 [1]	168,3 [1]
180	45	25	400	45	15	190,4

* Recommended length.
** Each hollow shaft type (standard, stepped, with shrink disc) has a slightly oversized diameter **D** (at the input) to facilitate the assembly of gear reducer on machine shaft end: this, however, does not affect the connection reliability.
1) Values **not to** standard.

6 - Structural and operational details

Reference groove

The reference for identification of the hollow low speed shaft side opposite to which it is advisable to apply the radial load, is provided by a groove as shown in the drawing below. The position of the reference groove is identified by the symbol ● in the drawings «Design» of ch. 8, 10, 12 and 14.



groove side ● opposite side to groove

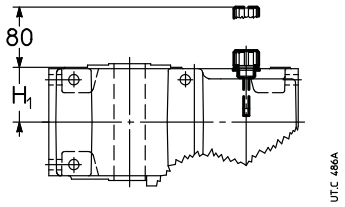
Plug dimensions

Gear reducer size	40, 50	63 ... 81	100 ... 140	160 ... 280	320 ... 360
Size threaded holes	G 1/4"	M16 × 1,5	G 1/2"	G 3/4"	G 1"
Tightening torque Nm	7	14	14	14	25

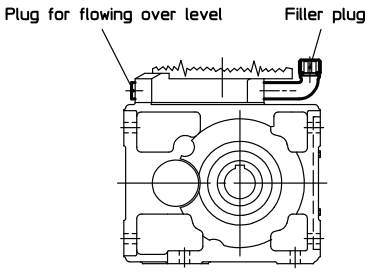
Filler and level plugs

2I, 3I, 4I (100, 125)
mounting position **V6**

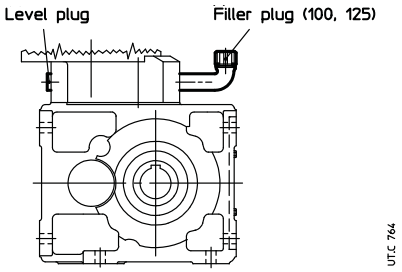
3I (125)
mounting position **V5**[1)]



ICI (100 ... 200)
mounting position **B6**[1)]

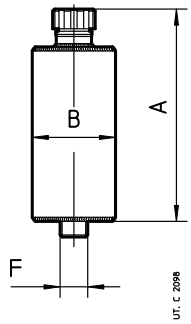


C3I (100 ... 125)
mounting position **B6**[1)]



1) For high speed continuous duty an expansion tank is envisaged: consult us.

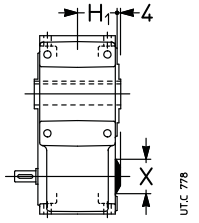
Expansion tank (sizes 100 ... 360)



Gear reducer size	A	B	F	Plug
100 ... 140	131	46	G1/2"	1/2"
160 ... 280	205	80	G3/4"	3/4"
320 ... 360	230	102	G1"	1"

Cap overall dimension (sizes 63, 64, 125 and 140)

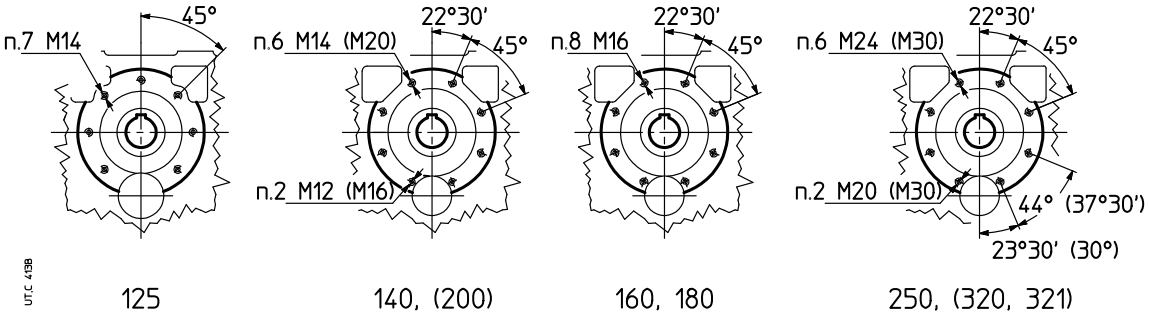
In the gear reducers and gearmotors stated in the table, the cap opposite to high speed shaft overhangs of 4 mm from H_1 dimension (see ch. 8,10, 12, 14), due to backstop device pre-arrangement.



Gear reducer size		X Ø
63, 64	**R 2I, 3I e MR 2I, 3I, 4I**	47
125	**R 2I, 3I e MR 2I, 3I, 4I**	72
140	**R 2I e MR 2I**	72

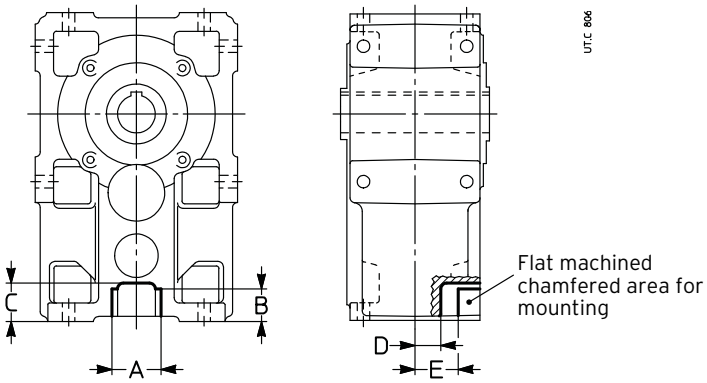
Fastening tapped holes (sizes **125 ... 321**)

The relevant through holes to be realized on the driven machine must be all of equal diameter for sizes 140, 200 and 250 (Ø 15, Ø 21 and Ø 25, respectively) as the 2 holes of smaller diameter are not in the position of 22° 30'.



Reaction recess (2I, 3I, 4I sizes **40 ... 125)**

Sizes 2I, 3I, 4I 40 ... 125 have a housing with a reaction recess having machined lateral surfaces, laying on the high speed side (opposite to groove), for the seating of springs and torque arm end for shaft mounting (see ch. 17 «Shaft mounting arrangements»).



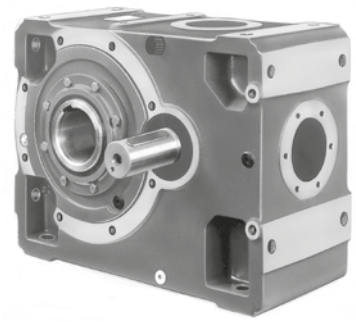
Gear reducer size	A H11	B	C ≈	D	E
40	23	18,5	22	14	25
50	29,7	23,5	26	15,5	28
63, 64	32,5	25,5	31	22,5	36,5
80, 81	45,8	27	36	27	41
100	63	27	38,5	36	54,5
125	67	37	52	46	64

Low speed shaft zone (sizes **140, 180, 225, 280, 360**)

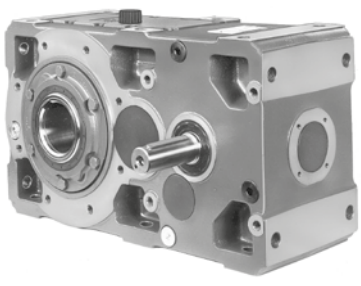
In standard model helical gear reducers the perspective pulley, if mounted against shaft shoulder (always advisable), can have a maximum diameter of:

- **R I**, at the distance of H1 + Q + 3 (ch. 8), 115 (size 140), 150 (size 180), 180 (size 225), 230 (size 280), 300 (size 360).
- **R 2I**, **R 3I**, at the distance H1 + Q + 3 (ch. 8), 315 (size 140), 400 (size 180), 500 (size 225), 630 (size 280), 800 (size 360).

The use of pulleys with larger diameter is allowed on condition that they don't overhang from the shaft end and provided that the maximum radial load values are observed (see ch.16); consult us if need be.



Helical gear reducers
(I 140, 180, 225, 280, 360)

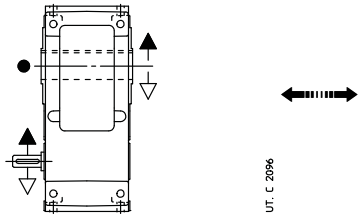


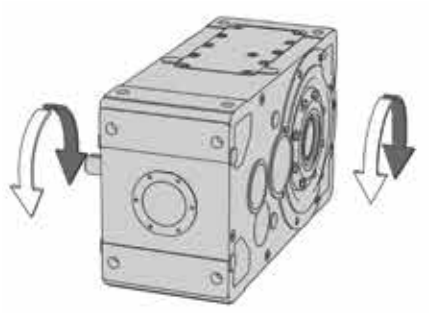
Helical gear reducers
(2I, 3I 140, 180, 225, 280, 360)

Directions of rotation

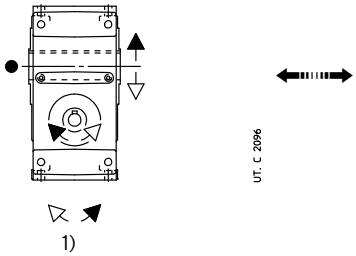
The correspondence between the high speed shaft (of gear reducer or gearmotor) and low speed shaft is stated at ch. 8, 10, 12, 14 according to design and train of gears. For the interpretation of arrows, refer to the following 3D sketchs.

Helical gear reducer R 2I UP2A

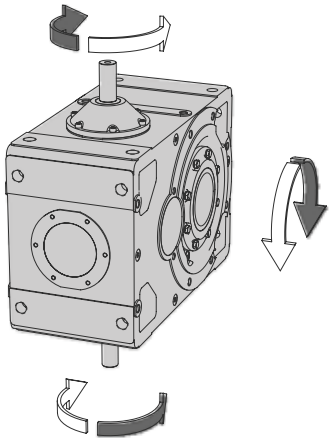




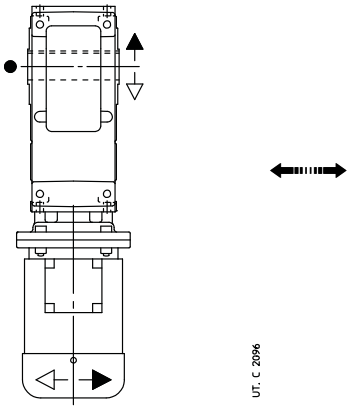
Bevel helical gear reducer R CI UO2D

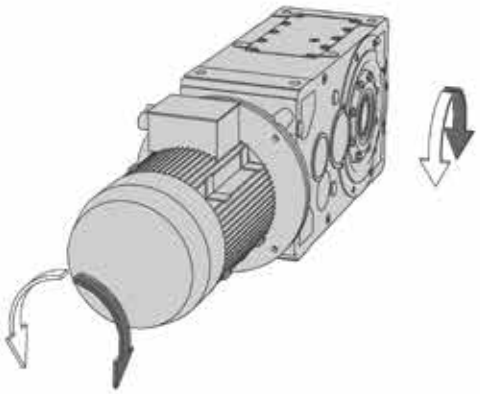


1) Direction of rotation of the second high speed shaft extension not in view.

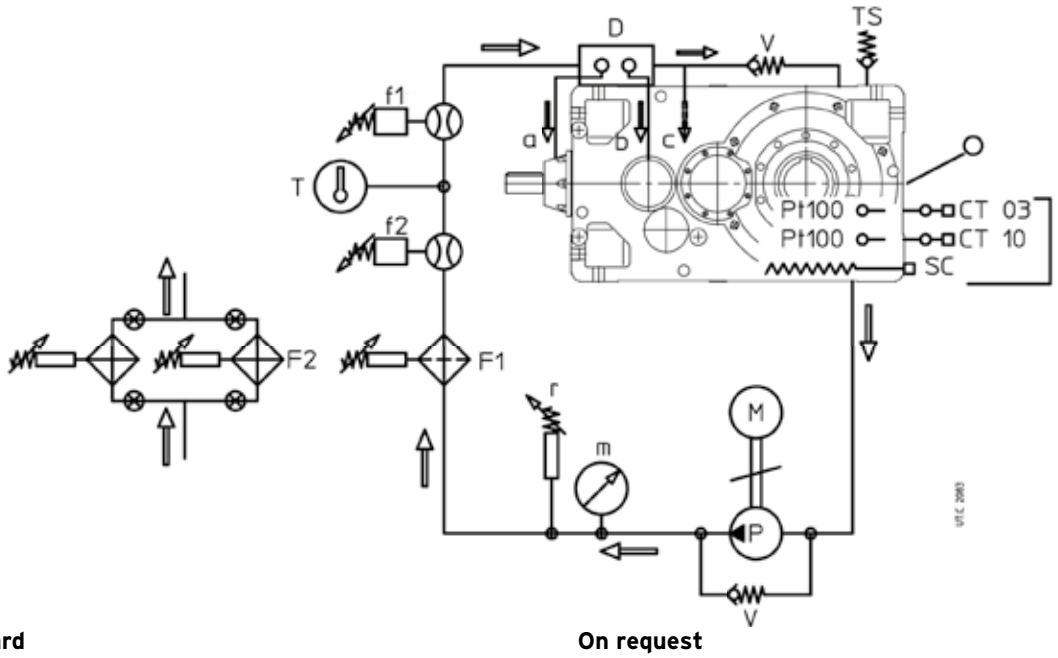


Bevel helical gearmotor MR C2I UO2A





Bearing and/or gear pair forced lubrication: hydraulic circuit diagram



Standard

a, b, c	Gear pair/bearing pipes
m	Pressure gauge (0 ÷ 16 bar)
M	Motor pump
P	Pump
T	Thermometer
V	Safety valve
r	Minimum pressure gauge
TS	Filler plug
D	Distributor
◒	Oil level (approximate)

On request

Pt 100*	Oil temperature probe (loose)*
f1	Electric flow switch: vertical mounting
f2	Visible flow switch
F1	Filter
F2	Exchange filters
CT03*, CT10*	Signalling device (loose)*
SC*	Heater

***** On request, but necessary for gear reducer starting with $T_{ambient}$ (= T_{oil}) ⩽ 25 °C: preheat the oil with the heater.

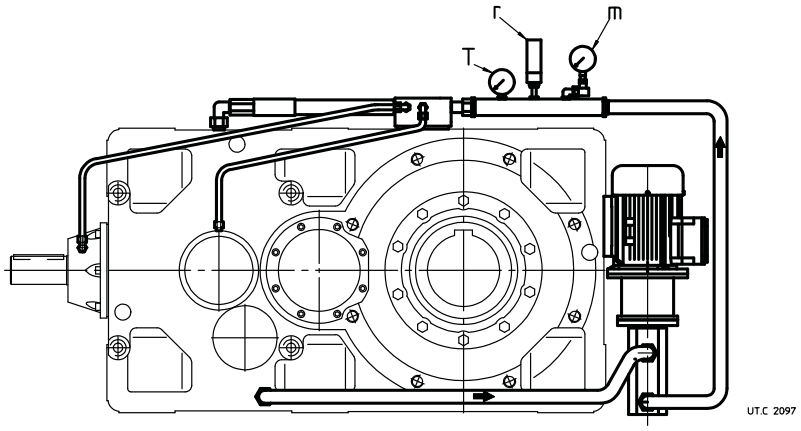
NOTES:

The bearings and/or the gear pairs to be forced lubricated are defined by Rossi according to gear reducer and application.

CT03: set the operating threshold at 50 °C (stopping the heater supply) and the reset threshold at 30 °C.

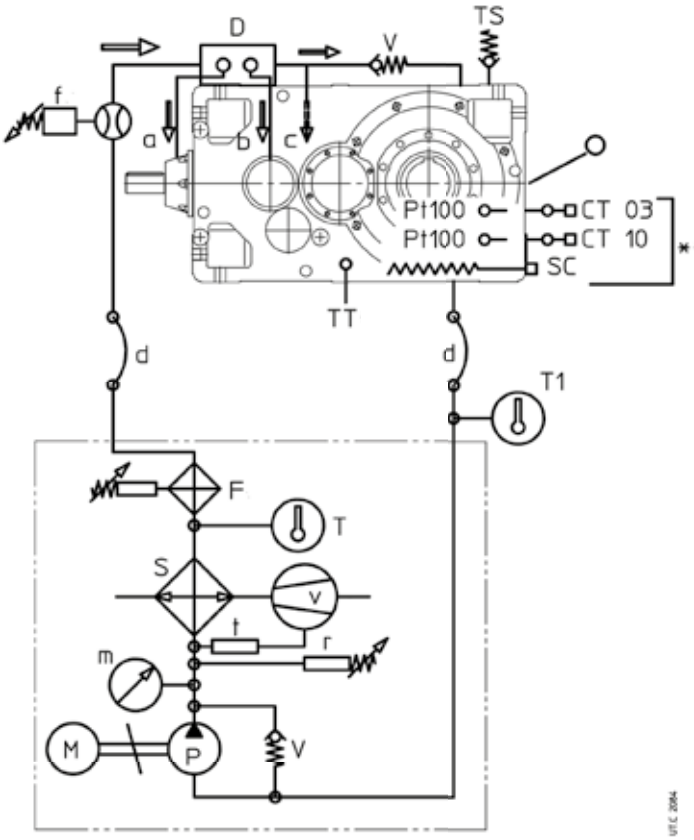
CT10: set the operating threshold at 30 °C to start gear reducer and motor pump; set the reset threshold at 10 °C and the safety threshold at 90 °C.

For the gear reducer starting at $T_{ambient}$ (= T_{oil}) ⩽ 0 °C the same logic is valid, but the devices CT03 and CT10 must be set according to the real ambient temperature.



Sketch of forced lubrication with motor pump; the exact position of motor pump depends on the gear reducer size, train of gears, mounting position and available overall dimensions: for this reason, on request, a drawing of the specific solution will be supplied; the pipes will be realized with suction and delivery flexible pipes and with rigid pipes between the distributor and the bearings.

Bearing and/or gear pair forced lubrication with oil/air or oil/water independent cooling unit: hydraulic circuit diagram



Standard

a, b, c	Gear pair/bearing pipes
d	Flexible connection (by Buyer)
m	Pressure gauge (0 ÷ 16 bar)
M	Motor pump
P	Pump
S	Oil/air or oil/water exchanger
v	Motor fan (UR O/A...)
t	Fan thermostat 0 ÷ 90°C (UR O/A...)
T	Thermometer 0 ÷ 120°C
V	Safety valve
r	Minimum pressure gauge
TS	Filler plug
D	Distributor
	Oil level (approximate)

On request

Pt 100*	Oil temperature probe (loose)*
f	Flow switch (loose)
F	Filter with eletric blockage warning (with UR O/A... loose)
CT03* CT10*	Signalling device (loose)*
T1	Thermometer 0 ÷ 120°C
TT	Bi-metal type thermometer
SC*	Heater

***** On request but necessary for gear reducer starting with $T_{ambient}$ (= T_{oil}) ⩽ 25 °C: preheat the oil with heater.

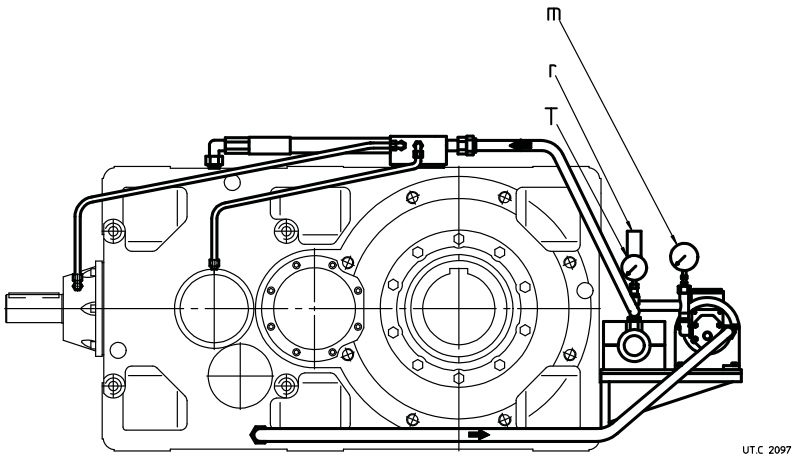
NOTES:

Bearings and/or gear pairs to be forced lubricated are defined by Rossi according to gear reducer and application.

CT03: set the operating threshold at 50 °C (stopping the heater supply) and the reset threshold at 30 °C.

CT10: set the operating threshold at 30 °C to start gear reducer and motor pump; set the reset threshold at 10 °C and the safety threshold at 90 °C.

For gear reducer starting with $T_{ambient}$ (= T_{oil}) ⩽ 0 °C the same logic is valid, but the devices CT03 and CT10 must be set according to the real ambient temperature.



Sketch of forced lubrication with cooling unit; the exact position of cooling unit depends on the gear reducer size, train of gears, mounting position and available overall dimensions: for this reason, on request, a drawing of the specific solution will be supplied; the pipes will be realized with suction and delivery flexible pipes and with rigid pipes between the distributor and the bearings.

Maximum bending moment of flange MR

In case of assembly of motors supplied by the customer, verify that the static bending moment M_b generated by motor weight on the counter flange of gear reducer is lower than the value allowed M_{bmax}, stated in the table:

$$M_b \leq M_{bmax}$$

where:

$M_b = G \cdot (X + HF) / 1000$ [N m]

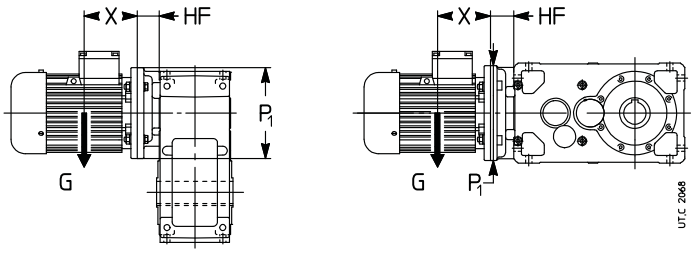
G [N] motor weight; numerically nearly equal to motor mass, expressed in kg, multiplied by 10.

X [mm] distance from motor center of gravity from flange surface

HF [mm] supplied in the table, according to gear reducer size and flange diameter P_1

Very long and thin motors, though with bending moments within the prescribed limits, may generate anomalous vibrations during the operation. In these cases it is necessary to foresee a proper additional motor support (see motor specific documentation).

Loads higher than permissible loads may be present in dynamical applications where the gearmotor is subjected to translations, rotations or oscillations (e.g.: shaft mounting arrangements): consult us for the study of every specific case.



Bending moment M_{bmax} and dimension HF

Size	P_1 Ø	2I, 3I HF mm	2I, 3I M_{bmax} N m	4I HF mm	4I M_{bmax} N m	CI HF mm	CI M_{bmax} N m	ICI HF mm	ICI M_{bmax} N m	C3I HF mm	C3I M_{bmax} N m	C2I HF[1] mm		C2I M_{bmax} N m
40	140	28	**28**	-	**-**	31	**63**	31	**63**	-	**-**	-	-	**-**
	160	-	**-**	-	**-**	31	**63**	31	**63**	-	**-**	-	-	**-**
50	140	28	**56**	-	**-**	31	**63**	31	**63**	50	**63**	-	-	**-**
	160	30	**56**	-	**-**	31	**63**	31	**63**	50	**63**	-	-	**-**
	200	-	**-**	-	**-**	31	**63**	31	**63**	-	**-**	-	-	**-**
63, 64	140	31	**63**	51	**63**	-	**-**	-	**-**	-	**-**	-	-	-
	160	31	**63**	51	**63**	38	**112**	38	**112**	65	**112**	-	-	**-**
	200	31	**112**	-	**-**	38	**112**	38	**112**	65	**112**	-	-	**-**
80, 81	160	38	**112**	66	**112**	-	**-**	38	**112**	65	**112**	-	-	**-**
	200	38	**200**	66	**112**	38	**200**	38	**112**	65	**112**	-	-	**-**
	250	38	**200**	-	**-**	50	**200**	-	**-**	-	**-**	-	-	**-**
100	200	45	**280**	79	**280**	45	**280**	45	**280**	78	**280**	-	-	**-**
	250	45	**280**[2]	-	**-**	45	**450**	45	**280**	-	**-**	-	-	**-**
	300	65	**450**	-	**-**	65	**450**	-	**-**	-	**-**	-	-	**-**
125	200	55	**500**	100	**500**	-	**-**	55	**500**	99	**500**	-	-	**-**
	250	55	**500**	100	**500**	-	**-**	55	**500**	99	**500**	-	-	**-**
	300	61	**1 400**	-	**-**	70	**560**	56	**900**	-	**-**	-	-	**-**
	350	75	**1 400**	-	**-**	100	**900**	-	**-**	-	**-**	-	-	**-**
140	200	-	**-**	-	**-**	-	**-**	55	**500**	-	**-**	-	-	**-**
	250	30	**560**	-	**-**	-	**-**	55	**500**	-	**-**	45	(30)	**560**
	300	55	**560**	-	**-**	70	**560**	56	**900**	-	**-**	70	(55)	**900**[3]
	350	75	**900**	-	**-**	100	**900**	-	**-**	-	**-**	-	-	**-**
160, 180	250	50	**1 250**	-	**-**	-	**-**	67	**710**	-	**-**	55	(25)	**180**
	300	50	**1 250**	-	**-**	-	**-**	67	**710**	-	**-**	70	(50)	**1 250**
	350	75	**1 250**	-	**-**	102	**1 250**	80	**1 120**	-	**-**	100	(75)	**1 250**
	400	65	**1 250**	-	**-**	102	**1 250**	-	**-**	-	**-**	-	-	**-**
	450	95	**2 000**	-	**-**	132	**2 000**	-	**-**	-	**-**	-	-	**-**
200, 225	300	67	**2 500**	-	**-**	-	**-**	80	**1 800**	-	**-**	72	(27)	**630**
	350	67	**2 500**	-	**-**	100	**2 500**	80	**1 800**	-	**-**	102	(67)	**2 500**
	400	67	**2 500**	-	**-**	100	**2 500**	80	**1 800**	-	**-**	102	(67)	**2 500**
	450	97	**2 500**	-	**-**	130	**2 500**	90	**1 800**	-	**-**	132	(97)	**2 500**
	550	97	**4 000**	-	**-**	130	**4 000**	-	**-**	-	**-**	-	-	**-**
250, 280	350	65	**4 500**	-	**-**	-	**-**	-	**-**	-	**-**	100	(45)	**1 400**
	400	65	**4 500**	-	**-**	-	**-**	-	**-**	-	**-**	100	(45)	**4 500**
	450	95	**4 500**	-	**-**	130	**4 500**	-	**-**	-	**-**	130	(75)	**4 500**
	550	95	**4 500**	-	**-**	130	**4 500**	-	**-**	-	**-**	130	(75)	**4 500**
	660	115	**4 750**	-	**-**	160	**4 750**	-	**-**	-	**-**	-	-	**-**
320 ... 360	400	85	**9 000**	-	**-**	-	**-**	-	**-**	-	**-**	100	(25)	**1 600**
	450	85	**9 000**	-	**-**	-	**-**	-	**-**	-	**-**	130	(55)	**2 800**
	550	95	**9 000**	-	**-**	-	**-**	-	**-**	-	**-**	130	(65)	**9 000**
	660	115	**9 000**	-	**-**	-	**-**	-	**-**	-	**-**	160	(85)	**9 000**

1) The values in bracket is valid for design UO2V, UO2Vsin, UO2R, UO2Rsin.
2) 450 N m for MR 2I.
3) 560 Nm for design UO2V, UO2Vsin, UO2R, UO2Rsin.

7 - Helical gear reducer selection tables

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
90 000 000	2	–	–	–	–	–	–	1 140 **I/2**	–	2 180 **I/1,95**	–	4 080 **I/2,05**	–	7 040 **I/2**	–	12 210 **I/1,95**	15 260 **I/1,95**	–			
80 000 000	2,24	–	–	–	–	–	–	1 170 **I/2,28**	1 540 **I/2,3**	2 240 **I/2,21**	3 050 **I/2,24**	4 180 **I/2,2**	5 700 **I/2,27**	7 400 **I/2,33**	10 120 **I/2,3**	12 810 **I/2,26**	16 020 **I/2,26**	17 860 **I/2,29**			
	2	–	–	–	–	–	–	1 180 **I/2**	–	2 260 **I/1,95**	–	4 220 **I/2,05**	–	7 290 **I/2**	–	12 630 **I/1,95**	15 780 **I/1,95**	–			
71 000 000	2,5	–	175 **I/2,53**	–	330 **I/2,44**	–	650 **I/2,55**	1 220 **I/2,53**	1 610 **I/2,53**	2 350 **I/2,44**	3 250 **I/2,5**	4 370 **I/2,55**	5 820 **I/2,43**	7 580 **I/2,53**	10 570 **I/2,53**	13 120 **I/2,44**	16 390 **I/2,44**	18 610 **I/2,5**			
	2,24	–	–	–	–	–	–	1 210 **I/2,28**	1 590 **I/2,3**	2 320 **I/2,21**	3 160 **I/2,24**	4 320 **I/2,2**	5 900 **I/2,27**	7 660 **I/2,33**	10 470 **I/2,3**	13 260 **I/2,26**	16 570 **I/2,26**	18 480 **I/2,29**			
	2	–	–	–	–	–	–	1 220 **I/2**	–	2 330 **I/1,95**	–	4 370 **I/2,05**	–	7 530 **I/2**	–	13 050 **I/1,95**	16 310 **I/1,95**	–			
63 000 000	2,8	–	–	–	–	–	–	1 250 **I/2,75**	1 610 **I/2,82**	2 400 **I/2,81**	3 310 **I/2,83**	4 570 **I/2,82**	5 830 **I/2,83**	8 350 **I/2,81**	10 580 **I/2,82**	13 420 **I/2,81**	16 780 **I/2,81**	19 000 **I/2,83**			
	2,5	–	180 **I/2,53**	–	345 **I/2,44**	–	670 **I/2,55**	1 270 **I/2,53**	1 660 **I/2,53**	2 430 **I/2,44**	3 360 **I/2,5**	4 530 **I/2,55**	6 020 **I/2,43**	7 840 **I/2,53**	10 930 **I/2,53**	13 570 **I/2,44**	16 960 **I/2,44**	19 260 **I/2,5**			
	2,24	–	–	–	–	–	–	1 250 **I/2,28**	1 650 **I/2,3**	2 390 **I/2,21**	3 260 **I/2,24**	4 470 **I/2,2**	6 100 **I/2,27**	7 910 **I/2,33**	10 820 **I/2,3**	13 700 **I/2,26**	17 120 **I/2,26**	19 100 **I/2,29**			
	2	–	–	–	–	–	–	1 260 **I/2**	–	2 410 **I/1,95**	–	4 520 **I/2,05**	–	7 790 **I/2**	–	13 500 **I/1,95**	16 880 **I/1,95**	–			
56 000 000	3,15	–	190 **I/3,28**	–	355 **I/3,13**	–	690 **I/3,27**	1 310 **I/3,28**	1 680 **I/3,13**	2 510 **I/3,13**	3 380 **I/3,25**	4 660 **I/3,27**	6 170 **I/3,18**	8 120 **I/3,28**	11 830 **I/3,19**	14 020 **I/3,13**	17 530 **I/3,13**	19 390 **I/3,25**			
	2,8	–	–	–	–	–	–	1 300 **I/2,75**	1 660 **I/2,82**	2 480 **I/2,81**	3 430 **I/2,83**	4 720 **I/2,82**	6 030 **I/2,83**	8 640 **I/2,81**	10 940 **I/2,82**	13 890 **I/2,81**	17 360 **I/2,81**	19 660 **I/2,83**			
	2,5	–	190 **I/2,53**	–	355 **I/2,44**	–	695 **I/2,55**	1 310 **I/2,53**	1 720 **I/2,53**	2 510 **I/2,44**	3 470 **I/2,5**	4 680 **I/2,55**	6 220 **I/2,43**	8 100 **I/2,53**	11 300 **I/2,53**	14 020 **I/2,44**	17 530 **I/2,44**	19 900 **I/2,5**			
	2,24	–	–	–	–	–	–	1 290 **I/2,28**	1 700 **I/2,3**	2 480 **I/2,21**	3 380 **I/2,24**	4 620 **I/2,2**	6 310 **I/2,27**	8 190 **I/2,33**	11 200 **I/2,3**	14 170 **I/2,26**	17 720 **I/2,26**	19 760 **I/2,29**			
	2	–	–	–	–	–	–	1 300 **I/2**	–	2 490 **I/1,95**	–	4 660 **I/2,05**	–	8 040 **I/2**	–	13 940 **I/1,95**	17 420 **I/1,95**	–			
50 000 000	3,55	–	–	–	–	–	–	1 340 **I/3,62**	1 710 **I/3,64**	2 420 **I/3,62**	3 510 **I/3,6**	4 760 **I/3,57**	6 290 **I/3,67**	8 730 **I/3,62**	11 250 **I/3,64**	14 620 **I/3,5**	18 280 **I/3,5**	20 140 **I/3,6**			
	3,15	–	195 **I/3,28**	–	365 **I/3,13**	–	715 **I/3,27**	1 360 **I/3,28**	1 740 **I/3,13**	2 590 **I/3,13**	3 500 **I/3,25**	4 830 **I/3,27**	6 380 **I/3,18**	8 400 **I/3,28**	12 240 **I/3,19**	14 510 **I/3,13**	18 140 **I/3,13**	20 060 **I/3,25**			
	2,8	–	–	–	–	–	–	1 340 **I/2,75**	1 720 **I/2,82**	2 570 **I/2,81**	3 540 **I/2,83**	4 880 **I/2,82**	6 230 **I/2,83**	8 930 **I/2,81**	11 310 **I/2,82**	14 350 **I/2,81**	17 940 **I/2,81**	20 320 **I/2,83**			

For n_1 lower than 560 min^{-1} see page 107.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / *i*																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
50 000 000	2,5	–	195 **I/2,53**	–	365 **I/2,44**	–	720 **I/2,55**	1 350 **I/2,53**	1 780 **I/2,53**	2 590 **I/2,44**	3 590 **I/2,5**	4 840 **I/2,55**	6 440 **I/2,43**	8 380 **I/2,53**	11 690 **I/2,53**	14 510 **I/2,44**	18 140 **I/2,44**	20 590 **I/2,5**			
	2,24	–	–	–	–	–	–	1 330 **I/2,28**	1 760 **I/2,3**	2 550 **I/2,21**	3 480 **I/2,24**	4 770 **I/2,2**	6 510 **I/2,27**	8 450 **I/2,33**	11 560 **I/2,3**	14 630 **I/2,26**	18 290 **I/2,26**	20 390 **I/2,29**			
	2	–	–	–	–	–	–	1 350 **I/2**	–	2 580 **I/1,95**	–	4 830 **I/2,05**	–	8 330 **I/2**	–	14 440 **I/1,95**	18 050 **I/1,95**	–			
45 000 000	4	–	185 **I/4**	–	375 **I/4,16**	–	560 **I/3,92**	1 140 **I/4**	1 780 **I/4,08**	2 690 **I/4,13**	3 390 **I/4,15**	4 990 **I/4,13**	6 520 **I/4,07**	8 450 **I/4**	12 300 **I/4,08**	15 710 **I/4,07**	19 640 **I/4,07**	20 890 **I/4**			
	3,55	–	–	–	–	–	–	1 390 **I/3,62**	1 770 **I/3,64**	2 500 **I/3,62**	3 630 **I/3,6**	4 930 **I/3,57**	6 510 **I/3,67**	9 030 **I/3,62**	11 640 **I/3,64**	15 130 **I/3,5**	18 910 **I/3,5**	20 840 **I/3,6**			
	3,15	–	200 **I/3,28**	–	380 **I/3,13**	–	740 **I/3,27**	1 400 **I/3,28**	1 790 **I/3,13**	2 680 **I/3,13**	3 620 **I/3,25**	4 990 **I/3,27**	6 600 **I/3,18**	8 680 **I/3,28**	12 650 **I/3,19**	14 990 **I/3,13**	18 740 **I/3,13**	20 730 **I/3,25**			
	2,8	–	–	–	–	–	–	1 390 **I/2,75**	1 780 **I/2,82**	2 660 **I/2,81**	3 670 **I/2,83**	5 050 **I/2,82**	6 440 **I/2,83**	9 240 **I/2,81**	11 700 **I/2,82**	14 850 **I/2,81**	18 560 **I/2,81**	21 020 **I/2,83**			
	2,5	–	200 **I/2,53**	–	380 **I/2,44**	–	740 **I/2,55**	1 400 **I/2,53**	1 840 **I/2,53**	2 680 **I/2,44**	3 710 **I/2,5**	4 990 **I/2,55**	6 640 **I/2,43**	8 650 **I/2,53**	12 070 **I/2,53**	14 970 **I/2,44**	18 720 **I/2,44**	21 250 **I/2,5**			
	2,24	–	–	–	–	–	–	1 380 **I/2,28**	1 820 **I/2,3**	2 650 **I/2,21**	3 610 **I/2,24**	4 940 **I/2,2**	6 740 **I/2,27**	8 750 **I/2,33**	11 970 **I/2,3**	15 150 **I/2,26**	18 940 **I/2,26**	21 130 **I/2,29**			
	2	–	–	–	–	–	–	1 390 **I/2**	–	2 680 **I/1,95**	–	5 010 **I/2,05**	–	8 630 **I/2**	–	14 960 **I/1,95**	18 700 **I/1,95**	–			
40 000 000	4,5	–	–	–	–	–	–	1 160 **I/4,45**	1 750 **I/4,5**	2 730 **I/4,5**	3 550 **I/4,67**	5 080 **I/4,5**	6 500 **I/4,67**	9 330 **I/4,47**	11 370 **I/4,5**	16 180 **I/4,5**	20 220 **I/4,5**	22 220 **I/4,6**			
	4	–	190 **I/4**	–	390 **I/4,16**	–	580 **I/3,92**	1 180 **I/4**	1 840 **I/4,08**	2 780 **I/4,13**	3 500 **I/4,15**	5 170 **I/4,13**	6 750 **I/4,07**	8 740 **I/4**	12 720 **I/4,08**	16 260 **I/4,07**	20 320 **I/4,07**	21 610 **I/4**			
	3,55	–	–	–	–	–	–	1 430 **I/3,62**	1 830 **I/3,64**	2 590 **I/3,62**	3 760 **I/3,6**	5 090 **I/3,57**	6 730 **I/3,67**	9 330 **I/3,62**	12 030 **I/3,64**	15 640 **I/3,5**	19 550 **I/3,5**	21 530 **I/3,6**			
	3,15	–	210 **I/3,28**	–	390 **I/3,13**	–	765 **I/3,27**	1 450 **I/3,28**	1 860 **I/3,13**	2 770 **I/3,13**	3 740 **I/3,25**	5 160 **I/3,27**	6 830 **I/3,18**	8 980 **I/3,28**	13 080 **I/3,19**	15 510 **I/3,13**	19 390 **I/3,13**	21 450 **I/3,25**			
	2,8	–	–	–	–	–	–	1 430 **I/2,75**	1 840 **I/2,82**	2 740 **I/2,81**	3 780 **I/2,83**	5 210 **I/2,82**	6 650 **I/2,83**	9 530 **I/2,81**	12 070 **I/2,82**	15 330 **I/2,81**	19 160 **I/2,81**	21 700 **I/2,83**			
	2,5	–	210 **I/2,53**	–	390 **I/2,44**	–	770 **I/2,55**	1 450 **I/2,53**	1 900 **I/2,53**	2 770 **I/2,44**	3 840 **I/2,5**	5 170 **I/2,55**	6 880 **I/2,43**	8 960 **I/2,53**	12 500 **I/2,53**	15 510 **I/2,44**	19 390 **I/2,44**	22 020 **I/2,5**			
	2,24	–	–	–	–	–	–	1 430 **I/2,28**	1 890 **I/2,3**	2 740 **I/2,21**	3 740 **I/2,24**	5 120 **I/2,2**	6 990 **I/2,27**	9 070 **I/2,33**	12 410 **I/2,3**	15 710 **I/2,26**	19 630 **I/2,26**	21 900 **I/2,29**			
	2	–	–	–	–	–	–	1 450 **I/2**	–	2 770 **I/1,95**	–	5 190 **I/2,05**	–	8 950 **I/2**	–	15 510 **I/1,95**	19 390 **I/1,95**	–			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **f_i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
35 500 000	5	–	190 **I/5**	–	390 **I/5,2**	–	585 **I/4,82**	1 190 **I/5**	1 790 **I/5**	2 770 **I/4,92**	3 440 **I/5,07**	5 160 **I/4,92**	6 600 **I/5,07**	8 340 **I/5,08**	13 050 **I/5**	16 490 **I/4,92**	20 610 **I/4,92**	22 790 **I/5,07**			
	4,5	–	–	–	–	–	–	1 200 **I/4,45**	1 810 **I/4,5**	2 820 **I/4,5**	3 670 **I/4,67**	5 250 **I/4,5**	6 730 **I/4,67**	9 650 **I/4,47**	11 770 **I/4,5**	16 740 **I/4,5**	20 920 **I/4,5**	22 980 **I/4,6**			
	4	–	195 **I/4**	–	405 **I/4,16**	–	600 **I/3,92**	1 220 **I/4**	1 900 **I/4,08**	2 870 **I/4,13**	3 620 **I/4,15**	5 340 **I/4,13**	6 970 **I/4,07**	9 030 **I/4**	13 150 **I/4,08**	16 800 **I/4,07**	21 000 **I/4,07**	22 340 **I/4**			
	3,55	–	–	–	–	–	–	1 480 **I/3,62**	1 890 **I/3,64**	2 680 **I/3,62**	3 890 **I/3,6**	5 270 **I/3,57**	6 960 **I/3,67**	9 650 **I/3,62**	12 440 **I/3,64**	16 180 **I/3,5**	20 220 **I/3,5**	22 280 **I/3,6**			
	3,15	–	215 **I/3,28**	–	405 **I/3,13**	–	790 **I/3,27**	1 500 **I/3,28**	1 910 **I/3,13**	2 860 **I/3,13**	3 860 **I/3,25**	5 330 **I/3,27**	7 050 **I/3,18**	9 270 **I/3,28**	13 500 **I/3,19**	16 010 **I/3,13**	20 010 **I/3,13**	22 140 **I/3,25**			
	2,8	–	–	–	–	–	–	1 480 **I/2,75**	1 900 **I/2,82**	2 840 **I/2,81**	3 920 **I/2,83**	5 400 **I/2,82**	6 890 **I/2,83**	9 870 **I/2,81**	12 510 **I/2,82**	15 880 **I/2,81**	19 850 **I/2,81**	22 480 **I/2,83**			
	2,5	–	215 **I/2,53**	–	405 **I/2,44**	–	795 **I/2,55**	1 500 **I/2,53**	1 970 **I/2,53**	2 870 **I/2,44**	3 980 **I/2,5**	5 360 **I/2,55**	7 130 **I/2,43**	9 290 **I/2,53**	12 950 **I/2,53**	16 080 **I/2,44**	20 100 **I/2,44**	22 820 **I/2,5**			
	2,24	–	–	–	–	–	–	1 480 **I/2,28**	1 960 **I/2,3**	2 840 **I/2,21**	3 880 **I/2,24**	5 310 **I/2,2**	7 240 **I/2,27**	9 400 **I/2,33**	12 860 **I/2,3**	16 280 **I/2,26**	20 350 **I/2,26**	22 700 **I/2,29**			
	2	–	–	–	–	–	–	1 500 **I/2**	–	2 870 **I/1,95**	–	5 370 **I/2,05**	–	9 270 **I/2**	–	16 070 **I/1,95**	20 080 **I/1,95**	–			
31 500 000	5	–	195 **I/5**	–	405 **I/5,2**	–	605 **I/4,82**	1 230 **I/5**	1 850 **I/5**	2 870 **I/4,92**	3 560 **I/5,07**	5 340 **I/4,92**	6 830 **I/5,07**	8 630 **I/5,08**	13 500 **I/5**	17 060 **I/4,92**	21 320 **I/4,92**	23 580 **I/5,07**			
	4,5	–	–	–	–	–	–	1 240 **I/4,45**	1 880 **I/4,5**	2 920 **I/4,5**	3 800 **I/4,67**	5 430 **I/4,5**	6 950 **I/4,67**	9 970 **I/4,47**	12 160 **I/4,5**	17 300 **I/4,5**	21 620 **I/4,5**	23 750 **I/4,6**			
	4	–	200 **I/4**	–	415 **I/4,16**	–	620 **I/3,92**	1 260 **I/4**	1 970 **I/4,08**	2 970 **I/4,13**	3 750 **I/4,15**	5 530 **I/4,13**	7 210 **I/4,07**	9 340 **I/4**	13 610 **I/4,08**	17 380 **I/4,07**	21 730 **I/4,07**	23 110 **I/4**			
	3,55	–	–	–	–	–	–	1 530 **I/3,62**	1 950 **I/3,64**	2 760 **I/3,62**	4 010 **I/3,6**	5 440 **I/3,57**	7 180 **I/3,67**	9 960 **I/3,62**	12 840 **I/3,64**	16 700 **I/3,5**	20 870 **I/3,5**	22 990 **I/3,6**			
	3,15	–	225 **I/3,28**	–	420 **I/3,13**	–	820 **I/3,27**	1 550 **I/3,28**	1 980 **I/3,13**	2 970 **I/3,13**	4 000 **I/3,25**	5 520 **I/3,27**	7 300 **I/3,18**	9 600 **I/3,28**	13 990 **I/3,19**	16 590 **I/3,13**	20 730 **I/3,13**	22 930 **I/3,25**			
	2,8	–	–	–	–	–	–	1 540 **I/2,75**	1 970 **I/2,82**	2 940 **I/2,81**	4 060 **I/2,83**	5 600 **I/2,82**	7 140 **I/2,83**	10 230 **I/2,81**	12 960 **I/2,82**	16 460 **I/2,81**	20 570 **I/2,81**	23 300 **I/2,83**			
	2,5	–	225 **I/2,53**	–	420 **I/2,44**	–	825 **I/2,55**	1 560 **I/2,53**	2 040 **I/2,53**	2 980 **I/2,44**	4 130 **I/2,5**	5 560 **I/2,55**	7 390 **I/2,43**	9 630 **I/2,53**	13 430 **I/2,53**	16 670 **I/2,44**	20 830 **I/2,44**	23 650 **I/2,5**			
	2,24	–	–	–	–	–	–	1 540 **I/2,28**	2 030 **I/2,3**	2 950 **I/2,21**	4 020 **I/2,24**	5 500 **I/2,2**	7 500 **I/2,27**	9 740 **I/2,33**	13 330 **I/2,3**	16 870 **I/2,26**	21 080 **I/2,26**	23 510 **I/2,29**			
	2	–	–	–	–	–	–	1 550 **I/2**	–	2 970 **I/1,95**	–	5 560 **I/2,05**	–	9 590 **I/2**	–	16 620 **I/1,95**	20 780 **I/1,95**	–			

For n_1 lower than 560 min^{-1} see page 107.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
28 000 000	6,3	99 **2I/6,42**	185 **2I/6,53**	220 **2I/6,86**	390 **2I/6,41**	445 **2I/6,41**	810 **2I/6,42**	1 630 **2I/6,53**	–	3 260 **2I/6,41**	–	7 470 **2I/6,42**	–	14 970 **2I/6,53**	–	25 380 **2I/6,41**	29 970 **2I/6,41**	–			
	5	–	205 **I/5**	–	420 **I/5,2**	–	625 **I/4,82**	1 270 **I/5**	1 910 **I/5**	2 970 **I/4,92**	3 680 **I/5,07**	5 510 **I/4,92**	7 050 **I/5,07**	8 920 **I/5,08**	13 950 **I/5**	17 630 **I/4,92**	22 040 **I/4,92**	24 370 **I/5,07**			
	4,5	–	–	–	–	–	–	1 290 **I/4,45**	1 940 **I/4,5**	3 020 **I/4,5**	3 930 **I/4,67**	5 610 **I/4,5**	7 190 **I/4,67**	10 320 **I/4,47**	12 580 **I/4,5**	17 900 **I/4,5**	22 370 **I/4,5**	24 570 **I/4,6**			
	4	–	210 **I/4**	–	430 **I/4,16**	–	640 **I/3,92**	1 300 **I/4**	2 030 **I/4,08**	3 070 **I/4,13**	3 870 **I/4,15**	5 700 **I/4,13**	7 440 **I/4,07**	9 650 **I/4**	14 040 **I/4,08**	17 940 **I/4,07**	22 420 **I/4,07**	23 850 **I/4**			
	3,55	–	–	–	–	–	–	1 590 **I/3,62**	2 020 **I/3,64**	2 860 **I/3,62**	4 160 **I/3,6**	5 630 **I/3,57**	7 440 **I/3,67**	10 320 **I/3,62**	13 300 **I/3,64**	17 300 **I/3,5**	21 620 **I/3,5**	23 820 **I/3,6**			
	3,15	–	230 **I/3,28**	–	435 **I/3,13**	–	850 **I/3,27**	1 610 **I/3,28**	2 060 **I/3,13**	3 070 **I/3,13**	4 150 **I/3,25**	5 720 **I/3,27**	7 560 **I/3,18**	9 950 **I/3,28**	14 500 **I/3,19**	17 190 **I/3,13**	21 490 **I/3,13**	23 770 **I/3,25**			
	2,8	–	–	–	–	–	–	1 590 **I/2,75**	2 040 **I/2,82**	3 050 **I/2,81**	4 210 **I/2,83**	5 800 **I/2,82**	7 400 **I/2,83**	10 610 **I/2,81**	13 440 **I/2,82**	17 060 **I/2,81**	21 320 **I/2,81**	24 150 **I/2,83**			
	2,5	–	230 **I/2,53**	–	435 **I/2,44**	–	855 **I/2,55**	1 610 **I/2,53**	2 120 **I/2,53**	3 090 **I/2,44**	4 280 **I/2,5**	5 760 **I/2,55**	7 660 **I/2,43**	9 980 **I/2,53**	13 910 **I/2,53**	17 260 **I/2,44**	21 580 **I/2,44**	24 500 **I/2,5**			
	2,24	–	–	–	–	–	–	1 590 **I/2,28**	2 100 **I/2,3**	3 050 **I/2,21**	4 160 **I/2,24**	5 690 **I/2,2**	7 760 **I/2,27**	10 080 **I/2,33**	13 790 **I/2,3**	17 450 **I/2,26**	21 810 **I/2,26**	24 330 **I/2,29**			
	2	–	–	–	–	–	–	1 600 **I/2**	–	3 070 **I/1,95**	–	5 740 **I/2,05**	–	9 900 **I/2**	–	17 160 **I/1,95**	21 450 **I/1,95**	–			
25 000 000	6,3	100 **2I/6,42**	190 **2I/6,53**	230 **2I/6,86**	400 **2I/6,41**	455 **2I/6,41**	835 **2I/6,42**	1 670 **2I/6,53**	–	3 340 **2I/6,41**	–	7 670 **2I/6,42**	–	15 370 **2I/6,53**	–	26 060 **2I/6,41**	30 770 **2I/6,41**	–			
	5	–	210 **I/5**	–	435 **I/5,2**	–	645 **I/4,82**	1 310 **I/5**	1 980 **I/5**	3 070 **I/4,92**	3 810 **I/5,07**	5 710 **I/4,92**	7 300 **I/5,07**	9 230 **I/5,08**	14 430 **I/5**	18 240 **I/4,92**	22 800 **I/4,92**	25 210 **I/5,07**			
	4,5	–	–	–	–	–	–	1 330 **I/4,45**	2 000 **I/4,5**	3 120 **I/4,5**	4 050 **I/4,67**	5 800 **I/4,5**	7 430 **I/4,67**	10 650 **I/4,47**	12 990 **I/4,5**	18 470 **I/4,5**	23 090 **I/4,5**	25 360 **I/4,6**			
	4	–	215 **I/4**	–	445 **I/4,16**	–	665 **I/3,92**	1 350 **I/4**	2 110 **I/4,08**	3 180 **I/4,13**	4 010 **I/4,15**	5 910 **I/4,13**	7 710 **I/4,07**	9 990 **I/4**	14 550 **I/4,08**	18 580 **I/4,07**	23 230 **I/4,07**	24 710 **I/4**			
	3,55	–	–	–	–	–	–	1 640 **I/3,62**	2 100 **I/3,64**	2 960 **I/3,62**	4 310 **I/3,6**	5 840 **I/3,57**	7 710 **I/3,67**	10 700 **I/3,62**	13 790 **I/3,64**	17 930 **I/3,5**	22 410 **I/3,5**	24 690 **I/3,6**			
	3,15	–	240 **I/3,28**	–	450 **I/3,13**	–	880 **I/3,27**	1 670 **I/3,28**	2 130 **I/3,13**	3 190 **I/3,13**	4 300 **I/3,25**	5 930 **I/3,27**	7 840 **I/3,18**	10 310 **I/3,28**	15 030 **I/3,19**	17 820 **I/3,13**	22 270 **I/3,13**	24 640 **I/3,25**			
	2,8	–	–	–	–	–	–	1 650 **I/2,75**	2 120 **I/2,82**	3 160 **I/2,81**	4 360 **I/2,83**	6 010 **I/2,82**	7 670 **I/2,83**	10 990 **I/2,81**	13 920 **I/2,82**	17 670 **I/2,81**	22 090 **I/2,81**	25 010 **I/2,83**			
	2,5	–	240 **I/2,53**	–	450 **I/2,44**	–	885 **I/2,55**	1 670 **I/2,53**	2 190 **I/2,53**	3 190 **I/2,44**	4 420 **I/2,5**	5 960 **I/2,55**	7 920 **I/2,43**	10 320 **I/2,53**	14 390 **I/2,53**	17 860 **I/2,44**	22 330 **I/2,44**	25 350 **I/2,5**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
25 000 000	2,24	–	–	–	–	–	–	1 640 **I/2,28**	2 160 **I/2,3**	3 150 **I/2,21**	4 290 **I/2,24**	5 880 **I/2,2**	8 010 **I/2,27**	10 400 **I/2,33**	14 230 **I/2,3**	18 010 **I/2,26**	22 510 **I/2,26**	25 110 **I/2,29**			
	2	–	–	–	–	–	–	1 660 **I/2**	–	3 180 **I/1,95**	–	5 950 **I/2,05**	–	10 250 **I/2**	–	17 770 **I/1,95**	22 220 **I/1,95**	–			
22 400 000	8	115 **2I/8,01**	210 **2I/8,26**	260 **2I/7,99**	445 **2I/8,03**	530 **2I/8,03**	910 **2I/8,01**	1 820 **2I/8,26**	–	4 080 **2I/8,03**	–	8 330 **2I/8,01**	–	16 730 **2I/8,26**	–	29 220 **2I/8,03**	36 420 **2I/8,03**	–			
	6,3	105 **2I/6,42**	195 **2I/6,53**	235 **2I/6,86**	410 **2I/6,41**	470 **2I/6,41**	855 **2I/6,42**	1 720 **2I/6,53**	–	3 440 **2I/6,41**	–	7 880 **2I/6,42**	–	15 790 **2I/6,53**	–	26 770 **2I/6,41**	31 610 **2I/6,41**	–			
	5	–	215 **I/5**	–	450 **I/5,2**	–	665 **I/4,82**	1 360 **I/5**	2 040 **I/5**	3 170 **I/4,92**	3 930 **I/5,07**	5 890 **I/4,92**	7 530 **I/5,07**	9 530 **I/5,08**	14 900 **I/5**	18 830 **I/4,92**	23 530 **I/4,92**	26 020 **I/5,07**			
	4,5	–	–	–	–	–	–	1 380 **I/4,45**	2 070 **I/4,5**	3 230 **I/4,5**	4 200 **I/4,67**	6 000 **I/4,5**	7 690 **I/4,67**	11 030 **I/4,47**	13 450 **I/4,5**	19 130 **I/4,5**	23 920 **I/4,5**	26 280 **I/4,6**			
	4	–	225 **I/4**	–	460 **I/4,16**	–	690 **I/3,92**	1 400 **I/4**	2 180 **I/4,08**	3 290 **I/4,13**	4 150 **I/4,15**	6 120 **I/4,13**	7 990 **I/4,07**	10 360 **I/4**	15 080 **I/4,08**	19 260 **I/4,07**	24 080 **I/4,07**	25 610 **I/4**			
	3,55	–	–	–	–	–	–	1 700 **I/3,62**	2 180 **I/3,64**	3 070 **I/3,62**	4 460 **I/3,6**	6 050 **I/3,57**	7 990 **I/3,67**	11 090 **I/3,62**	14 290 **I/3,64**	18 580 **I/3,5**	23 230 **I/3,5**	25 590 **I/3,6**			
	3,15	–	250 **I/3,28**	–	465 **I/3,13**	–	910 **I/3,27**	1 730 **I/3,28**	2 210 **I/3,13**	3 300 **I/3,13**	4 450 **I/3,25**	6 140 **I/3,27**	8 120 **I/3,18**	10 680 **I/3,28**	15 570 **I/3,19**	18 460 **I/3,13**	23 080 **I/3,13**	25 520 **I/3,25**			
	2,8	–	–	–	–	–	–	1 710 **I/2,75**	2 190 **I/2,82**	3 270 **I/2,81**	4 510 **I/2,83**	6 220 **I/2,82**	7 930 **I/2,83**	11 370 **I/2,81**	14 400 **I/2,82**	18 280 **I/2,81**	22 850 **I/2,81**	25 880 **I/2,83**			
	2,5	–	245 **I/2,53**	–	465 **I/2,44**	–	915 **I/2,55**	1 720 **I/2,53**	2 260 **I/2,53**	3 300 **I/2,44**	4 560 **I/2,5**	6 150 **I/2,55**	8 180 **I/2,43**	10 650 **I/2,53**	14 850 **I/2,53**	18 440 **I/2,44**	23 040 **I/2,44**	26 170 **I/2,5**			
	2,24	–	–	–	–	–	–	1 700 **I/2,28**	2 240 **I/2,3**	3 260 **I/2,21**	4 440 **I/2,24**	6 090 **I/2,2**	8 300 **I/2,27**	10 780 **I/2,33**	14 740 **I/2,3**	18 660 **I/2,26**	23 320 **I/2,26**	26 010 **I/2,29**			
	2	–	–	–	–	–	–	1 720 **I/2**	–	3 290 **I/1,95**	–	6 160 **I/2,05**	–	10 630 **I/2**	–	18 420 **I/1,95**	23 030 **I/1,95**	–			
20 000 000	9	–	–	–	–	–	–	–	2 360 **2I/9,22**	4 090 **2I/9,24**	4 730 **2I/9,31**	8 330 **2I/8,85**	10 590 **2I/8,88**	16 730 **2I/9,19**	21 670 **2I/9,22**	29 220 **2I/9,24**	36 420 **2I/9,24**	43 500 **2I/9,31**			
	8	115 **2I/8,01**	215 **2I/8,26**	270 **2I/7,99**	455 **2I/8,03**	545 **2I/8,03**	930 **2I/8,01**	1 870 **2I/8,26**	–	4 190 **2I/8,03**	–	8 550 **2I/8,01**	–	17 170 **2I/8,26**	–	29 990 **2I/8,03**	37 390 **2I/8,03**	–			
	6,3	105 **2I/6,42**	200 **2I/6,53**	240 **2I/6,86**	425 **2I/6,41**	480 **2I/6,41**	880 **2I/6,42**	1 760 **2I/6,53**	–	3 520 **2I/6,41**	–	8 080 **2I/6,42**	–	16 190 **2I/6,53**	–	27 450 **2I/6,41**	32 410 **2I/6,41**	–			
	5	–	220 **I/5**	–	465 **I/5,2**	–	690 **I/4,82**	1 410 **I/5**	2 110 **I/5**	3 280 **I/4,92**	4 070 **I/5,07**	6 100 **I/4,92**	7 800 **I/5,07**	9 870 **I/5,08**	15 430 **I/5**	19 500 **I/4,92**	24 380 **I/4,92**	26 960 **I/5,07**			
	4,5	–	–	–	–	–	–	1 430 **I/4,45**	2 150 **I/4,5**	3 350 **I/4,5**	4 350 **I/4,67**	6 220 **I/4,5**	7 970 **I/4,67**	11 430 **I/4,47**	13 940 **I/4,5**	19 830 **I/4,5**	24 790 **I/4,5**	27 230 **I/4,6**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
20 000 000	4	–	230 **I/4**	–	480 **I/4,16**	–	715 **I/3,92**	1 450 **I/4**	2 260 **I/4,08**	3 410 **I/4,13**	4 300 **I/4,15**	6 350 **I/4,13**	8 290 **I/4,07**	10 730 **I/4**	15 630 **I/4,08**	19 960 **I/4,07**	24 960 **I/4,07**	26 550 **I/4**			
	3,55	–	–	–	–	–	–	1 760 **I/3,62**	2 250 **I/3,64**	3 180 **I/3,62**	4 620 **I/3,6**	6 270 **I/3,57**	8 280 **I/3,67**	11 490 **I/3,62**	14 810 **I/3,64**	19 250 **I/3,5**	24 060 **I/3,5**	26 510 **I/3,6**			
	3,15	–	255 **I/3,28**	–	485 **I/3,13**	–	945 **I/3,27**	1 790 **I/3,28**	2 280 **I/3,13**	3 420 **I/3,13**	4 610 **I/3,25**	6 350 **I/3,27**	8 400 **I/3,18**	11 050 **I/3,28**	16 110 **I/3,19**	19 100 **I/3,13**	23 870 **I/3,13**	26 410 **I/3,25**			
	2,8	–	–	–	–	–	–	1 760 **I/2,75**	2 260 **I/2,82**	3 370 **I/2,81**	4 660 **I/2,83**	6 420 **I/2,82**	8 190 **I/2,83**	11 730 **I/2,81**	14 870 **I/2,82**	18 870 **I/2,81**	23 590 **I/2,81**	26 710 **I/2,83**			
	2,5	–	255 **I/2,53**	–	485 **I/2,44**	–	945 **I/2,55**	1 780 **I/2,53**	2 340 **I/2,53**	3 410 **I/2,44**	4 730 **I/2,5**	6 370 **I/2,55**	8 470 **I/2,43**	11 040 **I/2,53**	15 390 **I/2,53**	19 100 **I/2,44**	23 870 **I/2,44**	27 110 **I/2,5**			
	2,24	–	–	–	–	–	–	1 760 **I/2,28**	2 320 **I/2,3**	3 380 **I/2,21**	4 610 **I/2,24**	6 310 **I/2,2**	8 600 **I/2,27**	11 170 **I/2,33**	15 280 **I/2,3**	19 340 **I/2,26**	24 170 **I/2,26**	26 960 **I/2,29**			
	2	–	–	–	–	–	–	1 780 **I/2**	–	3 410 **I/1,95**	–	6 390 **I/2,05**	–	11 020 **I/2**	–	19 090 **I/1,95**	23 870 **I/1,95**	–			
18 000 000	10	115 **2I/10,2**	210 **2I/10,7**	265 **2I/11,2**	465 **2I/10,3**	550 **2I/10,3**	910 **2I/10,2**	1 820 **2I/10,7**	2 610 **2I/10,2**	4 090 **2I/10,3**	5 420 **2I/10,7**	8 330 **2I/10,2**	11 660 **2I/9,95**	16 730 **2I/10,7**	23 030 **2I/10,4**	29 220 **2I/10,3**	36 420 **2I/10,3**	46 070 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 420 **2I/9,22**	4 200 **2I/9,24**	4 850 **2I/9,31**	8 550 **2I/8,85**	10 870 **2I/8,88**	17 170 **2I/9,19**	22 250 **2I/9,22**	29 990 **2I/9,24**	37 390 **2I/9,24**	44 650 **2I/9,31**			
	8	120 **2I/8,01**	220 **2I/8,26**	275 **2I/7,99**	470 **2I/8,03**	560 **2I/8,03**	960 **2I/8,01**	1 920 **2I/8,26**	–	4 300 **2I/8,03**	–	8 780 **2I/8,01**	–	17 640 **2I/8,26**	–	30 810 **2I/8,03**	38 410 **2I/8,03**	–			
	6,3	110 **2I/6,42**	205 **2I/6,53**	245 **2I/6,86**	435 **2I/6,41**	495 **2I/6,41**	905 **2I/6,42**	1 810 **2I/6,53**	–	3 620 **2I/6,41**	–	8 310 **2I/6,42**	–	16 660 **2I/6,53**	–	28 230 **2I/6,41**	33 340 **2I/6,41**	–			
	5	–	225 **I/5**	–	480 **I/5,2**	–	715 **I/4,82**	1 460 **I/5**	2 190 **I/5**	3 400 **I/4,92**	4 220 **I/5,07**	6 320 **I/4,92**	8 090 **I/5,07**	10 230 **I/5,08**	16 000 **I/5**	20 210 **I/4,92**	25 270 **I/4,92**	27 940 **I/5,07**			
	4,5	–	–	–	–	–	–	1 480 **I/4,45**	2 230 **I/4,5**	3 470 **I/4,5**	4 510 **I/4,67**	6 450 **I/4,5**	8 260 **I/4,67**	11 850 **I/4,47**	14 450 **I/4,5**	20 560 **I/4,5**	25 690 **I/4,5**	28 230 **I/4,6**			
	4	–	240 **I/4**	–	495 **I/4,16**	–	740 **I/3,92**	1 500 **I/4**	2 340 **I/4,08**	3 530 **I/4,13**	4 460 **I/4,15**	6 580 **I/4,13**	8 580 **I/4,07**	11 120 **I/4**	16 190 **I/4,08**	20 680 **I/4,07**	25 850 **I/4,07**	27 500 **I/4**			
	3,55	–	–	–	–	–	–	1 830 **I/3,62**	2 330 **I/3,64**	3 290 **I/3,62**	4 780 **I/3,6**	6 480 **I/3,57**	8 570 **I/3,67**	11 880 **I/3,62**	15 320 **I/3,64**	19 920 **I/3,5**	24 900 **I/3,5**	27 430 **I/3,6**			
	3,15	–	265 **I/3,28**	–	500 **I/3,13**	–	975 **I/3,27**	1 840 **I/3,28**	2 360 **I/3,13**	3 520 **I/3,13**	4 750 **I/3,25**	6 560 **I/3,27**	8 670 **I/3,18**	11 410 **I/3,28**	16 620 **I/3,19**	19 710 **I/3,13**	24 640 **I/3,13**	27 250 **I/3,25**			
	2,8	–	–	–	–	–	–	1 830 **I/2,75**	2 340 **I/2,82**	3 500 **I/2,81**	4 830 **I/2,83**	6 650 **I/2,82**	8 480 **I/2,83**	12 160 **I/2,81**	15 400 **I/2,82**	19 550 **I/2,81**	24 430 **I/2,81**	27 670 **I/2,83**			
	2,5	–	265 **I/2,53**	–	500 **I/2,44**	–	980 **I/2,55**	1 850 **I/2,53**	2 430 **I/2,53**	3 540 **I/2,44**	4 900 **I/2,5**	6 600 **I/2,55**	8 780 **I/2,43**	11 440 **I/2,53**	15 950 **I/2,53**	19 790 **I/2,44**	24 740 **I/2,44**	28 090 **I/2,5**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ...	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2} min^{-1}
18 000 000	2,24	/ i	–	–	–	–	–	–	1 830 **I/2,28**	2 410 **I/2,3**	3 500 **I/2,21**	4 770 **I/2,24**	6 540 **I/2,2**	8 920 **I/2,27**	11 580 **I/2,33**	15 840 **I/2,3**	20 040 **I/2,26**	25 050 **I/2,26**	27 940 **I/2,29**			
									270		–		–		–		–	–		2	2800	**1400**
	2		–	–	–	–	–	–	1 840 **I/2▲**	–	3 540 **I/1,95**	–	6 620 **I/2,05**	–	11 410 **I/2**	–	19 780 **I/1,95**	24 730 **I/1,95**	–			
16 000 000	11,2		–	–	–	–	–	–	–	2 750 **2I/11,9**	4 090 **2I/11,9**	5 840 **2I/11,8**	8 330 **2I/11,2**	11 660 **2I/11,5**	16 730 **2I/11,8**	23 030 **2I/11,9**	29 220 **2I/11,5**	36 420 **2I/11,5**	46 070 **2I/11,8**			
	10		115 **2I/10,2**	215 **2I/10,7**	270 **2I/11,2**	480 **2I/10,3**	565 **2I/10,3**	930 **2I/10,2**	1 870 **2I/10,7**	2 680 **2I/10,2**	4 200 **2I/10,3**	5 570 **2I/10,7**	8 550 **2I/10,2**	11 960 **2I/9,95**	17 170 **2I/10,7**	23 640 **2I/10,4**	29 990 **2I/10,3**	37 390 **2I/10,3**	47 290 **2I/10,7**			
	9		–	–	–	–	–	–	–	2 480 **2I/9,22**	4 310 **2I/9,24**	4 990 **2I/9,31**	8 780 **2I/8,85**	11 170 **2I/8,88**	17 640 **2I/9,19**	22 860 **2I/9,22**	30 810 **2I/9,24**	38 410 **2I/9,24**	45 870 **2I/9,31**			
	8		120 **2I/8,01**	225 **2I/8,26**	280 **2I/7,99**	480 **2I/8,03**	575 **2I/8,03**	980 **2I/8,01**	1 970 **2I/8,26**	–	4 410 **2I/8,03**	–	9 000 **2I/8,01**	–	18 090 **2I/8,26**	–	31 600 **2I/8,03**	39 390 **2I/8,03**	–			
	6,3		115 **2I/6,42**	215 **2I/6,53**	255 **2I/6,86**	450 **2I/6,41**	510 **2I/6,41**	935 **2I/6,42**	1 870 **2I/6,53**	–	3 740 **2I/6,41**	–	8 580 **2I/6,42**	–	17 190 **2I/6,53**	–	29 150 **2I/6,41**	34 420 **2I/6,41**	–			
	5		–	230 **I/5**	–	500 **I/5,2**	–	740 **I/4,82**	1 510 **I/5**	2 270 **I/5**	3 520 **I/4,92**	4 370 **I/5,07**	6 550 **I/4,92**	8 380 **I/5,07**	10 600 **I/5,08**	16 580 **I/5**	20 950 **I/4,92**	26 190 **I/4,92**	28 960 **I/5,07**			
	4,5		–	–	–	–	–	–	1 530 **I/4,45**	2 310 **I/4,5**	3 590 **I/4,5**	4 670 **I/4,67**	6 680 **I/4,5**	8 560 **I/4,67**	12 280 **I/4,47**	14 970 **I/4,5**	21 300 **I/4,5**	26 620 **I/4,5**	29 240 **I/4,6**			
	4		–	250 **I/4**	–	515 **I/4,16**	–	765 **I/3,92**	1 550 **I/4**	2 420 **I/4,08**	3 660 **I/4,13**	4 610 **I/4,15**	6 800 **I/4,13**	8 880 **I/4,07**	11 500 **I/4**	16 750 **I/4,08**	21 400 **I/4,07**	26 750 **I/4,07**	28 450 **I/4**			
	3,55		–	–	–	–	–	–	1 880 **I/3,62**	2 410 **I/3,64**	3 400 **I/3,62**	4 940 **I/3,6**	6 690 **I/3,57**	8 840 **I/3,67**	12 260 **I/3,62**	15 810 **I/3,64**	20 560 **I/3,5**	25 700 **I/3,5**	28 310 **I/3,6**			
	3,15		–	275 **I/3,28**	–	515 **I/3,13**	–	1 010 **I/3,27**	1 910 **I/3,28**	2 440 **I/3,13**	3 650 **I/3,13**	4 920 **I/3,25**	6 790 **I/3,27**	8 990 **I/3,18**	11 820 **I/3,28**	17 220 **I/3,19**	20 420 **I/3,13**	25 530 **I/3,13**	28 230 **I/3,25**			
	2,8		–	–	–	–	–	–	1 890 **I/2,75**	2 430 **I/2,82**	3 620 **I/2,81**	5 000 **I/2,83**	6 890 **I/2,82**	8 790 **I/2,83**	12 600 **I/2,81**	15 960 **I/2,82**	20 260 **I/2,81**	25 320 **I/2,81**	28 680 **I/2,83**			
	2,5		–	275 **I/2,53**	–	520 **I/2,44**	–	1 020 **I/2,55**	1 920 **I/2,53**	2 520 **I/2,53**	3 670 **I/2,44**	5 080 **I/2,5**	6 840 **I/2,55**	9 100 **I/2,43**	11 860 **I/2,53**	16 530 **I/2,53**	20 520 **I/2,44**	25 650 **I/2,44**	29 120 **I/2,5**			
									244	318	481	–	–	–	–	–	–	–	–	2,24	2800	**1250**
	2,24		–	–	–	–	–	–	1 890 **I/2,28**	2 500 **I/2,3▲**	3 630 **I/2,21▲**	4 950 **I/2,24**	6 770 **I/2,2**	9 240 **I/2,27**	11 990 **I/2,33**	16 410 **I/2,3**	20 760 **I/2,26**	25 960 **I/2,26**	28 950 **I/2,29**			
									244		491		–		–		–	–		2	2500	
	2		–	–	–	–	–	–	1 870 **I/2**	–	3 660 **I/1,95▲**	–	6 850 **I/2,05**	–	11 810 **I/2**	–	20 460 **I/1,95**	25 580 **I/1,95**	–			
14 000 000	12,5		110 **2I/12,3**	210 **2I/13,1**	260 **2I/13,6**	490 **2I/13,7**	580 **2I/13,7**	910 **2I/12,3**	1 820 **2I/13,1**	2 670 **2I/13,3**	4 020 **2I/13,6**	5 670 **2I/13,6**	8 120 **2I/13**	11 310 **2I/12,8**	16 280 **2I/13,1**	22 400 **2I/13,3**	28 330 **2I/13,4**	34 520 **2I/13,4**	44 850 **2I/13,1**			
	11,2		–	–	–	–	–	–	–	2 820 **2I/11,9**	4 200 **2I/11,9**	6 000 **2I/11,8**	8 550 **2I/11,2**	11 960 **2I/11,5**	17 170 **2I/11,8**	23 640 **2I/11,9**	29 990 **2I/11,5**	37 390 **2I/11,5**	47 290 **2I/11,8**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i** 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
14 000 000	10	120 **2I/10,2**	220 **2I/10,7**	280 **2I/11,2**	500 **2I/10,3**	585 **2I/10,3**	960 **2I/10,2**	1 920 **2I/10,7**	2 750 **2I/10,2**	4 310 **2I/10,3**	5 720 **2I/10,7**	8 780 **2I/10,2**	12 290 **2I/9,95**	17 640 **2I/10,7**	24 280 **2I/10,4**	30 810 **2I/10,3**	38 410 **2I/10,3**	48 590 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 550 **2I/9,22**	4 420 **2I/9,24**	5 110 **2I/9,31**	9 000 **2I/8,85**	11 450 **2I/8,88**	18 090 **2I/9,19**	23 440 **2I/9,22**	31 600 **2I/9,24**	39 390 **2I/9,24**	47 040 **2I/9,31**			
	8	125 **2I/8,01**	235 **2I/8,26**	290 **2I/7,99**	495 **2I/8,03**	590 **2I/8,03**	1 010 **2I/8,01**	2 030 **2I/8,26**	–	4 540 **2I/8,03**	–	9 260 **2I/8,01**	–	18 600 **2I/8,26**	–	32 500 **2I/8,03**	40 510 **2I/8,03**	–			
	6,3	115 **2I/6,42**	220 **2I/6,53**	260 **2I/6,86**	460 **2I/6,41**	525 **2I/6,41**	960 **2I/6,42**	1 920 **2I/6,53**	–	3 840 **2I/6,41**	–	8 810 **2I/6,42**	–	17 670 **2I/6,53**	–	29 950 **2I/6,41**	35 360 **2I/6,41**	–			
	5	–	235 **I/5**	–	500 **I/5,2**	–	770 **I/4,82**	1 560 **I/5**	2 350 **I/5**	3 650 **I/4,92**	4 530 **I/5,07**	6 790 **I/4,92**	8 680 **I/5,07**	10 990 **I/5,08**	17 180 **I/5**	21 710 **I/4,92**	27 130 **I/4,92**	30 000 **I/5,07**			
	4,5	–	–	–	–	–	–	1 590 **I/4,45**	2 390 **I/4,5**	3 720 **I/4,5**	4 840 **I/4,67**	6 910 **I/4,5**	8 860 **I/4,67**	12 700 **I/4,47**	15 490 **I/4,5**	22 030 **I/4,5**	27 540 **I/4,5**	30 260 **I/4,6**			
	4	–	255 **I/4**	–	530 **I/4,16**	–	790 **I/3,92**	1 600 **I/4**	2 500 **I/4,08**	3 770 **I/4,13**	4 760 **I/4,15**	7 020 **I/4,13**	9 170 **I/4,07**	11 870 **I/4**	17 290 **I/4,08**	22 090 **I/4,07**	27 610 **I/4,07**	29 370 **I/4**			
	3,55	–	–	–	–	–	–	1 950 **I/3,62**	2 490 **I/3,64**	3 520 **I/3,62**	5 120 **I/3,6**	6 930 **I/3,57**	9 160 **I/3,67**	12 710 **I/3,62**	16 380 **I/3,64**	21 300 **I/3,5**	26 620 **I/3,5**	29 330 **I/3,6**			
	3,15	–	285 **I/3,28**	–	535 **I/3,13**	–	1 040 **I/3,27**	1 980 **I/3,28**	2 530 **I/3,13**	3 780 **I/3,13**	5 100 **I/3,25**	7 040 **I/3,27**	9 310 **I/3,18**	12 250 **I/3,28**	17 850 **I/3,19**	21 170 **I/3,13**	26 460 **I/3,13**	29 260 **I/3,25**			
	2,8	–	–	–	–	–	–	1 960 **I/2,75**	2 520 **I/2,82**	3 750 **I/2,81**	5 190 **I/2,83**	7 140 **I/2,82**	9 110 **I/2,83**	13 060 **I/2,81**	16 540 **I/2,82**	21 000 **I/2,81**	26 250 **I/2,81**	29 730 **I/2,83**			
			33		64,5		121	230	302	456	617	–	–	–	–	–	–	–	2,5	2800	**1120**
	2,5	–	285 **I/2,53**	–	535 **I/2,44**	–	1 050 **I/2,55**	1 980 **I/2,53**	2 610 **I/2,53**	3 800 **I/2,44▲**	5 260 **I/2,5▲**	7 090 **I/2,55**	9 430 **I/2,43**	12 280 **I/2,53**	17 130 **I/2,53**	21 260 **I/2,44**	26 570 **I/2,44**	30 170 **I/2,5**			
								225	294	444	598	–	–	–	–	–	–	–	2,24	2500	
	2,24	–	–	–	–	–	–	1 960 **I/2,28**	2 580 **I/2,3**	3 750 **I/2,21▲**	5 120 **I/2,24▲**	7 010 **I/2,2**	9 560 **I/2,27**	12 410 **I/2,33**	16 970 **I/2,3**	21 480 **I/2,26**	26 850 **I/2,26**	29 950 **I/2,29**			
								222		454		–		–		–	–		2	2240	
	2	–	–	–	–	–	–	1 890 **I/2**	–	3 780 **I/1,95▲**	–	7 070 **I/2,05**	–	12 200 **I/2**	–	21 150 **I/1,95**	26 440 **I/1,95**	–			
12 500 000	14	–	–	–	–	–	–	–	2 670 **2I/14,7**	4 250 **2I/14,1**	5 910 **2I/14,4**	8 520 **2I/13,9**	10 630 **2I/14,6**	17 410 **2I/14,6**	21 130 **2I/14,7**	29 940 **2I/14,3**	36 610 **2I/14,3**	46 590 **2I/14,4**			
	12,5	110 **2I/12,3**	215 **2I/13,1**	270 **2I/13,6**	510 **2I/13,7**	600 **2I/13,7**	930 **2I/12,3**	1 870 **2I/13,1**	2 740 **2I/13,3**	4 160 **2I/13,6**	5 820 **2I/13,6**	8 340 **2I/13**	11 620 **2I/12,8**	16 710 **2I/13,1**	23 000 **2I/13,3**	29 080 **2I/13,4**	35 440 **2I/13,4**	46 040 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	2 900 **2I/11,9**	4 310 **2I/11,9**	6 160 **2I/11,8**	8 780 **2I/11,2**	12 290 **2I/11,5**	17 640 **2I/11,8**	24 280 **2I/11,9**	30 810 **2I/11,5**	38 410 **2I/11,5**	48 590 **2I/11,8**			
	10	120 **2I/10,2**	225 **2I/10,7**	285 **2I/11,2**	515 **2I/10,3**	605 **2I/10,3**	980 **2I/10,2**	1 970 **2I/10,7**	2 820 **2I/10,2**	4 420 **2I/10,3**	5 870 **2I/10,7**	9 000 **2I/10,2**	12 610 **2I/9,95**	18 090 **2I/10,7**	24 900 **2I/10,4**	31 600 **2I/10,3**	39 390 **2I/10,3**	49 820 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 620 **2I/9,22**	4 550 **2I/9,24**	5 260 **2I/9,31**	9 260 **2I/8,85**	11 780 **2I/8,88**	18 600 **2I/9,19**	24 110 **2I/9,22**	32 500 **2I/9,24**	40 510 **2I/9,24**	48 380 **2I/9,31**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
12 500 000	8	130 **2I/8,01**	240 **2I/8,26**	300 **2I/7,99**	510 **2I/8,03**	610 **2I/8,03**	1 040 **2I/8,01**	2 090 **2I/8,26**	–	4 680 **2I/8,03**	–	9 560 **2I/8,01**	–	19 210 **2I/8,26**	–	33 550 **2I/8,03**	41 830 **2I/8,03**	–			
	6,3	120 **2I/6,42**	225 **2I/6,53**	270 **2I/6,86**	475 **2I/6,41**	540 **2I/6,41**	985 **2I/6,42**	1 970 **2I/6,53**	–	3 950 **2I/6,41**	–	9 050 **2I/6,42**	–	18 130 **2I/6,53**	–	30 740 **2I/6,41**	36 300 **2I/6,41**	–			
	5	–	245 **I/5**	–	515 **I/5,2**	–	795 **I/4,82**	1 620 **I/5**	2 430 **I/5**	3 780 **I/4,92**	4 680 **I/5,07**	7 020 **I/4,92**	8 980 **I/5,07**	11 370 **I/5,08**	17 770 **I/5**	22 460 **I/4,92**	28 070 **I/4,92**	31 040 **I/5,07**			
	4,5	–	–	–	–	–	–	1 640 **I/4,45**	2 470 **I/4,5**	3 840 **I/4,5**	4 990 **I/4,67**	7 130 **I/4,5**	9 140 **I/4,67**	13 110 **I/4,47**	15 990 **I/4,5**	22 740 **I/4,5**	28 420 **I/4,5**	31 230 **I/4,6**			
	4	–	265 **I/4**	–	550 **I/4,16**	–	815 **I/3,92**	1 660 **I/4**	2 590 **I/4,08**	3 910 **I/4,13**	4 930 **I/4,15**	7 270 **I/4,13**	9 500 **I/4,07**	12 300 **I/4**	17 910 **I/4,08**	22 880 **I/4,07**	28 600 **I/4,07**	30 420 **I/4**			
	3,55	–	–	–	–	–	–	2 020 **I/3,62**	2 580 **I/3,64**	3 650 **I/3,62**	5 300 **I/3,6**	7 190 **I/3,57**	9 490 **I/3,67**	13 170 **I/3,62**	16 970 **I/3,64**	22 070 **I/3,5**	27 590 **I/3,5**	30 400 **I/3,6**			
	3,15	–	295 **I/3,28**	–	555 **I/3,13**	–	1 080 **I/3,27**	2 050 **I/3,28**	2 620 **I/3,13**	3 920 **I/3,13**	5 290 **I/3,25**	7 300 **I/3,27**	9 650 **I/3,18**	12 700 **I/3,28**	18 500 **I/3,19**	21 940 **I/3,13**	27 420 **I/3,13**	30 330 **I/3,25**			
								217	271	406	556	768	–	–	–	–	–	–	2,8	2800	**1000**
	2,8	–	–	–	–	–	–	2 030 **I/2,75**	2 610 **I/2,82**	3 890 **I/2,81▲**	5 370 **I/2,83▲**	7 400 **I/2,82▲**	9 440 **I/2,83**	13 530 **I/2,81**	17 140 **I/2,82**	21 750 **I/2,81**	27 190 **I/2,81**	30 800 **I/2,83**			
			30,5		59,6		111	213	279	421	570	751	–	–	–	–	–	–	2,5	2500	
	2,5	–	295 **I/2,53**	–	555 **I/2,44**	–	1 090 **I/2,55**	2 050 **I/2,53**	2 700 **I/2,53**	3 930 **I/2,44**	5 450 **I/2,5▲**	7 330 **I/2,55▲**	9 750 **I/2,43**	12 710 **I/2,53**	17 720 **I/2,53**	21 990 **I/2,44**	27 490 **I/2,44**	31 210 **I/2,5**			
								208	272	411	554	772	–	–	–	–	–	–	2,24	2240	
	2,24	–	–	–	–	–	–	2 020 **I/2,28**	2 670 **I/2,3**	3 880 **I/2,21**	5 290 **I/2,24▲**	7 240 **I/2,2▲**	9 880 **I/2,27**	12 820 **I/2,33**	17 540 **I/2,3**	22 200 **I/2,26**	27 750 **I/2,26**	30 950 **I/2,29**			
								201		410		749		–		–	–		2	2000	
	2	–	–	–	–	–	–	1 920 **I/2**	–	3 820 **I/1,95**	–	7 320 **I/2,05▲**	–	12 620 **I/2**	–	21 880 **I/1,95**	27 350 **I/1,95**	–			
11 200 000	16	120 **2I/16,3**	215 **2I/15,8**	285 **2I/16,5**	525 **2I/15,7**	620 **2I/15,7**	930 **2I/16,1**	1 860 **2I/15,8**	2 750 **2I/15,1**	4 490 **2I/15,7**	5 740 **2I/16,6**	8 520 **2I/16,1**	11 240 **2I/15,6**	17 090 **2I/16,2**	21 910 **2I/15,7**	29 940 **2I/15,9**	37 290 **2I/15,9**	45 340 **2I/16**			
	14	–	–	–	–	–	–	–	2 740 **2I/14,7**	4 400 **2I/14,1**	6 070 **2I/14,4**	8 750 **2I/13,9**	10 920 **2I/14,6**	18 020 **2I/14,6**	21 690 **2I/14,7**	30 730 **2I/14,3**	37 580 **2I/14,3**	47 830 **2I/14,4**			
	12,5	115 **2I/12,3**	220 **2I/13,1**	280 **2I/13,6**	525 **2I/13,7**	620 **2I/13,7**	960 **2I/12,3**	1 920 **2I/13,1**	2 820 **2I/13,3**	4 290 **2I/13,6**	5 980 **2I/13,6**	8 560 **2I/13**	11 930 **2I/12,8**	17 170 **2I/13,1**	23 630 **2I/13,3**	29 880 **2I/13,4**	36 410 **2I/13,4**	47 300 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	2 970 **2I/11,9**	4 420 **2I/11,9**	6 320 **2I/11,8**	9 000 **2I/11,2**	12 610 **2I/11,5**	18 090 **2I/11,8**	24 900 **2I/11,9**	31 600 **2I/11,5**	39 390 **2I/11,5**	49 820 **2I/11,8**			
	10	125 **2I/10,2**	235 **2I/10,7**	295 **2I/11,2**	530 **2I/10,3**	625 **2I/10,3**	1 010 **2I/10,2**	2 030 **2I/10,7**	2 900 **2I/10,2**	4 550 **2I/10,3**	6 030 **2I/10,7**	9 260 **2I/10,2**	12 960 **2I/9,95**	18 600 **2I/10,7**	25 610 **2I/10,4**	32 500 **2I/10,3**	40 510 **2I/10,3**	51 240 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 710 **2I/9,22**	4 700 **2I/9,24**	5 430 **2I/9,31**	9 560 **2I/8,85**	12 160 **2I/8,88**	19 210 **2I/9,19**	24 890 **2I/9,22**	33 550 **2I/9,24**	41 830 **2I/9,24**	49 950 **2I/9,31**			
	8	135 **2I/8,01**	250 **2I/8,26**	310 **2I/7,99**	525 **2I/8,03**	625 **2I/8,03**	1 070 **2I/8,01**	2 150 **2I/8,26**	–	4 810 **2I/8,03**	–	9 820 **2I/8,01**	–	19 730 **2I/8,26**	–	34 470 **2I/8,03**	42 970 **2I/8,03**	–			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} ... N m / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
11 200 000	6,3	125 **2I/6,42**	230 **2I/6,53**	275 **2I/6,86**	485 **2I/6,41**	555 **2I/6,41**	1 010 **2I/6,42**	2 030 **2I/6,53**	–	4 050 **2I/6,41**	–	9 300 **2I/6,42**	–	18 630 **2I/6,53**	–	31 580 **2I/6,41**	37 290 **2I/6,41**	–			
	5	–	245 **I/5**	–	515 **I/5,2**	–	820 **I/4,82**	1 670 **I/5**	2 510 **I/5**	3 900 **I/4,92**	4 830 **I/5,07**	7 250 **I/4,92**	9 270 **I/5,07**	11 730 **I/5,08**	18 340 **I/5**	23 180 **I/4,92**	28 970 **I/4,92**	32 030 **I/5,07**			
	4,5	–	–	–	–	–	–	1 690 **I/4,45**	2 550 **I/4,5**	3 970 **I/4,5**	5 170 **I/4,67**	7 390 **I/4,5**	9 470 **I/4,67**	13 580 **I/4,47**	16 560 **I/4,5**	23 560 **I/4,5**	29 450 **I/4,5**	32 350 **I/4,6**			
	4	–	275 **I/4**	–	570 **I/4,16**	–	845 **I/3,92**	1 720 **I/4**	2 690 **I/4,08**	4 050 **I/4,13**	5 110 **I/4,15**	7 540 **I/4,13**	9 840 **I/4,07**	12 750 **I/4**	18 560 **I/4,08**	23 710 **I/4,07**	29 640 **I/4,07**	31 530 **I/4**			
	3,55	–	–	–	–	–	–	2 100 **I/3,62**	2 680 **I/3,64**	3 780 **I/3,62**	5 500 **I/3,6**	7 450 **I/3,57**	9 840 **I/3,67**	13 650 **I/3,62**	17 590 **I/3,64**	22 880 **I/3,5**	28 600 **I/3,5**	31 510 **I/3,6**			
			26,8		53,8		101	190	255	380	494	678	–	–	–	–	–	–	3,15	2800	**900**
	3,15	–	300 **I/3,28**	–	575 **I/3,13**	–	1 120 **I/3,27**	2 130 **I/3,28**	2 720 **I/3,13**	4 060 **I/3,13**	5 480 **I/3,25▲**	7 560 **I/3,27▲**	10 000 **I/3,18**	13 150 **I/3,28**	19 170 **I/3,19**	22 730 **I/3,13**	28 410 **I/3,13**	31 420 **I/3,25**			
								200	250	375	514	710	–	–	–	–	–	–	2,8	2500	
	2,8	–	–	–	–	–	–	2 100 **I/2,75**	2 700 **I/2,82**	4 020 **I/2,81**	5 560 **I/2,83▲**	7 660 **I/2,82▲**	9 770 **I/2,83**	14 000 **I/2,81**	17 730 **I/2,82**	22 510 **I/2,81**	28 130 **I/2,81**	31 860 **I/2,83**			
			28,2		55,1		103	197	259	390	528	696	974	–	–	–	–	–	2,5	2240	
	2,5	–	305 **I/2,53**	–	575 **I/2,44**	–	1 120 **I/2,55**	2 120 **I/2,53**	2 790 **I/2,53**	4 060 **I/2,44**	5 630 **I/2,5**	7 580 **I/2,55▲**	10 080 **I/2,43▲**	13 130 **I/2,53**	18 310 **I/2,53**	22 730 **I/2,44**	28 410 **I/2,44**	32 260 **I/2,5**			
								192	251	380	510	713	942	–	–	–	–	–	2,24	2000	
	2,24	–	–	–	–	–	–	2 090 **I/2,28**	2 760 **I/2,3**	4 010 **I/2,21**	5 450 **I/2,24**	7 490 **I/2,2▲**	10 220 **I/2,27▲**	13 270 **I/2,33**	18 150 **I/2,3**	22 970 **I/2,26**	28 710 **I/2,26**	32 020 **I/2,29**			
								183		369		695		–		–	–		2	1800	
	2	–	–	–	–	–	–	1 940 **I/2**	–	3 820 **I/1,95**	–	7 550 **I/2,05▲**	–	13 030 **I/2**	–	22 580 **I/1,95**	28 230 **I/1,95**	–			
10 000 000	18	–	–	–	–	–	–	–	2 820 **2I/17,6**	4 310 **2I/18,1**	5 780 **2I/18**	8 520 **2I/17,6**	11 960 **2I/18,1**	17 090 **2I/17,8**	23 570 **2I/17,9**	29 940 **2I/17,8**	37 290 **2I/17,8**	46 850 **2I/18,3**			
	16	120 **2I/16,3**	225 **2I/15,8**	290 **2I/16,5**	545 **2I/15,7**	640 **2I/15,7**	955 **2I/16,1**	1 910 **2I/15,8**	2 830 **2I/15,1**	4 640 **2I/15,7**	5 890 **2I/16,6**	8 750 **2I/16,1**	11 530 **2I/15,6**	17 550 **2I/16,2**	22 490 **2I/15,7**	30 730 **2I/15,9**	38 280 **2I/15,9**	46 540 **2I/16**			
	14	–	–	–	–	–	–	–	2 820 **2I/14,7**	4 540 **2I/14,1**	6 230 **2I/14,4**	8 990 **2I/13,9**	11 220 **2I/14,6**	18 620 **2I/14,6**	22 280 **2I/14,7**	31 580 **2I/14,3**	38 610 **2I/14,3**	49 140 **2I/14,4**			
	12,5	120 **2I/12,3**	225 **2I/13,1**	290 **2I/13,6**	545 **2I/13,7**	640 **2I/13,7**	980 **2I/12,3**	1 970 **2I/13,1**	2 890 **2I/13,3**	4 440 **2I/13,6**	6 140 **2I/13,6**	8 780 **2I/13**	12 240 **2I/12,8**	17 600 **2I/13,1**	24 230 **2I/13,3**	30 640 **2I/13,4**	37 340 **2I/13,4**	48 500 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 060 **2I/11,9**	4 550 **2I/11,9**	6 500 **2I/11,8**	9 260 **2I/11,2**	12 960 **2I/11,5**	18 600 **2I/11,8**	25 610 **2I/11,9**	32 500 **2I/11,5**	40 510 **2I/11,5**	51 240 **2I/11,8**			
	10	130 **2I/10,2**	240 **2I/10,7**	305 **2I/11,2**	550 **2I/10,3**	650 **2I/10,3**	1 040 **2I/10,2**	2 090 **2I/10,7**	2 990 **2I/10,2**	4 700 **2I/10,3**	6 230 **2I/10,7**	9 560 **2I/10,2**	13 380 **2I/9,95**	19 210 **2I/10,7**	26 440 **2I/10,4**	33 550 **2I/10,3**	41 830 **2I/10,3**	52 900 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 780 **2I/9,22**	4 830 **2I/9,24**	5 580 **2I/9,31**	9 820 **2I/8,85**	12 490 **2I/8,88**	19 730 **2I/9,19**	25 570 **2I/9,22**	34 470 **2I/9,24**	42 970 **2I/9,24**	51 320 **2I/9,31**			
	8	135 **2I/8,01**	255 **2I/8,26**	315 **2I/7,99**	540 **2I/8,03**	645 **2I/8,03**	1 100 **2I/8,01**	2 200 **2I/8,26**	–	4 940 **2I/8,03**	–	10 080 **2I/8,01**	–	20 260 **2I/8,26**	–	35 390 **2I/8,03**	44 110 **2I/8,03**	–			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i** **50**	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**	i_N	n_1 min^{-1}	n_{N2}
10 000 000	6,3	125 **2I/6,42**	235 **2I/6,53**	280 **2I/6,86**	495 **2I/6,41**	560 **2I/6,41**	1 020 **2I/6,42**	2 050 **2I/6,53**	–	4 110 **2I/6,41**	–	9 420 **2I/6,42**	–	18 890 **2I/6,53**	–	32 010 **2I/6,41**	37 800 **2I/6,41**	–			
	5	–	250 **I/5**	–	530 **I/5,2**	–	850 **I/4,82**	1 730 **I/5**	2 600 **I/5**	4 040 **I/4,92**	5 010 **I/5,07**	7 510 **I/4,92**	9 610 **I/5,07**	12 150 **I/5,08**	19 000 **I/5**	24 010 **I/4,92**	30 010 **I/4,92**	33 190 **I/5,07**			
	4,5	–	–	–	–	–	–	1 760 **I/4,45**	2 650 **I/4,5**	4 120 **I/4,5**	5 360 **I/4,67**	7 660 **I/4,5**	9 820 **I/4,67**	14 070 **I/4,47**	17 170 **I/4,5**	24 420 **I/4,5**	30 520 **I/4,5**	33 530 **I/4,6**			
	4	–	285 **I/4**	–	590 **I/4,16**	–	880 **I/3,92**	1 780 **I/4**	2 780 **I/4,08**	4 200 **I/4,13**	5 300 **I/4,15**	7 810 **I/4,13**	10 200 **I/4,07**	13 220 **I/4**	19 240 **I/4,08**	24 580 **I/4,07**	30 720 **I/4,07**	32 680 **I/4**			
								176	223	318	464	633	–	–	–	–	–	–	3,55	2800	**800**
	3,55	–	–	–	–	–	–	2 170 **I/3,62**	2 770 **I/3,64**	3 920 **I/3,62**	5 690 **I/3,6**	7 720 **I/3,57▲**	10 190 **I/3,67**	14 140 **I/3,62**	18 230 **I/3,64**	23 700 **I/3,5**	29 630 **I/3,5**	32 640 **I/3,6**			
			23,9		49,7		93	175	236	351	457	627	853	–	–	–	–	–	3,15	2500	
	3,15	–	300 **I/3,28**	–	595 **I/3,13**	–	1 160 **I/3,27**	2 200 **I/3,28**	2 810 **I/3,13**	4 200 **I/3,13**	5 670 **I/3,25**	7 820 **I/3,27▲**	10 350 **I/3,18▲**	13 610 **I/3,28**	19 830 **I/3,19**	23 510 **I/3,13**	29 390 **I/3,13**	32 510 **I/3,25**			
								185	232	347	476	657	836	–	–	–	–	–	2,8	2240	
	2,8	–	–	–	–	–	–	2 170 **I/2,75**	2 790 **I/2,82**	4 160 **I/2,81**	5 740 **I/2,83**	7 910 **I/2,82▲**	10 090 **I/2,83▲**	14 470 **I/2,81**	18 330 **I/2,82**	23 260 **I/2,81**	29 080 **I/2,81**	32 930 **I/2,83**			
			26,1		50,9		95,4	182	239	360	488	643	899	1 125	–	–	–	–	2,5	2000	
	2,5	–	315 **I/2,53**	–	595 **I/2,44**	–	1 160 **I/2,55**	2 200 **I/2,53**	2 880 **I/2,53**	4 200 **I/2,44**	5 820 **I/2,5**	7 840 **I/2,55**	10 430 **I/2,43▲**	13 590 **I/2,53▲**	18 940 **I/2,53**	23 510 **I/2,44**	29 390 **I/2,44**	33 370 **I/2,5**			
								179	234	353	459	663	875	1 106	–	–	–	–	2,24	1800	
	2,24	–	–	–	–	–	–	2 160 **I/2,28**	2 850 **I/2,3**	4 140 **I/2,21**	5 450 **I/2,24**	7 730 **I/2,2**	10 550 **I/2,27▲**	13 690 **I/2,33▲**	18 730 **I/2,3**	23 710 **I/2,26**	29 630 **I/2,26**	33 050 **I/2,29**			
								165		328		640		1 131		–	–		2	1600	
	2	–	–	–	–	–	–	1 970 **I/2**	–	3 820 **I/1,95**	–	7 830 **I/2,05**	–	13 500 **I/2▲**	–	23 400 **I/1,95**	29 250 **I/1,95**	–			
9 000 000	20	120 **2I/20,1**	225 **2I/19,3**	295 **2I/20,1**	555 **2I/20,8**	630 **2I/20,8**	955 **2I/19,3**	1 910 **2I/19,3**	2 880 **2I/19,6**	4 540 **2I/20,7**	5 810 **2I/20,8**	8 350 **2I/20,3**	11 620 **2I/20**	16 910 **2I/19,7**	22 920 **2I/20,1**	29 050 **2I/20,6**	35 320 **2I/20,6**	45 930 **2I/20,3**			
	18	–	–	–	–	–	–	–	2 890 **2I/17,6**	4 460 **2I/18,1**	5 970 **2I/18**	8 750 **2I/17,6**	12 270 **2I/18,1**	17 550 **2I/17,8**	24 200 **2I/17,9**	30 730 **2I/17,8**	38 280 **2I/17,8**	48 100 **2I/18,3**			
	16	125 **2I/16,3**	230 **2I/15,8**	300 **2I/16,5**	565 **2I/15,7**	660 **2I/15,7**	980 **2I/16,1**	1 960 **2I/15,8**	2 900 **2I/15,1**	4 800 **2I/15,7**	6 050 **2I/16,6**	8 990 **2I/16,1**	11 850 **2I/15,6**	18 030 **2I/16,2**	23 110 **2I/15,7**	31 580 **2I/15,9**	39 330 **2I/15,9**	47 820 **2I/16**			
	14	–	–	–	–	–	–	–	2 890 **2I/14,7**	4 700 **2I/14,1**	6 390 **2I/14,4**	9 210 **2I/13,9**	11 500 **2I/14,6**	19 260 **2I/14,6**	22 850 **2I/14,7**	32 380 **2I/14,3**	39 590 **2I/14,3**	50 390 **2I/14,4**			
	12,5	125 **2I/12,3**	235 **2I/13,1**	300 **2I/13,6**	560 **2I/13,7**	660 **2I/13,7**	1 010 **2I/12,3**	2 030 **2I/13,1**	2 970 **2I/13,3**	4 590 **2I/13,6**	6 310 **2I/13,6**	9 030 **2I/13**	12 590 **2I/12,8**	18 110 **2I/13,1**	24 920 **2I/13,3**	31 510 **2I/13,4**	38 400 **2I/13,4**	49 890 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 160 **2I/11,9**	4 700 **2I/11,9**	6 710 **2I/11,8**	9 560 **2I/11,2**	13 380 **2I/11,5**	19 210 **2I/11,8**	26 440 **2I/11,9**	33 550 **2I/11,5**	41 830 **2I/11,5**	52 900 **2I/11,8**			
	10	135 **2I/10,2**	250 **2I/10,7**	315 **2I/11,2**	570 **2I/10,3**	670 **2I/10,3**	1 070 **2I/10,2**	2 150 **2I/10,7**	3 080 **2I/10,2**	4 860 **2I/10,3**	6 400 **2I/10,7**	9 820 **2I/10,2**	13 750 **2I/9,95**	19 730 **2I/10,7**	27 170 **2I/10,4**	34 470 **2I/10,3**	42 970 **2I/10,3**	54 350 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 850 **2I/9,22**	4 950 **2I/9,24**	5 730 **2I/9,31**	10 080 **2I/8,85**	12 830 **2I/8,88**	20 260 **2I/9,19**	26 250 **2I/9,22**	35 390 **2I/9,24**	44 110 **2I/9,24**	52 680 **2I/9,31**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i** 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
9 000 000	8	140 **2I/8,01**	260 **2I/8,26**	325 **2I/7,99**	555 **2I/8,03**	660 **2I/8,03**	1 130 **2I/8,01**	2 270 **2I/8,26**	–	5 080 **2I/8,03**	–	10 360 **2I/8,01**	–	20 810 **2I/8,26**	–	36 360 **2I/8,03**	45 320 **2I/8,03**	–			
	6,3	125 **2I/6,42**	240 **2I/6,53**	285 **2I/6,86**	500 **2I/6,41**	570 **2I/6,41**	1 040 **2I/6,42**	2 080 **2I/6,53**	–	4 160 **2I/6,41**	–	9 540 **2I/6,42**	–	19 120 **2I/6,53**	–	32 420 **2I/6,41**	38 280 **2I/6,41**	–			
	5	–	250 **I/5**	–	530 **I/5,2**	–	880 **I/4,82**	1 790 **I/5**	2 700 **I/5**	4 190 **I/4,92**	5 190 **I/5,07**	7 780 **I/4,92**	9 960 **I/5,07**	12 590 **I/5,08**	19 690 **I/5**	24 890 **I/4,92**	31 110 **I/4,92**	34 400 **I/5,07**			
	4,5	–	–	–	–	–	–	1 820 **I/4,45**	2 740 **I/4,5**	4 270 **I/4,5**	5 550 **I/4,67**	7 940 **I/4,5**	10 170 **I/4,67**	14 590 **I/4,47**	17 790 **I/4,5**	25 310 **I/4,5**	31 630 **I/4,5**	34 750 **I/4,6**			
			21,7		43		68	135	207	309	388	574	–	–	–	–	–	–	4	2800	**710**
	4	–	295 **I/4**	–	610 **I/4,16**	–	910 **I/3,92**	1 850 **I/4**	2 880 **I/4,08**	4 350 **I/4,13**	5 490 **I/4,15**	8 090 **I/4,13**	10 570 **I/4,07**	13 690 **I/4**	19 930 **I/4,08**	25 460 **I/4,07**	31 830 **I/4,07**	33 860 **I/4**			
								163	206	294	428	585	753	–	–	–	–	–	3,55	2500	
	3,55	–	–	–	–	–	–	2 250 **I/3,62**	2 870 **I/3,64**	4 060 **I/3,62**	5 890 **I/3,6**	7 980 **I/3,57**	10 550 **I/3,67▲**	14 630 **I/3,62**	18 860 **I/3,64**	24 520 **I/3,5**	30 650 **I/3,5**	33 770 **I/3,6**			
			21,9		46		86,1	162	218	325	423	580	790	–	–	–	–	–	3,15	2240	
	3,15	–	305 **I/3,28**	–	615 **I/3,13**	–	1 200 **I/3,27**	2 270 **I/3,28**	2 910 **I/3,13**	4 350 **I/3,13**	5 860 **I/3,25**	8 080 **I/3,27**	10 690 **I/3,18▲**	14 060 **I/3,28**	20 490 **I/3,19**	24 300 **I/3,13**	30 380 **I/3,13**	33 600 **I/3,25**			
								171	214	320	439	607	772	1 114	1 406	–	–	–	2,8	2000	
	2,8	–	–	–	–	–	–	2 250 **I/2,75**	2 890 **I/2,82**	4 300 **I/2,81**	5 940 **I/2,83**	8 190 **I/2,82**	10 440 **I/2,83▲**	14 970 **I/2,81▲**	18 960 **I/2,82▲**	24 060 **I/2,81**	30 080 **I/2,81**	34 070 **I/2,83**			
			23,5		47,3		88,6	169	222	335	453	597	835	1 045	1 459	–	–	–	2,5	1800	
	2,5	–	315 **I/2,53**	–	615 **I/2,44**	–	1 200 **I/2,55**	2 270 **I/2,53**	2 980 **I/2,53**	4 340 **I/2,44**	6 010 **I/2,5**	8 090 **I/2,55**	10 760 **I/2,43**	14 020 **I/2,53▲**	19 550 **I/2,53▲**	24 270 **I/2,44**	30 340 **I/2,44**	34 440 **I/2,5**			
								165	215	325	408	610	806	1 019	1 413	–	–	–	2,24	1600	
	2,24	–	–	–	–	–	–	2 240 **I/2,28**	2 950 **I/2,3**	4 290 **I/2,21**	5 450 **I/2,24**	8 010 **I/2,2**	10 930 **I/2,27**	14 190 **I/2,33▲**	19 400 **I/2,3▲**	24 560 **I/2,26**	30 700 **I/2,26**	34 240 **I/2,29**			
								147		287		583		1 030		–	–		2	1400	
	2	–	–	–	–	–	–	2 000 **I/2**	–	3 820 **I/1,95**	–	8 150 **I/2,05**	–	14 050 **I/2▲**	–	24 350 **I/1,95**	30 440 **I/1,95**	–			
8 000 000	22,4	–	–	–	–	–	–	–	2 930 **2I/21,7**	4 600 **2I/22,5**	6 010 **2I/23,3**	8 470 **2I/22,2**	10 930 **2I/23**	19 520 **2I/22**	21 600 **2I/22,2**	27 390 **2I/22,8**	34 270 **2I/22,8**	43 280 **2I/23,4**			
	20	120 **2I/20,1**	235 **2I/19,3**	305 **2I/20,1**	575 **2I/20,8**	650 **2I/20,8**	985 **2I/19,3**	1 970 **2I/19,3**	2 980 **2I/19,6**	4 700 **2I/20,7**	5 970 **2I/20,8**	8 640 **2I/20,3**	11 920 **2I/20**	17 500 **2I/19,7**	23 530 **2I/20,1**	29 830 **2I/20,6**	36 260 **2I/20,6**	47 150 **2I/20,3**			
	18	–	–	–	–	–	–	–	2 970 **2I/17,6**	4 610 **2I/18,1**	6 170 **2I/18**	8 990 **2I/17,6**	12 610 **2I/18,1**	18 030 **2I/17,8**	24 860 **2I/17,9**	31 580 **2I/17,8**	39 330 **2I/17,8**	49 420 **2I/18,3**			
	16	130 **2I/16,3**	240 **2I/15,8**	315 **2I/16,5**	580 **2I/15,7**	685 **2I/15,7**	1 020 **2I/16,1**	2 010 **2I/15,8**	2 980 **2I/15,1**	4 960 **2I/15,7**	6 210 **2I/16,6**	9 210 **2I/16,1**	12 150 **2I/15,6**	18 490 **2I/16,2**	23 700 **2I/15,7**	32 380 **2I/15,9**	40 330 **2I/15,9**	49 030 **2I/16**			
	14	–	–	–	–	–	–	–	2 990 **2I/14,7**	4 850 **2I/14,1**	6 570 **2I/14,4**	9 480 **2I/13,9**	11 830 **2I/14,6**	19 880 **2I/14,6**	23 500 **2I/14,7**	33 300 **2I/14,3**	40 720 **2I/14,3**	51 820 **2I/14,4**			
	12,5	130 **2I/12,3**	240 **2I/13,1**	310 **2I/13,6**	580 **2I/13,7**	685 **2I/13,7**	1 040 **2I/12,3**	2 090 **2I/13,1**	3 070 **2I/13,3**	4 750 **2I/13,6**	6 510 **2I/13,6**	9 330 **2I/13**	12 990 **2I/12,8**	18 690 **2I/13,1**	25 730 **2I/13,3**	32 530 **2I/13,4**	39 640 **2I/13,4**	51 500 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 250 **2I/11,9**	4 830 **2I/11,9**	6 890 **2I/11,8**	9 820 **2I/11,2**	13 750 **2I/11,5**	19 730 **2I/11,8**	27 170 **2I/11,9**	34 470 **2I/11,5**	42 970 **2I/11,5**	54 350 **2I/11,8**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
8 000 000	10	135 **2I/10,2**	255 **2I/10,7**	320 **2I/11,2**	590 **2I/10,3**	695 **2I/10,3**	1 100 **2I/10,2**	2 200 **2I/10,7**	3 160 **2I/10,2**	5 030 **2I/10,3**	6 570 **2I/10,7**	10 080 **2I/10,2**	14 120 **2I/9,95**	20 260 **2I/10,7**	27 890 **2I/10,4**	35 390 **2I/10,3**	44 110 **2I/10,3**	55 790 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 930 **2I/9,22**	5 090 **2I/9,24**	5 880 **2I/9,31**	10 360 **2I/8,85**	13 180 **2I/8,88**	20 810 **2I/9,19**	26 970 **2I/9,22**	36 360 **2I/9,24**	45 320 **2I/9,24**	54 120 **2I/9,31**			
	8	140 **2I/8,01**	265 **2I/8,26**	330 **2I/7,99**	560 **2I/8,03**	670 **2I/8,03**	1 150 **2I/8,01**	2 300 **2I/8,26**	–	5 140 **2I/8,03**	–	10 500 **2I/8,01**	–	21 100 **2I/8,26**	–	36 850 **2I/8,03**	45 940 **2I/8,03**	–			
	6,3	130 **2I/6,42**	240 **2I/6,53**	290 **2I/6,86**	505 **2I/6,41**	575 **2I/6,41**	1 050 **2I/6,42**	2 110 **2I/6,53**	–	4 220 **2I/6,41**	–	9 680 **2I/6,42**	–	19 400 **2I/6,53**	–	32 880 **2I/6,41**	38 820 **2I/6,41**	–			
	5	–	255 **I/5**	–	545 **I/5,2**	–	915 **I/4,82**	1 860 **I/5**	2 800 **I/5**	4 340 **I/4,92**	5 380 **I/5,07**	8 070 **I/4,92**	10 320 **I/5,07**	13 050 **I/5,08**	20 410 **I/5**	25 800 **I/4,92**	32 240 **I/4,92**	35 650 **I/5,07**			
								124	185	288	362	536	–	–	–	–	–	–	4,5	2800	**630**
	4,5	–	–	–	–	–	–	1 890 **I/4,45**	2 840 **I/4,5**	4 420 **I/4,5**	5 750 **I/4,67**	8 230 **I/4,5**	10 540 **I/4,67**	15 110 **I/4,47**	18 430 **I/4,5**	26 220 **I/4,5**	32 770 **I/4,5**	36 000 **I/4,6**			
			20		39,7		62,8	125	192	285	358	530	703	–	–	–	–	–	4	2500	
	4	–	305 **I/4**	–	630 **I/4,16**	–	940 **I/3,92**	1 910 **I/4**	2 980 **I/4,08**	4 500 **I/4,13**	5 680 **I/4,15**	8 370 **I/4,13**	10 930 **I/4,07**	14 160 **I/4**	20 620 **I/4,08**	26 340 **I/4,07**	32 930 **I/4,07**	35 030 **I/4**			
								151	191	272	397	542	697	–	–	–	–	–	3,55	2240	
	3,55	–	–	–	–	–	–	2 320 **I/3,62**	2 970 **I/3,64**	4 190 **I/3,62**	6 090 **I/3,6**	8 250 **I/3,57**	10 900 **I/3,67**	15 120 **I/3,62**	19 490 **I/3,64**	25 340 **I/3,5**	31 680 **I/3,5**	34 900 **I/3,6**			
			19,6		42,5		79,6	150	202	300	391	536	729	927	1 393	–	–	–	3,15	2000	
	3,15	–	305 **I/3,28**	–	635 **I/3,13**	–	1 240 **I/3,27**	2 350 **I/3,28**	3 010 **I/3,13**	4 500 **I/3,13**	6 060 **I/3,25**	8 360 **I/3,27**	11 060 **I/3,18**	14 550 **I/3,28▲**	21 200 **I/3,19▲**	25 140 **I/3,13**	31 430 **I/3,13**	34 760 **I/3,25**			
								159	199	298	408	564	717	1 035	1 306	–	–	–	2,8	1800	
	2,8	–	–	–	–	–	–	2 320 **I/2,75**	2 980 **I/2,82**	4 440 **I/2,81**	6 130 **I/2,83**	8 450 **I/2,82**	10 780 **I/2,83**	15 450 **I/2,81▲**	19 570 **I/2,82▲**	24 840 **I/2,81**	31 050 **I/2,81**	35 160 **I/2,83**			
			20,9		43,6		81,6	156	204	308	408	550	769	962	1 343	1 723	2 154	–	2,5	1600	
	2,5	–	315 **I/2,53**	–	635 **I/2,44**	–	1 240 **I/2,55**	2 350 **I/2,53**	3 080 **I/2,53**	4 500 **I/2,44**	6 090 **I/2,5**	8 380 **I/2,55**	11 150 **I/2,43**	14 530 **I/2,53**	20 260 **I/2,53▲**	25 140 **I/2,44▲**	31 430 **I/2,44▲**	35 680 **I/2,5**			
								150	196	287	357	556	734	928	1 287	1 656	2 070	–	2,24	1400	
	2,24	–	–	–	–	–	–	2 330 **I/2,28**	3 070 **I/2,3**	4 330 **I/2,21**	5 450 **I/2,24**	8 340 **I/2,2**	11 370 **I/2,27**	14 760 **I/2,33**	20 200 **I/2,3▲**	25 560 **I/2,26▲**	31 950 **I/2,26▲**	35 640 **I/2,29**			
								133		256		527		951		1 689	2 111		2	1250	
	2	–	–	–	–	–	–	2 030 **I/2**	–	3 820 **I/1,95**	–	8 250 **I/2,05**	–	14 540 **I/2**	–	25 190 **I/1,95▲**	31 490 **I/1,95▲**	–			
7 100 000	25	105 **2I/24,4**	225 **2I/24,1**	270 **2I/25,1**	475 **2I/26**	545 **2I/26**	985 **2I/23,7**	1 970 **2I/24,1**	2 900 **2I/24,1**	4 250 **2I/24,6**	5 800 **2I/25,4**	8 590 **2I/24,2**	11 010 **2I/25**	17 350 **2I/25**	21 850 **2I/24,6**	24 970 **2I/25**	34 840 **2I/25**	39 870 **2I/25,7**			
	22,4	–	–	–	–	–	–	–	3 030 **2I/21,7**	4 760 **2I/22,5**	6 220 **2I/23,3**	8 760 **2I/22,2**	11 250 **2I/23**	19 500 **2I/22**	22 180 **2I/22,2**	28 120 **2I/22,8**	35 450 **2I/22,8**	44 430 **2I/23,4**			
	20	125 **2I/20,1**	240 **2I/19,3**	315 **2I/20,1**	580 **2I/20,8**	685 **2I/20,8**	1 020 **2I/19,3**	2 040 **2I/19,3**	3 080 **2I/19,6**	4 860 **2I/20,7**	6 130 **2I/20,8**	8 930 **2I/20,3**	12 250 **2I/20**	18 080 **2I/19,7**	24 170 **2I/20,1**	30 640 **2I/20,6**	37 250 **2I/20,6**	48 440 **2I/20,3**			
	18	–	–	–	–	–	–	–	3 060 **2I/17,6**	4 770 **2I/18,1**	6 390 **2I/18**	9 210 **2I/17,6**	12 930 **2I/18,1**	18 540 **2I/17,8**	25 490 **2I/17,9**	32 380 **2I/17,8**	40 330 **2I/17,8**	50 670 **2I/18,3**			
	16	135 **2I/16,3**	245 **2I/15,8**	325 **2I/16,5**	600 **2I/15,7**	705 **2I/15,7**	1 050 **2I/16,1**	2 070 **2I/15,8**	3 060 **2I/15,1**	5 120 **2I/15,7**	6 380 **2I/16,6**	9 480 **2I/16,1**	12 500 **2I/15,6**	19 010 **2I/16,2**	24 370 **2I/15,7**	33 300 **2I/15,9**	41 480 **2I/15,9**	50 430 **2I/16**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
7 100 000	14	–	–	–	–	–	–	–	3 090 **2I/14,7**	5 030 **2I/14,1**	6 790 **2I/14,4**	9 780 **2I/13,9**	12 210 **2I/14,6**	20 600 **2I/14,6**	24 260 **2I/14,7**	34 380 **2I/14,3**	42 040 **2I/14,3**	53 500 **2I/14,4**			
	12,5	135 **2I/12,3**	250 **2I/13,1**	320 **2I/13,6**	580 **2I/13,7**	685 **2I/13,7**	1 070 **2I/12,3**	2 150 **2I/13,1**	3 150 **2I/13,3**	4 920 **2I/13,6**	6 690 **2I/13,6**	9 580 **2I/13**	13 350 **2I/12,8**	19 200 **2I/13,1**	26 430 **2I/13,3**	33 430 **2I/13,4**	40 730 **2I/13,4**	52 910 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 330 **2I/11,9**	4 950 **2I/11,9**	7 080 **2I/11,8**	10 080 **2I/11,2**	14 120 **2I/11,5**	20 260 **2I/11,8**	27 890 **2I/11,9**	35 390 **2I/11,5**	44 110 **2I/11,5**	55 790 **2I/11,8**			
	10	140 **2I/10,2**	260 **2I/10,7**	330 **2I/11,2**	615 **2I/10,3**	720 **2I/10,3**	1 130 **2I/10,2**	2 270 **2I/10,7**	3 240 **2I/10,2**	5 210 **2I/10,3**	6 750 **2I/10,7**	10 360 **2I/10,2**	14 500 **2I/9,95**	20 810 **2I/10,7**	28 650 **2I/10,4**	36 360 **2I/10,3**	45 320 **2I/10,3**	57 320 **2I/10,7**			
	9	–	–	–	–	–	–	–	2 970 **2I/9,22**	5 160 **2I/9,24**	5 960 **2I/9,31**	10 500 **2I/8,85**	13 360 **2I/8,88**	21 100 **2I/9,19**	27 330 **2I/9,22**	36 850 **2I/9,24**	45 940 **2I/9,24**	54 860 **2I/9,31**			
	8	145 **2I/8,01**	270 **2I/8,26**	335 **2I/7,99**	575 **2I/8,03**	680 **2I/8,03**	1 160 **2I/8,01**	2 330 **2I/8,26**	–	5 210 **2I/8,03**	–	10 630 **2I/8,01**	–	21 360 **2I/8,26**	–	37 320 **2I/8,03**	46 520 **2I/8,03**	–			
	6,3	130 **2I/6,42**	245 **2I/6,53**	290 **2I/6,86**	515 **2I/6,41**	585 **2I/6,41**	1 070 **2I/6,42**	2 140 **2I/6,53**	–	4 280 **2I/6,41**	–	9 810 **2I/6,42**	–	19 670 **2I/6,53**	–	33 350 **2I/6,41**	39 380 **2I/6,41**	–			
			15,1		31,6		57,5	113	170	268	322	498	–	–	–	–	–	–	5	2800	**560**
	5	–	255 **I/5**	–	560 **I/5,2**	–	945 **I/4,82**	1 930 **I/5**	2 900 **I/5**	4 490 **I/4,92**	5 570 **I/5,07**	8 360 **I/4,92**	10 690 **I/5,07**	13 520 **I/5,08**	21 150 **I/5**	26 720 **I/4,92**	33 400 **I/4,92**	36 930 **I/5,07**			
								115	171	266	334	495	612	–	–	–	–	–	4,5	2500	
	4,5	–	–	–	–	–	–	1 950 **I/4,45**	2 940 **I/4,5**	4 580 **I/4,5**	5 950 **I/4,67**	8 510 **I/4,5**	10 900 **I/4,67**	15 640 **I/4,47**	19 070 **I/4,5**	27 120 **I/4,5**	33 910 **I/4,5**	37 250 **I/4,6**			
			18		36,8		58,1	116	177	264	331	491	651	–	–	–	–	–	4	2240	
	4	–	305 **I/4**	–	655 **I/4,16**	–	975 **I/3,92**	1 980 **I/4**	3 080 **I/4,08**	4 650 **I/4,13**	5 870 **I/4,15**	8 660 **I/4,13**	11 300 **I/4,07**	14 640 **I/4**	21 310 **I/4,08**	27 230 **I/4,07**	34 030 **I/4,07**	36 200 **I/4**			
								139	176	251	366	501	644	906	1 159	–	–	–	3,55	2000	
	3,55	–	–	–	–	–	–	2 400 **I/3,62**	3 070 **I/3,64**	4 340 **I/3,62**	6 300 **I/3,6**	8 540 **I/3,57**	11 280 **I/3,67**	15 640 **I/3,62**	20 160 **I/3,64▲**	26 220 **I/3,5**	32 770 **I/3,5**	36 110 **I/3,6**			
			18,1		39,5		73,9	139	187	279	363	498	678	861	1 294	1 561	1 951	–	3,15	1800	
	3,15	–	315 **I/3,28**	–	655 **I/3,13**	–	1 280 **I/3,27**	2 430 **I/3,28**	3 100 **I/3,13**	4 640 **I/3,13**	6 260 **I/3,25**	8 630 **I/3,27**	11 420 **I/3,18**	15 020 **I/3,28**	21 880 **I/3,19▲**	25 950 **I/3,13▲**	32 440 **I/3,13▲**	35 880 **I/3,25**			
								146	183	274	376	519	660	953	1 203	1 533	1 916	–	2,8	1600	
	2,8	–	–	–	–	–	–	2 400 **I/2,75**	3 080 **I/2,82**	4 600 **I/2,81**	6 350 **I/2,83**	8 750 **I/2,82**	11 170 **I/2,83**	16 000 **I/2,81**	20 270 **I/2,82▲**	25 730 **I/2,81▲**	32 160 **I/2,81▲**	36 430 **I/2,83**			
			18,8		39,7		74,3	142	186	281	357	501	701	876	1 223	1 569	1 962	2 178	2,5	1400	
	2,5	–	325 **I/2,53**	–	660 **I/2,44**	–	1 300 **I/2,55**	2 440 **I/2,53**	3 210 **I/2,53**	4 680 **I/2,44**	6 090 **I/2,5**	8 730 **I/2,55**	11 610 **I/2,43**	15 120 **I/2,53**	21 080 **I/2,53**	26 170 **I/2,44▲**	32 710 **I/2,44▲**	37 140 **I/2,5▲**			
								138	181	256	319	513	661	857	1 189	1 530	1 912	2 111	2,24	1250	
	2,24	–	–	–	–	–	–	2 410 **I/2,28**	3 180 **I/2,3**	4 330 **I/2,21**	5 450 **I/2,24**	8 630 **I/2,2**	11 470 **I/2,27**	15 280 **I/2,33**	20 900 **I/2,3**	26 450 **I/2,26▲**	33 060 **I/2,26▲**	36 870 **I/2,29▲**			
								120		230		473		881		1 564	1 955		2	1120	
	2	–	–	–	–	–	–	2 050 **I/2**	–	3 820 **I/1,95**	–	8 250 **I/2,05**	–	15 020 **I/2**	–	26 040 **I/1,95▲**	32 550 **I/1,95▲**	–			
6 300 000	28	–	–	–	–	–	875 **2I/28,8**	–	2 510 **3I/29,1**	4 290 **3I/28,4**	5 040 **3I/28,6**	8 720 **3I/27,2**	11 320 **3I/27,3**	17 500 **3I/28,7**	22 610 **3I/28,8**	30 650 **3I/30**	38 140 **3I/30**	46 430 **3I/30,3**			
	25	110 **2I/24,4**	230 **2I/24,1**	280 **2I/25,1**	490 **2I/26**	560 **2I/26**	1 020 **2I/23,7**	2 040 **2I/24,1**	2 900 **2I/24,1**	4 370 **2I/24,6**	6 000 **2I/25,4**	8 890 **2I/24,2**	11 390 **2I/25**	17 950 **2I/25**	22 610 **2I/24,6**	25 640 **2I/25**	36 050 **2I/25**	40 930 **2I/25,7**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
6 300 000	22,4	–	–	–	–	–	–	–	3 140 **2I/21,7**	4 920 **2I/22,5**	6 430 **2I/23,3**	9 060 **2I/22,2**	11 630 **2I/23**	20 000 **2I/22**	22 780 **2I/22,2**	28 890 **2I/22,8**	36 640 **2I/22,8**	45 640 **2I/23,4**			
	20	130 **2I/20,1**	250 **2I/19,3**	325 **2I/20,1**	585 **2I/20,8**	685 **2I/20,8**	1 060 **2I/19,3**	2 110 **2I/19,3**	3 180 **2I/19,6**	5 020 **2I/20,7**	6 290 **2I/20,8**	9 240 **2I/20,3**	12 560 **2I/20**	18 710 **2I/19,7**	24 790 **2I/20,1**	31 420 **2I/20,6**	38 200 **2I/20,6**	49 680 **2I/20,3**			
	18	–	–	–	–	–	–	–	3 160 **2I/17,6**	4 930 **2I/18,1**	6 590 **2I/18**	9 480 **2I/17,6**	13 300 **2I/18,1**	19 140 **2I/17,8**	26 220 **2I/17,9**	33 300 **2I/17,8**	41 480 **2I/17,8**	52 120 **2I/18,3**			
	16	140 **2I/16,3**	255 **2I/15,8**	335 **2I/16,5**	625 **2I/15,7**	735 **2I/15,7**	1 090 **2I/16,1**	2 140 **2I/15,8**	3 160 **2I/15,1**	5 310 **2I/15,7**	6 590 **2I/16,6**	9 780 **2I/16,1**	12 900 **2I/15,6**	19 630 **2I/16,2**	25 160 **2I/15,7**	34 380 **2I/15,9**	42 820 **2I/15,9**	52 060 **2I/16**			
	14	–	–	–	–	–	–	–	3 210 **2I/14,7**	5 210 **2I/14,1**	6 970 **2I/14,4**	10 050 **2I/13,9**	12 550 **2I/14,6**	21 350 **2I/14,6**	24 930 **2I/14,7**	35 320 **2I/14,3**	43 190 **2I/14,3**	54 970 **2I/14,4**			
	12,5	140 **2I/12,3**	255 **2I/13,1**	330 **2I/13,6**	585 **2I/13,7**	690 **2I/13,7**	1 100 **2I/12,3**	2 200 **2I/13,1**	3 260 **2I/13,3**	5 100 **2I/13,6**	6 870 **2I/13,6**	9 840 **2I/13**	13 700 **2I/12,8**	19 710 **2I/13,1**	27 130 **2I/13,3**	34 310 **2I/13,4**	41 810 **2I/13,4**	54 320 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 420 **2I/11,9**	5 090 **2I/11,9**	7 270 **2I/11,8**	10 360 **2I/11,2**	14 500 **2I/11,5**	20 810 **2I/11,8**	28 650 **2I/11,9**	36 360 **2I/11,5**	45 320 **2I/11,5**	57 320 **2I/11,8**			
	10	140 **2I/10,2**	265 **2I/10,7**	345 **2I/11,2**	635 **2I/10,3**	745 **2I/10,3**	1 150 **2I/10,2**	2 300 **2I/10,7**	3 290 **2I/10,2**	5 390 **2I/10,3**	6 840 **2I/10,7**	10 500 **2I/10,2**	14 700 **2I/9,95**	21 100 **2I/10,7**	29 040 **2I/10,4**	36 850 **2I/10,3**	45 940 **2I/10,3**	58 100 **2I/10,7**			
	9	–	–	–	–	–	–	–	3 010 **2I/9,22**	5 220 **2I/9,24**	6 040 **2I/9,31**	10 630 **2I/8,85**	13 530 **2I/8,88**	21 360 **2I/9,19**	27 680 **2I/9,22**	37 320 **2I/9,24**	46 520 **2I/9,24**	55 550 **2I/9,31**			
	8	145 **2I/8,01**	270 **2I/8,26**	340 **2I/7,99**	595 **2I/8,03**	700 **2I/8,03**	1 180 **2I/8,01**	2 360 **2I/8,26**	–	5 280 **2I/8,03**	–	10 780 **2I/8,01**	–	21 670 **2I/8,26**	–	37 850 **2I/8,03**	47 180 **2I/8,03**	–			
	6,3	130 **2I/6,42**	250 **2I/6,53**	295 **2I/6,86**	520 **2I/6,41**	600 **2I/6,41**	1 080 **2I/6,42**	2 170 **2I/6,53**	–	4 340 **2I/6,41**	–	9 960 **2I/6,42**	–	19 960 **2I/6,53**	–	33 830 **2I/6,41**	39 950 **2I/6,41**	–			
			13,9		28,3		53,2	104	157	247	298	460	571	–	–	–	–	–	5	2500	**500**
	5	–	265 **I/5**	–	560 **I/5,2**	–	980 **I/4,82**	1 990 **I/5**	3 000 **I/5**	4 650 **I/4,92**	5 770 **I/5,07**	8 650 **I/4,92**	11 060 **I/5,07**	13 990 **I/5,08**	21 880 **I/5**	27 650 **I/4,92**	34 560 **I/4,92**	38 210 **I/5,07**			
								106	158	246	309	458	566	–	–	–	–	–	4,5	2240	
	4,5	–	–	–	–	–	–	2 020 **I/4,45**	3 040 **I/4,5**	4 730 **I/4,5**	6 150 **I/4,67**	8 800 **I/4,5**	11 270 **I/4,67**	16 160 **I/4,47**	19 710 **I/4,5**	28 030 **I/4,5**	35 040 **I/4,5**	38 500 **I/4,6**			
			16,1		32,7		53,7	107	164	244	306	454	601	793	1 133	–	–	–	4	2000	
	4	–	305 **I/4**	–	650 **I/4,16**	–	1 010 **I/3,92**	2 040 **I/4**	3 190 **I/4,08**	4 810 **I/4,13**	6 070 **I/4,15**	8 950 **I/4,13**	11 690 **I/4,07**	15 140 **I/4**	22 050 **I/4,08**	28 170 **I/4,07**	35 210 **I/4,07**	37 460 **I/4**			
								129	164	233	340	465	598	842	1 077	1 457	1 822	1 951	3,55	1800	
	3,55	–	–	–	–	–	–	2 480 **I/3,62**	3 170 **I/3,64**	4 480 **I/3,62**	6 500 **I/3,6**	8 810 **I/3,57**	11 640 **I/3,67**	16 150 **I/3,62**	20 810 **I/3,64**	27 060 **I/3,5▲**	33 830 **I/3,5▲**	37 270 **I/3,6▲**			
			16,1		36,4		68,1	128	172	257	334	459	624	793	1 192	1 437	1 797	1 916	3,15	1600	
	3,15	–	315 **I/3,28**	–	680 **I/3,13**	–	1 330 **I/3,27**	2 510 **I/3,28**	3 220 **I/3,13**	4 810 **I/3,13**	6 480 **I/3,25**	8 940 **I/3,27**	11 830 **I/3,18**	15 560 **I/3,28**	22 670 **I/3,19**	26 880 **I/3,13▲**	33 600 **I/3,13▲**	37 170 **I/3,25▲**			
								133	167	250	342	473	601	868	1 096	1 396	1 745	1 962	2,8	1400	
	2,8	–	–	–	–	–	–	2 500 **I/2,75**	3 210 **I/2,82**	4 790 **I/2,81**	6 610 **I/2,83**	9 110 **I/2,82**	11 620 **I/2,83**	16 660 **I/2,81**	21 100 **I/2,82**	26 780 **I/2,81▲**	33 480 **I/2,81▲**	37 910 **I/2,83▲**			
			16,8		36,7		67,5	131	172	254	319	462	647	810	1 130	1 450	1 812	2 012	2,5	1250	
	2,5	–	325 **I/2,53**	–	685 **I/2,44**	–	1 320 **I/2,55**	2 530 **I/2,53**	3 320 **I/2,53**	4 750 **I/2,44**	6 090 **I/2,5**	9 030 **I/2,55**	12 010 **I/2,43**	15 650 **I/2,53**	21 810 **I/2,53**	27 070 **I/2,44**	33 840 **I/2,44**	38 430 **I/2,5▲**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ...	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
6 300 000	2,24								128	168	230	286	475	592	793	1 101	1 416	1 771	1 955	2,24	1120	500
			–	–	–	–	–	–	2 490	3 290	4 330	5 450	8 920	11 470	15 790	21 600	27 330	34 170	38 110			
									I/2,28	I/2,3	I/2,21	I/2,24	I/2,2	I/2,27	I/2,33	I/2,3	I/2,26	I/2,26	I/2,29▲			
	2								109		205		422		814		1 445	1 806		2	1000	
			–	–	–	–	–	–	2 080	–	3 820	–	8 250	–	15 540	–	26 940	33 670	–			
									I/2		I/1,95		I/2,05		I/2		I/1,95	I/1,95				
5 600 000	31,5		–	250	280	515	605	1 060	1 800	2 780	4 290	5 780	8 910	12 260	17 500	24 180	30 650	38 140	48 360			
				3I/33,5	3I/34,9	3I/32,8	3I/32,8	3I/32,6	3I/33,5	3I/32,2	3I/31,6	3I/32,8	3I/31,5	3I/30,6	3I/33,5	3I/32,5	3I/33,5	3I/33,5	3I/34,7			
	28		–	–	–	–	–	900	–	2 580	4 400	5 170	8 950	11 620	17 970	23 210	31 460	39 150	47 660			
								2I/28,8		3I/29,1	3I/28,4	3I/28,6	3I/27,2	3I/27,3	3I/28,7	3I/28,8	3I/30	3I/30	3I/30,3			
	25		110	235	290	495	580	1 050	2 110	3 000	4 500	6 200	9 180	11 770	18 550	23 370	26 340	37 260	42 050			
			2I/24,4	2I/24,1	2I/25,1	2I/26	2I/26	2I/23,7	2I/24,1	2I/24,1	2I/24,6	2I/25,4	2I/24,2	2I/25	2I/25	2I/24,6	2I/25	2I/25	2I/25,7			
	22,4		–	–	–	–	–	–	–	3 240	5 090	6 650	9 370	12 030	20 600	23 360	29 630	37 910	46 810			
										2I/21,7	2I/22,5	2I/23,3	2I/22,2	2I/23	2I/22	2I/22,2	2I/22,8	2I/22,8	2I/23,4			
	20		130	255	335	585	690	1 090	2 180	3 290	5 180	6 470	9 540	12 920	19 310	25 490	32 320	39 290	51 090			
			2I/20,1	2I/19,3	2I/20,1	2I/20,8	2I/20,8	2I/19,3	2I/19,3	2I/19,6	2I/20,7	2I/20,8	2I/20,3	2I/20	2I/19,7	2I/20,1	2I/20,6	2I/20,6	2I/20,3			
	18		–	–	–	–	–	–	–	3 270	5 100	6 830	9 780	13 730	19 830	27 070	34 380	42 820	53 810			
										2I/17,6	2I/18,1	2I/18	2I/17,6	2I/18,1	2I/17,8	2I/17,9	2I/17,8	2I/17,8	2I/18,3			
	16		145	265	345	645	760	1 130	2 190	3 250	5 500	6 770	10 050	13 260	20 170	25 850	35 320	43 990	53 490			
			2I/16,3	2I/15,8	2I/16,5	2I/15,7	2I/15,7	2I/16,1	2I/15,8	2I/15,1	2I/15,7	2I/16,6	2I/16,1	2I/15,6	2I/16,2	2I/15,7	2I/15,9	2I/15,9	2I/16			
	14		–	–	–	–	–	–	–	3 320	5 400	7 160	10 320	12 880	22 130	25 590	36 260	44 330	56 430			
										2I/14,7	2I/14,1	2I/14,4	2I/13,9	2I/14,6	2I/14,6	2I/14,7	2I/14,3	2I/14,3	2I/14,4			
	12,5		145	265	345	585	690	1 130	2 270	3 370	5 290	7 060	10 100	14 080	20 250	27 880	35 250	42 960	55 800			
			2I/12,3	2I/13,1	2I/13,6	2I/13,7	2I/13,7	2I/12,3	2I/13,1	2I/13,3	2I/13,6	2I/13,6	2I/13	2I/12,8	2I/13,1	2I/13,3	2I/13,4	2I/13,4	2I/13,1			
	11,2		–	–	–	–	–	–	–	3 470	5 180	7 370	10 500	14 700	21 100	29 040	36 850	45 940	58 100			
										2I/11,9	2I/11,9	2I/11,8	2I/11,2	2I/11,5	2I/11,8	2I/11,9	2I/11,5	2I/11,5	2I/11,8			
	10		145	270	355	655	770	1 160	2 330	3 330	5 570	6 930	10 630	14 890	21 360	29 410	37 320	46 520	58 840			
			2I/10,2	2I/10,7	2I/11,2	2I/10,3	2I/10,3	2I/10,2	2I/10,7	2I/10,2	2I/10,3	2I/10,7	2I/10,2	2I/9,95	2I/10,7	2I/10,4	2I/10,3	2I/10,3	2I/10,7			
	9		–	–	–	–	–	–	–	3 050	5 300	6 120	10 780	13 720	21 670	28 070	37 850	47 180	56 340			
										2I/9,22	2I/9,24	2I/9,31	2I/8,85	2I/8,88	2I/9,19	2I/9,22	2I/9,24	2I/9,24	2I/9,31			
	8		150	275	345	620	725	1 190	2 390	–	5 360	–	10 940	–	21 980	–	38 390	47 860	–			
			2I/8,01	2I/8,26	2I/7,99	2I/8,03	2I/8,03	2I/8,01	2I/8,26		2I/8,03		2I/8,01		2I/8,26		2I/8,03	2I/8,03				
			6,12	11,3	12,8	24,2	28,5	50,7	98,7		201		461		908		–	–		6,3	2800	450
	6,3		135	250	300	530	625	1 110	2 200	–	4 400	–	10 100	–	20 240	–	34 310	40 510	–			
			2I/6,42	2I/6,53	2I/6,86	2I/6,41	2I/6,41	2I/6,42	2I/6,53		2I/6,41		2I/6,42		2I/6,53▲		2I/6,41	2I/6,41				
				12,4		25,4		49,2	96,6	145	229	276	426	529	–	–	–	–	–	5	2240	
	5		–	265	–	565	–	1 010	2 060	3 100	4 810	5 960	8 940	11 430	14 460	22 610	28 570	35 720	39 490			
				I/5		I/5,2		I/4,82	I/5	I/5	I/4,92	I/5,07	I/4,92	I/5,07	I/5,08	I/5	I/4,92	I/4,92	I/5,07			
									98,1	146	228	286	423	523	784	949	–	–	–	4,5	2000	
	4,5		–	–	–	–	–	–	2 090	3 140	4 890	6 370	9 100	11 660	16 720	20 390	29 000	36 250	39 830			
									I/4,45	I/4,5	I/4,5	I/4,67	I/4,5	I/4,67	I/4,47	I/4,5	I/4,5	I/4,5	I/4,6			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
5 600 000			14,8		30,3		49,9	99,4	152	227	284	421	559	737	1 052	1 347	1 684	1 822	4	1800	**450**
	4	–	315 **I/4**	–	670 **I/4,16**	–	1 040 **I/3,92**	2 110 **I/4**	3 290 **I/4,08**	4 970 **I/4,13**	6 270 **I/4,15**	9 240 **I/4,13**	12 070 **I/4,07**	15 630 **I/4**	22 760 **I/4,08**	29 070 **I/4,07**	36 340 **I/4,07**	38 660 **I/4▲**			
								119	151	215	313	428	551	775	992	1 342	1 677	1 797	3,55	1600	
	3,55	–	–	–	–	–	–	2 570 **I/3,62**	3 280 **I/3,64**	4 640 **I/3,62**	6 730 **I/3,6**	9 130 **I/3,57**	12 060 **I/3,67**	16 730 **I/3,62**	21 560 **I/3,64**	28 030 **I/3,5**	35 040 **I/3,5**	38 610 **I/3,6▲**			
			14,5		32,3		62	117	157	234	304	418	568	722	1 085	1 309	1 636	1 745	3,15	1400	
	3,15	–	325 **I/3,28**	–	690 **I/3,13**	–	1 380 **I/3,27**	2 620 **I/3,28**	3 350 **I/3,13**	5 000 **I/3,13**	6 750 **I/3,25**	9 310 **I/3,27**	12 310 **I/3,18**	16 190 **I/3,28**	23 600 **I/3,19**	27 980 **I/3,13**	34 980 **I/3,13**	38 690 **I/3,25▲**			
								123	154	231	316	437	556	802	1 012	1 290	1 612	1 812	2,8	1250	
	2,8	–	–	–	–	–	–	2 590 **I/2,75**	3 320 **I/2,82**	4 950 **I/2,81**	6 840 **I/2,83**	9 430 **I/2,82**	12 030 **I/2,83**	17 230 **I/2,81**	21 830 **I/2,82**	27 710 **I/2,81**	34 640 **I/2,81**	39 230 **I/2,83▲**			
			15,1		33,9		60,5	121	159	228	286	428	589	750	1 047	1 342	1 678	1 863	2,5	1120	
	2,5	–	325 **I/2,53**	–	710 **I/2,44**	–	1 320 **I/2,55**	2 610 **I/2,53**	3 430 **I/2,53**	4 750 **I/2,44**	6 090 **I/2,5**	9 330 **I/2,55**	12 200 **I/2,43**	16 170 **I/2,53**	22 540 **I/2,53**	27 980 **I/2,44**	34 980 **I/2,44**	39 710 **I/2,5**			
								118	155	205	255	425	529	733	1 017	1 308	1 636	1 806	2,24	1000	
	2,24	–	–	–	–	–	–	2 580 **I/2,28**	3 400 **I/2,3**	4 330 **I/2,21**	5 450 **I/2,24**	8 930 **I/2,2**	11 470 **I/2,27**	16 330 **I/2,33**	22 340 **I/2,3**	28 280 **I/2,26**	35 350 **I/2,26**	39 420 **I/2,29**			
								99,3		185		380		756		1 342	1 678		2	900	
	2	–	–	–	–	–	–	2 110 **I/2**	–	3 820 **I/1,95**	–	8 250 **I/2,05**	–	16 040 **I/2**	–	27 800 **I/1,95**	34 760 **I/1,95**	–			
5 000 000																					
	35,5	–	–	–	–	–	–	–	2 890 **3I/37,5**	4 870 **3I/36,5**	6 130 **3I/36,3**	9 750 **3I/34,4**	12 260 **3I/35,4**	17 660 **3I/36,9**	24 180 **3I/37,2**	30 650 **3I/37,4**	38 140 **3I/37,4**	48 360 **3I/38,4**			
	31,5	–	255 **3I/33,5**	290 **3I/34,9**	530 **3I/32,8**	625 **3I/32,8**	1 090 **3I/32,6**	1 850 **3I/33,5**	2 860 **3I/32,2**	4 400 **3I/31,6**	5 930 **3I/32,8**	9 220 **3I/31,5**	12 580 **3I/30,6**	17 970 **3I/33,5**	24 820 **3I/32,5**	31 460 **3I/33,5**	39 150 **3I/33,5**	49 640 **3I/34,7**			
	28	–	–	–	–	–	925 **2I/28,8**	–	2 650 **3I/29,1**	4 530 **3I/28,4**	5 310 **3I/28,6**	9 190 **3I/27,2**	11 930 **3I/27,3**	18 460 **3I/28,7**	23 850 **3I/28,8**	32 320 **3I/30**	40 230 **3I/30**	48 970 **3I/30,3**			
	25	110 **2I/24,4**	245 **2I/24,1**	300 **2I/25,1**	495 **2I/26**	585 **2I/26**	1 090 **2I/23,7**	2 120 **2I/24,1**	3 070 **2I/24,1**	4 620 **2I/24,6**	6 410 **2I/25,4**	9 500 **2I/24,2**	12 180 **2I/25**	19 190 **2I/25**	24 170 **2I/24,6**	27 010 **2I/25**	38 540 **2I/25**	43 120 **2I/25,7**			
	22,4	–	–	–	–	–	–	–	3 350 **2I/21,7**	5 260 **2I/22,5**	6 860 **2I/23,3**	9 670 **2I/22,2**	12 410 **2I/23**	21 200 **2I/22**	24 030 **2I/22,2**	30 470 **2I/22,8**	39 120 **2I/22,8**	48 140 **2I/23,4**			
	20	135 **2I/20,1**	265 **2I/19,3**	345 **2I/20,1**	590 **2I/20,8**	690 **2I/20,8**	1 130 **2I/19,3**	2 250 **2I/19,3**	3 400 **2I/19,6**	5 370 **2I/20,7**	6 670 **2I/20,8**	9 880 **2I/20,3**	13 340 **2I/20**	20 000 **2I/19,7**	26 320 **2I/20,1**	33 360 **2I/20,6**	40 560 **2I/20,6**	52 740 **2I/20,3**			
	18	–	–	–	–	–	–	–	3 390 **2I/17,6**	5 290 **2I/18,1**	7 080 **2I/18**	10 050 **2I/17,6**	14 110 **2I/18,1**	20 550 **2I/17,8**	27 810 **2I/17,9**	35 320 **2I/17,8**	43 990 **2I/17,8**	55 280 **2I/18,3**			
	16	150 **2I/16,3**	275 **2I/15,8**	360 **2I/16,5**	670 **2I/15,7**	785 **2I/15,7**	1 170 **2I/16,1**	2 250 **2I/15,8**	3 330 **2I/15,1**	5 700 **2I/15,7**	6 950 **2I/16,6**	10 320 **2I/16,1**	13 610 **2I/15,6**	20 700 **2I/16,2**	26 540 **2I/15,7**	36 260 **2I/15,9**	45 160 **2I/15,9**	54 910 **2I/16**			
	14	–	–	–	–	–	–	–	3 440 **2I/14,7**	5 600 **2I/14,1**	7 350 **2I/14,4**	10 600 **2I/13,9**	13 230 **2I/14,6**	22 410 **2I/14,6**	26 290 **2I/14,7**	37 250 **2I/14,3**	45 550 **2I/14,3**	57 970 **2I/14,4**			
	12,5	150 **2I/12,3**	275 **2I/13,1**	355 **2I/13,6**	590 **2I/13,7**	695 **2I/13,7**	1 150 **2I/12,3**	2 320 **2I/13,1**	3 490 **2I/13,3**	5 470 **2I/13,6**	7 160 **2I/13,6**	10 240 **2I/13**	14 270 **2I/12,8**	20 540 **2I/13,1**	28 260 **2I/13,3**	35 730 **2I/13,4**	43 540 **2I/13,4**	56 560 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 510 **2I/11,9**	5 350 **2I/11,9**	7 460 **2I/11,8**	10 630 **2I/11,2**	14 890 **2I/11,5**	21 360 **2I/11,8**	29 410 **2I/11,9**	37 320 **2I/11,5**	46 520 **2I/11,5**	58 840 **2I/11,8**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
5 000 000	10	150 **2I/10,2**	280 **2I/10,7**	365 **2I/11,2**	680 **2I/10,3**	800 **2I/10,3**	1 180 **2I/10,2**	2 370 **2I/10,7**	3 380 **2I/10,2**	5 770 **2I/10,3**	7 140 **2I/10,7**	10 780 **2I/10,2**	15 100 **2I/9,95**	21 670 **2I/10,7**	29 830 **2I/10,4**	37 850 **2I/10,3**	47 180 **2I/10,3**	59 670 **2I/10,7**			
	9	–	–	–	–	–	–	–	3 100 **2I/9,22**	5 370 **2I/9,24**	6 210 **2I/9,31**	10 940 **2I/8,85**	13 910 **2I/8,88**	21 980 **2I/9,19**	28 480 **2I/9,22**	38 390 **2I/9,24**	47 860 **2I/9,24**	57 150 **2I/9,31**			
	8	150 **2I/8,01**	280 **2I/8,26**	350 **2I/7,99**	640 **2I/8,03**	755 **2I/8,03**	1 210 **2I/8,01**	2 430 **2I/8,26**	–	5 440 **2I/8,03**	–	11 100 **2I/8,01**	–	22 290 **2I/8,26**	–	38 940 **2I/8,03**	48 540 **2I/8,03**	–			
		5,54	10,2	11,8	22,4	26,3	46,9	89,4		182		418		822		–	–		6,3	2500	**400**
	6,3	135 **2I/6,42**	255 **2I/6,53**	310 **2I/6,86**	550 **2I/6,41**	645 **2I/6,41**	1 150 **2I/6,42**	2 230 **2I/6,53**	–	4 460 **2I/6,41**	–	10 230 **2I/6,42**	–	20 510 **2I/6,53▲**	–	34 780 **2I/6,41**	41 060 **2I/6,41**	–			
			11,4		22,8		45,5	89,2	134	211	255	393	488	617	980	–	–	–	5	2000	
	5	–	270 **I/5**	–	565 **I/5,2**	–	1 050 **I/4,82**	2 130 **I/5**	3 200 **I/5**	4 970 **I/4,92**	6 170 **I/5,07**	9 250 **I/4,92**	11 830 **I/5,07**	14 960 **I/5,08**	23 390 **I/5**	29 560 **I/4,92**	36 950 **I/4,92**	40 860 **I/5,07**			
								91,1	136	212	265	393	486	728	882	1 254	1 567	1 684	4,5	1800	
	4,5	–	–	–	–	–	–	2 150 **I/4,45**	3 250 **I/4,5**	5 050 **I/4,5**	6 570 **I/4,67**	9 390 **I/4,5**	12 030 **I/4,67**	17 260 **I/4,47**	21 050 **I/4,5**	29 930 **I/4,5**	37 420 **I/4,5**	41 110 **I/4,6▲**			
			13,2		26,9		45,9	91,5	140	209	262	388	514	678	969	1 241	1 551	1 677	4	1600	
	4	–	315 **I/4**	–	670 **I/4,16**	–	1 080 **I/3,92**	2 180 **I/4**	3 410 **I/4,08**	5 150 **I/4,13**	6 490 **I/4,15**	9 570 **I/4,13**	12 500 **I/4,07**	16 190 **I/4**	23 580 **I/4,08**	30 120 **I/4,07**	37 650 **I/4,07**	40 050 **I/4**			
								108	137	196	285	390	502	706	903	1 222	1 528	1 636	3,55	1400	
	3,55	–	–	–	–	–	–	2 680 **I/3,62**	3 420 **I/3,64**	4 830 **I/3,62**	7 010 **I/3,6**	9 500 **I/3,57**	12 550 **I/3,67**	17 410 **I/3,62**	22 440 **I/3,64**	29 180 **I/3,5**	36 470 **I/3,5**	40 180 **I/3,6**			
			12,9		28,8		56,1	108	145	216	281	386	525	667	1 003	1 209	1 512	1 612	3,15	1250	
	3,15	–	325 **I/3,28**	–	690 **I/3,13**	–	1 400 **I/3,27**	2 710 **I/3,28**	3 460 **I/3,13**	5 180 **I/3,13**	6 980 **I/3,25**	9 630 **I/3,27**	12 740 **I/3,18**	16 750 **I/3,28**	24 410 **I/3,19**	28 950 **I/3,13**	36 180 **I/3,13**	40 020 **I/3,25**			
								114	143	214	286	405	514	743	937	1 194	1 493	1 678	2,8	1120	
	2,8	–	–	–	–	–	–	2 670 **I/2,75**	3 430 **I/2,82**	5 120 **I/2,81**	6 900 **I/2,83**	9 740 **I/2,82**	12 430 **I/2,83**	17 810 **I/2,81**	22 560 **I/2,82**	28 640 **I/2,81**	35 800 **I/2,81**	40 540 **I/2,83**			
			13,9		30,4		54	112	147	203	255	396	526	693	967	1 240	1 550	1 721	2,5	1000	
	2,5	–	335 **I/2,53**	–	710 **I/2,44**	–	1 320 **I/2,55**	2 700 **I/2,53**	3 550 **I/2,53**	4 750 **I/2,44**	6 090 **I/2,5**	9 650 **I/2,55**	12 200 **I/2,43**	16 730 **I/2,53**	23 320 **I/2,53**	28 950 **I/2,44**	36 180 **I/2,44**	41 090 **I/2,5**			
								110	144	185	229	382	476	681	945	1 215	1 519	1 678	2,24	900	
	2,24	–	–	–	–	–	–	2 660 **I/2,28**	3 510 **I/2,3**	4 330 **I/2,21**	5 450 **I/2,24**	8 930 **I/2,2**	11 470 **I/2,27**	16 860 **I/2,33**	23 060 **I/2,3**	29 190 **I/2,26**	36 480 **I/2,26**	40 690 **I/2,29**			
								89,5		164		338		696		1 236	1 520		2	800	
	2	–	–	–	–	–	–	2 140 **I/2**	–	3 820 **I/1,95**	–	8 250 **I/2,05**	–	16 620 **I/2**	–	28 800 **I/1,95**	35 430 **I/1,95**	–			
4 500 000	40	–	265 **3I/40,8**	325 **3I/42,5**	560 **3I/43,6**	650 **3I/43,6**	1 150 **3I/39,1**	2 030 **3I/40,8**	2 890 **3I/38,7**	5 140 **3I/38,5**	5 930 **3I/39,9**	10 600 **3I/41,5**	12 520 **3I/40,4**	18 030 **3I/42,4**	24 180 **3I/41,2**	30 650 **3I/40,7**	38 140 **3I/40,7**	48 360 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	2 970 **3I/37,5**	5 040 **3I/36,5**	6 290 **3I/36,3**	10 080 **3I/34,4**	12 580 **3I/35,4**	18 280 **3I/36,9**	24 820 **3I/37,2**	31 460 **3I/37,4**	39 150 **3I/37,4**	49 640 **3I/38,4**			
	31,5	–	265 **3I/33,5**	290 **3I/34,9**	550 **3I/32,8**	645 **3I/32,8**	1 130 **3I/32,6**	1 900 **3I/33,5**	2 930 **3I/32,2**	4 530 **3I/31,6**	6 090 **3I/32,8**	9 530 **3I/31,5**	12 930 **3I/30,6**	18 460 **3I/33,5**	25 500 **3I/32,5**	32 320 **3I/33,5**	40 230 **3I/33,5**	51 000 **3I/34,7**			
	28	–	–	–	–	–	950 **2I/28,8**	–	2 720 **3I/29,1**	4 640 **3I/28,4**	5 450 **3I/28,6**	9 430 **3I/27,2**	12 240 **3I/27,3**	18 930 **3I/28,7**	24 460 **3I/28,8**	33 150 **3I/30**	41 250 **3I/30**	50 210 **3I/30,3**			
	25	120 **2I/24,4**	250 **2I/24,1**	305 **2I/25,1**	495 **2I/26**	585 **2I/26**	1 120 **2I/23,7**	2 180 **2I/24,1**	3 150 **2I/24,1**	4 750 **2I/24,6**	6 620 **2I/25,4**	9 810 **2I/24,2**	12 570 **2I/25**	19 810 **2I/25**	24 950 **2I/24,6**	27 780 **2I/25**	39 780 **2I/25**	44 350 **2I/25,7**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ...	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
4 500 000	22,4	/ i	–	–	–	–	–	–	–	3 470 2I/21,7	5 440 2I/22,5	7 110 2I/23,3	10 020 2I/22,2	12 860 2I/23	22 450 2I/22	24 810 2I/22,2	31 460 2I/22,8	40 530 2I/22,8	49 700 2I/23,4			
	20		140 2I/20,1	275 2I/19,3	360 2I/20,1	590 2I/20,8	695 2I/20,8	1 170 2I/19,3	2 340 2I/19,3	3 530 2I/19,6	5 570 2I/20,7	6 860 2I/20,8	10 240 2I/20,3	13 700 2I/20	20 730 2I/19,7	27 040 2I/20,1	34 280 2I/20,6	41 670 2I/20,6	54 190 2I/20,3			
	18		–	–	–	–	–	–	–	3 510 2I/17,6	5 480 2I/18,1	7 340 2I/18	10 320 2I/17,6	14 480 2I/18,1	21 300 2I/17,8	28 550 2I/17,9	36 260 2I/17,8	45 160 2I/17,8	56 750 2I/18,3			
	16		155 2I/16,3	285 2I/15,8	370 2I/16,5	695 2I/15,7	815 2I/15,7	1 210 2I/16,1	2 310 2I/15,8	3 430 2I/15,1	5 910 2I/15,7	7 140 2I/16,6	10 600 2I/16,1	13 980 2I/15,6	21 270 2I/16,2	27 270 2I/15,7	37 250 2I/15,9	46 400 2I/15,9	56 410 2I/16			
	14		–	–	–	–	–	–	–	3 560 2I/14,7	5 790 2I/14,1	7 450 2I/14,4	10 750 2I/13,9	13 410 2I/14,6	22 490 2I/14,6	26 650 2I/14,7	37 760 2I/14,3	46 170 2I/14,3	58 760 2I/14,4			
	12,5		155 2I/12,3	280 2I/13,1	360 2I/13,6	590 2I/13,7	695 2I/13,7	1 160 2I/12,3	2 390 2I/13,1	3 600 2I/13,3	5 650 2I/13,6	7 250 2I/13,6	10 370 2I/13	14 450 2I/12,8	21 200 2I/13,1	28 610 2I/13,3	36 190 2I/13,4	44 090 2I/13,4	57 280 2I/13,1			
	11,2		–	–	–	–	–	–	–	3 580 2I/11,9	5 540 2I/11,9	7 570 2I/11,8	10 780 2I/11,2	15 100 2I/11,5	21 670 2I/11,8	29 830 2I/11,9	37 850 2I/11,5	47 180 2I/11,5	59 670 2I/11,8			
	10		155 2I/10,2	290 2I/10,7	380 2I/11,2	705 2I/10,3	825 2I/10,3	1 190 2I/10,2	2 450 2I/10,7	3 430 2I/10,2	5 980 2I/10,3	7 400 2I/10,7	10 940 2I/10,2	15 310 2I/9,95	21 980 2I/10,7	30 250 2I/10,4	38 390 2I/10,3	47 860 2I/10,3	60 530 2I/10,7			
	9		–	–	–	–	–	–	–	3 140 2I/9,22	5 450 2I/9,24	6 300 2I/9,31	11 100 2I/8,85	14 110 2I/8,88	22 290 2I/9,19	28 880 2I/9,22	38 940 2I/9,24	48 540 2I/9,24	57 970 2I/9,31			
	8	/ i M	5,58 150 2I/8,01	10,3 290 2I/8,26	13 355 2I/7,99	24,2 665 2I/8,03	28,5 780 2I/8,03	44,9 1 230 2I/8,01	87,3 2 460 2I/8,26	–	201 5 510 2I/8,03	–	412 11 250 2I/8,01	–	802 22 610 2I/8,26▲	–	– 39 490 2I/8,03	– 49 230 2I/8,03	–	8	2800	355
	6,3	/ i M	5,03 140 2I/6,42	9,29 260 2I/6,53	11 320 2I/6,86	20,7 565 2I/6,41	24,4 665 2I/6,41	43,4 1 190 2I/6,42	81,1 2 260 2I/6,53	–	165 4 520 2I/6,41	–	379 10 370 2I/6,42	–	746 20 790 2I/6,53	–	– 35 240 2I/6,41	– 41 610 2I/6,41	–	6,3	2240	
	5	/ i M	– –	10,3 270 I/5	– –	20,6 570 I/5,2	– –	42,2 1 080 I/4,82	82,9 2 200 I/5	125 3 310 I/5	196 5 130 I/4,92	237 6 360 I/5,07	365 9 540 I/4,92	454 12 210 I/5,07	573 15 440 I/5,08	910 24 150 I/5	1 168 30 510 I/4,92	1 460 38 140 I/4,92	1 567 42 170 I/5,07	5	1800	
	4,5	/ i M	– –	– –	– –	– –	– –	– –	83,9 2 230 I/4,45	125 3 360 I/4,5	195 5 230 I/4,5	244 6 810 I/4,67	362 9 730 I/4,5	448 12 470 I/4,67	671 17 880 I/4,47	812 21 800 I/4,5	1 155 31 010 I/4,5	1 443 38 760 I/4,5	1 551 42 590 I/4,6	4,5	1600	
	4	/ i M	– –	11,9 325 I/4	– –	24,4 695 I/4,16	– –	41,8 1 120 I/3,92	83,4 2 270 I/4	128 3 550 I/4,08	190 5 360 I/4,13	239 6 760 I/4,15	353 9 970 I/4,13	468 13 010 I/4,07	618 16 860 I/4	882 24 540 I/4,08	1 130 31 350 I/4,07	1 413 39 190 I/4,07	1 528 41 690 I/4	4	1400	
	3,55	/ i M	– –	– –	– –	– –	– –	– –	100 2 770 I/3,62	127 3 530 I/3,64	181 4 990 I/3,62	264 7 250 I/3,6	360 9 830 I/3,57	463 12 980 I/3,67	652 18 010 I/3,62	834 23 220 I/3,64	1 129 30 190 I/3,5	1 411 37 740 I/3,5	1 512 41 570 I/3,6	3,55	1250	
	3,15	/ i M	– –	11,6 325 I/3,28	– –	25,8 690 I/3,13	– –	51,3 1 430 I/3,27	99,9 2 800 I/3,28	134 3 580 I/3,13	200 5 350 I/3,13	260 7 220 I/3,25	357 9 950 I/3,27	486 13 160 I/3,18	618 17 310 I/3,28	928 25 230 I/3,19	1 120 29 920 I/3,13	1 400 37 400 I/3,13	1 493 41 360 I/3,25	3,15	1120	
	2,8	/ i M	– –	– –	– –	– –	– –	– –	105 2 770 I/2,75	132 3 550 I/2,82	197 5 300 I/2,81	255 6 900 I/2,83	374 10 080 I/2,82	475 12 860 I/2,83	686 18 430 I/2,81	866 23 340 I/2,82	1 103 29 630 I/2,81	1 379 37 030 I/2,81	1 550 41 940 I/2,83	2,8	1000	
	2,5	/ i M	– –	12,5 335 I/2,53	– –	27,4 710 I/2,44	– –	48,6 1 320 I/2,55	104 2 790 I/2,53	137 3 660 I/2,53	183 4 750 I/2,44	230 6 090 I/2,5	367 9 960 I/2,55	473 12 200 I/2,43	643 17 270 I/2,53	898 24 070 I/2,53	1 152 29 880 I/2,44	1 440 37 350 I/2,44	1 599 42 410 I/2,5	2,5	900	

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
4 500 000								101	132	164	204	340	423	627	870	1 119	1 399	1 545	2,24	800	**355**
	2,24	–	–	–	–	–	–	2 750 **I/2,28**	3 630 **I/2,3**	4 330 **I/2,21**	5 450 **I/2,24**	8 930 **I/2,2**	11 470 **I/2,27**	17 460 **I/2,33**	23 890 **I/2,3**	30 240 **I/2,26**	37 800 **I/2,26**	42 150 **I/2,29**			
								80,5		146		300		640		1 137	1 349		2	710	
	2	–	–	–	–	–	–	2 170 **I/2**	–	3 820 **I/1,95**	–	8 250 **I/2,05**	–	17 220 **I/2**	–	29 850 **I/1,95**	35 430 **I/1,95**	–			
4 000 000	45	–	–	–	–	–	–	–	3 370 **3I/45,1**	5 300 **3I/44,4**	6 560 **3I/44,2**	10 600 **3I/45,4**	14 450 **3I/46,6**	19 840 **3I/46,7**	24 180 **3I/47,1**	30 650 **3I/45,5**	38 140 **3I/45,5**	48 360 **3I/46,8**			
	40	–	270 **3I/40,8**	335 **3I/42,5**	580 **3I/43,6**	670 **3I/43,6**	1 180 **3I/39,1**	2 100 **3I/40,8**	2 990 **3I/38,7**	5 320 **3I/38,5**	6 130 **3I/39,9**	10 900 **3I/41,5**	12 950 **3I/40,4**	18 660 **3I/42,4**	24 820 **3I/41,2**	31 460 **3I/40,7**	39 150 **3I/40,7**	49 640 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	3 050 **3I/37,5**	5 210 **3I/36,5**	6 460 **3I/36,3**	10 420 **3I/34,4**	12 930 **3I/35,4**	18 890 **3I/36,9**	25 500 **3I/37,2**	32 320 **3I/37,4**	40 230 **3I/37,4**	51 000 **3I/38,4**			
	31,5	–	270 **3I/33,5**	300 **3I/34,9**	570 **3I/32,8**	670 **3I/32,8**	1 170 **3I/32,6**	1 950 **3I/33,5**	3 010 **3I/32,2**	4 670 **3I/31,6**	6 250 **3I/32,8**	9 860 **3I/31,5**	13 260 **3I/30,6**	18 930 **3I/33,5**	26 150 **3I/32,5**	33 150 **3I/33,5**	41 250 **3I/33,5**	52 300 **3I/34,7**			
	28	–	–	–	–	–	975 **2I/28,8**	–	2 800 **3I/29,1**	4 770 **3I/28,4**	5 600 **3I/28,6**	9 700 **3I/27,2**	12 590 **3I/27,3**	19 470 **3I/28,7**	25 160 **3I/28,8**	34 090 **3I/30**	42 420 **3I/30**	51 640 **3I/30,3**			
	25	120 **2I/24,4**	255 **2I/24,1**	315 **2I/25,1**	500 **2I/26**	585 **2I/26**	1 150 **2I/23,7**	2 240 **2I/24,1**	3 250 **2I/24,1**	5 000 **2I/24,6**	6 860 **2I/25,4**	10 160 **2I/24,2**	13 020 **2I/25**	20 520 **2I/25**	25 850 **2I/24,6**	28 680 **2I/25**	41 210 **2I/25**	45 790 **2I/25,7**			
	22,4	–	–	–	–	–	–	–	3 590 **2I/21,7**	5 640 **2I/22,5**	7 370 **2I/23,3**	10 390 **2I/22,2**	13 330 **2I/23**	22 540 **2I/22**	25 490 **2I/22,2**	32 320 **2I/22,8**	42 010 **2I/22,8**	51 060 **2I/23,4**			
	20	140 **2I/20,1**	285 **2I/19,3**	360 **2I/20,1**	590 **2I/20,8**	695 **2I/20,8**	1 210 **2I/19,3**	2 420 **2I/19,3**	3 660 **2I/19,6**	5 770 **2I/20,7**	7 040 **2I/20,8**	10 610 **2I/20,3**	14 070 **2I/20**	21 490 **2I/19,7**	27 760 **2I/20,1**	35 190 **2I/20,6**	42 770 **2I/20,6**	55 630 **2I/20,3**			
	18	–	–	–	–	–	–	–	3 640 **2I/17,6**	5 680 **2I/18,1**	7 600 **2I/18**	10 600 **2I/17,6**	14 880 **2I/18,1**	22 060 **2I/17,8**	29 330 **2I/17,9**	37 250 **2I/17,8**	46 400 **2I/17,8**	58 300 **2I/18,3**			
	16	160 **2I/16,3**	295 **2I/15,8**	385 **2I/16,5**	700 **2I/15,7**	830 **2I/15,7**	1 250 **2I/16,1**	2 360 **2I/15,8**	3 470 **2I/15,1**	6 110 **2I/15,7**	7 240 **2I/16,6**	10 750 **2I/16,1**	14 170 **2I/15,6**	21 560 **2I/16,2**	27 640 **2I/15,7**	37 760 **2I/15,9**	47 030 **2I/15,9**	57 180 **2I/16**			
	14	–	–	–	–	–	–	–	3 680 **2I/14,7**	5 970 **2I/14,1**	7 600 **2I/14,4**	10 880 **2I/13,9**	13 580 **2I/14,6**	22 570 **2I/14,6**	26 980 **2I/14,7**	38 240 **2I/14,3**	46 750 **2I/14,3**	59 510 **2I/14,4**			
	12,5	160 **2I/12,3**	290 **2I/13,1**	360 **2I/13,6**	595 **2I/13,7**	700 **2I/13,7**	1 200 **2I/12,3**	2 480 **2I/13,1**	3 730 **2I/13,3**	5 850 **2I/13,6**	7 350 **2I/13,6**	10 520 **2I/13**	14 660 **2I/12,8**	21 960 **2I/13,1**	29 020 **2I/13,3**	36 700 **2I/13,4**	44 720 **2I/13,4**	58 090 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 710 **2I/11,9**	5 750 **2I/11,9**	7 690 **2I/11,8**	10 940 **2I/11,2**	15 310 **2I/11,5**	22 250 **2I/11,8**	30 250 **2I/11,9**	38 390 **2I/11,5**	47 860 **2I/11,5**	60 530 **2I/11,8**			
	10	165 **2I/10,2**	305 **2I/10,7**	395 **2I/11,2**	705 **2I/10,3**	830 **2I/10,3**	1 240 **2I/10,2**	2 540 **2I/10,7**	3 470 **2I/10,2**	6 200 **2I/10,3**	7 670 **2I/10,7**	11 100 **2I/10,2**	15 530 **2I/9,95**	22 290 **2I/10,7**	30 690 **2I/10,4**	38 940 **2I/10,3**	48 540 **2I/10,3**	61 400 **2I/10,7**			
									101	175	201	373	473	721	931	–	–	–	9	2800	**315**
	9	–	–	–	–	–	–	–	3 180 **2I/9,22**	5 530 **2I/9,24**	6 390 **2I/9,31**	11 250 **2I/8,85**	14 310 **2I/8,88**	22 610 **2I/9,19▲**	29 290 **2I/9,22▲**	39 490 **2I/9,24**	49 230 **2I/9,24**	58 790 **2I/9,31**			
		5,05	9,48	11,8	22,4	26,3	40,7	80,1		182		373		726		–	–		8	2500	
	8	155 **2I/8,01**	300 **2I/8,26**	360 **2I/7,99**	685 **2I/8,03**	810 **2I/8,03**	1 240 **2I/8,01**	2 530 **2I/8,26**	–	5 590 **2I/8,03**	–	11 410 **2I/8,01**	–	22 920 **2I/8,26▲**	–	40 030 **2I/8,03**	49 900 **2I/8,03**	–			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ...	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
4 000 000			4,55	8,41	10,1	19,1	22,5	40,1	73,4		150		343		675		1 166	1 377		6,3	2000	**315**
	6,3	/ i	140	260	330	585	690	1 230	2 290	–	4 580	–	10 510	–	21 070	–	35 720	42 170	–			
			2I/6,42	**2I/6,53**	**2I/6,86**	**2I/6,41**	**2I/6,41**	**2I/6,42**	**2I/6,53**		**2I/6,41**		**2I/6,42**		**2I/6,53**		**2I/6,41 ▲**	**2I/6,41 ▲**				
				9,38		18,4		38,9	76,3	114	175	218	336	418	528	838	1 076	1 345	1 443	5	1600	
	5	/ i	–	280	–	570	–	1 120	2 280	3 400	5 150	6 590	9 890	12 650	16 000	25 010	31 610	39 510	43 680			
				I/5		**I/5,2**		**I/4,82**	**I/5**	**I/5**	**I/4,92**	**I/5,07**	**I/4,92**	**I/5,07**	**I/5,08**	**I/5**	**I/4,92**	**I/4,92**	**I/5,07**			
									76,4	114	177	223	330	408	611	739	1 052	1 314	1 413	4,5	1400	
	4,5	/ i	–	–	–	–	–	–	2 320	3 500	5 450	7 080	10 130	12 980	18 610	22 690	32 280	40 350	44 330			
									I/4,45	**I/4,5**	**I/4,5**	**I/4,67**	**I/4,5**	**I/4,67**	**I/4,47**	**I/4,5**	**I/4,5**	**I/4,5**	**I/4,6**			
				10,6		21,9		38,7	77	118	176	220	327	433	571	815	1 044	1 305	1 411	4	1250	
	4	/ i	–	325	–	695	–	1 160	2 350	3 670	5 540	6 990	10 310	13 460	17 440	25 390	32 430	40 540	43 130			
				I/4		**I/4,16**		**I/3,92**	**I/4**	**I/4,08**	**I/4,13**	**I/4,15**	**I/4,13**	**I/4,07**	**I/4**	**I/4,08**	**I/4,07**	**I/4,07**	**I/4**			
									92,8	118	167	244	334	429	604	772	1 045	1 307	1 400	3,55	1120	
	3,55	/ i	–	–	–	–	–	–	2 860	3 650	5 160	7 490	10 160	13 420	18 610	23 990	31 200	39 000	42 970			
									I/3,62	**I/3,64**	**I/3,62**	**I/3,6**	**I/3,57**	**I/3,67**	**I/3,62**	**I/3,64**	**I/3,5**	**I/3,5**	**I/3,6**			
				10,7		23,7		45,8	92,3	124	185	241	330	449	571	858	1 034	1 293	1 379	3,15	1000	
	3,15	/ i	–	335	–	710	–	1 430	2 890	3 700	5 530	7 460	10 300	13 620	17 910	26 100	30 950	38 690	42 800			
				I/3,28		**I/3,13**		**I/3,27**	**I/3,28**	**I/3,13**	**I/3,13**	**I/3,25**	**I/3,27**	**I/3,18**	**I/3,28**	**I/3,19**	**I/3,13**	**I/3,13**	**I/3,25**			
									97,9	122	183	230	347	441	637	804	1 025	1 281	1 440	2,8	900	
	2,8	/ i	–	–	–	–	–	–	2 860	3 670	5 450	6 900	10 400	13 270	19 020	24 090	30 580	38 220	43 290			
									I/2,75	**I/2,82**	**I/2,81**	**I/2,83**	**I/2,82**	**I/2,83**	**I/2,81**	**I/2,82**	**I/2,81**	**I/2,81**	**I/2,83**			
				11,1		24,3		43,2	95,7	126	163	204	338	421	592	827	1 061	1 326	1 472	2,5	800	
	2,5	/ i	–	335	–	710	–	1 320	2 890	3 790	4 750	6 090	10 300	12 200	17 890	24 940	30 950	38 690	43 930			
				I/2,53		**I/2,44**		**I/2,55**	**I/2,53**	**I/2,53**	**I/2,44**	**I/2,5**	**I/2,55**	**I/2,43**	**I/2,53**	**I/2,53**	**I/2,44**	**I/2,44**	**I/2,5**			
									93,2	118	146	181	302	375	577	800	1 030	1 287	1 421	2,24	710	
	2,24	/ i	–	–	–	–	–	–	2 860	3 650	4 330	5 450	8 930	11 470	18 100	24 760	31 340	39 170	43 690			
									I/2,28	**I/2,3**	**I/2,21**	**I/2,24**	**I/2,2**	**I/2,27**	**I/2,33**	**I/2,3**	**I/2,26**	**I/2,26**	**I/2,29**			
									72,4		129		266		577		1 014	1 197		2	630	
	2	/ i	–	–	–	–	–	–	2 190	–	3 820	–	8 250	–	17 500	–	30 000	35 430	–			
									I/2		**I/1,95**		**I/2,05**		**I/2**		**I/1,95**	**I/1,95**				
3 550 000	50	/ i	–	265	335	560	670	1 150	2 150	3 450	5 150	7 300	10 300	14 500	20 600	23 500	32 050	40 060	46 990			
				3I/49,4	**3I/51,5**	**3I/49,8**	**3I/49,8**	**3I/51,2**	**3I/49,5**	**3I/50,4**	**3I/50,8**	**3I/51**	**3I/52,6**	**3I/51,8**	**3I/51,7**	**3I/52,7**	**3I/52,9**	**3I/52,9**	**3I/52**			
	45	/ i	–	–	–	–	–	–	–	3 480	5 300	6 790	10 900	14 950	20 530	24 820	31 460	39 150	49 640			
										3I/45,1	**3I/44,4**	**3I/44,2**	**3I/45,4**	**3I/46,6**	**3I/46,7**	**3I/47,1**	**3I/45,5**	**3I/45,5**	**3I/46,8**			
	40	/ i	–	280	335	595	670	1 220	2 170	3 090	5 500	6 340	11 200	13 380	19 280	25 500	32 320	40 230	51 000			
				3I/40,8	**3I/42,5**	**3I/43,6**	**3I/43,6**	**3I/39,1**	**3I/40,8**	**3I/38,7**	**3I/38,5**	**3I/39,9**	**3I/41,5**	**3I/40,4**	**3I/42,4**	**3I/41,2**	**3I/40,7**	**3I/40,7**	**3I/42,3**			
	35,5	/ i	–	–	–	–	–	–	–	3 130	5 390	6 630	10 780	13 260	19 540	26 150	33 150	41 250	52 300			
										3I/37,5	**3I/36,5**	**3I/36,3**	**3I/34,4**	**3I/35,4**	**3I/36,9**	**3I/37,2**	**3I/37,4**	**3I/37,4**	**3I/38,4**			
	31,5	/ i	–	280	305	585	690	1 210	2 010	3 090	4 820	6 430	10 180	13 640	19 470	26 890	34 090	42 420	53 790			
				3I/33,5	**3I/34,9**	**3I/32,8**	**3I/32,8**	**3I/32,6**	**3I/33,5**	**3I/32,2**	**3I/31,6**	**3I/32,8**	**3I/31,5**	**3I/30,6**	**3I/33,5**	**3I/32,5**	**3I/33,5**	**3I/33,5**	**3I/34,7**			
	28	/ i	–	–	–	–	–	1 030	–	2 890	4 930	5 790	10 010	12 990	20 100	25 970	35 190	43 800	53 320			
								2I/28,8		**3I/29,1**	**3I/28,4**	**3I/28,6**	**3I/27,2**	**3I/27,3**	**3I/28,7**	**3I/28,8**	**3I/30**	**3I/30**	**3I/30,3**			
	25	/ i	120	265	325	500	590	1 180	2 300	3 410	5 150	7 110	10 530	13 490	21 270	26 790	29 460	42 720	47 340			
			2I/24,4	**2I/24,1**	**2I/25,1**	**2I/26**	**2I/26**	**2I/23,7**	**2I/24,1**	**2I/24,1**	**2I/24,6**	**2I/25,4**	**2I/24,2**	**2I/25**	**2I/25**	**2I/24,6**	**2I/25**	**2I/25**	**2I/25,7**			
	22,4	/ i	–	–	–	–	–	–	–	3 730	5 600	7 640	10 760	13 820	22 620	26 160	33 180	43 540	52 410			
										2I/21,7	**2I/22,5**	**2I/23,3**	**2I/22,2**	**2I/23**	**2I/22**	**2I/22,2**	**2I/22,8**	**2I/22,8**	**2I/23,4**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
3 550 000	20	145 **2I/20,1**	295 **2I/19,3**	365 **2I/20,1**	595 **2I/20,8**	700 **2I/20,8**	1 260 **2I/19,3**	2 510 **2I/19,3**	3 790 **2I/19,6**	5 980 **2I/20,7**	7 290 **2I/20,8**	11 000 **2I/20,3**	14 450 **2I/20**	22 260 **2I/19,7**	28 520 **2I/20,1**	36 150 **2I/20,6**	43 950 **2I/20,6**	57 150 **2I/20,3**			
	18	–	–	–	–	–	–	–	3 770 **2I/17,6**	5 870 **2I/18,1**	7 870 **2I/18**	10 870 **2I/17,6**	15 080 **2I/18,1**	22 830 **2I/17,8**	29 730 **2I/17,9**	37 760 **2I/17,8**	47 030 **2I/17,8**	59 100 **2I/18,3**			
	16	165 **2I/16,3**	305 **2I/15,8**	395 **2I/16,5**	705 **2I/15,7**	830 **2I/15,7**	1 290 **2I/16,1**	2 430 **2I/15,8**	3 520 **2I/15,1**	6 310 **2I/15,7**	7 330 **2I/16,6**	10 980 **2I/16,1**	14 350 **2I/15,6**	21 830 **2I/16,2**	27 990 **2I/15,7**	38 240 **2I/15,9**	47 630 **2I/15,9**	57 910 **2I/16**			
	14	–	–	–	–	–	–	–	3 810 **2I/14,7**	6 190 **2I/14,1**	7 870 **2I/14,4**	11 100 **2I/13,9**	13 770 **2I/14,6**	22 650 **2I/14,6**	27 370 **2I/14,7**	38 780 **2I/14,3**	47 420 **2I/14,3**	60 350 **2I/14,4**			
	12,5	165 **2I/12,3**	305 **2I/13,1**	365 **2I/13,6**	595 **2I/13,7**	700 **2I/13,7**	1 240 **2I/12,3**	2 570 **2I/13,1**	3 870 **2I/13,3**	6 060 **2I/13,6**	7 450 **2I/13,6**	10 880 **2I/13**	14 870 **2I/12,8**	22 760 **2I/13,1**	29 430 **2I/13,3**	37 230 **2I/13,4**	45 360 **2I/13,4**	58 930 **2I/13,1**			
	11,2	–	–	–	–	–	–	–	3 840 **2I/11,9**	5 960 **2I/11,9**	7 970 **2I/11,8**	11 100 **2I/11,2**	15 530 **2I/11,5**	23 060 **2I/11,8**	30 690 **2I/11,9**	38 940 **2I/11,5**	48 540 **2I/11,5**	61 400 **2I/11,8**			
		4,84	8,56	10,7	20,2	23,7	36,7	71,9	101	183	218	322	464	618	876	–	–	–	10	2800	**280**
	10	170 **2I/10,2**	315 **2I/10,7**	410 **2I/11,2**	710 **2I/10,3**	835 **2I/10,3**	1 280 **2I/10,2**	2 630 **2I/10,7**	3 520 **2I/10,2**	6 420 **2I/10,3**	7 940 **2I/10,7**	11 250 **2I/10,2**	15 750 **2I/9,95**	22 610 **2I/10,7▲**	31 120 **2I/10,4▲**	39 490 **2I/10,3**	49 230 **2I/10,3**	62 270 **2I/10,7**			
									91,6	159	182	338	428	653	843	–	–	–	9	2500	
	9	–	–	–	–	–	–	–	3 230 **2I/9,22**	5 600 **2I/9,24**	6 480 **2I/9,31**	11 410 **2I/8,85**	14 510 **2I/8,88**	22 920 **2I/9,19▲**	29 690 **2I/9,22▲**	40 030 **2I/9,24**	49 900 **2I/9,24**	59 590 **2I/9,31**			
		4,59	8,78	11	20,7	24,4	37,4	74,2		165		339		659		–	–		8	2240	
	8	155 **2I/8,01**	310 **2I/8,26**	375 **2I/7,99**	710 **2I/8,03**	835 **2I/8,03**	1 280 **2I/8,01**	2 610 **2I/8,26**	–	5 660 **2I/8,03**	–	11 560 **2I/8,01**	–	23 220 **2I/8,26**	–	40 560 **2I/8,03**	50 560 **2I/8,03**	–			
		4,15	7,66	9,41	17,6	20,9	37,2	66,9		136		313		616		1 063	1 255		6,3	1800	
	6,3	140 **2I/6,42**	265 **2I/6,53**	345 **2I/6,86**	600 **2I/6,41**	710 **2I/6,41**	1 270 **2I/6,42**	2 320 **2I/6,53**	–	4 640 **2I/6,41**	–	10 640 **2I/6,42**	–	21 340 **2I/6,53**	–	36 170 **2I/6,41**	42 710 **2I/6,41**	–			
			8,21		16,1		35,4	69,5	100	153	198	306	380	481	763	980	1 225	1 314	5	1400	
	5	–	280 **I/5**	–	570 **I/5,2**	–	1 160 **I/4,82**	2 370 **I/5**	3 420 **I/5**	5 150 **I/4,92**	6 860 **I/5,07**	10 290 **I/4,92**	13 160 **I/5,07**	16 650 **I/5,08**	26 040 **I/5**	32 900 **I/4,92**	41 120 **I/4,92**	45 470 **I/5,07**			
								70,6	105	164	206	305	377	564	683	971	1 214	1 305	4,5	1250	
	4,5	–	–	–	–	–	–	2 400 **I/4,45**	3 620 **I/4,5**	5 630 **I/4,5**	7 330 **I/4,67**	10 480 **I/4,5**	13 430 **I/4,67**	19 250 **I/4,47**	23 480 **I/4,5**	33 390 **I/4,5**	41 740 **I/4,5**	45 860 **I/4,6**			
			9,53		19,7		35,8	71,3	109	163	204	302	401	528	755	967	1 208	1 307	4	1120	
	4	–	325 **I/4**	–	700 **I/4,16**	–	1 200 **I/3,92**	2 430 **I/4**	3 800 **I/4,08**	5 730 **I/4,13**	7 230 **I/4,15**	10 660 **I/4,13**	13 910 **I/4,07**	18 020 **I/4**	26 240 **I/4,08**	33 520 **I/4,07**	41 900 **I/4,07**	44 570 **I/4**			
								81,1	109	155	226	308	396	558	714	966	1 207	1 293	3,55	1000	
	3,55	–	–	–	–	–	–	2 800 **I/3,62**	3 780 **I/3,64**	5 340 **I/3,62**	7 750 **I/3,6**	10 510 **I/3,57**	13 880 **I/3,67**	19 260 **I/3,62**	24 820 **I/3,64**	32 280 **I/3,5**	40 350 **I/3,5**	44 450 **I/3,6**			
			9,61		21,4		41,2	83,2	115	172	223	307	417	530	797	961	1 201	1 281	3,15	900	
	3,15	–	335 **I/3,28**	–	710 **I/3,13**	–	1 430 **I/3,27**	2 900 **I/3,28**	3 820 **I/3,13**	5 710 **I/3,13**	7 700 **I/3,25**	10 630 **I/3,27**	14 060 **I/3,18**	18 490 **I/3,28**	26 940 **I/3,19**	31 950 **I/3,13**	39 930 **I/3,13**	44 170 **I/3,25**			
								90,1	113	162	204	320	406	587	740	944	1 179	1 326	2,8	800	
	2,8	–	–	–	–	–	–	2 960 **I/2,75**	3 800 **I/2,82**	5 450 **I/2,81**	6 900 **I/2,83**	10 780 **I/2,82**	13 750 **I/2,83**	19 700 **I/2,81**	24 960 **I/2,82**	31 680 **I/2,81**	39 600 **I/2,81**	44 850 **I/2,83**			
			10,1		22,5		38,3	88	116	144	181	300	373	545	761	976	1 220	1 354	2,5	710	
	2,5	–	345 **I/2,53**	–	740 **I/2,44**	–	1 320 **I/2,55**	3 000 **I/2,53**	3 930 **I/2,53**	4 750 **I/2,44**	6 090 **I/2,5**	10 300 **I/2,55**	12 200 **I/2,43**	18 540 **I/2,53**	25 850 **I/2,53**	32 080 **I/2,44**	40 100 **I/2,44**	45 530 **I/2,5**			
								84	105	129	161	268	333	530	717	947	1 184	1 307	2,24	630	
	2,24	–	–	–	–	–	–	2 900 **I/2,28**	3 650 **I/2,3**	4 330 **I/2,21**	5 450 **I/2,24**	8 930 **I/2,2**	11 470 **I/2,27**	18 760 **I/2,33**	25 000 **I/2,3**	32 480 **I/2,26**	40 600 **I/2,26**	45 290 **I/2,29**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
3 550 000								65,2		115		236		513		901	1 064		2	560	**280**
	2	–	–	–	–	–	–	2 220 **I/2**	–	3 820 **I/1,95**	–	8 250 **I/2,05**	–	17 500 **I/2**	–	30 000 **I/1,95**	35 430 **I/1,95**	–			
3 150 000	56	–	–	–	–	–	–	–	3 450 **3I/55,4**	5 300 **3I/55,5**	7 100 **3I/55,3**	10 600 **3I/54,1**	14 830 **3I/55,5**	21 230 **3I/55,6**	24 180 **3I/56**	30 650 **3I/57,8**	38 140 **3I/57,8**	48 360 **3I/59,4**			
	50	–	270 **3I/49,4**	345 **3I/51,5**	580 **3I/49,8**	690 **3I/49,8**	1 180 **3I/51,2**	2 220 **3I/49,5**	3 550 **3I/50,4**	5 300 **3I/50,8**	7 500 **3I/51**	10 600 **3I/52,6**	15 000 **3I/51,8**	21 200 **3I/51,7**	24 120 **3I/52,7**	33 160 **3I/52,9**	41 450 **3I/52,9**	48 240 **3I/52**			
	45	–	–	–	–	–	–	–	3 600 **3I/45,1**	5 450 **3I/44,4**	7 020 **3I/44,2**	11 200 **3I/45,4**	15 450 **3I/46,6**	21 220 **3I/46,7**	25 500 **3I/47,1**	32 320 **3I/45,5**	40 230 **3I/45,5**	51 000 **3I/46,8**			
	40	–	280 **3I/40,8**	345 **3I/42,5**	600 **3I/43,6**	705 **3I/43,6**	1 250 **3I/39,1**	2 250 **3I/40,8**	3 190 **3I/38,7**	5 690 **3I/38,5**	6 560 **3I/39,9**	11 500 **3I/41,5**	13 840 **3I/40,4**	19 950 **3I/42,4**	26 150 **3I/41,2**	33 150 **3I/40,7**	41 250 **3I/40,7**	52 300 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	3 220 **3I/37,5**	5 560 **3I/36,5**	6 820 **3I/36,3**	11 130 **3I/34,4**	13 640 **3I/35,4**	20 170 **3I/36,9**	26 890 **3I/37,2**	34 090 **3I/37,4**	42 420 **3I/37,4**	53 790 **3I/38,4**			
	31,5	–	290 **3I/33,5**	315 **3I/34,9**	610 **3I/32,8**	715 **3I/32,8**	1 250 **3I/32,6**	2 070 **3I/33,5**	3 200 **3I/32,2**	5 000 **3I/31,6**	6 640 **3I/32,8**	10 540 **3I/31,5**	14 080 **3I/30,6**	20 100 **3I/33,5**	27 760 **3I/32,5**	35 190 **3I/33,5**	43 800 **3I/33,5**	55 530 **3I/34,7**			
	28	–	–	–	–	–	1 030 **2I/28,8**	–	2 970 **3I/29,1**	5 060 **3I/28,4**	5 940 **3I/28,6**	10 290 **3I/27,2**	13 350 **3I/27,3**	20 650 **3I/28,7**	26 680 **3I/28,8**	36 160 **3I/30**	45 000 **3I/30**	54 780 **3I/30,3**			
	25	125 **2I/24,4**	270 **2I/24,1**	335 **2I/25,1**	505 **2I/26**	590 **2I/26**	1 180 **2I/23,7**	2 440 **2I/24,1**	3 420 **2I/24,1**	5 150 **2I/24,6**	7 370 **2I/25,4**	10 820 **2I/24,2**	13 990 **2I/25**	21 200 **2I/25**	27 770 **2I/24,6**	30 250 **2I/25**	44 280 **2I/25**	49 070 **2I/25,7**			
	22,4	–	–	–	–	–	–	–	3 860 **2I/21,7**	5 800 **2I/22,5**	7 910 **2I/23,3**	11 150 **2I/22,2**	14 310 **2I/23**	22 710 **2I/22**	26 880 **2I/22,2**	34 090 **2I/22,8**	45 110 **2I/22,8**	53 850 **2I/23,4**			
	20	145 **2I/20,1**	305 **2I/19,3**	365 **2I/20,1**	595 **2I/20,8**	700 **2I/20,8**	1 300 **2I/19,3**	2 600 **2I/19,3**	3 920 **2I/19,6**	6 180 **2I/20,7**	7 550 **2I/20,8**	11 380 **2I/20,3**	14 650 **2I/20**	23 030 **2I/19,7**	28 910 **2I/20,1**	36 650 **2I/20,6**	45 440 **2I/20,6**	57 930 **2I/20,3**			
	18	–	–	–	–	–	–	–	3 890 **2I/17,6**	6 060 **2I/18,1**	8 120 **2I/18**	11 220 **2I/17,6**	15 270 **2I/18,1**	23 560 **2I/17,8**	30 100 **2I/17,9**	38 240 **2I/17,8**	47 630 **2I/17,8**	59 840 **2I/18,3**			
	16	170 **2I/16,3**	315 **2I/15,8**	410 **2I/16,5**	705 **2I/15,7**	835 **2I/15,7**	1 340 **2I/16,1**	2 520 **2I/15,8**	3 570 **2I/15,1**	6 540 **2I/15,7**	7 560 **2I/16,6**	11 380 **2I/16,1**	14 550 **2I/15,6**	22 180 **2I/16,2**	28 380 **2I/15,7**	38 780 **2I/15,9**	48 300 **2I/15,9**	58 730 **2I/16**			
	14	–	–	–	–	–	–	–	3 940 **2I/14,7**	6 420 **2I/14,1**	8 160 **2I/14,4**	11 510 **2I/13,9**	14 160 **2I/14,6**	22 740 **2I/14,6**	27 760 **2I/14,7**	39 340 **2I/14,3**	48 100 **2I/14,3**	61 210 **2I/14,4**			
	12,5	170 **2I/12,3**	315 **2I/13,1**	365 **2I/13,6**	600 **2I/13,7**	705 **2I/13,7**	1 290 **2I/12,3**	2 660 **2I/13,1**	4 010 **2I/13,3**	6 280 **2I/13,6**	7 660 **2I/13,6**	11 280 **2I/13**	15 080 **2I/12,8**	23 590 **2I/13,1**	29 860 **2I/13,3**	37 760 **2I/13,4**	46 010 **2I/13,4**	59 770 **2I/13,1**			
									98,1	152	205	295	402	593	767	–	–	–	11,2	2800	**250**
	11,2	–	–	–	–	–	–	–	3 980 **2I/11,9**	6 170 **2I/11,9**	8 260 **2I/11,8**	11 250 **2I/11,2**	15 750 **2I/11,5**	23 890 **2I/11,8▲**	31 120 **2I/11,9▲**	39 900 **2I/11,5**	49 870 **2I/11,5**	62 270 **2I/11,8**			
		4,47	7,91	9,68	18,1	21,2	33,9	66,5	91,6	169	201	292	420	559	793	–	–	–	10	2500	
	10	175 **2I/10,2**	325 **2I/10,7**	415 **2I/11,2**	710 **2I/10,3**	835 **2I/10,3**	1 320 **2I/10,2**	2 720 **2I/10,7**	3 570 **2I/10,2**	6 640 **2I/10,3**	8 220 **2I/10,7**	11 410 **2I/10,2**	15 970 **2I/9,95**	22 920 **2I/10,7▲**	31 550 **2I/10,4▲**	40 030 **2I/10,3**	49 900 **2I/10,3**	63 120 **2I/10,7**			
									83,9	144	165	306	388	593	765	–	–	–	9	2240	
	9	–	–	–	–	–	–	–	3 300 **2I/9,22**	5 680 **2I/9,24**	6 560 **2I/9,31**	11 560 **2I/8,85**	14 700 **2I/8,88**	23 220 **2I/9,19**	30 080 **2I/9,22**	40 560 **2I/9,24**	50 560 **2I/9,24**	60 380 **2I/9,31**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
3 150 000	8	4,15 160 **2I/8,01**	8,11 320 **2I/8,26**	10,1 385 **2I/7,99**	19,1 735 **2I/8,03**	22,5 865 **2I/8,03**	34,6 1 320 **2I/8,01**	68,6 2 700 **2I/8,26**	–	150 5 740 **2I/8,03**	–	306 11 710 **2I/8,01**	–	596 23 530 **2I/8,26**	–	1 072 41 110 **2I/8,03▲**	1 336 51 250 **2I/8,03▲**	–	8	2000	**250**
	6,3	3,74 145 **2I/6,42**	6,93 270 **2I/6,53**	8,67 355 **2I/6,86**	15,7 600 **2I/6,41**	19,3 740 **2I/6,41**	34,3 1 310 **2I/6,42**	60,3 2 350 **2I/6,53**	–	123 4 710 **2I/6,41**	–	282 10 790 **2I/6,42**	–	555 21 640 **2I/6,53**	–	958 36 680 **2I/6,41**	1 131 43 310 **2I/6,41**	–	6,3	1600	
	5	–	7,33 280 **I/5**	–	14,5 575 **I/5,2**	–	32,7 1 200 **I/4,82**	64,2 2 450 **I/5**	89,4 3 420 **I/5**	143 5 360 **I/4,92**	183 7 100 **I/5,07**	283 10 650 **I/4,92**	351 13 620 **I/5,07**	444 17 230 **I/5,08**	705 26 940 **I/5**	905 34 040 **I/4,92**	1 131 42 550 **I/4,92**	1 214 47 040 **I/5,07**	5	1250	
	4,5	–	–	–	–	–	–	65,4 2 480 **I/4,45**	94,5 3 630 **I/4,5**	151 5 790 **I/4,5**	190 7 580 **I/4,67**	282 10 830 **I/4,5**	349 13 870 **I/4,67**	522 19 900 **I/4,47**	632 24 270 **I/4,5**	899 34 510 **I/4,5**	1 124 43 140 **I/4,5**	1 208 47 390 **I/4,6**	4,5	1120	
	4	–	8,77 335 **I/4**	–	17,6 700 **I/4,16**	–	33,1 1 240 **I/3,92**	65,9 2 520 **I/4**	101 3 930 **I/4,08**	150 5 930 **I/4,13**	188 7 480 **I/4,15**	279 11 020 **I/4,13**	370 14 390 **I/4,07**	488 18 650 **I/4**	697 27 150 **I/4,08**	893 34 680 **I/4,07**	1 116 43 350 **I/4,07**	1 207 46 110 **I/4**	4	1000	
	3,55	–	–	–	–	–	–	75,6 2 900 **I/3,62**	101 3 900 **I/3,64**	144 5 510 **I/3,62**	210 8 000 **I/3,6**	286 10 850 **I/3,57**	368 14 330 **I/3,67**	518 19 880 **I/3,62**	663 25 620 **I/3,64**	897 33 320 **I/3,5**	1 121 41 640 **I/3,5**	1 201 45 880 **I/3,6**	3,55	900	
	3,15	–	8,54 335 **I/3,28**	–	19 710 **I/3,13**	–	36,6 1 430 **I/3,27**	73,9 2 900 **I/3,28**	106 3 960 **I/3,13**	158 5 920 **I/3,13**	204 7 920 **I/3,25**	282 11 010 **I/3,27**	384 14 560 **I/3,18**	488 19 150 **I/3,28**	734 27 910 **I/3,19**	885 33 100 **I/3,13**	1 106 41 370 **I/3,13**	1 179 45 760 **I/3,25**	3,15	800	
	2,8	–	–	–	–	–	–	81,1 3 000 **I/2,75**	104 3 940 **I/2,82**	144 5 450 **I/2,81**	181 6 900 **I/2,83**	294 11 170 **I/2,82**	374 14 250 **I/2,83**	540 20 420 **I/2,81**	681 25 870 **I/2,82**	868 32 830 **I/2,81**	1 085 41 040 **I/2,81**	1 220 46 480 **I/2,83**	2,8	710	
	2,5	–	9 345 **I/2,53**	–	20 740 **I/2,44**	–	34 1 320 **I/2,55**	78,2 3 000 **I/2,53**	104 4 000 **I/2,53**	128 4 750 **I/2,44**	161 6 090 **I/2,5**	266 10 300 **I/2,55**	331 12 200 **I/2,43**	501 19 220 **I/2,53**	700 26 790 **I/2,53**	897 33 250 **I/2,44**	1 122 41 560 **I/2,44**	1 245 47 190 **I/2,5**	2,5	630	
	2,24	–	–	–	–	–	–	74,7 2 900 **I/2,28**	93,1 3 650 **I/2,3**	115 4 330 **I/2,21**	143 5 450 **I/2,24**	238 8 930 **I/2,2**	296 11 470 **I/2,27**	488 19 440 **I/2,33**	637 25 000 **I/2,3**	872 33 650 **I/2,26**	1 064 41 080 **I/2,26**	1 185 46 200 **I/2,29**	2,24	560	
2 800 000	63	–	265 **3I/60,1**	325 **3I/62,6**	560 **3I/66,3**	650 **3I/66,3**	1 150 **3I/61,5**	2 300 **3I/60,2**	3 450 **3I/62**	5 150 **3I/63,5**	7 300 **3I/63,8**	10 300 **3I/62,6**	14 500 **3I/61,7**	20 600 **3I/61,5**	23 940 **3I/62,7**	34 500 **3I/67,1**	43 120 **3I/67,1**	46 990 **3I/66**			
	56	–	–	–	–	–	–	–	3 550 **3I/55,4**	5 300 **3I/55,5**	7 300 **3I/55,3**	10 900 **3I/54,1**	15 340 **3I/55,5**	21 960 **3I/55,6**	24 820 **3I/56**	31 460 **3I/57,8**	39 150 **3I/57,8**	49 640 **3I/59,4**			
	50	–	280 **3I/49,4**	355 **3I/51,5**	580 **3I/49,8**	710 **3I/49,8**	1 220 **3I/51,2**	2 300 **3I/49,5**	3 650 **3I/50,4**	5 450 **3I/50,8**	7 750 **3I/51**	10 900 **3I/52,6**	15 500 **3I/51,8**	21 800 **3I/51,7**	24 780 **3I/52,7**	34 270 **3I/52,9**	42 840 **3I/52,9**	49 560 **3I/52**			
	45	–	–	–	–	–	–	–	3 720 **3I/45,1**	5 600 **3I/44,4**	7 260 **3I/44,2**	11 500 **3I/45,4**	15 980 **3I/46,6**	21 950 **3I/46,7**	26 150 **3I/47,1**	33 150 **3I/45,5**	41 250 **3I/45,5**	52 300 **3I/46,8**			
	40	–	290 **3I/40,8**	365 **3I/42,5**	600 **3I/43,6**	705 **3I/43,6**	1 280 **3I/39,1**	2 320 **3I/40,8**	3 300 **3I/38,7**	5 870 **3I/38,5**	6 770 **3I/39,9**	11 800 **3I/41,5**	14 290 **3I/40,4**	20 590 **3I/42,4**	26 890 **3I/41,2**	34 090 **3I/40,7**	42 420 **3I/40,7**	53 790 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	3 320 **3I/37,5**	5 760 **3I/36,5**	7 040 **3I/36,3**	11 530 **3I/34,4**	14 080 **3I/35,4**	20 890 **3I/36,9**	27 760 **3I/37,2**	35 190 **3I/37,4**	43 800 **3I/37,4**	55 530 **3I/38,4**			
	31,5	–	290 **3I/33,5**	325 **3I/34,9**	630 **3I/32,8**	740 **3I/32,8**	1 250 **3I/32,6**	2 130 **3I/33,5**	3 280 **3I/32,2**	5 180 **3I/31,6**	6 820 **3I/32,8**	10 930 **3I/31,5**	14 460 **3I/30,6**	20 650 **3I/33,5**	28 530 **3I/32,5**	36 160 **3I/33,5**	45 000 **3I/33,5**	57 050 **3I/34,7**			
	28	–	–	–	–	–	1 060 **2I/28,8**	–	3 040 **3I/29,1**	5 200 **3I/28,4**	6 100 **3I/28,6**	10 560 **3I/27,2**	13 700 **3I/27,3**	21 200 **3I/28,7**	27 390 **3I/28,8**	37 120 **3I/30**	46 190 **3I/30**	56 230 **3I/30,3**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
2 800 000	25	125 2I/24,4	280 2I/24,1	335 2I/25,1	505 2I/26	595 2I/26	1 220 2I/23,7	2 450 2I/24,1	3 440 2I/24,1	5 380 2I/24,6	7 630 2I/25,4	10 860 2I/24,2	14 490 2I/25	22 360 2I/25	28 770 2I/24,6	31 070 2I/25	45 870 2I/25	50 840 2I/25,7			
	22,4	–	–	–	–	–	–	–	3 950 2I/21,7	6 000 2I/22,5	8 190 2I/23,3	11 540 2I/22,2	14 810 2I/23	22 790 2I/22	27 250 2I/22,2	34 550 2I/22,8	46 670 2I/22,8	54 580 2I/23,4			
	20	145 2I/20,1	315 2I/19,3	365 2I/20,1	600 2I/20,8	705 2I/20,8	1 340 2I/19,3	2 680 2I/19,3	4 050 2I/19,6	6 380 2I/20,7	7 790 2I/20,8	11 740 2I/20,3	14 830 2I/20	23 770 2I/19,7	29 270 2I/20,1	37 110 2I/20,6	46 900 2I/20,6	58 660 2I/20,3			
	18	–	–	–	–	–	–	–	4 030 2I/17,6	6 280 2I/18,1	8 410 2I/18	11 630 2I/17,6	15 490 2I/18,1	24 410 2I/17,8	30 530 2I/17,9	38 780 2I/17,8	48 300 2I/17,8	60 690 2I/18,3			
	16	170 2I/16,3	325 2I/15,8	415 2I/16,5	710 2I/15,7	840 2I/15,7	1 390 2I/16,1	2 610 2I/15,8	3 680 2I/15,1	6 770 2I/15,7	7 830 2I/16,6	11 790 2I/16,1	14 930 2I/15,6	22 990 2I/16,2	28 790 2I/15,7	39 850 2I/15,9	49 810 2I/15,9	59 570 2I/16			
	14	–	–	–	–	–	–	–	3 960 2I/14,7	6 650 2I/14,1	8 450 2I/14,4	11 930 2I/13,9	14 680 2I/14,6	22 820 2I/14,6	28 160 2I/14,7	39 900 2I/14,3	48 790 2I/14,3	62 090 2I/14,4			
		4,05	7,3	7,9	12,9	15,1	31,8	61,9	91,5	139	170	264	351	548	667	–	–	–	12,5	2800	**224**
	12,5	170 2I/12,3	325 2I/13,1	365 2I/13,6	600 2I/13,7	705 2I/13,7	1 330 2I/12,3	2 760 2I/13,1	4 150 2I/13,3	6 440 2I/13,6	7 930 2I/13,6	11 680 2I/13	15 290 2I/12,8	24 440 2I/13,1▲	30 280 2I/13,3▲	38 300 2I/13,4	47 590 2I/13,4	60 620 2I/13,1			
									90,6	141	189	270	364	548	694	–	–	–	11,2	2500	
	11,2	–	–	–	–	–	–	–	4 120 2I/11,9	6 380 2I/11,9	8 550 2I/11,8	11 530 2I/11,2	15 970 2I/11,5	24 720 2I/11,8▲	31 550 2I/11,9▲	41 280 2I/11,5	51 600 2I/11,5	63 120 2I/11,8			
		4,14	7,32	8,71	16,2	19,1	31,4	61,5	83,9	156	187	267	381	507	720	–	–	–	10	2240	
	10	180 2I/10,2	335 2I/10,7	415 2I/11,2	715 2I/10,3	840 2I/10,3	1 370 2I/10,2	2 820 2I/10,7	3 650 2I/10,2	6 860 2I/10,3	8 490 2I/10,7	11 640 2I/10,2	16 180 2I/9,95	23 220 2I/10,7	31 960 2I/10,4	40 860 2I/10,3	51 070 2I/10,3	63 950 2I/10,7			
									77,5	130	150	278	352	536	692	932	1 161	1 377	9	2000	
	9	–	–	–	–	–	–	–	3 410 2I/9,22	5 760 2I/9,24	6 650 2I/9,31	11 730 2I/8,85	14 900 2I/8,88	23 530 2I/9,19	30 490 2I/9,22	41 110 2I/9,24▲	51 250 2I/9,24▲	61 200 2I/9,31▲			
		3,78	7,53	9,41	17,6	20,9	32,1	63,7		136		279		544		977	1 218		8	1800	
	8	160 2I/8,01	330 2I/8,26	400 2I/7,99	750 2I/8,03	890 2I/8,03	1 360 2I/8,01	2 790 2I/8,26	–	5 810 2I/8,03	–	11 860 2I/8,01	–	23 830 2I/8,26	–	41 630 2I/8,03	51 900 2I/8,03	–			
		3,33	6,32	7,89	13,8	17,3	31,2	53,6		109		251		493		852	1 006		6,3	1400	
	6,3	145 2I/6,42	280 2I/6,53	370 2I/6,86	605 2I/6,41	755 2I/6,41	1 370 2I/6,42	2 390 2I/6,53	–	4 780 2I/6,41	–	10 970 2I/6,42	–	21 990 2I/6,53	–	37 270 2I/6,41	44 010 2I/6,41	–			
			6,8		13		29,9	58,7	80,1	128	168	259	324	411	653	838	1 048	1 124	5	1120	
	5	–	290 I/5	–	575 I/5,2	–	1 230 I/4,82	2 500 I/5	3 420 I/5	5 380 I/4,92	7 260 I/5,07	10 860 I/4,92	14 000 I/5,07	17 800 I/5,08	27 840 I/5	35 180 I/4,92	43 970 I/4,92	48 620 I/5,07			
								59,9	84,4	135	176	261	322	483	584	831	1 039	1 116	4,5	1000	
	4,5	–	–	–	–	–	–	2 550 I/4,45	3 630 I/4,5	5 810 I/4,5	7 840 I/4,67	11 200 I/4,5	14 350 I/4,67	20 580 I/4,47	25 100 I/4,5	35 710 I/4,5	44 630 I/4,5	49 030 I/4,6			
			8,06		15,9		30,7	61,2	93,7	139	175	259	344	453	648	829	1 037	1 121	4	900	
	4	–	340 I/4	–	705 I/4,16	–	1 280 I/3,92	2 600 I/4	4 050 I/4,08	6 120 I/4,13	7 720 I/4,15	11 380 I/4,13	14 850 I/4,07	19 240 I/4	28 020 I/4,08	35 790 I/4,07	44 740 I/4,07	47 590 I/4			
								67,2	92,9	132	192	264	339	477	610	826	1 033	1 106	3,55	800	
	3,55	–	–	–	–	–	–	2 900 I/3,62	4 040 I/3,64	5 710 I/3,62	8 250 I/3,6	11 240 I/3,57	14 840 I/3,67	20 590 I/3,62	26 540 I/3,64	34 510 I/3,5	43 140 I/3,5	47 530 I/3,6			
			7,81		17,3		32,5	67,9	97,6	146	181	260	353	449	675	814	1 017	1 085	3,15	710	
	3,15	–	345 I/3,28	–	730 I/3,13	–	1 430 I/3,27	3 000 I/3,28	4 100 I/3,13	6 130 I/3,13	7 920 I/3,25	11 410 I/3,27	15 090 I/3,18	19 850 I/3,28	28 930 I/3,19	34 300 I/3,13	42 880 I/3,13	47 430 I/3,25			
								72	95,3	128	161	268	333	496	626	798	998	1 122	2,8	630	
	2,8	–	–	–	–	–	–	3 000 I/2,75	4 080 I/2,82	5 450 I/2,81	6 900 I/2,83	11 460 I/2,82	14 310 I/2,83	21 170 I/2,81	26 810 I/2,82	34 030 I/2,81	42 540 I/2,81	48 180 I/2,83			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
2 800 000			8,23		17,8		30,2	71,2	92,8	114	143	236	295	461	631	826	1 033	1 147	2,5	560	**224**
	2,5	–	355 **I/2,53**	–	740 **I/2,44**	–	1 320 **I/2,55**	3 070 **I/2,53**	4 000 **I/2,53**	4 750 **I/2,44**	6 090 **I/2,5**	10 300 **I/2,55**	12 200 **I/2,43**	19 910 **I/2,53**	27 200 **I/2,53**	34 450 **I/2,44**	43 060 **I/2,44**	48 890 **I/2,5**			
2 500 000	71	–	–	–	–	–	–	–	3 550 **3I/72,8**	5 300 **3I/74,9**	7 260 **3I/74,6**	10 600 **3I/72,6**	15 000 **3I/74,5**	21 200 **3I/74,7**	24 180 **3I/75,3**	31 810 **3I/71**	39 760 **3I/71**	48 360 **3I/73**			
	63	–	270 **3I/60,1**	335 **3I/62,6**	580 **3I/66,3**	670 **3I/66,3**	1 180 **3I/61,5**	2 360 **3I/60,2**	3 550 **3I/62**	5 300 **3I/63,5**	7 500 **3I/63,8**	10 600 **3I/62,6**	15 000 **3I/61,7**	21 200 **3I/61,5**	24 760 **3I/62,7**	35 690 **3I/67,1**	44 610 **3I/67,1**	48 240 **3I/66**			
	56	–	–	–	–	–	–	–	3 650 **3I/55,4**	5 450 **3I/55,5**	7 500 **3I/55,3**	11 200 **3I/54,1**	15 850 **3I/55,5**	22 700 **3I/55,6**	25 500 **3I/56**	32 320 **3I/57,8**	40 230 **3I/57,8**	51 000 **3I/59,4**			
	50	–	280 **3I/49,4**	355 **3I/51,5**	600 **3I/49,8**	710 **3I/49,8**	1 250 **3I/51,2**	2 380 **3I/49,5**	3 750 **3I/50,4**	5 600 **3I/50,8**	7 750 **3I/51**	11 200 **3I/52,6**	15 500 **3I/51,8**	22 400 **3I/51,7**	25 410 **3I/52,7**	35 450 **3I/52,9**	44 320 **3I/52,9**	50 820 **3I/52**			
	45	–	–	–	–	–	–	–	3 840 **3I/45,1**	5 800 **3I/44,4**	7 500 **3I/44,2**	11 800 **3I/45,4**	16 490 **3I/46,6**	22 660 **3I/46,7**	26 890 **3I/47,1**	34 090 **3I/45,5**	42 420 **3I/45,5**	53 790 **3I/46,8**			
	40	–	300 **3I/40,8**	370 **3I/42,5**	600 **3I/43,6**	710 **3I/43,6**	1 320 **3I/39,1**	2 410 **3I/40,8**	3 410 **3I/38,7**	6 080 **3I/38,5**	7 010 **3I/39,9**	12 200 **3I/41,5**	14 800 **3I/40,4**	21 330 **3I/42,4**	27 760 **3I/41,2**	35 190 **3I/40,7**	43 800 **3I/40,7**	55 530 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	3 440 **3I/37,5**	5 970 **3I/36,5**	7 230 **3I/36,3**	11 950 **3I/34,4**	14 460 **3I/35,4**	21 660 **3I/36,9**	28 530 **3I/37,2**	36 160 **3I/37,4**	45 000 **3I/37,4**	57 050 **3I/38,4**			
	31,5	–	300 **3I/33,5**	335 **3I/34,9**	655 **3I/32,8**	770 **3I/32,8**	1 280 **3I/32,6**	2 190 **3I/33,5**	3 370 **3I/32,2**	5 370 **3I/31,6**	7 000 **3I/32,8**	11 330 **3I/31,5**	14 850 **3I/30,6**	21 200 **3I/33,5**	29 280 **3I/32,5**	37 120 **3I/33,5**	46 190 **3I/33,5**	58 560 **3I/34,7**			
	28	–	–	–	–	–	1 090 **2I/28,8**	–	3 130 **3I/29,1**	5 340 **3I/28,4**	6 270 **3I/28,6**	10 850 **3I/27,2**	14 080 **3I/27,3**	21 780 **3I/28,7**	28 140 **3I/28,8**	38 140 **3I/30**	47 460 **3I/30**	57 770 **3I/30,3**			
	25	125 **2I/24,4**	285 **2I/24,1**	335 **2I/25,1**	505 **2I/26**	595 **2I/26**	1 250 **2I/23,7**	2 460 **2I/24,1**	3 450 **2I/24,1**	5 400 **2I/24,6**	7 840 **2I/25,4**	10 900 **2I/24,2**	14 990 **2I/25**	22 440 **2I/25**	29 760 **2I/24,6**	31 500 **2I/25**	46 250 **2I/25**	52 590 **2I/25,7**			
	22,4	–	–	–	–	–	–	–	3 960 **2I/21,7**	6 000 **2I/22,5**	8 450 **2I/23,3**	11 750 **2I/22,2**	15 280 **2I/23**	22 860 **2I/22**	27 590 **2I/22,2**	34 990 **2I/22,8**	47 590 **2I/22,8**	55 280 **2I/23,4**			
	20	145 **2I/20,1**	330 **2I/19,3**	365 **2I/20,1**	600 **2I/20,8**	705 **2I/20,8**	1 390 **2I/19,3**	2 780 **2I/19,3**	4 190 **2I/19,6**	6 450 **2I/20,7**	8 070 **2I/20,8**	12 160 **2I/20,3**	15 280 **2I/20**	24 630 **2I/19,7**	29 690 **2I/20,1**	37 630 **2I/20,6**	48 590 **2I/20,6**	59 500 **2I/20,3**			
	18	–	–	–	–	–	–	–	4 170 **2I/17,6**	6 510 **2I/18,1**	8 500 **2I/18**	12 050 **2I/17,6**	15 710 **2I/18,1**	25 300 **2I/17,8**	30 970 **2I/17,9**	39 340 **2I/17,8**	49 000 **2I/17,8**	61 560 **2I/18,3**			
	16	170 **2I/16,3**	340 **2I/15,8**	415 **2I/16,5**	710 **2I/15,7**	840 **2I/15,7**	1 440 **2I/16,1**	2 710 **2I/15,8**	3 810 **2I/15,1**	6 900 **2I/15,7**	8 120 **2I/16,6**	12 220 **2I/16,1**	15 470 **2I/15,6**	23 830 **2I/16,2**	29 210 **2I/15,7**	41 310 **2I/15,9**	51 630 **2I/15,9**	60 430 **2I/16**			
									79,2	144	178	261	305	460	570	–	–	–	14	2800	**200**
	14	–	–	–	–	–	–	–	3 970 **2I/14,7**	6 890 **2I/14,1**	8 760 **2I/14,4**	12 360 **2I/13,9**	15 210 **2I/14,6**	22 910 **2I/14,6▲**	28 560 **2I/14,7▲**	40 470 **2I/14,3**	49 480 **2I/14,3**	62 970 **2I/14,4**			
		3,63	6,75	7,07	11,7	13,5	29,4	57,2	84,5	124	157	244	318	507	603	–	–	–	12,5	2500	
	12,5	170 **2I/12,3**	335 **2I/13,1**	370 **2I/13,6**	610 **2I/13,7**	710 **2I/13,7**	1 380 **2I/12,3**	2 850 **2I/13,1**	4 300 **2I/13,3**	6 460 **2I/13,6**	8 210 **2I/13,6**	12 090 **2I/13**	15 500 **2I/12,8**	25 290 **2I/13,1▲**	30 690 **2I/13,3▲**	38 820 **2I/13,4**	49 240 **2I/13,4**	61 450 **2I/13,1**			
									83,9	130	175	250	330	507	630	–	–	–	11,2	2240	
	11,2	–	–	–	–	–	–	–	4 260 **2I/11,9**	6 600 **2I/11,9**	8 830 **2I/11,8**	11 920 **2I/11,2**	16 180 **2I/11,5**	25 550 **2I/11,8**	31 960 **2I/11,9**	41 800 **2I/11,5**	52 250 **2I/11,5**	63 950 **2I/11,8**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
2 500 000		3,83	6,76	7,8	14,6	17,1	29	56,8	77,5	144	172	246	345	469	652	860	1 075	1 271	10	2000	**200**
	10	185 **2I/10,2**	345 **2I/10,7**	415 **2I/11,2**	715 **2I/10,3**	840 **2I/10,3**	1 420 **2I/10,2**	2 910 **2I/10,7**	3 780 **2I/10,2**	7 100 **2I/10,3**	8 790 **2I/10,7**	12 050 **2I/10,2**	16 400 **2I/9,95**	24 020 **2I/10,7**	32 400 **2I/10,4**	42 270 **2I/10,3▲**	52 840 **2I/10,3▲**	64 820 **2I/10,7▲**			
									72	119	136	258	320	489	631	849	1 059	1 255	9	1800	
	9	–	–	–	–	–	–	–	3 520 **2I/9,22**	5 830 **2I/9,24**	6 740 **2I/9,31**	12 110 **2I/8,85**	15 090 **2I/8,88**	23 830 **2I/9,19**	30 880 **2I/9,22**	41 630 **2I/9,24**	51 900 **2I/9,24**	61 980 **2I/9,31**			
		3,42	6,93	8,67	15,7	19,3	29,6	58,6		123		252		490		881	1 098		8	1600	
	8	165 **2I/8,01**	340 **2I/8,26**	415 **2I/7,99**	755 **2I/8,03**	925 **2I/8,03**	1 410 **2I/8,01**	2 890 **2I/8,26**	–	5 890 **2I/8,03**	–	12 030 **2I/8,01**	–	24 170 **2I/8,26**	–	42 220 **2I/8,03**	52 630 **2I/8,03**	–			
		2,98	5,83	7,29	12,4	15,5	28,8	48,2		98,2		225		443		768	904		6,3	1250	
	6,3	145 **2I/6,42**	290 **2I/6,53**	380 **2I/6,86**	605 **2I/6,41**	760 **2I/6,41**	1 410 **2I/6,42**	2 400 **2I/6,53**	–	4 820 **2I/6,41**	–	11 030 **2I/6,42**	–	22 120 **2I/6,53**	–	37 630 **2I/6,41**	44 290 **2I/6,41**	–			
			6,07		11,6		26,8	52,6	71,5	115	150	232	289	380	586	774	968	1 039	5	1000	
	5	–	290 **I/5**	–	580 **I/5,2**	–	1 230 **I/4,82**	2 510 **I/5**	3 420 **I/5**	5 400 **I/4,92**	7 260 **I/5,07**	10 900 **I/4,92**	14 000 **I/5,07**	18 420 **I/5,08**	28 000 **I/5**	36 390 **I/4,92**	45 490 **I/4,92**	50 300 **I/5,07**			
								54,1	76	122	159	242	299	448	543	772	965	1 037	4,5	900	
	4,5	–	–	–	–	–	–	2 560 **I/4,45**	3 630 **I/4,5**	5 830 **I/4,5**	7 880 **I/4,67**	11 560 **I/4,5**	14 820 **I/4,67**	21 240 **I/4,47**	25 910 **I/4,5**	36 850 **I/4,5**	46 070 **I/4,5**	50 610 **I/4,6**			
			7,17		14,2		28,3	56,3	84	125	161	239	317	418	596	764	955	1 033	4	800	
	4	–	340 **I/4**	–	705 **I/4,16**	–	1 320 **I/3,92**	2 690 **I/4**	4 090 **I/4,08**	6 180 **I/4,13**	8 000 **I/4,15**	11 790 **I/4,13**	15 390 **I/4,07**	19 940 **I/4**	29 030 **I/4,08**	37 080 **I/4,07**	46 350 **I/4,07**	49 310 **I/4**			
								61,7	85,5	122	170	242	312	439	561	760	950	1 017	3,55	710	
	3,55	–	–	–	–	–	–	3 000 **I/3,62**	4 190 **I/3,64**	5 920 **I/3,62**	8 250 **I/3,6**	11 650 **I/3,57**	15 380 **I/3,67**	21 340 **I/3,62**	27 510 **I/3,64**	35 770 **I/3,5**	44 710 **I/3,5**	49 260 **I/3,6**			
			6,93		15,4		28,8	60,2	89,8	129	161	239	325	413	621	749	936	998	3,15	630	
	3,15	–	345 **I/3,28**	–	730 **I/3,13**	–	1 430 **I/3,27**	3 000 **I/3,28**	4 250 **I/3,13**	6 140 **I/3,13**	7 920 **I/3,25**	11 830 **I/3,27**	15 650 **I/3,18**	20 580 **I/3,28**	29 990 **I/3,19**	35 550 **I/3,13**	44 440 **I/3,13**	49 160 **I/3,25**			
								65,5	87,8	114	143	238	296	457	577	735	919	1 033	2,8	560	
	2,8	–	–	–	–	–	–	3 070 **I/2,75**	4 230 **I/2,82**	5 450 **I/2,81**	6 900 **I/2,83**	11 460 **I/2,82**	14 310 **I/2,83**	21 930 **I/2,81**	27 780 **I/2,82**	35 260 **I/2,81**	44 070 **I/2,81**	49 910 **I/2,83**			
2 240 000	80	–	225 **3I/75,2**	280 **3I/78,2**	485 **3I/82,7**	560 **3I/82,7**	1000 **3I/75,5**	2 000 **3I/75,3**	3 450 **3I/81,4**	5 150 **3I/85,7**	7 300 **3I/86,1**	10 300 **3I/84**	14 500 **3I/82,7**	20 600 **3I/82,7**	26 420 **3I/84,3**	36 960 **3I/82,5**	43 700 **3I/82,5**	46 990 **3I/81,1**			
	71	–	–	–	–	–	–	–	3 650 **3I/72,8**	5 300 **3I/74,9**	7 510 **3I/74,6**	10 900 **3I/72,6**	15 500 **3I/74,5**	21 800 **3I/74,7**	24 820 **3I/75,3**	32 910 **3I/71**	41 140 **3I/71**	49 640 **3I/73**			
	63	–	280 **3I/60,1**	335 **3I/62,6**	580 **3I/66,3**	670 **3I/66,3**	1 220 **3I/61,5**	2 430 **3I/60,2**	3 650 **3I/62**	5 450 **3I/63,5**	7 750 **3I/63,8**	10 900 **3I/62,6**	15 500 **3I/61,7**	21 800 **3I/61,5**	25 590 **3I/62,7**	36 890 **3I/67,1**	46 110 **3I/67,1**	49 560 **3I/66**			
	56	–	–	–	–	–	–	–	3 750 **3I/55,4**	5 600 **3I/55,5**	7 750 **3I/55,3**	11 500 **3I/54,1**	16 400 **3I/55,5**	23 480 **3I/55,6**	26 150 **3I/56**	33 150 **3I/57,8**	41 250 **3I/57,8**	52 300 **3I/59,4**			
	50	–	290 **3I/49,4**	365 **3I/51,5**	615 **3I/49,8**	730 **3I/49,8**	1 280 **3I/51,2**	2 450 **3I/49,5**	3 750 **3I/50,4**	5 600 **3I/50,8**	8 000 **3I/51**	11 500 **3I/52,6**	16 000 **3I/51,8**	23 000 **3I/51,7**	26 140 **3I/52,7**	36 590 **3I/52,9**	45 740 **3I/52,9**	52 270 **3I/52**			
	45	–	–	–	–	–	–	–	3 980 **3I/45,1**	6 000 **3I/44,4**	7 760 **3I/44,2**	12 200 **3I/45,4**	17 090 **3I/46,6**	23 470 **3I/46,7**	27 760 **3I/47,1**	35 190 **3I/45,5**	43 800 **3I/45,5**	55 530 **3I/46,8**			
	40	–	305 **3I/40,8**	370 **3I/42,5**	605 **3I/43,6**	710 **3I/43,6**	1 360 **3I/39,1**	2 490 **3I/40,8**	3 540 **3I/38,7**	6 300 **3I/38,5**	7 270 **3I/39,9**	12 500 **3I/41,5**	15 340 **3I/40,4**	22 110 **3I/42,4**	28 530 **3I/41,2**	36 160 **3I/40,7**	45 000 **3I/40,7**	57 050 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	3 560 **3I/37,5**	6 190 **3I/36,5**	7 420 **3I/36,3**	12 380 **3I/34,4**	14 850 **3I/35,4**	22 450 **3I/36,9**	29 280 **3I/37,2**	37 120 **3I/37,4**	46 190 **3I/37,4**	58 560 **3I/38,4**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
2 240 000	31,5	–	305 **3I/33,5**	345 **3I/34,9**	675 **3I/32,8**	775 **3I/32,8**	1 320 **3I/32,6**	2 250 **3I/33,5**	3 460 **3I/32,2**	5 560 **3I/31,6**	7 190 **3I/32,8**	11 730 **3I/31,5**	15 250 **3I/30,6**	21 780 **3I/33,5**	30 080 **3I/32,5**	38 140 **3I/33,5**	47 460 **3I/33,5**	60 170 **3I/34,7**			
	28	–	–	–	–	–	1 120 **2I/28,8**	–	3 170 **3I/29,1**	5 410 **3I/28,4**	6 350 **3I/28,6**	11 000 **3I/27,2**	14 270 **3I/27,3**	22 080 **3I/28,7**	28 520 **3I/28,8**	38 660 **3I/30**	48 100 **3I/30**	58 560 **3I/30,3**			
	25	125 **2I/24,4**	285 **2I/24,1**	335 **2I/25,1**	510 **2I/26**	600 **2I/26**	1 300 **2I/23,7**	2 470 **2I/24,1**	3 460 **2I/24,1**	5 420 **2I/24,6**	7 870 **2I/25,4**	10 930 **2I/24,2**	15 470 **2I/25**	22 520 **2I/25**	30 260 **2I/24,6**	31 900 **2I/25**	46 410 **2I/25**	54 280 **2I/25,7**			
	22,4	–	–	–	–	–	–	–	3 970 **2I/21,7**	6 180 **2I/22,5**	8 730 **2I/23,3**	11 790 **2I/22,2**	15 830 **2I/23**	22 950 **2I/22**	27 980 **2I/22,2**	35 480 **2I/22,8**	47 770 **2I/22,8**	56 060 **2I/23,4**			
	20	145 **2I/20,1**	340 **2I/19,3**	370 **2I/20,1**	605 **2I/20,8**	710 **2I/20,8**	1 440 **2I/19,3**	2 880 **2I/19,3**	4 310 **2I/19,6**	6 470 **2I/20,7**	8 360 **2I/20,8**	12 610 **2I/20,3**	15 840 **2I/20**	25 530 **2I/19,7**	30 110 **2I/20,1**	38 170 **2I/20,6**	50 360 **2I/20,6**	60 420 **2I/20,3**			
	18	–	–	–	–	–	–	–	4 330 **2I/17,6**	6 750 **2I/18,1**	8 500 **2I/18**	12 490 **2I/17,6**	15 930 **2I/18,1**	26 220 **2I/17,8**	31 410 **2I/17,9**	39 900 **2I/17,8**	49 700 **2I/17,8**	62 450 **2I/18,3**			
		3,07	6,5	7,42	13,4	15,8	27,1	51,9	76,8	129	148	231	301	447	553	–	–	–	16	2800	**180**
	16	170 **2I/16,3**	350 **2I/15,8**	420 **2I/16,5**	715 **2I/15,7**	845 **2I/15,7**	1 490 **2I/16,1**	2 800 **2I/15,8**	3 950 **2I/15,1**	6 900 **2I/15,7**	8 410 **2I/16,6**	12 660 **2I/16,1**	16 030 **2I/15,6**	24 690 **2I/16,2**	29 620 **2I/15,7**	42 790 **2I/15,9**	53 490 **2I/15,9**	61 280 **2I/16**			
									71	128	165	241	282	412	515	–	–	–	14	2500	
	14	–	–	–	–	–	–	–	3 980 **2I/14,7**	6 900 **2I/14,1**	9 060 **2I/14,4**	12 780 **2I/13,9**	15 730 **2I/14,6**	22 990 **2I/14,6▲**	28 950 **2I/14,7▲**	41 020 **2I/14,3**	50 150 **2I/14,3**	63 830 **2I/14,4**			
		3,26	6,25	6,36	10,6	12,2	27,2	52,9	76	112	146	226	289	463	548	–	–	–	12,5	2240	
	12,5	170 **2I/12,3**	350 **2I/13,1**	370 **2I/13,6**	620 **2I/13,7**	715 **2I/13,7**	1 430 **2I/12,3**	2 950 **2I/13,1**	4 320 **2I/13,3**	6 480 **2I/13,6**	8 480 **2I/13,6**	12 490 **2I/13**	15 710 **2I/12,8**	25 800 **2I/13,1**	31 100 **2I/13,3**	39 330 **2I/13,4**	50 890 **2I/13,4**	62 260 **2I/13,1**			
									77,5	120	162	231	299	468	570	764	955	1 148	11,2	2000	
	11,2	–	–	–	–	–	–	–	4 400 **2I/11,9**	6 820 **2I/11,9**	9 140 **2I/11,8**	12 330 **2I/11,2**	16 400 **2I/11,5**	26 390 **2I/11,8**	32 400 **2I/11,9**	41 950 **2I/11,5▲**	52 440 **2I/11,5▲**	64 820 **2I/11,8▲**			
		3,54	6,28	7,04	13,1	15,5	26,9	52,8	72	132	160	229	315	435	594	799	998	1 159	10	1800	
	10	190 **2I/10,2**	360 **2I/10,7**	420 **2I/11,2**	720 **2I/10,3**	845 **2I/10,3**	1 460 **2I/10,2**	3 010 **2I/10,7**	3 900 **2I/10,2**	7 190 **2I/10,3**	9 070 **2I/10,7**	12 430 **2I/10,2**	16 610 **2I/9,95**	24 790 **2I/10,7**	32 810 **2I/10,4**	43 630 **2I/10,3**	54 530 **2I/10,3**	65 640 **2I/10,7**			
									66,3	107	123	238	289	441	569	769	961	1 131	9	1600	
	9	–	–	–	–	–	–	–	3 650 **2I/9,22**	5 910 **2I/9,24**	6 830 **2I/9,31**	12 540 **2I/8,85**	15 320 **2I/8,88**	24 170 **2I/9,19**	31 320 **2I/9,22**	42 420 **2I/9,24**	53 020 **2I/9,24**	62 850 **2I/9,31**			
		3,12	6,32	7,89	13,8	17	26,9	53,4		109		228		436		783	976		8	1400	
	8	170 **2I/8,01**	355 **2I/8,26**	430 **2I/7,99**	755 **2I/8,03**	935 **2I/8,03**	1 470 **2I/8,01**	3 010 **2I/8,26**	–	5 990 **2I/8,03**	–	12 480 **2I/8,01**	–	24 560 **2I/8,26**	–	42 900 **2I/8,03**	53 480 **2I/8,03**	–			
		2,68	5,4	6,75	11,1	13,9	26,7	43,4		88,6		203		399		694	815		6,3	1120	
	6,3	145 **2I/6,42**	300 **2I/6,53**	395 **2I/6,86**	610 **2I/6,41**	760 **2I/6,41**	1 460 **2I/6,42**	2 420 **2I/6,53**	–	4 850 **2I/6,41**	–	11 100 **2I/6,42**	–	22 250 **2I/6,53**	–	37 980 **2I/6,41**	44 570 **2I/6,41**	–			
			5,47		10,5		24,2	47,5	64,4	104	135	209	260	353	528	710	888	965	5	900	
	5	–	290 **I/5**	–	580 **I/5,2**	–	1 240 **I/4,82**	2 520 **I/5**	3 420 **I/5**	5 420 **I/4,92**	7 260 **I/5,07**	10 940 **I/4,92**	14 000 **I/5,07**	19 010 **I/5,08**	28 000 **I/5**	37 110 **I/4,92**	46 390 **I/4,92**	51 920 **I/5,07**			
								48,3	67,5	109	141	220	275	413	500	711	888	955	4,5	800	
	4,5	–	–	–	–	–	–	2 570 **I/4,45**	3 630 **I/4,5**	5 860 **I/4,5**	7 880 **I/4,67**	11 800 **I/4,5**	15 330 **I/4,67**	22 010 **I/4,47**	26 840 **I/4,5**	38 180 **I/4,5**	47 720 **I/4,5**	52 430 **I/4,6**			
			6,36		12,7		26	51,8	74,8	112	148	220	291	384	549	703	878	950	4	710	
	4	–	340 **I/4**	–	710 **I/4,16**	–	1 370 **I/3,92**	2 790 **I/4**	4 100 **I/4,08**	6 200 **I/4,13**	8 290 **I/4,15**	12 220 **I/4,13**	15 950 **I/4,07**	20 660 **I/4**	30 080 **I/4,08**	38 430 **I/4,07**	48 040 **I/4,07**	51 100 **I/4**			
								55,6	78,4	112	151	223	287	404	516	699	874	936	3,55	630	
	3,55	–	–	–	–	–	–	3 050 **I/3,62**	4 330 **I/3,64**	6 130 **I/3,62**	8 250 **I/3,6**	12 070 **I/3,57**	15 950 **I/3,67**	22 120 **I/3,62**	28 510 **I/3,64**	37 080 **I/3,5**	46 350 **I/3,5**	51 060 **I/3,6**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
2 240 000			6,34		14		25,6	54,8	82,7	115	143	220	295	380	571	689	862	919	3,15	560	**180**
	3,15	–	355 **I/3,28**	–	750 **I/3,13**	–	1 430 **I/3,27**	3 070 **I/3,28**	4 410 **I/3,13**	6 140 **I/3,13**	7 920 **I/3,25**	12 250 **I/3,27**	16 000 **I/3,18**	21 320 **I/3,28**	31 060 **I/3,19**	36 830 **I/3,13**	46 040 **I/3,13**	50 930 **I/3,25**			
2 000 000	90	–	–	–	–	–	–	–	3 550 **3I/89,4**	5 300 **3I/93,7**	6 900 **3I/93,3**	10 600 **3I/86,4**	15 000 **3I/88,8**	21 200 **3I/89**	25 180 **3I/89,7**	34 180 **3I/90,1**	42 730 **3I/90,1**	48 360 **3I/92,7**			
	80	–	230 **3I/75,2**	290 **3I/78,2**	500 **3I/82,7**	580 **3I/82,7**	1 030 **3I/75,5**	2 060 **3I/75,3**	3 550 **3I/81,4**	5 300 **3I/85,7**	7 500 **3I/86,1**	10 600 **3I/84**	15 000 **3I/82,7**	21 200 **3I/82,7**	27 330 **3I/84,3**	37 500 **3I/82,5**	45 000 **3I/82,5**	48 240 **3I/81,1**			
	71	–	–	–	–	–	–	–	3 750 **3I/72,8**	5 450 **3I/74,9**	7 760 **3I/74,6**	11 200 **3I/72,6**	16 000 **3I/74,5**	22 400 **3I/74,7**	25 500 **3I/75,3**	34 010 **3I/71**	42 520 **3I/71**	51 000 **3I/73**			
	63	–	280 **3I/60,1**	345 **3I/62,6**	605 **3I/66,3**	710 **3I/66,3**	1 250 **3I/61,5**	2 500 **3I/60,2**	3 750 **3I/62**	5 600 **3I/63,5**	7 750 **3I/63,8**	11 200 **3I/62,6**	15 500 **3I/61,7**	22 400 **3I/61,5**	26 480 **3I/62,7**	38 160 **3I/67,1**	47 700 **3I/67,1**	50 820 **3I/66**			
	56	–	–	–	–	–	–	–	3 870 **3I/55,4**	5 800 **3I/55,5**	8 000 **3I/55,3**	11 800 **3I/54,1**	16 930 **3I/55,5**	24 240 **3I/55,6**	26 890 **3I/56**	34 090 **3I/57,8**	42 420 **3I/57,8**	53 790 **3I/59,4**			
	50	–	300 **3I/49,4**	385 **3I/51,5**	630 **3I/49,8**	775 **3I/49,8**	1 320 **3I/51,2**	2 540 **3I/49,5**	3 870 **3I/50,4**	5 800 **3I/50,8**	8 250 **3I/51**	11 800 **3I/52,6**	16 500 **3I/51,8**	23 600 **3I/51,7**	26 980 **3I/52,7**	37 910 **3I/52,9**	47 390 **3I/52,9**	53 960 **3I/52**			
	45	–	–	–	–	–	–	–	4 130 **3I/45,1**	6 150 **3I/44,4**	8 050 **3I/44,2**	12 500 **3I/45,4**	17 710 **3I/46,6**	24 330 **3I/46,7**	28 530 **3I/47,1**	36 160 **3I/45,5**	45 000 **3I/45,5**	57 050 **3I/46,8**			
	40	–	315 **3I/40,8**	370 **3I/42,5**	605 **3I/43,6**	715 **3I/43,6**	1 400 **3I/39,1**	2 580 **3I/40,8**	3 670 **3I/38,7**	6 300 **3I/38,5**	7 530 **3I/39,9**	12 800 **3I/41,5**	15 900 **3I/40,4**	22 920 **3I/42,4**	29 280 **3I/41,2**	37 120 **3I/40,7**	46 190 **3I/40,7**	58 560 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	3 690 **3I/37,5**	6 420 **3I/36,5**	7 630 **3I/36,3**	12 830 **3I/34,4**	15 250 **3I/35,4**	23 250 **3I/36,9**	30 080 **3I/37,2**	38 140 **3I/37,4**	47 460 **3I/37,4**	60 170 **3I/38,4**			
	31,5	–	315 **3I/33,5**	355 **3I/34,9**	700 **3I/32,8**	775 **3I/32,8**	1 360 **3I/32,6**	2 280 **3I/33,5**	3 510 **3I/32,2**	5 750 **3I/31,6**	7 290 **3I/32,8**	12 140 **3I/31,5**	15 460 **3I/30,6**	22 080 **3I/33,5**	30 490 **3I/32,5**	38 660 **3I/33,5**	48 100 **3I/33,5**	60 990 **3I/34,7**			
	28	–	–	–	–	–	1 120 **2I/28,8**	–	3 210 **3I/29,1**	5 480 **3I/28,4**	6 430 **3I/28,6**	11 130 **3I/27,2**	14 450 **3I/27,3**	22 360 **3I/28,7**	28 880 **3I/28,8**	39 140 **3I/30**	48 710 **3I/30**	59 300 **3I/30,3**			
	25	125 **2I/24,4**	290 **2I/24,1**	340 **2I/25,1**	510 **2I/26**	600 **2I/26**	1 300 **2I/23,7**	2 480 **2I/24,1**	3 470 **2I/24,1**	5 440 **2I/24,6**	7 900 **2I/25,4**	10 980 **2I/24,2**	15 820 **2I/25**	22 600 **2I/25**	30 370 **2I/24,6**	32 350 **2I/25**	46 580 **2I/25**	56 240 **2I/25,7**			
	22,4	–	–	–	–	–	–	–	3 990 **2I/21,7**	6 200 **2I/22,5**	8 760 **2I/23,3**	11 840 **2I/22,2**	16 410 **2I/23**	23 030 **2I/22**	28 720 **2I/22,2**	35 990 **2I/22,8**	47 950 **2I/22,8**	56 960 **2I/23,4**			
	20	145 **2I/20,1**	350 **2I/19,3**	370 **2I/20,1**	605 **2I/20,8**	710 **2I/20,8**	1 490 **2I/19,3**	2 970 **2I/19,3**	4 320 **2I/19,6**	6 500 **2I/20,7**	8 670 **2I/20,8**	12 890 **2I/20,3**	16 420 **2I/20**	25 850 **2I/19,7**	30 980 **2I/20,1**	38 720 **2I/20,6**	52 200 **2I/20,6**	62 630 **2I/20,3**			
									74,9	113	143	216	266	436	521	–	–	–	18	2800	**160**
	18	–	–	–	–	–	–	–	4 480 **2I/17,6**	6 990 **2I/18,1**	8 750 **2I/18**	12 940 **2I/17,6**	16 390 **2I/18,1**	26 450 **2I/17,8**	31 860 **2I/17,9**	40 470 **2I/17,8**	50 470 **2I/17,8**	63 330 **2I/18,3**			
		2,75	6,01	6,65	12	14,1	25,1	48	71	119	137	213	278	413	501	–	–	–	16	2500	
	16	170 **2I/16,3**	365 **2I/15,8**	420 **2I/16,5**	715 **2I/15,7**	845 **2I/15,7**	1 540 **2I/16,1**	2 900 **2I/15,8**	4 080 **2I/15,1**	7 100 **2I/15,7**	8 700 **2I/16,6**	13 100 **2I/16,1**	16 580 **2I/15,6**	25 540 **2I/16,2**	30 020 **2I/15,7**	44 270 **2I/15,9**	55 340 **2I/15,9**	62 520 **2I/16**			
									63,8	115	153	223	261	371	469	–	–	–	14	2240	
	14	–	–	–	–	–	–	–	4 000 **2I/14,7**	6 900 **2I/14,1**	9 360 **2I/14,4**	13 210 **2I/13,9**	16 260 **2I/14,6**	23 070 **2I/14,6**	29 400 **2I/14,7**	41 560 **2I/14,3**	51 340 **2I/14,3**	64 670 **2I/14,4**			

For n_1 lower than 560 min^{-1} see page 107.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
2 000 000	12,5	2,92 170 **2I/12,3**	5,7 355 **2I/13,1**	5,7 370 **2I/13,6**	9,58 625 **2I/13,7**	11,1 725 **2I/13,7**	25,1 1 480 **2I/12,3**	47,6 2 970 **2I/13,1**	68,1 4 330 **2I/13,3**	100 6 500 **2I/13,6**	134 8 760 **2I/13,6**	208 12 890 **2I/13**	266 16 200 **2I/12,8**	415 25 890 **2I/13,1**	498 31 700 **2I/13,3**	625 39 870 **2I/13,4▲**	825 52 650 **2I/13,4▲**	1 006 63 100 **2I/13,1▲**	12,5	2000	**160**
	11,2	–	–	–	–	–	–	–	71,7 4 530 **2I/11,9**	112 7 040 **2I/11,9**	150 9 430 **2I/11,8**	214 12 720 **2I/11,2**	272 16 610 **2I/11,5**	423 26 480 **2I/11,8**	520 32 810 **2I/11,9**	690 42 090 **2I/11,5**	862 52 610 **2I/11,5**	1 046 65 640 **2I/11,8**	11,2	1800	
	10	3,16 195 **2I/10,2**	5,79 370 **2I/10,7**	6,29 420 **2I/11,2**	11,7 720 **2I/10,3**	13,8 850 **2I/10,3**	24,8 1 510 **2I/10,2**	48,6 3 120 **2I/10,7**	66,3 4 040 **2I/10,2**	118 7 220 **2I/10,3**	147 9 400 **2I/10,7**	211 12 880 **2I/10,2**	284 16 840 **2I/9,95**	401 25 690 **2I/10,7**	535 33 270 **2I/10,4**	736 45 200 **2I/10,3**	919 56 500 **2I/10,3**	1 044 66 570 **2I/10,7**	10	1600	
	9	–	–	–	–	–	–	–	60,4 3 800 **2I/9,22**	95,3 6 010 **2I/9,24**	109 6 940 **2I/9,31**	216 13 060 **2I/8,85**	263 15 950 **2I/8,88**	392 24 560 **2I/9,19**	506 31 820 **2I/9,22**	700 44 150 **2I/9,24**	876 55 190 **2I/9,24**	1 006 63 860 **2I/9,31**	9	1400	
	8	2,88 175 **2I/8,01**	5,83 370 **2I/8,26**	7,29 445 **2I/7,99**	12,4 760 **2I/8,03**	15,3 935 **2I/8,03**	24,9 1 520 **2I/8,01**	49,3 3 110 **2I/8,26**	–	98,2 6 030 **2I/8,03**	–	211 12 910 **2I/8,01**	–	391 24 710 **2I/8,26**	–	704 43 180 **2I/8,03**	877 53 810 **2I/8,03**	–	8	1250	
	6,3	2,4 145 **2I/6,42**	4,99 310 **2I/6,53**	6,24 410 **2I/6,86**	9,97 610 **2I/6,41**	12,5 765 **2I/6,41**	24,7 1 510 **2I/6,42**	39 2 430 **2I/6,53**	–	79,6 4 880 **2I/6,41**	–	182 11 160 **2I/6,42**	–	359 22 380 **2I/6,53**	–	626 38 340 **2I/6,41**	732 44 850 **2I/6,41**	–	6,3	1000	
	5	–	5,05 300 **I/5**	–	9,39 585 **I/5,2**	–	21,6 1 240 **I/4,82**	42,4 2 530 **I/5**	57,2 3 420 **I/5**	92,6 5 440 **I/4,92**	120 7 260 **I/5,07**	187 10 980 **I/4,92**	231 14 000 **I/5,07**	325 19 690 **I/5,08**	469 28 000 **I/5**	634 37 250 **I/4,92**	792 46 560 **I/4,92**	888 53 780 **I/5,07**	5	800	
	4,5	–	–	–	–	–	–	42,9 2 570 **I/4,45**	59,9 3 630 **I/4,5**	97,1 5 880 **I/4,5**	126 7 880 **I/4,67**	195 11 800 **I/4,5**	244 15 330 **I/4,67**	378 22 730 **I/4,47**	460 27 820 **I/4,5**	633 38 340 **I/4,5**	792 47 920 **I/4,5**	878 54 340 **I/4,6**	4,5	710	
	4	–	5,64 340 **I/4**	–	11,2 710 **I/4,16**	–	23,5 1 400 **I/3,92**	46,2 2 800 **I/4**	66,6 4 120 **I/4,08**	99,4 6 230 **I/4,13**	136 8 590 **I/4,15**	200 12 500 **I/4,13**	268 16 530 **I/4,07**	353 21 420 **I/4**	505 31 180 **I/4,08**	646 39 830 **I/4,07**	808 49 790 **I/4,07**	874 52 970 **I/4**	4	630	
	3,55	–	–	–	–	–	–	49,6 3 060 **I/3,62**	69,9 4 340 **I/3,64**	103 6 350 **I/3,62**	134 8 250 **I/3,6**	205 12 510 **I/3,57**	264 16 500 **I/3,67**	372 22 920 **I/3,62**	476 29 540 **I/3,64**	644 38 410 **I/3,5**	804 48 010 **I/3,5**	862 52 900 **I/3,6**	3,55	560	
1 800 000	100	–	–	–	–	–	1 150 **3I/103**	2 300 **3I/101**	3 450 **3I/100**	5 150 **3I/107**	7 300 **3I/108**	10 300 **3I/100**	14 500 **3I/98,5**	20 600 **3I/98,5**	28 180 **3I/100**	36 500 **3I/105**	43 700 **3I/105**	48 830 **3I/103**			
	90	–	–	–	–	–	–	–	3 650 **3I/89,4**	5 300 **3I/93,7**	7 100 **3I/93,3**	10 900 **3I/86,4**	15 500 **3I/88,8**	21 800 **3I/89**	26 050 **3I/89,7**	35 360 **3I/90,1**	44 200 **3I/90,1**	49 640 **3I/92,7**			
	80	–	235 **3I/75,2**	290 **3I/78,2**	510 **3I/82,7**	580 **3I/82,7**	1 060 **3I/75,5**	2 120 **3I/75,3**	3 650 **3I/81,4**	5 450 **3I/85,7**	7 750 **3I/86,1**	10 900 **3I/84**	15 500 **3I/82,7**	21 800 **3I/82,7**	28 250 **3I/84,3**	38 700 **3I/82,5**	46 200 **3I/82,5**	49 560 **3I/81,1**			
	71	–	–	–	–	–	–	–	3 870 **3I/72,8**	5 600 **3I/74,9**	8 030 **3I/74,6**	11 500 **3I/72,6**	16 000 **3I/74,5**	23 000 **3I/74,7**	26 150 **3I/75,3**	35 190 **3I/71**	43 990 **3I/71**	52 300 **3I/73**			
	63	–	290 **3I/60,1**	355 **3I/62,6**	610 **3I/66,3**	715 **3I/66,3**	1 280 **3I/61,5**	2 570 **3I/60,2**	3 750 **3I/62**	5 600 **3I/63,5**	8 000 **3I/63,8**	11 500 **3I/62,6**	16 000 **3I/61,7**	23 000 **3I/61,5**	27 330 **3I/62,7**	39 390 **3I/67,1**	49 230 **3I/67,1**	52 270 **3I/66**			
	56	–	–	–	–	–	–	–	4 000 **3I/55,4**	6 000 **3I/55,5**	8 320 **3I/55,3**	12 200 **3I/54,1**	17 540 **3I/55,5**	25 110 **3I/55,6**	27 760 **3I/56**	35 190 **3I/57,8**	43 900 **3I/57,8**	55 530 **3I/59,4**			
	50	–	305 **3I/49,4**	385 **3I/51,5**	650 **3I/49,8**	775 **3I/49,8**	1 360 **3I/51,2**	2 640 **3I/49,5**	4 000 **3I/50,4**	6 000 **3I/50,8**	8 780 **3I/51**	12 200 **3I/52,6**	17 000 **3I/51,8**	24 300 **3I/51,7**	27 720 **3I/52,7**	39 290 **3I/52,9**	49 110 **3I/52,9**	55 440 **3I/52**			
	45	–	–	–	–	–	–	–	4 280 **3I/45,1**	6 300 **3I/44,4**	8 340 **3I/44,2**	12 800 **3I/45,4**	18 360 **3I/46,6**	25 220 **3I/46,7**	29 280 **3I/47,1**	37 120 **3I/45,5**	46 190 **3I/45,5**	58 560 **3I/46,8**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
1 800 000	40	–	325 3I/40,8	370 3I/42,5	610 3I/43,6	715 3I/43,6	1 450 3I/39,1	2 680 3I/40,8	3 800 3I/38,7	6 500 3I/38,5	7 800 3I/39,9	13 200 3I/41,5	16 480 3I/40,4	23 740 3I/42,4	30 080 3I/41,2	38 140 3I/40,7	47 460 3I/40,7	60 170 3I/42,3			
	35,5	–	–	–	–	–	–	–	3 820 3I/37,5	6 640 3I/36,5	7 730 3I/36,3	13 270 3I/34,4	15 460 3I/35,4	24 060 3I/36,9	30 490 3I/37,2	38 660 3I/37,4	48 100 3I/37,4	60 990 3I/38,4			
	31,5	–	315 3I/33,5	355 3I/34,9	720 3I/32,8	800 3I/32,8	1 360 3I/32,6	2 350 3I/33,5	3 550 3I/32,2	5 940 3I/31,6	7 380 3I/32,8	12 530 3I/31,5	15 660 3I/30,6	22 570 3I/33,5	30 880 3I/32,5	39 140 3I/33,5	48 710 3I/33,5	61 760 3I/34,7			
	28	–	–	–	–	–	1 150 2I/28,8	–	3 260 3I/29,1	5 560 3I/28,4	6 530 3I/28,6	11 290 3I/27,2	14 660 3I/27,3	22 670 3I/28,7	29 290 3I/28,8	39 700 3I/30	49 400 3I/30	60 140 3I/30,3			
	25	125 2I/24,4	290 2I/24,1	340 2I/25,1	510 2I/26	605 2I/26	1 300 2I/23,7	2 480 2I/24,1	3 480 2I/24,1	5 460 2I/24,6	7 930 2I/25,4	11 020 2I/24,2	15 880 2I/25	22 690 2I/25	30 480 2I/24,6	32 810 2I/25	46 760 2I/25	58 290 2I/25,7			
	22,4	–	–	–	–	–	–	–	4 000 2I/21,7	6 230 2I/22,5	8 790 2I/23,3	11 880 2I/22,2	17 010 2I/23	23 120 2I/22	29 770 2I/22,2	36 510 2I/22,8	48 130 2I/22,8	59 040 2I/23,4			
		2,13	5,42	5,42	8,57	10,1	23	45,3	64,8	92,5	124	186	249	386	469	–	–	–	20	2800	**140**
	20	145 2I/20,1	355 2I/19,3	370 2I/20,1	610 2I/20,8	715 2I/20,8	1 520 2I/19,3	2 980 2I/19,3	4 340 2I/19,6	6 520 2I/20,7	8 790 2I/20,8	12 940 2I/20,3	17 010 2I/20	25 950 2I/19,7	32 100 2I/20,1	39 270 2I/20,6	54 080 2I/20,6	64 880 2I/20,3			
									67,6	103	127	199	246	390	471	–	–	–	18	2500	
	18	–	–	–	–	–	–	–	4 530 2I/17,6	7 100 2I/18,1	8 750 2I/18	13 390 2I/17,6	16 960 2I/18,1	26 540 2I/17,8	32 290 2I/17,9	41 770 2I/17,8	52 210 2I/17,8	64 190 2I/18,3			
		2,47	5,26	5,98	10,8	12,7	23,2	44,4	63,9	108	124	197	257	383	455	–	–	–	16	2240	
	16	170 2I/16,3	355 2I/15,8	420 2I/16,5	720 2I/15,7	850 2I/15,7	1 590 2I/16,1	3 000 2I/15,8	4 100 2I/15,1	7 240 2I/15,7	8 790 2I/16,6	13 540 2I/16,1	17 140 2I/15,6	26 400 2I/16,2	30 420 2I/15,7	45 760 2I/15,9	57 190 2I/15,9	64 610 2I/16			
									57,2	106	141	206	241	332	433	623	779	953	14	2000	
	14	–	–	–	–	–	–	–	4 010 2I/14,7	7 130 2I/14,1	9 670 2I/14,4	13 670 2I/13,9	16 820 2I/14,6	23 150 2I/14,6	30 420 2I/14,7	42 490 2I/14,3	53 110 2I/14,3	65 550 2I/14,4			
		2,64	5,14	5,15	8,73	10,1	23,3	43	61,5	90,6	121	188	247	375	463	569	766	933	12,5	1800	
	12,5	170 2I/12,3	355 2I/13,1	370 2I/13,6	635 2I/13,7	735 2I/13,7	1 520 2I/12,3	2 980 2I/13,1	4 350 2I/13,3	6 530 2I/13,6	8 790 2I/13,6	12 930 2I/13	16 720 2I/12,8	25 980 2I/13,1	32 720 2I/13,3	40 370 2I/13,4	54 340 2I/13,4	65 080 2I/13,1			
									64	100	137	197	246	377	468	615	769	943	11,2	1600	
	11,2	–	–	–	–	–	–	–	4 540 2I/11,9	7 100 2I/11,9	9 680 2I/11,8	13 180 2I/11,2	16 840 2I/11,5	26 570 2I/11,8	33 270 2I/11,9	42 250 2I/11,5	52 810 2I/11,5	66 570 2I/11,8			
		2,77	5,12	5,52	10,3	12,1	22,6	44,3	60,4	103	134	192	252	365	476	670	837	929	10	1400	
	10	195 2I/10,2	375 2I/10,7	420 2I/11,2	725 2I/10,3	850 2I/10,3	1 580 2I/10,2	3 240 2I/10,7	4 200 2I/10,2	7 250 2I/10,3	9 780 2I/10,7	13 410 2I/10,2	17 110 2I/9,95	26 730 2I/10,7	33 810 2I/10,4	47 040 2I/10,3	58 810 2I/10,3	67 640 2I/10,7			
									55,8	85,6	98,2	200	243	352	454	647	809	904	9	1250	
	9	–	–	–	–	–	–	–	3 930 2I/9,22	6 040 2I/9,24	6 990 2I/9,31	13 510 2I/8,85	16 500 2I/8,88	24 710 2I/9,19	32 020 2I/9,22	45 680 2I/9,24	57 100 2I/9,24	64 280 2I/9,31			
		2,67	5,4	6,75	11,1	13,7	23	45,7		88,6		195		353		634	790		8	1120	
	8	180 2I/8,01	380 2I/8,26	460 2I/7,99	760 2I/8,03	940 2I/8,03	1 570 2I/8,01	3 220 2I/8,26	–	6 070 2I/8,03	–	13 340 2I/8,01	–	24 850 2I/8,26	–	43 440 2I/8,03	54 130 2I/8,03	–			
		2,17	4,64	5,66	9	11,3	22	35,3		72,1		165		325		568	663		6,3	900	
	6,3	150 2I/6,42	320 2I/6,53	410 2I/6,86	615 2I/6,41	765 2I/6,41	1 500 2I/6,42	2 450 2I/6,53	–	4 910 2I/6,41	–	11 230 2I/6,42	–	22 500 2I/6,53	–	38 670 2I/6,41	45 120 2I/6,41	–			
			4,5		8,36		19,2	37,7	50,8	82,3	106	166	205	299	416	565	706	817	5	710	
	5	–	300 I/5	–	585 I/5,2	–	1 250 I/4,82	2 540 I/5	3 420 I/5	5 450 I/4,92	7 260 I/5,07	11 020 I/4,92	14 000 I/5,07	20 410 I/5,08	28 000 I/5	37 390 I/4,92	46 730 I/4,92	55 740 I/5,07			
								38,1	53,2	86,5	111	173	217	337	423	564	705	808	4,5	630	
	4,5	–	–	–	–	–	–	2 570 I/4,45	3 630 I/4,5	5 900 I/4,5	7 880 I/4,67	11 800 I/4,5	15 330 I/4,67	22 810 I/4,47	28 840 I/4,5	38 480 I/4,5	48 100 I/4,5	56 320 I/4,6			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 800 000			5,02		9,99		20,9	41	59,3	88,7	122	177	247	325	465	595	744	804	4	560	**140**
	4	–	340 **I/4**	–	710 **I/4,16**	–	1 400 **I/3,92**	2 800 **I/4**	4 120 **I/4,08**	6 250 **I/4,13**	8 620 **I/4,15**	12 500 **I/4,13**	17 130 **I/4,07**	22 190 **I/4**	32 300 **I/4,08**	41 270 **I/4,07**	51 580 **I/4,07**	54 870 **I/4**			
1 600 000	100	–	–	–	–	–	1 180 **3I/103**	2 360 **3I/101**	3 550 **3I/100**	5 300 **3I/107**	7 500 **3I/108**	10 600 **3I/100**	15 000 **3I/98,5**	21 200 **3I/98,5**	29 150 **3I/100**	37 500 **3I/105**	45 000 **3I/105**	50 520 **3I/103**			
	90	–	–	–	–	–	–	–	3 750 **3I/89,4**	5 450 **3I/93,7**	7 300 **3I/93,3**	11 200 **3I/86,4**	16 000 **3I/88,8**	22 400 **3I/89**	26 920 **3I/89,7**	36 550 **3I/90,1**	45 680 **3I/90,1**	51 000 **3I/92,7**			
	80	–	245 **3I/75,2**	300 **3I/78,2**	515 **3I/82,7**	605 **3I/82,7**	1 090 **3I/75,5**	2 180 **3I/75,3**	3 750 **3I/81,4**	5 600 **3I/85,7**	7 750 **3I/86,1**	11 200 **3I/84**	15 500 **3I/82,7**	22 400 **3I/82,7**	29 230 **3I/84,3**	38 700 **3I/82,5**	47 500 **3I/82,5**	50 820 **3I/81,1**			
	71	–	–	–	–	–	–	–	3 870 **3I/72,8**	5 800 **3I/74,9**	8 290 **3I/74,6**	11 800 **3I/72,6**	16 500 **3I/74,5**	23 600 **3I/74,7**	26 950 **3I/75,3**	36 320 **3I/71**	45 400 **3I/71**	53 790 **3I/73**			
	63	–	300 **3I/60,1**	370 **3I/62,6**	610 **3I/66,3**	715 **3I/66,3**	1 320 **3I/61,5**	2 650 **3I/60,2**	3 870 **3I/62**	5 800 **3I/63,5**	8 250 **3I/63,8**	11 800 **3I/62,6**	16 500 **3I/61,7**	23 600 **3I/61,5**	28 310 **3I/62,7**	40 800 **3I/67,1**	51 010 **3I/67,1**	53 960 **3I/66**			
	56	–	–	–	–	–	–	–	4 120 **3I/55,4**	6 150 **3I/55,5**	8 360 **3I/55,3**	12 500 **3I/54,1**	17 500 **3I/55,5**	25 000 **3I/55,6**	28 530 **3I/56**	36 400 **3I/57,8**	45 500 **3I/57,8**	57 050 **3I/59,4**			
	50	–	315 **3I/49,4**	400 **3I/51,5**	670 **3I/49,8**	800 **3I/49,8**	1 400 **3I/51,2**	2 730 **3I/49,5**	4 120 **3I/50,4**	6 150 **3I/50,8**	8 810 **3I/51**	12 500 **3I/52,6**	17 500 **3I/51,8**	25 000 **3I/51,7**	28 460 **3I/52,7**	40 730 **3I/52,9**	50 910 **3I/52,9**	56 910 **3I/52**			
	45	–	–	–	–	–	–	–	4 430 **3I/45,1**	6 500 **3I/44,4**	8 640 **3I/44,2**	13 200 **3I/45,4**	19 020 **3I/46,6**	26 120 **3I/46,7**	30 080 **3I/47,1**	38 140 **3I/45,5**	47 460 **3I/45,5**	60 170 **3I/46,8**			
	40	–	335 **3I/40,8**	375 **3I/42,5**	610 **3I/43,6**	720 **3I/43,6**	1 450 **3I/39,1**	2 770 **3I/40,8**	3 930 **3I/38,7**	6 700 **3I/38,5**	8 070 **3I/39,9**	13 600 **3I/41,5**	17 040 **3I/40,4**	24 560 **3I/42,4**	30 490 **3I/41,2**	38 660 **3I/40,7**	48 100 **3I/40,7**	60 990 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	3 940 **3I/37,5**	6 700 **3I/36,5**	7 830 **3I/36,3**	13 700 **3I/34,4**	15 660 **3I/35,4**	24 830 **3I/36,9**	30 880 **3I/37,2**	39 140 **3I/37,4**	48 710 **3I/37,4**	61 760 **3I/38,4**			
	31,5	–	325 **3I/33,5**	365 **3I/34,9**	725 **3I/32,8**	800 **3I/32,8**	1 360 **3I/32,6**	2 430 **3I/33,5**	3 600 **3I/32,2**	6 150 **3I/31,6**	7 490 **3I/32,8**	12 980 **3I/31,5**	15 880 **3I/30,6**	23 380 **3I/33,5**	31 320 **3I/32,5**	39 700 **3I/33,5**	49 400 **3I/33,5**	62 640 **3I/34,7**			
	28	–	–	–	–	–	1 150 **2I/28,8**	–	3 300 **3I/29,1**	5 640 **3I/28,4**	6 620 **3I/28,6**	11 630 **3I/27,2**	14 870 **3I/27,3**	23 000 **3I/28,7**	29 710 **3I/28,8**	40 270 **3I/30**	50 110 **3I/30**	61 000 **3I/30,3**			
	25	125 **2I/24,4**	290 **2I/24,1**	340 **2I/25,1**	520 **2I/26**	605 **2I/26**	1 310 **2I/23,7**	2 490 **2I/24,1**	3 500 **2I/24,1**	5 480 **2I/24,6**	7 960 **2I/25,4**	11 060 **2I/24,2**	15 940 **2I/25**	22 770 **2I/25**	30 600 **2I/24,6**	33 280 **2I/25**	46 930 **2I/25**	60 410 **2I/25,7**			
									54,4	81,5	111	158	220	309	408	–	–	–	22,4	2800	**125**
	22,4	–	–	–	–	–	–	–	4 020 **2I/21,7**	6 250 **2I/22,5**	8 830 **2I/23,3**	11 930 **2I/22,2**	17 270 **2I/23**	23 210 **2I/22**	30 840 **2I/22,2**	37 030 **2I/22,8**	48 310 **2I/22,8**	61 170 **2I/23,4**			
		1,91	4,85	4,86	7,75	9,02	20,6	40,6	58	82,9	111	167	230	346	433	–	–	–	20	2500	
	20	145 **2I/20,1**	355 **2I/19,3**	370 **2I/20,1**	615 **2I/20,8**	720 **2I/20,8**	1 520 **2I/19,3**	2 990 **2I/19,3**	4 350 **2I/19,6**	6 540 **2I/20,7**	8 820 **2I/20,8**	12 980 **2I/20,3**	17 600 **2I/20**	26 040 **2I/19,7**	33 210 **2I/20,1**	39 810 **2I/20,6**	55 950 **2I/20,6**	67 130 **2I/20,3**			
									60,8	92,4	114	184	228	351	428	–	–	–	18	2240	
	18	–	–	–	–	–	–	–	4 550 **2I/17,6**	7 120 **2I/18,1**	8 750 **2I/18**	13 800 **2I/17,6**	17 520 **2I/18,1**	26 640 **2I/17,8**	32 720 **2I/17,9**	42 380 **2I/17,8**	52 970 **2I/17,8**	65 710 **2I/18,3**			
		2,22	4,83	5,35	9,64	11,4	20,8	41	57,3	97,1	111	182	237	354	411	623	779	875	16	2000	
	16	175 **2I/16,3**	365 **2I/15,8**	420 **2I/16,5**	720 **2I/15,7**	855 **2I/15,7**	1 600 **2I/16,1**	3 100 **2I/15,8**	4 120 **2I/15,1**	7 270 **2I/15,7**	8 820 **2I/16,6**	14 010 **2I/16,1**	17 730 **2I/15,6**	27 310 **2I/16,2**	30 830 **2I/15,7**	47 340 **2I/15,9**	59 170 **2I/15,9**	66 850 **2I/16**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 600 000									51,6	95,8	127	191	223	300	403	579	724	869	14	1800	**125**
	14	–	–	–	–	–	–	–	4 030 **2I/14,7**	7 150 **2I/14,1**	9 700 **2I/14,4**	14 110 **2I/13,9**	17 260 **2I/14,6**	23 230 **2I/14,6**	31 390 **2I/14,7**	43 850 **2I/14,3**	54 820 **2I/14,3**	66 430 **2I/14,4**			
		2,35	4,59	4,59	7,87	9,11	20,7	38,4	54,9	80,8	108	168	228	334	425	513	704	859	12,5	1600	
	12,5	175 **2I/12,3**	360 **2I/13,1**	375 **2I/13,6**	645 **2I/13,7**	745 **2I/13,7**	1 520 **2I/12,3**	2 990 **2I/13,1**	4 360 **2I/13,3**	6 550 **2I/13,6**	8 830 **2I/13,6**	12 980 **2I/13**	17 330 **2I/12,8**	26 070 **2I/13,1**	33 790 **2I/13,3**	40 940 **2I/13,4**	56 170 **2I/13,4**	67 420 **2I/13,1**			
									56,2	88	120	180	221	331	416	547	682	838	11,2	1400	
	11,2	–	–	–	–	–	–	–	4 560 **2I/11,9**	7 130 **2I/11,9**	9 720 **2I/11,8**	13 720 **2I/11,2**	17 350 **2I/11,5**	26 690 **2I/11,8**	33 810 **2I/11,9**	42 900 **2I/11,5**	53 480 **2I/11,5**	67 640 **2I/11,8**			
		2,48	4,57	4,95	9,23	10,9	20,9	40,8	55,8	92,5	122	177	230	337	428	611	763	834	10	1250	
	10	195 **2I/10,2**	375 **2I/10,7**	425 **2I/11,2**	725 **2I/10,3**	855 **2I/10,3**	1 630 **2I/10,2**	3 350 **2I/10,7**	4 350 **2I/10,2**	7 280 **2I/10,3**	9 930 **2I/10,7**	13 870 **2I/10,2**	17 530 **2I/9,95**	27 660 **2I/10,7**	34 030 **2I/10,4**	48 030 **2I/10,3**	60 040 **2I/10,3**	68 080 **2I/10,7**			
									50,2	77,2	88,6	185	225	317	410	599	749	815	9	1120	
	9	–	–	–	–	–	–	–	3 950 **2I/9,22**	6 080 **2I/9,24**	7 030 **2I/9,31**	13 960 **2I/8,85**	17 050 **2I/8,88**	24 850 **2I/9,19**	32 210 **2I/9,22**	47 210 **2I/9,24**	59 010 **2I/9,24**	64 680 **2I/9,31**			
		2,46	4,9	6,24	9,97	12,3	21,3	42,2		79,6		180		317		570	710		8	1000	
	8	190 **2I/8,01**	385 **2I/8,26**	475 **2I/7,99**	765 **2I/8,03**	945 **2I/8,03**	1 630 **2I/8,01**	3 330 **2I/8,26**	–	6 110 **2I/8,03**	–	13 800 **2I/8,01**	–	25 000 **2I/8,26**	–	43 720 **2I/8,03**	54 460 **2I/8,03**	–			
		1,94	4,27	5,03	8,03	10	19,6	31,6		64,5		147		290		510	593		6,3	800	
	6,3	150 **2I/6,42**	335 **2I/6,53**	410 **2I/6,86**	615 **2I/6,41**	770 **2I/6,41**	1 500 **2I/6,42**	2 460 **2I/6,53**	–	4 940 **2I/6,41**	–	11 300 **2I/6,42**	–	22 640 **2I/6,53**	–	39 040 **2I/6,41**	45 420 **2I/6,41**	–			
			4		7,45		17,1	33,6	45,1	73	94,4	148	182	275	369	502	629	752	5	630	
	5	–	305 **I/5**	–	585 **I/5,2**	–	1 250 **I/4,82**	2 550 **I/5**	3 420 **I/5**	5 450 **I/4,92**	7 260 **I/5,07**	11 060 **I/4,92**	14 000 **I/5,07**	21 160 **I/5,08**	28 000 **I/5**	37 500 **I/4,92**	46 910 **I/4,92**	57 780 **I/5,07**			
								33,8	47,3	77,2	99	154	193	301	389	503	629	744	4,5	560	
	4,5	–	–	–	–	–	–	2 570 **I/4,45**	3 630 **I/4,5**	5 920 **I/4,5**	7 880 **I/4,67**	11 800 **I/4,5**	15 330 **I/4,67**	22 900 **I/4,47**	29 870 **I/4,5**	38 630 **I/4,5**	48 280 **I/4,5**	58 350 **I/4,6**			
1 400 000																					
	125	–	–	–	–	–	1 150 **3I/123**	2 300 **3I/123**	2 900 **3I/123**	4 370 **3I/128**	6 300 **3I/131**	9 000 **3I/119**	12 500 **3I/123**	18 000 **3I/125**	25 000 **3I/123**	31 500 **3I/127**	37 500 **3I/127**	50 000 **3I/131**			
	100	–	–	–	–	–	1 220 **3I/103**	2 430 **3I/101**	3 650 **3I/100**	5 450 **3I/107**	7 750 **3I/108**	10 900 **3I/100**	15 500 **3I/98,5**	21 800 **3I/98,5**	30 130 **3I/100**	38 700 **3I/105**	46 200 **3I/105**	52 210 **3I/103**			
	90	–	–	–	–	–	–	–	3 870 **3I/89,4**	5 600 **3I/93,7**	7 500 **3I/93,3**	11 500 **3I/86,4**	16 000 **3I/88,8**	23 000 **3I/89**	27 850 **3I/89,7**	37 810 **3I/90,1**	47 260 **3I/90,1**	52 300 **3I/92,7**			
	80	–	250 **3I/75,2**	305 **3I/78,2**	515 **3I/82,7**	605 **3I/82,7**	1 120 **3I/75,5**	2 240 **3I/75,3**	3 750 **3I/81,4**	5 600 **3I/85,7**	8 000 **3I/86,1**	11 500 **3I/84**	16 000 **3I/82,7**	23 000 **3I/82,7**	30 160 **3I/84,3**	40 000 **3I/82,5**	48 700 **3I/82,5**	52 270 **3I/81,1**			
	71	–	–	–	–	–	–	–	4 000 **3I/72,8**	6 000 **3I/74,9**	8 580 **3I/74,6**	12 200 **3I/72,6**	17 000 **3I/74,5**	24 300 **3I/74,7**	27 920 **3I/75,3**	37 630 **3I/71**	47 030 **3I/71**	55 530 **3I/73**			
	63	–	305 **3I/60,1**	375 **3I/62,6**	610 **3I/66,3**	720 **3I/66,3**	1 360 **3I/61,5**	2 720 **3I/60,2**	4 000 **3I/62**	6 000 **3I/63,5**	8 500 **3I/63,8**	12 200 **3I/62,6**	17 000 **3I/61,7**	24 300 **3I/61,5**	29 340 **3I/62,7**	42 290 **3I/67,1**	52 860 **3I/67,1**	55 440 **3I/66**			
	56	–	–	–	–	–	–	–	4 120 **3I/55,4**	6 300 **3I/55,5**	8 390 **3I/55,3**	12 800 **3I/54,1**	18 000 **3I/55,5**	25 700 **3I/55,6**	29 280 **3I/56**	37 730 **3I/57,8**	47 160 **3I/57,8**	58 560 **3I/59,4**			
	50	–	325 **3I/49,4**	410 **3I/51,5**	690 **3I/49,8**	825 **3I/49,8**	1 450 **3I/51,2**	2 830 **3I/49,5**	4 250 **3I/50,4**	6 300 **3I/50,8**	8 840 **3I/51**	13 040 **3I/52,6**	18 000 **3I/51,8**	26 170 **3I/51,7**	29 460 **3I/52,7**	42 190 **3I/52,9**	52 740 **3I/52,9**	58 470 **3I/52**			
	45	–	–	–	–	–	–	–	4 500 **3I/45,1**	6 700 **3I/44,4**	8 940 **3I/44,2**	13 600 **3I/45,4**	19 000 **3I/46,6**	26 770 **3I/46,7**	30 490 **3I/47,1**	38 660 **3I/45,5**	48 100 **3I/45,5**	60 990 **3I/46,8**			

For n_1 lower than 560 min^{-1} see page 107.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 400 000	40	–	335 **3I/40,8**	375 **3I/42,5**	615 **3I/43,6**	720 **3I/43,6**	1 500 **3I/39,1**	2 860 **3I/40,8**	4 060 **3I/38,7**	6 700 **3I/38,5**	8 330 **3I/39,9**	13 600 **3I/41,5**	17 590 **3I/40,4**	25 350 **3I/42,4**	30 880 **3I/41,2**	39 140 **3I/40,7**	48 710 **3I/40,7**	61 760 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	4 080 **3I/37,5**	6 700 **3I/36,5**	7 940 **3I/36,3**	13 840 **3I/34,4**	16 190 **3I/35,4**	25 720 **3I/36,9**	31 320 **3I/37,2**	39 700 **3I/37,4**	49 400 **3I/37,4**	62 640 **3I/38,4**			
	31,5	–	325 **3I/33,5**	365 **3I/34,9**	730 **3I/32,8**	825 **3I/32,8**	1 400 **3I/32,6**	2 520 **3I/33,5**	3 660 **3I/32,2**	6 380 **3I/31,6**	7 590 **3I/32,8**	13 450 **3I/31,5**	16 110 **3I/30,6**	24 230 **3I/33,5**	31 770 **3I/32,5**	40 270 **3I/33,5**	50 110 **3I/33,5**	63 530 **3I/34,7**			
	28	–	–	–	–	–	1 200 **2I/28,8**	–	3 400 **3I/29,1**	5 720 **3I/28,4**	6 710 **3I/28,6**	12 050 **3I/27,2**	15 080 **3I/27,3**	23 330 **3I/28,7**	30 140 **3I/28,8**	40 850 **3I/30**	50 830 **3I/30**	61 880 **3I/30,3**			
	25	1,51 125 **2I/24,4**	3,54 290 **2I/24,1**	4 340 **2I/25,1**	5,94 525 **2I/26**	6,87 610 **2I/26**	16,2 1 310 **2I/23,7**	30,5 2 500 **2I/24,1**	42,7 3 510 **2I/24,1**	65,5 5 500 **2I/24,6**	92,4 7 990 **2I/25,4**	134 11 100 **2I/24,2**	188 16 000 **2I/25**	268 22 860 **2I/25**	366 30 710 **2I/24,6**	– 33 760 **2I/25**	– 47 110 **2I/25**	– 62 590 **2I/25,7**	25	2800	**112**
	22,4	–	–	–	–	–	–	–	48,7 4 030 **2I/21,7**	73 6 270 **2I/22,5**	99,4 8 860 **2I/23,3**	141 11 970 **2I/22,2**	197 17 330 **2I/23**	277 23 290 **2I/22**	377 31 900 **2I/22,2**	– 37 530 **2I/22,8**	– 48 480 **2I/22,8**	– 63 280 **2I/23,4**	22,4	2500	
	20	1,72 145 **2I/20,1**	4,36 360 **2I/19,3**	4,37 375 **2I/20,1**	7,04 625 **2I/20,8**	8,15 725 **2I/20,8**	18,6 1 530 **2I/19,3**	36,5 3 000 **2I/19,3**	52,2 4 370 **2I/19,6**	74,5 6 570 **2I/20,7**	99,9 8 850 **2I/20,8**	150 13 030 **2I/20,3**	213 18 190 **2I/20**	311 26 130 **2I/19,7**	396 33 870 **2I/20,1**	– 40 330 **2I/20,6**	– 56 340 **2I/20,6**	– 69 380 **2I/20,3**	20	2240	
	18	–	–	–	–	–	–	–	54,5 4 570 **2I/17,6**	82,8 7 150 **2I/18,1**	106 9 120 **2I/18**	165 13 850 **2I/17,6**	210 18 130 **2I/18,1**	315 26 730 **2I/17,8**	387 33 170 **2I/17,9**	501 42 530 **2I/17,8**	627 53 160 **2I/17,8**	779 67 980 **2I/18,3**	18	2000	
	16	2 175 **2I/16,3**	4,35 365 **2I/15,8**	4,84 425 **2I/16,5**	8,7 725 **2I/15,7**	10,3 855 **2I/15,7**	18,8 1 600 **2I/16,1**	38,1 3 200 **2I/15,8**	51,7 4 130 **2I/15,1**	87,7 7 290 **2I/15,7**	100 8 850 **2I/16,6**	169 14 460 **2I/16,1**	221 18 300 **2I/15,6**	326 27 980 **2I/16,2**	375 31 220 **2I/15,7**	570 48 140 **2I/15,9**	713 60 180 **2I/15,9**	813 68 990 **2I/16**	16	1800	
	14	–	–	–	–	–	–	–	46,1 4 040 **2I/14,7**	85,5 7 180 **2I/14,1**	113 9 740 **2I/14,4**	175 14 510 **2I/13,9**	199 17 330 **2I/14,6**	268 23 320 **2I/14,6**	371 32 520 **2I/14,7**	533 45 430 **2I/14,3**	666 56 790 **2I/14,3**	801 68 820 **2I/14,4**	14	1600	
	12,5	2,07 175 **2I/12,3**	4,03 360 **2I/13,1**	4,07 380 **2I/13,6**	6,99 655 **2I/13,7**	8,1 755 **2I/13,7**	18,2 1 530 **2I/12,3**	33,7 3 010 **2I/13,1**	48,2 4 380 **2I/13,3**	71 6 580 **2I/13,6**	95,2 8 860 **2I/13,6**	148 13 030 **2I/13**	207 18 030 **2I/12,8**	294 26 180 **2I/13,1**	374 33 940 **2I/13,3**	456 41 600 **2I/13,4**	619 56 400 **2I/13,4**	783 70 170 **2I/13,1**	12,5	1400	
	11,2	–	–	–	–	–	–	–	50,4 4 580 **2I/11,9**	78,9 7 160 **2I/11,9**	108 9 750 **2I/11,8**	162 13 860 **2I/11,2**	205 17 950 **2I/11,5**	297 26 780 **2I/11,8**	374 34 030 **2I/11,9**	491 43 180 **2I/11,5**	612 53 810 **2I/11,5**	773 69 900 **2I/11,8**	11,2	1250	
	10	2,23 195 **2I/10,2**	4,23 385 **2I/10,7**	4,45 425 **2I/11,2**	8,3 730 **2I/10,3**	9,76 855 **2I/10,3**	19,3 1 690 **2I/10,2**	36,7 3 360 **2I/10,7**	50,2 4 370 **2I/10,2**	83,2 7 300 **2I/10,3**	109 9 930 **2I/10,7**	164 14 340 **2I/10,2**	213 18 110 **2I/9,95**	306 28 040 **2I/10,7**	386 34 240 **2I/10,4**	549 48 200 **2I/10,3**	686 60 250 **2I/10,3**	752 68 510 **2I/10,7**	10	1120	
	9	–	–	–	–	–	–	–	44,9 3 950 **2I/9,22**	69,4 6 120 **2I/9,24**	79,6 7 080 **2I/9,31**	171 14 440 **2I/8,85**	208 17 640 **2I/8,88**	289 25 320 **2I/9,19**	368 32 410 **2I/9,22**	553 48 840 **2I/9,24**	692 61 050 **2I/9,24**	732 65 090 **2I/9,31**	9	1000	
	8	2,29 195 **2I/8,01**	4,41 385 **2I/8,26**	5,73 485 **2I/7,99**	9 765 **2I/8,03**	11,1 945 **2I/8,03**	19,8 1 680 **2I/8,01**	38,2 3 350 **2I/8,26**	– –	72,1 6 140 **2I/8,03**	– –	168 14 240 **2I/8,01**	– –	287 25 140 **2I/8,26**	– –	516 43 980 **2I/8,03**	643 54 770 **2I/8,03**	– –	8	900	
	6,3	1,73 150 **2I/6,42**	3,93 345 **2I/6,53**	4,47 410 **2I/6,86**	7,16 615 **2I/6,41**	8,95 770 **2I/6,41**	17,4 1 500 **2I/6,42**	28,2 2 480 **2I/6,53**	– –	57,6 4 970 **2I/6,41**	– –	132 11 370 **2I/6,42**	– –	259 22 780 **2I/6,53**	– –	457 39 420 **2I/6,41**	530 45 720 **2I/6,41**	– –	6,3	710	
	5	–	3,57 305 **I/5**	–	6,64 590 **I/5,2**	–	15,2 1 250 **I/4,82**	30 2 560 **I/5**	40,1 3 420 **I/5**	64,9 5 450 **I/4,92**	83,9 7 260 **I/5,07**	132 11 100 **I/4,92**	162 14 000 **I/5,07**	253 21 920 **I/5,08**	328 28 000 **I/5**	447 37 500 **I/4,92**	561 47 080 **I/4,92**	671 58 000 **I/5,07**	5	560	
1 250 000	125	–	–	–	–	–	1 180 **3I/123**	2 360 **3I/123**	3 000 **3I/123**	4 500 **3I/128**	6 300 **3I/131**	9 250 **3I/119**	12 800 **3I/123**	18 500 **3I/125**	25 700 **3I/123**	31 500 **3I/127**	38 700 **3I/127**	51 500 **3I/131**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 250 000	100	–	–	–	–	–	1 250 **3I/103**	2 500 **3I/101**	3 750 **3I/100**	5 600 **3I/107**	7 750 **3I/108**	11 200 **3I/100**	15 500 **3I/98,5**	22 400 **3I/98,5**	31 170 **3I/100**	38 700 **3I/105**	47 500 **3I/105**	54 020 **3I/103**			
	90	–	–	–	–	–	–	–	3 870 **3I/89,4**	5 800 **3I/93,7**	7 750 **3I/93,3**	11 800 **3I/86,4**	16 500 **3I/88,8**	23 600 **3I/89**	28 750 **3I/89,7**	39 030 **3I/90,1**	48 780 **3I/90,1**	53 790 **3I/92,7**			
	80	–	255 **3I/75,2**	315 **3I/78,2**	520 **3I/82,7**	610 **3I/82,7**	1 150 **3I/75,5**	2 300 **3I/75,3**	3 870 **3I/81,4**	5 800 **3I/85,7**	8 250 **3I/86,1**	11 800 **3I/84**	16 500 **3I/82,7**	23 600 **3I/82,7**	31 250 **3I/84,3**	41 200 **3I/82,5**	50 000 **3I/82,5**	53 960 **3I/81,1**			
	71	–	–	–	–	–	–	–	4 120 **3I/72,8**	6 150 **3I/74,9**	8 900 **3I/74,6**	12 500 **3I/72,6**	17 500 **3I/74,5**	25 000 **3I/74,7**	28 940 **3I/75,3**	39 000 **3I/71**	48 750 **3I/71**	57 050 **3I/73**			
	63	–	315 **3I/60,1**	375 **3I/62,6**	615 **3I/66,3**	725 **3I/66,3**	1 400 **3I/61,5**	2 800 **3I/60,2**	4 120 **3I/62**	6 150 **3I/63,5**	8 870 **3I/63,8**	12 500 **3I/62,6**	17 500 **3I/61,7**	25 000 **3I/61,5**	30 420 **3I/62,7**	43 840 **3I/67,1**	53 000 **3I/67,1**	56 910 **3I/66**			
	56	–	–	–	–	–	–	–	4 250 **3I/55,4**	6 500 **3I/55,5**	8 420 **3I/55,3**	13 200 **3I/54,1**	18 500 **3I/55,5**	26 820 **3I/55,6**	30 080 **3I/56**	39 080 **3I/57,8**	48 860 **3I/57,8**	60 170 **3I/59,4**			
	50	–	335 **3I/49,4**	425 **3I/51,5**	710 **3I/49,8**	850 **3I/49,8**	1 450 **3I/51,2**	2 930 **3I/49,5**	4 390 **3I/50,4**	6 590 **3I/50,8**	8 880 **3I/51**	13 090 **3I/52,6**	18 680 **3I/51,8**	26 270 **3I/51,7**	30 480 **3I/52,7**	43 650 **3I/52,9**	54 560 **3I/52,9**	59 270 **3I/52**			
	45	–	–	–	–	–	–	–	4 590 **3I/45,1**	6 700 **3I/44,4**	9 230 **3I/44,2**	13 910 **3I/45,4**	19 000 **3I/46,6**	26 860 **3I/46,7**	30 880 **3I/47,1**	39 140 **3I/45,5**	48 710 **3I/45,5**	61 760 **3I/46,8**			
	40	–	335 **3I/40,8**	375 **3I/42,5**	615 **3I/43,6**	725 **3I/43,6**	1 530 **3I/39,1**	2 960 **3I/40,8**	4 200 **3I/38,7**	6 700 **3I/38,5**	8 630 **3I/39,9**	13 600 **3I/41,5**	18 230 **3I/40,4**	26 260 **3I/42,4**	31 320 **3I/41,2**	39 700 **3I/40,7**	49 400 **3I/40,7**	62 640 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	4 230 **3I/37,5**	6 900 **3I/36,5**	8 140 **3I/36,3**	13 890 **3I/34,4**	16 780 **3I/35,4**	26 660 **3I/36,9**	31 770 **3I/37,2**	40 270 **3I/37,4**	50 110 **3I/37,4**	63 530 **3I/38,4**			
	31,5	–	335 **3I/33,5**	375 **3I/34,9**	730 **3I/32,8**	825 **3I/32,8**	1 400 **3I/32,6**	2 610 **3I/33,5**	3 760 **3I/32,2**	6 610 **3I/31,6**	7 700 **3I/32,8**	13 940 **3I/31,5**	16 340 **3I/30,6**	25 110 **3I/33,5**	32 220 **3I/32,5**	40 850 **3I/33,5**	50 830 **3I/33,5**	64 450 **3I/34,7**			
							12,2		35,5	59,9	69,8	134	164	242	311	404	503	608	28	2800	**100**
	28	–	–	–	–	–	1 200 **2I/28,8**	–	3 520 **3I/29,1**	5 800 **3I/28,4**	6 810 **3I/28,6**	12 490 **3I/27,2**	15 290 **3I/27,3**	23 660 **3I/28,7**	30 570 **3I/28,8**	41 430 **3I/30▲**	51 550 **3I/30▲**	62 760 **3I/30,3▲**			
		1,36	3,18	3,59	5,38	6,21	14,6	27,3	38,3	58,7	82,8	120	168	240	328	–	–	–	25	2500	
	25	125 **2I/24,4**	290 **2I/24,1**	345 **2I/25,1**	535 **2I/26**	615 **2I/26**	1 320 **2I/23,7**	2 510 **2I/24,1**	3 520 **2I/24,1**	5 520 **2I/24,6**	8 020 **2I/25,4**	11 140 **2I/24,2**	16 060 **2I/25**	22 940 **2I/25**	30 820 **2I/24,6**	34 220 **2I/25**	47 270 **2I/25**	64 750 **2I/25,7**			
									43,8	65,6	89,4	127	178	249	349	–	–	–	22,4	2240	
	22,4	–	–	–	–	–	–	–	4 050 **2I/21,7**	6 300 **2I/22,5**	8 890 **2I/23,3**	12 010 **2I/22,2**	17 390 **2I/23**	23 370 **2I/22**	32 970 **2I/22,2**	38 030 **2I/22,8**	48 650 **2I/22,8**	65 400 **2I/23,4**			
		1,54	3,91	3,91	6,37	7,37	16,6	32,7	46,8	66,8	89,6	135	195	279	355	415	574	740	20	2000	
	20	150 **2I/20,1**	360 **2I/19,3**	375 **2I/20,1**	635 **2I/20,8**	735 **2I/20,8**	1 530 **2I/19,3**	3 010 **2I/19,3**	4 390 **2I/19,6**	6 590 **2I/20,7**	8 880 **2I/20,8**	13 070 **2I/20,3**	18 660 **2I/20**	26 230 **2I/19,7**	33 990 **2I/20,1**	40 880 **2I/20,6**	56 540 **2I/20,6**	71 780 **2I/20,3**			
									49,2	74,7	95,8	149	195	284	353	453	566	724	18	1800	
	18	–	–	–	–	–	–	–	4 580 **2I/17,6**	7 170 **2I/18,1**	9 150 **2I/18**	13 900 **2I/17,6**	18 710 **2I/18,1**	26 820 **2I/17,8**	33 590 **2I/17,9**	42 670 **2I/17,8**	53 340 **2I/17,8**	70 170 **2I/18,3**			
		1,79	3,97	4,31	7,77	9,18	17,2	35,1	46,2	78,3	89,6	151	203	291	338	509	636	748	16	1600	
	16	175 **2I/16,3**	375 **2I/15,8**	425 **2I/16,5**	725 **2I/15,7**	860 **2I/15,7**	1 650 **2I/16,1**	3 320 **2I/15,8**	4 150 **2I/15,1**	7 320 **2I/15,7**	8 880 **2I/16,6**	14 530 **2I/16,1**	18 960 **2I/15,6**	28 090 **2I/16,2**	31 670 **2I/15,7**	48 320 **2I/15,9**	60 400 **2I/15,9**	71 480 **2I/16**			
									40,5	75,1	99,6	154	174	235	336	486	607	729	14	1400	
	14	–	–	–	–	–	–	–	4 060 **2I/14,7**	7 210 **2I/14,1**	9 780 **2I/14,4**	14 570 **2I/13,9**	17 400 **2I/14,6**	23 410 **2I/14,6**	33 670 **2I/14,7**	47 290 **2I/14,3**	59 110 **2I/14,3**	71 630 **2I/14,4**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 250 000	12,5	1,85 175 **2I/12,3**	3,61 360 **2I/13,1**	3,64 380 **2I/13,6**	6,27 655 **2I/13,7**	7,25 760 **2I/13,7**	16,3 1 530 **2I/12,3**	30,2 3 020 **2I/13,1**	43,2 4 400 **2I/13,3**	63,6 6 600 **2I/13,6**	85,3 8 900 **2I/13,6**	132 13 080 **2I/13**	191 18 660 **2I/12,8**	263 26 280 **2I/13,1**	335 34 060 **2I/13,3**	410 41 880 **2I/13,4**	554 56 610 **2I/13,4**	723 72 600 **2I/13,1**	12,5	1250	**100**
	11,2	–	–	–	–	–	–	–	45,3 4 590 **2I/11,9**	70,9 7 180 **2I/11,9**	97 9 790 **2I/11,8**	146 13 910 **2I/11,2**	189 18 560 **2I/11,5**	267 26 870 **2I/11,8**	337 34 240 **2I/11,9**	443 43 440 **2I/11,5**	552 54 130 **2I/11,5**	716 72 240 **2I/11,8**	11,2	1120	
	10	2 195 **2I/10,2**	3,78 385 **2I/10,7**	3,99 425 **2I/11,2**	7,44 730 **2I/10,3**	8,75 860 **2I/10,3**	16,9 1 650 **2I/10,2**	32,9 3 370 **2I/10,7**	44,8 4 370 **2I/10,2**	74,5 7 330 **2I/10,3**	97,3 9 930 **2I/10,7**	149 14 530 **2I/10,2**	197 18 740 **2I/9,95**	275 28 140 **2I/10,7**	347 34 460 **2I/10,4**	492 48 370 **2I/10,3**	615 60 470 **2I/10,3**	692 70 550 **2I/10,7**	10	1000	
	9	–	–	–	–	–	–	–	40,4 3 950 **2I/9,22**	62,8 6 160 **2I/9,24**	72,1 7 120 **2I/9,31**	155 14 560 **2I/8,85**	193 18 210 **2I/8,88**	268 26 130 **2I/9,19**	333 32 600 **2I/9,22**	514 50 410 **2I/9,24**	643 63 010 **2I/9,24**	663 65 480 **2I/9,31**	9	900	
	8	2,11 200 **2I/8,01**	3,92 385 **2I/8,26**	5,11 485 **2I/7,99**	8,03 770 **2I/8,03**	9,9 950 **2I/8,03**	17,8 1 700 **2I/8,01**	34 3 350 **2I/8,26**	–	64,5 6 180 **2I/8,03**	–	154 14 760 **2I/8,01**	–	256 25 290 **2I/8,26**	–	473 45 390 **2I/8,03**	592 56 740 **2I/8,03**	–	8	800	
	6,3	1,54 150 **2I/6,42**	3,48 345 **2I/6,53**	3,96 410 **2I/6,86**	6,37 620 **2I/6,41**	7,97 775 **2I/6,41**	15,9 1 550 **2I/6,42**	25,2 2 490 **2I/6,53**	–	51,4 5 000 **2I/6,41**	–	118 11 440 **2I/6,42**	–	231 22 920 **2I/6,53**	–	409 39 800 **2I/6,41**	473 46 020 **2I/6,41**	–	6,3	630	
1 120 000	160	–	–	–	–	–	1000 **3I/151**	2 000 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 220 **3I/123**	2 430 **3I/123**	3 150 **3I/123**	4 620 **3I/128**	6 500 **3I/131**	9 500 **3I/119**	13 200 **3I/123**	19 000 **3I/125**	26 500 **3I/123**	32 500 **3I/127**	40 000 **3I/127**	53 000 **3I/131**			
	100	–	–	–	–	–	1 280 **3I/103**	2 570 **3I/101**	3 750 **3I/100**	5 600 **3I/107**	8 000 **3I/108**	11 500 **3I/100**	16 000 **3I/98,5**	23 000 **3I/98,5**	32 170 **3I/100**	40 000 **3I/105**	48 700 **3I/105**	55 750 **3I/103**			
	90	–	–	–	–	–	–	–	4 000 **3I/89,4**	6 000 **3I/93,7**	8 000 **3I/93,3**	12 200 **3I/86,4**	17 000 **3I/88,8**	24 300 **3I/89**	29 780 **3I/89,7**	40 430 **3I/90,1**	50 540 **3I/90,1**	55 530 **3I/92,7**			
	80	–	265 **3I/75,2**	325 **3I/78,2**	520 **3I/82,7**	610 **3I/82,7**	1 180 **3I/75,5**	2 360 **3I/75,3**	4 000 **3I/81,4**	6 000 **3I/85,7**	8 500 **3I/86,1**	12 200 **3I/84**	17 000 **3I/82,7**	24 300 **3I/82,7**	32 390 **3I/84,3**	42 500 **3I/82,5**	51 500 **3I/82,5**	55 710 **3I/81,1**			
	71	–	–	–	–	–	–	–	4 250 **3I/72,8**	6 300 **3I/74,9**	9 220 **3I/74,6**	12 800 **3I/72,6**	18 000 **3I/74,5**	25 700 **3I/74,7**	30 000 **3I/75,3**	40 420 **3I/71**	50 530 **3I/71**	58 560 **3I/73**			
	63	–	325 **3I/60,1**	375 **3I/62,6**	615 **3I/66,3**	725 **3I/66,3**	1 450 **3I/61,5**	2 900 **3I/60,2**	4 250 **3I/62**	6 300 **3I/63,5**	8 910 **3I/63,8**	13 110 **3I/62,6**	18 000 **3I/61,7**	26 320 **3I/61,5**	31 510 **3I/62,7**	45 410 **3I/67,1**	54 500 **3I/67,1**	58 470 **3I/66**			
	56	–	–	–	–	–	–	–	4 370 **3I/55,4**	6 700 **3I/55,5**	8 450 **3I/55,3**	13 600 **3I/54,1**	19 000 **3I/55,5**	26 920 **3I/55,6**	30 490 **3I/56**	40 440 **3I/57,8**	50 550 **3I/57,8**	60 990 **3I/59,4**			
	50	–	335 **3I/49,4**	425 **3I/51,5**	710 **3I/49,8**	860 **3I/49,8**	1 500 **3I/51,2**	3 020 **3I/49,5**	4 400 **3I/50,4**	6 610 **3I/50,8**	8 910 **3I/51**	13 130 **3I/52,6**	18 740 **3I/51,8**	26 350 **3I/51,7**	31 450 **3I/52,7**	45 050 **3I/52,9**	56 310 **3I/52,9**	60 020 **3I/52**			
	45	–	–	–	–	–	–	–	4 600 **3I/45,1**	6 700 **3I/44,4**	9 560 **3I/44,2**	13 960 **3I/45,4**	19 780 **3I/46,6**	26 960 **3I/46,7**	31 320 **3I/47,1**	40 170 **3I/45,5**	50 210 **3I/45,5**	62 640 **3I/46,8**			
	40	–	345 **3I/40,8**	375 **3I/42,5**	615 **3I/43,6**	725 **3I/43,6**	1 540 **3I/39,1**	3 030 **3I/40,8**	4 360 **3I/38,7**	6 900 **3I/38,5**	8 940 **3I/39,9**	14 000 **3I/41,5**	18 890 **3I/40,4**	27 220 **3I/42,4**	31 770 **3I/41,2**	40 270 **3I/40,7**	50 110 **3I/40,7**	63 530 **3I/42,3**			
	35,5	–	–	–	–	–	–	–	4 380 **3I/37,5**	6 900 **3I/36,5**	8 440 **3I/36,3**	13 950 **3I/34,4**	17 390 **3I/35,4**	26 960 **3I/36,9**	32 220 **3I/37,2**	40 850 **3I/37,4**	50 830 **3I/37,4**	64 450 **3I/38,4**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 120 000			2,93	3,15	6,57	7,61	13,1	23,7	35,5	63,5	70,5	134	159	227	294	363	452	552	31,5	2800	**90**
	31,5	–	335 **3I/33,5**	375 **3I/34,9**	735 **3I/32,8**	850 **3I/32,8**	1 450 **3I/32,6**	2 710 **3I/33,5**	3 900 **3I/32,2**	6 850 **3I/31,6**	7 890 **3I/32,8**	14 450 **3I/31,5**	16 570 **3I/30,6**	26 020 **3I/33,5**	32 680 **3I/32,5**	41 430 **3I/33,5▲**	51 550 **3I/33,5▲**	65 360 **3I/34,7▲**			
							11		32,8	54,2	63,2	124	149	219	281	366	455	550	28	2500	
	28	–	–	–	–	–	1 210 **2I/28,8**	–	3 640 **3I/29,1**	5 880 **3I/28,4**	6 900 **3I/28,6**	12 920 **3I/27,2**	15 500 **3I/27,3**	23 980 **3I/28,7**	30 980 **3I/28,8**	41 990 **3I/30**	52 250 **3I/30**	63 610 **3I/30,3**			
		1,22	2,86	3,23	4,88	5,64	13,1	24,5	34,4	52,8	74,4	108	151	216	295	–	–	–	25	2240	
	25	125 **2I/24,4**	295 **2I/24,1**	345 **2I/25,1**	540 **2I/26**	625 **2I/26**	1 320 **2I/23,7**	2 520 **2I/24,1**	3 540 **2I/24,1**	5 540 **2I/24,6**	8 050 **2I/25,4**	11 180 **2I/24,2**	16 110 **2I/25**	23 020 **2I/25**	30 930 **2I/24,6**	34 670 **2I/25**	47 440 **2I/25**	66 920 **2I/25,7**			
									39,2	58,8	80,1	114	159	223	319	353	448	607	22,4	2000	
	22,4	–	–	–	–	–	–	–	4 060 **2I/21,7**	6 320 **2I/22,5**	8 920 **2I/23,3**	12 050 **2I/22,2**	17 450 **2I/23**	23 450 **2I/22**	33 720 **2I/22,2**	38 550 **2I/22,8**	48 820 **2I/22,8**	67 660 **2I/23,4**			
		1,39	3,53	3,53	5,81	6,72	15	29,5	42,2	60,3	80,9	121	176	252	320	378	518	688	20	1800	
	20	150 **2I/20,1**	360 **2I/19,3**	375 **2I/20,1**	640 **2I/20,8**	745 **2I/20,8**	1 540 **2I/19,3**	3 020 **2I/19,3**	4 400 **2I/19,6**	6 610 **2I/20,7**	8 910 **2I/20,8**	13 120 **2I/20,3**	18 720 **2I/20**	26 310 **2I/19,7**	34 110 **2I/20,1**	41 400 **2I/20,6**	56 730 **2I/20,6**	74 080 **2I/20,3**			
									43,9	66,7	85,5	133	180	253	322	408	508	666	18	1600	
	18	–	–	–	–	–	–	–	4 600 **2I/17,6**	7 200 **2I/18,1**	9 190 **2I/18**	13 950 **2I/17,6**	19 390 **2I/18,1**	26 920 **2I/17,8**	34 490 **2I/17,9**	43 260 **2I/17,8**	53 890 **2I/17,8**	72 690 **2I/18,3**			
		1,57	3,58	3,79	6,82	8,07	15,5	31,2	40,6	68,8	78,7	133	179	256	306	447	559	679	16	1400	
	16	175 **2I/16,3**	385 **2I/15,8**	425 **2I/16,5**	730 **2I/15,7**	860 **2I/15,7**	1 700 **2I/16,1**	3 370 **2I/15,8**	4 170 **2I/15,1**	7 350 **2I/15,7**	8 920 **2I/16,6**	14 590 **2I/16,1**	19 120 **2I/15,6**	28 210 **2I/16,2**	32 760 **2I/15,7**	48 520 **2I/15,9**	60 650 **2I/15,9**	74 160 **2I/16**			
									36,3	67,3	89,2	138	156	211	301	448	561	674	14	1250	
	14	–	–	–	–	–	–	–	4 070 **2I/14,7**	7 230 **2I/14,1**	9 820 **2I/14,4**	14 620 **2I/13,9**	17 460 **2I/14,6**	23 500 **2I/14,6**	33 790 **2I/14,7**	48 920 **2I/14,3**	61 160 **2I/14,3**	74 110 **2I/14,4**			
		1,67	3,25	3,27	5,63	6,52	14,7	27,2	38,8	57,2	76,7	119	172	237	301	370	499	662	12,5	1120	
	12,5	175 **2I/12,3**	360 **2I/13,1**	380 **2I/13,6**	660 **2I/13,7**	760 **2I/13,7**	1 540 **2I/12,3**	3 030 **2I/13,1**	4 410 **2I/13,3**	6 620 **2I/13,6**	8 930 **2I/13,6**	13 130 **2I/13**	18 740 **2I/12,8**	26 370 **2I/13,1**	34 180 **2I/13,3**	42 140 **2I/13,4**	56 800 **2I/13,4**	74 220 **2I/13,1**			
									40,6	63,5	87	131	175	239	311	398	496	662	11,2	1000	
	11,2	–	–	–	–	–	–	–	4 610 **2I/11,9**	7 210 **2I/11,9**	9 820 **2I/11,8**	13 960 **2I/11,2**	19 200 **2I/11,5**	26 970 **2I/11,8**	35 350 **2I/11,9**	43 720 **2I/11,5**	54 460 **2I/11,5**	74 740 **2I/11,8**			
		1,81	3,4	3,6	6,71	7,9	15,7	29,7	40,3	67,3	87,6	134	183	248	314	444	555	643	10	900	
	10	195 **2I/10,2**	385 **2I/10,7**	430 **2I/11,2**	735 **2I/10,3**	865 **2I/10,3**	1 700 **2I/10,2**	3 380 **2I/10,7**	4 370 **2I/10,2**	7 350 **2I/10,3**	9 930 **2I/10,7**	14 580 **2I/10,2**	19 340 **2I/9,95**	28 230 **2I/10,7**	34 670 **2I/10,4**	48 530 **2I/10,3**	60 670 **2I/10,3**	72 820 **2I/10,7**			
									35,9	56,2	64,5	138	178	247	298	473	592	593	9	800	
	9	–	–	–	–	–	–	–	3 950 **2I/9,22**	6 200 **2I/9,24**	7 170 **2I/9,31**	14 620 **2I/8,85**	18 870 **2I/8,88**	27 070 **2I/9,19**	32 800 **2I/9,22**	52 220 **2I/9,24**	65 280 **2I/9,24**	65 910 **2I/9,31**			
		1,91	3,48	4,53	7,16	8,82	15,8	31		57,6		142		229		435	544		8	710	
	8	205 **2I/8,01**	385 **2I/8,26**	485 **2I/7,99**	775 **2I/8,03**	955 **2I/8,03**	1 700 **2I/8,01**	3 450 **2I/8,26**	–	6 230 **2I/8,03**	–	15 290 **2I/8,01**	–	25 450 **2I/8,26**	–	47 040 **2I/8,03**	58 810 **2I/8,03**	–			
		1,37	3,1	3,52	5,69	7,08	14,2	22,4		45,7		105		206		366	422		6,3	560	
	6,3	150 **2I/6,42**	345 **2I/6,53**	410 **2I/6,86**	620 **2I/6,41**	775 **2I/6,41**	1 550 **2I/6,42**	2 500 **2I/6,53**	–	5 000 **2I/6,41**	–	11 500 **2I/6,42**	–	23 000 **2I/6,53**	–	40 000 **2I/6,41**	46 200 **2I/6,41**	–			
1 000 000	160	–	–	–	–	–	1 030 **3I/151**	2 060 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 250 **3I/123**	2 500 **3I/123**	3 150 **3I/123**	4 750 **3I/128**	6 700 **3I/131**	9 750 **3I/119**	13 600 **3I/123**	19 500 **3I/125**	27 200 **3I/123**	33 500 **3I/127**	40 000 **3I/127**	54 500 **3I/131**			
	100	–	–	–	–	–	1 320 **3I/103**	2 650 **3I/101**	3 870 **3I/100**	5 800 **3I/107**	8 250 **3I/108**	11 800 **3I/100**	16 500 **3I/98,5**	23 600 **3I/98,5**	33 330 **3I/100**	41 200 **3I/105**	50 000 **3I/105**	57 760 **3I/103**			
	90	–	–	–	–	–	–	–	4 120 **3I/89,4**	6 150 **3I/93,7**	8 250 **3I/93,3**	12 500 **3I/86,4**	17 500 **3I/88,8**	25 000 **3I/89**	30 860 **3I/89,7**	41 900 **3I/90,1**	52 380 **3I/90,1**	57 050 **3I/92,7**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 000 000	80	–	270 **3I/75,2**	335 **3I/78,2**	520 **3I/82,7**	615 **3I/82,7**	1 220 **3I/75,5**	2 430 **3I/75,3**	4 120 **3I/81,4**	6 150 **3I/85,7**	8 960 **3I/86,1**	12 500 **3I/84**	17 500 **3I/82,7**	25 000 **3I/82,7**	33 570 **3I/84,3**	43 700 **3I/82,5**	53 000 **3I/82,5**	57 750 **3I/81,1**			
	71	–	–	–	–	–	–	–	4 370 **3I/72,8**	6 500 **3I/74,9**	9 250 **3I/74,6**	13 200 **3I/72,6**	18 500 **3I/74,5**	27 070 **3I/74,7**	31 080 **3I/75,3**	41 880 **3I/71**	52 340 **3I/71**	60 170 **3I/73**			
	63	–	335 **3I/60,1**	380 **3I/62,6**	620 **3I/66,3**	730 **3I/66,3**	1 450 **3I/61,5**	2 900 **3I/60,2**	4 420 **3I/62**	6 500 **3I/63,5**	8 940 **3I/63,8**	13 160 **3I/62,6**	18 780 **3I/61,7**	26 410 **3I/61,5**	32 600 **3I/62,7**	45 610 **3I/67,1**	56 000 **3I/67,1**	59 270 **3I/66**			
	56	–	–	–	–	–	–	–	4 370 **3I/55,4**	6 700 **3I/55,5**	8 480 **3I/55,3**	13 600 **3I/54,1**	19 000 **3I/55,5**	27 010 **3I/55,6**	30 880 **3I/56**	41 730 **3I/57,8**	52 170 **3I/57,8**	61 760 **3I/59,4**			
	50	–	335 **3I/49,4**	430 **3I/51,5**	735 **3I/49,8**	865 **3I/49,8**	1 500 **3I/51,2**	3 000 **3I/49,5**	4 420 **3I/50,4**	6 630 **3I/50,8**	8 940 **3I/51**	13 180 **3I/52,6**	18 810 **3I/51,8**	26 450 **3I/51,7**	32 590 **3I/52,7**	45 590 **3I/52,9**	56 990 **3I/52,9**	60 870 **3I/52**			
	45	–	–	–	–	–	–	–	4 620 **3I/45,1**	6 900 **3I/44,4**	9 840 **3I/44,2**	14 010 **3I/45,4**	19 850 **3I/46,6**	27 060 **3I/46,7**	31 770 **3I/47,1**	41 630 **3I/45,5**	52 040 **3I/45,5**	63 530 **3I/46,8**			
	40	–	345 **3I/40,8**	380 **3I/42,5**	620 **3I/43,6**	730 **3I/43,6**	1 550 **3I/39,1**	3 040 **3I/40,8**	4 520 **3I/38,7**	6 900 **3I/38,5**	9 270 **3I/39,9**	14 000 **3I/41,5**	19 580 **3I/40,4**	28 210 **3I/42,4**	32 220 **3I/41,2**	40 850 **3I/40,7**	50 830 **3I/40,7**	64 450 **3I/42,3**			
									35,5	58,1	70,5	119	149	215	258	325	405	498	35,5	2800	**80**
	35,5	–	–	–	–	–	–	–	4 540 **3I/37,5**	7 230 **3I/36,5**	8 740 **3I/36,3**	14 000 **3I/34,4**	18 020 **3I/35,4**	27 060 **3I/36,9**	32 680 **3I/37,2**	41 430 **3I/37,4▲**	51 610 **3I/37,4▲**	65 360 **3I/38,4▲**			
		2,7	2,9	5,89	6,93	11,7	21,9	32,8	58,6	65,1	122	144	210	266	329	409	500	31,5	2500	
	31,5	–	345 **3I/33,5**	385 **3I/34,9**	735 **3I/32,8**	865 **3I/32,8**	1 450 **3I/32,6**	2 800 **3I/33,5**	4 030 **3I/32,2**	7 080 **3I/31,6**	8 160 **3I/32,8**	14 630 **3I/31,5**	16 800 **3I/30,6**	26 920 **3I/33,5**	33 130 **3I/32,5**	41 990 **3I/33,5**	52 250 **3I/33,5**	66 250 **3I/34,7**			
							9,86		30,3	49,2	57,4	115	135	198	255	332	413	500	28	2240	
	28	–	–	–	–	–	1 210 **2I/28,8**	–	3 760 **3I/29,1**	5 960 **3I/28,4**	6 990 **3I/28,6**	13 350 **3I/27,2**	15 710 **3I/27,3**	24 300 **3I/28,7**	31 390 **3I/28,8**	42 540 **3I/30**	52 940 **3I/30**	64 450 **3I/30,3**			
		1,09	2,56	2,89	4,42	5,11	11,7	22	30,8	47,3	66,7	96,9	136	194	264	294	399	552	25	2000	
	25	125 **2I/24,4**	295 **2I/24,1**	345 **2I/25,1**	550 **2I/26**	635 **2I/26**	1 330 **2I/23,7**	2 530 **2I/24,1**	3 550 **2I/24,1**	5 560 **2I/24,6**	8 070 **2I/25,4**	11 220 **2I/24,2**	16 170 **2I/25**	23 100 **2I/25**	31 040 **2I/24,6**	35 140 **2I/25**	47 610 **2I/25**	67 850 **2I/25,7**			
									35,4	53,1	72,3	103	144	202	288	322	404	564	22,4	1800	
	22,4	–	–	–	–	–	–	–	4 080 **2I/21,7**	6 340 **2I/22,5**	8 950 **2I/23,3**	12 090 **2I/22,2**	17 510 **2I/23**	23 530 **2I/22**	33 830 **2I/22,2**	39 030 **2I/22,8**	48 980 **2I/22,8**	69 840 **2I/23,4**			
		1,24	3,15	3,15	5,23	6,06	13,4	26,3	37,7	53,8	72,1	108	157	225	286	341	462	614	20	1600	
	20	150 **2I/20,1**	360 **2I/19,3**	380 **2I/20,1**	650 **2I/20,8**	755 **2I/20,8**	1 540 **2I/19,3**	3 030 **2I/19,3**	4 420 **2I/19,6**	6 640 **2I/20,7**	8 940 **2I/20,8**	13 170 **2I/20,3**	18 790 **2I/20**	26 410 **2I/19,7**	34 230 **2I/20,1**	41 990 **2I/20,6**	56 940 **2I/20,6**	74 400 **2I/20,3**			
									38,6	58,6	75,1	117	161	223	293	363	452	607	18	1400	
	18	–	–	–	–	–	–	–	4 620 **2I/17,6**	7 230 **2I/18,1**	9 220 **2I/18**	14 010 **2I/17,6**	19 840 **2I/18,1**	27 030 **2I/17,8**	35 900 **2I/17,9**	43 960 **2I/17,8**	54 750 **2I/17,8**	75 660 **2I/18,3**			
		1,41	3,2	3,4	6,11	7,23	13,8	28	36,3	61,6	70,5	119	161	229	283	401	501	609	16	1250	
	16	175 **2I/16,3**	385 **2I/15,8**	430 **2I/16,5**	730 **2I/15,7**	865 **2I/15,7**	1 700 **2I/16,1**	3 390 **2I/15,8**	4 180 **2I/15,1**	7 370 **2I/15,7**	8 950 **2I/16,6**	14 640 **2I/16,1**	19 190 **2I/15,6**	28 310 **2I/16,2**	33 890 **2I/15,7**	48 700 **2I/15,9**	60 870 **2I/15,9**	74 420 **2I/16**			
									32,6	60,5	80,2	124	141	190	270	415	519	624	14	1120	
	14	–	–	–	–	–	–	–	4 090 **2I/14,7**	7 260 **2I/14,1**	9 850 **2I/14,4**	14 670 **2I/13,9**	17 520 **2I/14,6**	23 580 **2I/14,6**	33 900 **2I/14,7**	50 560 **2I/14,3**	63 200 **2I/14,3**	76 590 **2I/14,4**			
		1,49	2,91	2,93	5,05	5,84	13,2	24,3	34,8	51,3	68,7	107	154	212	270	332	447	593	12,5	1000	
	12,5	175 **2I/12,3**	365 **2I/13,1**	380 **2I/13,6**	660 **2I/13,7**	765 **2I/13,7**	1 540 **2I/12,3**	3 040 **2I/13,1**	4 430 **2I/13,3**	6 650 **2I/13,6**	8 960 **2I/13,6**	13 170 **2I/13**	18 800 **2I/12,8**	26 460 **2I/13,1**	34 300 **2I/13,3**	42 420 **2I/13,4**	57 000 **2I/13,4**	74 480 **2I/13,1**			
									36,6	57,4	78,5	118	163	216	289	360	449	615	11,2	900	
	11,2	–	–	–	–	–	–	–	4 630 **2I/11,9**	7 230 **2I/11,9**	9 860 **2I/11,8**	14 000 **2I/11,2**	19 810 **2I/11,5**	27 060 **2I/11,8**	36 480 **2I/11,9**	43 980 **2I/11,5**	54 770 **2I/11,5**	77 140 **2I/11,8**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 000 000		1,61	3,02	3,21	5,99	7,05	13,9	26,5	35,9	60,1	77,9	120	169	221	281	396	495	592	10	800	**80**
	10	195	385	430	735	865	1 700	3 390	4 370	7 380	9 930	14 640	20 040	28 340	34 900	48 710	60 890	75 440			
		2I/10,2	**2I/10,7**	**2I/11,2**	**2I/10,3**	**2I/10,3**	**2I/10,2**	**2I/10,7**	**2I/10,2**	**2I/10,3**	**2I/10,7**	**2I/10,2**	**2I/9,95**	**2I/10,7**	**2I/10,4**	**2I/10,3**	**2I/10,3**	**2I/10,7**			
									31,8	50,2	57,6	123	159	227	266	423	529	544	9	710	
	9	–	–	–	–	–	–	–	3 950	6 240	7 220	14 670	18 930	28 050	33 010	52 600	65 750	68 160			
									2I/9,22	**2I/9,24**	**2I/9,31**	**2I/8,85**	**2I/8,88**	**2I/9,19**	**2I/9,22**	**2I/9,24**	**2I/9,24**	**2I/9,31**			
		1,7	3,09	4,02	6,37	7,86	14	27,5		51,5		128		209		401	501		8	630	
	8	205	385	485	775	955	1 700	3 450	–	6 270	–	15 500	–	26 150	–	48 760	60 950	–			
		2I/8,01	**2I/8,26**	**2I/7,99**	**2I/8,03**	**2I/8,03**	**2I/8,01**	**2I/8,26**		**2I/8,03**		**2I/8,01**		**2I/8,26**		**2I/8,03**	**2I/8,03**				
900 000	160	–	–	–	–	–	1 060	2 120	–	–	–	–	–	–	–	–	–	–			
							3I/151	**3I/153**													
	125	–	–	–	–	–	1 280	2 570	3 250	4 870	6 900	10 000	14 000	20 000	28 000	34 500	41 200	56 000			
							3I/123	**3I/123**	**3I/123**	**3I/128**	**3I/131**	**3I/119**	**3I/123**	**3I/125**	**3I/123**	**3I/127**	**3I/127**	**3I/131**			
	100	–	–	–	–	–	1 360	2 720	4 000	6 000	8 500	12 200	17 000	24 300	34 360	42 500	51 500	59 860			
							3I/103	**3I/101**	**3I/100**	**3I/107**	**3I/108**	**3I/100**	**3I/98,5**	**3I/98,5**	**3I/100**	**3I/105**	**3I/105**	**3I/103**			
	90	–	–	–	–	–	–	–	4 250	6 300	8 530	12 800	18 000	25 700	31 990	43 170	53 960	58 560			
									3I/89,4	**3I/93,7**	**3I/93,3**	**3I/86,4**	**3I/88,8**	**3I/89**	**3I/89,7**	**3I/90,1**	**3I/90,1**	**3I/92,7**			
	80	–	280	345	525	615	1 250	2 540	4 250	6 300	8 990	13 230	18 000	25 700	34 430	45 740	54 500	59 820			
			3I/75,2	**3I/78,2**	**3I/82,7**	**3I/82,7**	**3I/75,5**	**3I/75,3**	**3I/81,4**	**3I/85,7**	**3I/86,1**	**3I/84**	**3I/82,7**	**3I/82,7**	**3I/84,3**	**3I/82,5**	**3I/82,5**	**3I/81,1**			
	71	–	–	–	–	–	–	–	4 500	6 700	9 500	13 600	19 000	27 170	32 150	43 160	53 950	60 990			
									3I/72,8	**3I/74,9**	**3I/74,6**	**3I/72,6**	**3I/74,5**	**3I/74,7**	**3I/75,3**	**3I/71**	**3I/71**	**3I/73**			
	63	–	335	380	620	730	1 500	3 040	4 430	6 660	8 970	13 200	18 850	26 500	33 650	45 760	57 200	60 020			
			3I/60,1	**3I/62,6**	**3I/66,3**	**3I/66,3**	**3I/61,5**	**3I/60,2**	**3I/62**	**3I/63,5**	**3I/63,8**	**3I/62,6**	**3I/61,7**	**3I/61,5**	**3I/62,7**	**3I/67,1**	**3I/67,1**	**3I/66**			
	56	–	–	–	–	–	–	–	4 580	6 700	8 510	14 040	19 500	27 110	31 320	43 180	53 980	62 640			
									3I/55,4	**3I/55,5**	**3I/55,3**	**3I/54,1**	**3I/55,5**	**3I/55,6**	**3I/56**	**3I/57,8**	**3I/57,8**	**3I/59,4**			
	50	–	345	430	740	870	1 550	3 070	4 440	6 660	8 970	13 230	18 880	26 550	33 770	45 760	57 200	61 750			
			3I/49,4	**3I/51,5**	**3I/49,8**	**3I/49,8**	**3I/51,2**	**3I/49,5**	**3I/50,4**	**3I/50,8**	**3I/51**	**3I/52,6**	**3I/51,8**	**3I/51,7**	**3I/52,7**	**3I/52,9**	**3I/52,9**	**3I/52**			
	45	–	–	–	–	–	–	–	4 640	6 900	9 880	14 070	19 930	27 160	32 220	43 150	53 940	64 450			
									3I/45,1	**3I/44,4**	**3I/44,2**	**3I/45,4**	**3I/46,6**	**3I/46,7**	**3I/47,1**	**3I/45,5**	**3I/45,5**	**3I/46,8**			
			2,55	2,62	4,19	4,93	11,6	21,9	34,7	54,1	68,7	104	146	197	233	298	371	454	40	2800	**71**
	40	–	355	380	620	730	1 550	3 050	4 580	7 100	9 350	14 710	20 100	28 450	32 680	41 430	51 550	65 360			
			3I/40,8	**3I/42,5**	**3I/43,6**	**3I/43,6**	**3I/39,1**	**3I/40,8**	**3I/38,7**	**3I/38,5**	**3I/39,9**	**3I/41,5**	**3I/40,4**	**3I/42,4**	**3I/41,2**	**3I/40,7▲**	**3I/40,7▲**	**3I/42,3▲**			
									32,4	52	65,1	107	138	193	233	299	374	451	35,5	2500	
	35,5	–	–	–	–	–	–	–	4 640	7 250	9 040	14 050	18 640	27 160	33 130	42 710	53 390	66 250			
									3I/37,5	**3I/36,5**	**3I/36,3**	**3I/34,4**	**3I/35,4**	**3I/36,9**	**3I/37,2**	**3I/37,4**	**3I/37,4**	**3I/38,4**			
			2,42	2,6	5,29	6,23	10,8	20,2	30,3	54,3	60,3	109	130	195	242	298	371	454	31,5	2240	
	31,5	–	345	385	740	870	1 500	2 900	4 170	7 320	8 440	14 680	17 020	27 820	33 560	42 540	52 940	67 130			
			3I/33,5	**3I/34,9**	**3I/32,8**	**3I/32,8**	**3I/32,6**	**3I/33,5**	**3I/32,2**	**3I/31,6**	**3I/32,8**	**3I/31,5**	**3I/30,6**	**3I/33,5**	**3I/32,5**	**3I/33,5**	**3I/33,5**	**3I/34,7**			
							8,84		28	44,5	51,9	106	122	180	231	301	374	452	28	2000	
	28	–	–	–	–	–	1 220	–	3 890	6 040	7 090	13 810	15 920	24 640	31 820	43 120	53 670	65 330			
							2I/28,8		**3I/29,1**	**3I/28,4**	**3I/28,6**	**3I/27,2**	**3I/27,3**	**3I/28,7**	**3I/28,8**	**3I/30**	**3I/30**	**3I/30,3**			
		0,99	2,31	2,61	4,03	4,65	10,6	19,9	27,9	42,7	60,2	87,5	122	175	238	273	360	498	25	1800	
	25	130	295	345	555	640	1 330	2 540	3 560	5 580	8 100	11 250	16 220	23 180	31 140	36 200	47 770	68 080			
		2I/24,4	**2I/24,1**	**2I/25,1**	**2I/26**	**2I/26**	**2I/23,7**	**2I/24,1**	**2I/24,1**	**2I/24,6**	**2I/25,4**	**2I/24,2**	**2I/25**	**2I/25**	**2I/24,6**	**2I/25**	**2I/25**	**2I/25,7**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
									P_{N2} kW												
									M_{N2} N m												
									... / i												
900 000									31,6	47,4	64,5	91,8	128	180	257	290	361	519	22,4	1600	**71**
	22,4	–	–	–	–	–	–	–	4 090 **2I/21,7**	6 360 **2I/22,5**	8 980 **2I/23,3**	12 140 **2I/22,2**	17 570 **2I/23**	23 620 **2I/22**	33 960 **2I/22,2**	39 590 **2I/22,8**	49 160 **2I/22,8**	72 350 **2I/23,4**			
		1,09	2,77	2,79	4,65	5,39	11,8	23,1	33,1	47,3	63,4	95,2	138	197	251	303	406	539	20	1400	
	20	150 **2I/20,1**	365 **2I/19,3**	380 **2I/20,1**	660 **2I/20,8**	765 **2I/20,8**	1 550 **2I/19,3**	3 040 **2I/19,3**	4 430 **2I/19,6**	6 660 **2I/20,7**	8 980 **2I/20,8**	13 220 **2I/20,3**	18 870 **2I/20**	26 520 **2I/19,7**	34 380 **2I/20,1**	42 660 **2I/20,6**	57 180 **2I/20,6**	74 710 **2I/20,3**			
									34,6	52,5	67,3	105	144	200	271	326	406	561	18	1250	
	18	–	–	–	–	–	–	–	4 630 **2I/17,6**	7 250 **2I/18,1**	9 260 **2I/18**	14 060 **2I/17,6**	19 910 **2I/18,1**	27 130 **2I/17,8**	37 140 **2I/17,9**	44 240 **2I/17,8**	55 080 **2I/17,8**	78 280 **2I/18,3**			
		1,26	2,87	3,05	5,5	6,5	12,4	25,2	32,7	55,4	63,4	107	144	206	262	360	450	547	16	1120	
	16	175 **2I/16,3**	385 **2I/15,8**	430 **2I/16,5**	735 **2I/15,7**	870 **2I/15,7**	1 700 **2I/16,1**	3 400 **2I/15,8**	4 200 **2I/15,1**	7 400 **2I/15,7**	8 980 **2I/16,6**	14 690 **2I/16,1**	19 250 **2I/15,6**	28 410 **2I/16,2**	35 030 **2I/15,7**	48 870 **2I/15,9**	61 080 **2I/15,9**	74 680 **2I/16**			
									29,2	54,2	71,9	111	126	170	242	384	480	576	14	1000	
	14	–	–	–	–	–	–	–	4 100 **2I/14,7**	7 280 **2I/14,1**	9 880 **2I/14,4**	14 720 **2I/13,9**	17 580 **2I/14,6**	23 660 **2I/14,6**	34 020 **2I/14,7**	52 310 **2I/14,3**	65 390 **2I/14,3**	79 240 **2I/14,4**			
		1,35	2,63	2,65	4,56	5,27	11,9	22	31,4	46,3	62,1	96,2	139	191	244	301	403	536	12,5	900	
	12,5	175 **2I/12,3**	365 **2I/13,1**	380 **2I/13,6**	660 **2I/13,7**	765 **2I/13,7**	1 550 **2I/12,3**	3 050 **2I/13,1**	4 440 **2I/13,3**	6 670 **2I/13,6**	8 990 **2I/13,6**	13 220 **2I/13**	18 870 **2I/12,8**	26 550 **2I/13,1**	34 410 **2I/13,3**	42 680 **2I/13,4**	57 190 **2I/13,4**	74 730 **2I/13,1**			
									32,7	51,2	70,1	105	145	193	266	322	401	566	11,2	800	
	11,2	–	–	–	–	–	–	–	4 640 **2I/11,9**	7 260 **2I/11,9**	9 890 **2I/11,8**	14 050 **2I/11,2**	19 910 **2I/11,5**	27 160 **2I/11,8**	37 800 **2I/11,9**	44 260 **2I/11,5**	55 120 **2I/11,5**	79 910 **2I/11,8**			
		1,44	2,68	2,86	5,34	6,28	12,3	23,6	31,8	53,5	69,1	107	155	197	252	353	441	544	10	710	
	10	200 **2I/10,2**	385 **2I/10,7**	430 **2I/11,2**	740 **2I/10,3**	870 **2I/10,3**	1 700 **2I/10,2**	3 410 **2I/10,7**	4 370 **2I/10,2**	7 410 **2I/10,3**	9 930 **2I/10,7**	14 690 **2I/10,2**	20 770 **2I/9,95**	28 450 **2I/10,7**	35 330 **2I/10,4**	48 900 **2I/10,3**	61 120 **2I/10,3**	78 190 **2I/10,7**			
									28,3	44,8	51,5	110	141	208	238	377	471	501	9	630	
	9	–	–	–	–	–	–	–	3 950 **2I/9,22**	6 280 **2I/9,24**	7 270 **2I/9,31**	14 730 **2I/8,85**	18 930 **2I/8,88**	29 000 **2I/9,19**	33 220 **2I/9,22**	52 800 **2I/9,24**	66 000 **2I/9,24**	70 650 **2I/9,31**			
		1,51	2,75	3,58	5,66	7,01	12,4	24,5		46		114		192		369	461		8	560	
	8	205 **2I/8,01**	385 **2I/8,26**	485 **2I/7,99**	775 **2I/8,03**	960 **2I/8,03**	1 700 **2I/8,01**	3 450 **2I/8,26**	–	6 300 **2I/8,03**	–	15 500 **2I/8,01**	–	27 090 **2I/8,26**	–	50 520 **2I/8,03**	63 150 **2I/8,03**	–			
800 000	160	–	–	–	–	–	1 090 **3I/151**	2 180 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 320 **3I/123**	2 650 **3I/123**	3 350 **3I/123**	5 000 **3I/128**	7 100 **3I/131**	10 300 **3I/119**	14 500 **3I/123**	20 600 **3I/125**	29 000 **3I/123**	35 500 **3I/127**	42 500 **3I/127**	58 000 **3I/131**			
	100	–	–	–	–	–	1 400 **3I/103**	2 800 **3I/101**	4 120 **3I/100**	6 150 **3I/107**	9 020 **3I/108**	12 500 **3I/100**	17 500 **3I/98,5**	25 000 **3I/98,5**	34 490 **3I/100**	43 700 **3I/105**	53 000 **3I/105**	62 050 **3I/103**			
	90	–	–	–	–	–	–	–	4 370 **3I/89,4**	6 500 **3I/93,7**	8 560 **3I/93,3**	13 200 **3I/86,4**	18 500 **3I/88,8**	27 220 **3I/89**	33 140 **3I/89,7**	43 330 **3I/90,1**	54 160 **3I/90,1**	60 170 **3I/92,7**			
	80	–	290 **3I/75,2**	350 **3I/78,2**	525 **3I/82,7**	620 **3I/82,7**	1 280 **3I/75,5**	2 550 **3I/75,3**	4 370 **3I/81,4**	6 500 **3I/85,7**	9 020 **3I/86,1**	13 280 **3I/84**	18 500 **3I/82,7**	26 660 **3I/82,7**	34 550 **3I/84,3**	45 910 **3I/82,5**	56 000 **3I/82,5**	61 890 **3I/81,1**			
	71	–	–	–	–	–	–	–	4 500 **3I/72,8**	6 700 **3I/74,9**	9 500 **3I/74,6**	13 600 **3I/72,6**	19 000 **3I/74,5**	27 260 **3I/74,7**	33 180 **3I/75,3**	43 300 **3I/71**	54 130 **3I/71**	61 760 **3I/73**			
	63	–	335 **3I/60,1**	380 **3I/62,6**	625 **3I/66,3**	735 **3I/66,3**	1 500 **3I/61,5**	3 050 **3I/60,2**	4 450 **3I/62**	6 680 **3I/63,5**	9 000 **3I/63,8**	13 250 **3I/62,6**	18 920 **3I/61,7**	26 600 **3I/61,5**	34 480 **3I/62,7**	45 930 **3I/67,1**	57 410 **3I/67,1**	61 770 **3I/66**			
	56	–	–	–	–	–	–	–	4 590 **3I/55,4**	6 900 **3I/55,5**	8 540 **3I/55,3**	14 090 **3I/54,1**	19 960 **3I/55,5**	27 210 **3I/55,6**	32 280 **3I/56**	43 350 **3I/57,8**	54 180 **3I/57,8**	63 530 **3I/59,4**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
800 000	50	–	345 **3I/49,4**	430 **3I/51,5**	740 **3I/49,8**	870 **3I/49,8**	1 550 **3I/51,2**	3 070 **3I/49,5**	4 450 **3I/50,4**	6 680 **3I/50,8**	9 010 **3I/51**	13 280 **3I/52,6**	18 950 **3I/51,8**	26 650 **3I/51,7**	34 540 **3I/52,7**	45 930 **3I/52,9**	57 420 **3I/52,9**	62 630 **3I/52**			
									30,3	46,9	65,7	91,1	126	171	204	279	349	409	45	2800	**63**
	45	–	–	–	–	–	–	–	4 650 **3I/45,1**	7 100 **3I/44,4**	9 910 **3I/44,2**	14 120 **3I/45,4**	20 000 **3I/46,6**	27 270 **3I/46,7**	32 680 **3I/47,1**	43 340 **3I/45,5▲**	54 180 **3I/45,5▲**	65 360 **3I/46,8▲**			
			2,35	2,35	3,76	4,41	10,4	19,6	31,1	48,3	61,5	93	131	176	211	270	336	410	40	2500	
	40	–	365 **3I/40,8**	380 **3I/42,5**	625 **3I/43,6**	735 **3I/43,6**	1 560 **3I/39,1**	3 060 **3I/40,8**	4 600 **3I/38,7**	7 100 **3I/38,5**	9 380 **3I/39,9**	14 760 **3I/41,5**	20 170 **3I/40,4**	28 550 **3I/42,4**	33 130 **3I/41,2**	41 990 **3I/40,7**	52 250 **3I/40,7**	66 250 **3I/42,3**			
									29,1	46,8	60,3	96	128	173	212	272	340	410	35,5	2240	
	35,5	–	–	–	–	–	–	–	4 660 **3I/37,5**	7 280 **3I/36,5**	9 340 **3I/36,3**	14 100 **3I/34,4**	19 260 **3I/35,4**	27 250 **3I/36,9**	33 560 **3I/37,2**	43 380 **3I/37,4**	54 230 **3I/37,4**	67 130 **3I/38,4**			
			2,22	2,32	4,74	5,58	9,65	18,7	28	49,2	55,7	98	118	178	219	270	336	411	31,5	2000	
	31,5	–	355 **3I/33,5**	385 **3I/34,9**	740 **3I/32,8**	875 **3I/32,8**	1 500 **3I/32,6**	3 000 **3I/33,5**	4 310 **3I/32,2**	7 430 **3I/31,6**	8 730 **3I/32,8**	14 730 **3I/31,5**	17 270 **3I/30,6**	28 540 **3I/33,5**	34 020 **3I/32,5**	43 120 **3I/33,5**	53 670 **3I/33,5**	68 040 **3I/34,7**			
							7,98		26	40,6	47,3	98,7	111	167	211	274	341	412	28	1800	
	28	–	–	–	–	–	1 220 **2I/28,8**	–	4 020 **3I/29,1**	6 110 **3I/28,4**	7 180 **3I/28,6**	14 260 **3I/27,2**	16 120 **3I/27,3**	25 430 **3I/28,7**	32 220 **3I/28,8**	43 670 **3I/30**	54 340 **3I/30**	66 160 **3I/30,3**			
		0,88	2,06	2,33	3,63	4,19	9,45	17,7	24,9	38,1	53,7	78,1	109	156	213	251	321	445	25	1600	
	25	130 **2I/24,4**	295 **2I/24,1**	350 **2I/25,1**	565 **2I/26**	650 **2I/26**	1 340 **2I/23,7**	2 550 **2I/24,1**	3 570 **2I/24,1**	5 600 **2I/24,6**	8 130 **2I/25,4**	11 300 **2I/24,2**	16 280 **2I/25**	23 260 **2I/25**	31 260 **2I/24,6**	37 500 **2I/25**	47 940 **2I/25**	68 330 **2I/25,7**			
									27,8	41,6	56,7	80,7	113	158	226	258	317	467	22,4	1400	
	22,4	–	–	–	–	–	–	–	4 110 **2I/21,7**	6 390 **2I/22,5**	9 020 **2I/23,3**	12 190 **2I/22,2**	17 650 **2I/23**	23 720 **2I/22**	34 100 **2I/22,2**	40 220 **2I/22,8**	49 370 **2I/22,8**	74 330 **2I/23,4**			
		0,98	2,48	2,5	4,17	4,82	10,5	20,7	29,7	42,4	56,8	85,3	124	177	225	272	364	483	20	1250	
	20	150 **2I/20,1**	365 **2I/19,3**	385 **2I/20,1**	665 **2I/20,8**	770 **2I/20,8**	1 560 **2I/19,3**	3 050 **2I/19,3**	4 450 **2I/19,6**	6 690 **2I/20,7**	9 010 **2I/20,8**	13 270 **2I/20,3**	18 940 **2I/20**	26 620 **2I/19,7**	34 500 **2I/20,1**	42 940 **2I/20,6**	57 390 **2I/20,6**	74 980 **2I/20,3**			
									31,1	47,2	60,5	94,1	130	179	251	294	366	519	18	1120	
	18	–	–	–	–	–	–	–	4 650 **2I/17,6**	7 280 **2I/18,1**	9 290 **2I/18**	14 100 **2I/17,6**	19 980 **2I/18,1**	27 220 **2I/17,8**	38 380 **2I/17,9**	44 500 **2I/17,8**	55 400 **2I/17,8**	80 900 **2I/18,3**			
		1,13	2,56	2,74	4,93	5,83	11,1	22,6	29,3	49,6	56,8	96	129	185	242	323	404	490	16	1000	
	16	175 **2I/16,3**	385 **2I/15,8**	430 **2I/16,5**	735 **2I/15,7**	870 **2I/15,7**	1 700 **2I/16,1**	3 410 **2I/15,8**	4 210 **2I/15,1**	7 430 **2I/15,7**	9 010 **2I/16,6**	14 740 **2I/16,1**	19 320 **2I/15,6**	28 510 **2I/16,2**	36 240 **2I/15,7**	49 040 **2I/15,9**	61 300 **2I/15,9**	74 950 **2I/16**			
									26,4	49	64,9	100	114	153	219	349	437	535	14	900	
	14	–	–	–	–	–	–	–	4 120 **2I/14,7**	7 310 **2I/14,1**	9 920 **2I/14,4**	14 770 **2I/13,9**	17 640 **2I/14,6**	23 740 **2I/14,6**	34 140 **2I/14,7**	52 930 **2I/14,3**	66 160 **2I/14,3**	81 780 **2I/14,4**			
		1,2	2,35	2,36	4,06	4,7	10,6	19,6	28	41,3	55,4	85,8	124	171	217	269	360	478	12,5	800	
	12,5	175 **2I/12,3**	365 **2I/13,1**	385 **2I/13,6**	665 **2I/13,7**	770 **2I/13,7**	1 560 **2I/12,3**	3 060 **2I/13,1**	4 460 **2I/13,3**	6 690 **2I/13,6**	9 020 **2I/13,6**	13 270 **2I/13**	18 940 **2I/12,8**	26 650 **2I/13,1**	34 540 **2I/13,3**	42 960 **2I/13,4**	57 410 **2I/13,4**	75 000 **2I/13,1**			
									29,1	45,6	62,4	93,7	129	171	243	288	359	521	11,2	710	
	11,2	–	–	–	–	–	–	–	4 660 **2I/11,9**	7 290 **2I/11,9**	9 930 **2I/11,8**	14 110 **2I/11,2**	19 980 **2I/11,5**	27 200 **2I/11,8**	38 950 **2I/11,9**	44 550 **2I/11,5**	55 470 **2I/11,5**	82 830 **2I/11,8**			
		1,28	2,38	2,55	4,75	5,59	11	21	28,2	47,7	61,3	95,1	141	175	232	314	393	501	10	630	
	10	200 **2I/10,2**	385 **2I/10,7**	435 **2I/11,2**	740 **2I/10,3**	875 **2I/10,3**	1 700 **2I/10,2**	3 420 **2I/10,7**	4 370 **2I/10,2**	7 440 **2I/10,3**	9 930 **2I/10,7**	14 750 **2I/10,2**	21 200 **2I/9,95**	28 550 **2I/10,7**	36 620 **2I/10,4**	49 080 **2I/10,3**	61 350 **2I/10,3**	81 040 **2I/10,7**			
									25,1	40	46	98	125	185	214	336	420	461	9	560	
	9	–	–	–	–	–	–	–	3 950 **2I/9,22**	6 300 **2I/9,24**	7 300 **2I/9,31**	14 780 **2I/8,85**	18 930 **2I/8,88**	29 000 **2I/9,19**	33 600 **2I/9,22**	53 000 **2I/9,24**	66 240 **2I/9,24**	73 190 **2I/9,31**			
710 000	160	–	–	–	–	–	1 120 **3I/151**	2 240 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 360 **3I/123**	2 720 **3I/123**	3 450 **3I/123**	5 150 **3I/128**	7 300 **3I/131**	10 600 **3I/119**	14 500 **3I/123**	21 200 **3I/125**	29 000 **3I/123**	36 500 **3I/127**	43 700 **3I/127**	58 000 **3I/131**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
710 000	100	–	–	–	–	–	1 450 **3I/103**	2 900 **3I/101**	4 250 **3I/100**	6 300 **3I/107**	9 050 **3I/108**	12 800 **3I/100**	18 000 **3I/98,5**	25 700 **3I/98,5**	34 620 **3I/100**	46 090 **3I/105**	54 500 **3I/105**	64 280 **3I/103**			
	90	–	–	–	–	–	–	–	4 500 **3I/89,4**	6 700 **3I/93,7**	8 590 **3I/93,3**	13 600 **3I/86,4**	19 000 **3I/88,8**	27 320 **3I/89**	34 290 **3I/89,7**	43 490 **3I/90,1**	54 360 **3I/90,1**	60 990 **3I/92,7**			
	80	–	290 **3I/75,2**	350 **3I/78,2**	525 **3I/82,7**	620 **3I/82,7**	1 280 **3I/75,5**	2 560 **3I/75,3**	4 470 **3I/81,4**	6 500 **3I/85,7**	9 050 **3I/86,1**	13 330 **3I/84**	19 020 **3I/82,7**	26 750 **3I/82,7**	34 670 **3I/84,3**	46 060 **3I/82,5**	57 580 **3I/82,5**	63 880 **3I/81,1**			
	71	–	–	–	–	–	–	–	4 670 **3I/72,8**	6 700 **3I/74,9**	9 750 **3I/74,6**	13 600 **3I/72,6**	19 500 **3I/74,5**	27 360 **3I/74,7**	34 380 **3I/75,3**	43 470 **3I/71**	54 330 **3I/71**	62 640 **3I/73**			
	63	–	345 **3I/60,1**	380 **3I/62,6**	625 **3I/66,3**	735 **3I/66,3**	1 560 **3I/61,5**	3 060 **3I/60,2**	4 470 **3I/62**	6 700 **3I/63,5**	9 040 **3I/63,8**	13 300 **3I/62,6**	18 990 **3I/61,7**	26 700 **3I/61,5**	34 600 **3I/62,7**	46 100 **3I/67,1**	57 630 **3I/67,1**	64 020 **3I/66**			
	56	–	–	–	–	–	–	–	4 610 **3I/55,4**	6 900 **3I/55,5**	8 570 **3I/55,3**	14 140 **3I/54,1**	20 040 **3I/55,5**	27 310 **3I/55,6**	33 460 **3I/56**	43 510 **3I/57,8**	54 390 **3I/57,8**	64 450 **3I/59,4**			
		2,11	2,46	4,38	5,15	8,88	18,7	26	38,7	51,9	74,3	108	152	193	256	320	360	50	2800	**56**
	50	–	355 **3I/49,4**	435 **3I/51,5**	745 **3I/49,8**	875 **3I/49,8**	1 550 **3I/51,2**	3 150 **3I/49,5**	4 470 **3I/50,4**	6 710 **3I/50,8**	9 040 **3I/51**	13 330 **3I/52,6**	19 020 **3I/51,8**	26 750 **3I/51,7**	34 670 **3I/52,7**	46 100 **3I/52,9▲**	57 630 **3I/52,9▲**	63 860 **3I/52▲**			
									27,1	43	58,9	81,7	113	153	187	250	313	371	45	2500	
	45	–	–	–	–	–	–	–	4 670 **3I/45,1**	7 300 **3I/44,4**	9 950 **3I/44,2**	14 170 **3I/45,4**	20 070 **3I/46,6**	27 360 **3I/46,7**	33 520 **3I/47,1**	43 500 **3I/45,5**	54 370 **3I/45,5**	66 250 **3I/46,8**			
		2,11	2,11	3,41	3,97	9,37	17,6	28	44,5	55,3	83,6	118	158	191	246	308	373	40	2240	
	40	–	365 **3I/40,8**	385 **3I/42,5**	635 **3I/43,6**	735 **3I/43,6**	1 560 **3I/39,1**	3 070 **3I/40,8**	4 610 **3I/38,7**	7 300 **3I/38,5**	9 420 **3I/39,9**	14 810 **3I/41,5**	20 240 **3I/40,4**	28 650 **3I/42,4**	33 560 **3I/41,2**	42 790 **3I/40,7**	53 490 **3I/40,7**	67 130 **3I/42,3**			
									26,1	41,9	55,7	86	118	155	192	244	305	371	35,5	2000	
	35,5	–	–	–	–	–	–	–	4 680 **3I/37,5**	7 310 **3I/36,5**	9 670 **3I/36,3**	14 150 **3I/34,4**	19 930 **3I/35,4**	27 350 **3I/36,9**	34 020 **3I/37,2**	43 540 **3I/37,4**	54 420 **3I/37,4**	68 040 **3I/38,4**			
		2	2,16	4,28	5,04	8,97	17,4	26	44,4	51,8	88,5	110	161	200	246	306	374	31,5	1800	
	31,5	–	355 **3I/33,5**	400 **3I/34,9**	745 **3I/32,8**	875 **3I/32,8**	1 550 **3I/32,6**	3 090 **3I/33,5**	4 450 **3I/32,2**	7 450 **3I/31,6**	9 010 **3I/32,8**	14 780 **3I/31,5**	17 820 **3I/30,6**	28 630 **3I/33,5**	34 450 **3I/32,5**	43 670 **3I/33,5**	54 340 **3I/33,5**	68 900 **3I/34,7**			
							7,12		24	36,6	42,7	90,9	101	154	190	247	307	372	28	1600	
	28	–	–	–	–	–	1 230 **2I/28,8**	–	4 160 **3I/29,1**	6 200 **3I/28,4**	7 280 **3I/28,6**	14 770 **3I/27,2**	16 470 **3I/27,3**	26 340 **3I/28,7**	32 680 **3I/28,8**	44 290 **3I/30**	55 110 **3I/30**	67 090 **3I/30,3**			
		0,77	1,81	2,05	3,23	3,73	8,3	15,6	21,8	33,5	47,2	68,6	96	137	187	229	282	391	25	1400	
	25	130 **2I/24,4**	300 **2I/24,1**	350 **2I/25,1**	570 **2I/26**	660 **2I/26**	1 340 **2I/23,7**	2 560 **2I/24,1**	3 590 **2I/24,1**	5 620 **2I/24,6**	8 160 **2I/25,4**	11 340 **2I/24,2**	16 350 **2I/25**	23 360 **2I/25**	31 390 **2I/24,6**	39 030 **2I/25**	48 150 **2I/25**	68 620 **2I/25,7**			
									24,9	37,3	50,8	72,3	101	142	202	232	284	418	22,4	1250	
	22,4	–	–	–	–	–	–	–	4 120 **2I/21,7**	6 410 **2I/22,5**	9 050 **2I/23,3**	12 230 **2I/22,2**	17 710 **2I/23**	23 800 **2I/22**	34 220 **2I/22,2**	40 480 **2I/22,8**	49 550 **2I/22,8**	74 590 **2I/23,4**			
		0,88	2,23	2,24	3,75	4,34	9,48	18,6	26,7	38,1	51,1	76,7	111	159	202	245	327	435	20	1120	
	20	150 **2I/20,1**	365 **2I/19,3**	385 **2I/20,1**	665 **2I/20,8**	770 **2I/20,8**	1 560 **2I/19,3**	3 060 **2I/19,3**	4 470 **2I/19,6**	6 710 **2I/20,7**	9 040 **2I/20,8**	13 310 **2I/20,3**	19 010 **2I/20**	26 710 **2I/19,7**	34 620 **2I/20,1**	43 200 **2I/20,6**	57 590 **2I/20,6**	75 240 **2I/20,3**			
									27,8	42,3	54,2	84,3	116	161	228	264	328	479	18	1000	
	18	–	–	–	–	–	–	–	4 670 **2I/17,6**	7 300 **2I/18,1**	9 320 **2I/18**	14 160 **2I/17,6**	20 050 **2I/18,1**	27 320 **2I/17,8**	39 030 **2I/17,9**	44 780 **2I/17,8**	55 740 **2I/17,8**	83 590 **2I/18,3**			
		1,02	2,3	2,47	4,45	5,26	9,96	20,4	26,4	44,8	51,3	86,7	117	167	222	291	364	443	16	900	
	16	180 **2I/16,3**	385 **2I/15,8**	435 **2I/16,5**	740 **2I/15,7**	875 **2I/15,7**	1 700 **2I/16,1**	3 420 **2I/15,8**	4 220 **2I/15,1**	7 450 **2I/15,7**	9 040 **2I/16,6**	14 790 **2I/16,1**	19 390 **2I/15,6**	28 600 **2I/16,2**	37 030 **2I/15,7**	49 200 **2I/15,9**	61 500 **2I/15,9**	75 190 **2I/16**			
									23,5	43,7	57,9	89,3	101	137	195	312	390	486	14	800	
	14	–	–	–	–	–	–	–	4 130 **2I/14,7**	7 330 **2I/14,1**	9 950 **2I/14,4**	14 830 **2I/13,9**	17 710 **2I/14,6**	23 830 **2I/14,6**	34 260 **2I/14,7**	53 130 **2I/14,3**	66 410 **2I/14,3**	83 550 **2I/14,4**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... **/ i** **50**	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**	i_N	n_1 min^{-1}	n_{N2}
710 000	12,5	1,07 175 **2I/12,3**	2,09 365 **2I/13,1**	2,1 385 **2I/13,6**	3,62 665 **2I/13,7**	4,19 770 **2I/13,7**	9,45 1 560 **2I/12,3**	17,5 3 070 **2I/13,1**	25 4 480 **2I/13,3**	36,7 6 700 **2I/13,6**	49,3 9 060 **2I/13,6**	76,4 13 320 **2I/13**	111 19 000 **2I/12,8**	152 26 750 **2I/13,1**	194 34 670 **2I/13,3**	241 43 250 **2I/13,4**	321 57 620 **2I/13,4**	424 75 000 **2I/13,1**	12,5	710	**56**
	11,2	– – **–**	– – **–**	– – **–**	– – **–**	– – **–**	– – **–**	– – **–**	25,9 4 680 **2I/11,9**	40,5 7 300 **2I/11,9**	55,6 9 970 **2I/11,8**	83,5 14 160 **2I/11,2**	115 20 000 **2I/11,5**	152 27 200 **2I/11,8**	217 39 100 **2I/11,9**	257 44 850 **2I/11,5**	320 55 820 **2I/11,5**	467 83 660 **2I/11,8**	11,2	630	
	10	1,14 200 **2I/10,2**	2,11 385 **2I/10,7**	2,27 435 **2I/11,2**	4,24 745 **2I/10,3**	4,98 875 **2I/10,3**	9,74 1 700 **2I/10,2**	18,7 3 430 **2I/10,7**	25,1 4 370 **2I/10,2**	42,5 7 460 **2I/10,3**	54,5 9 930 **2I/10,7**	84,8 14 800 **2I/10,2**	125 21 200 **2I/9,95**	157 28 660 **2I/10,7**	214 37 930 **2I/10,4**	281 49 260 **2I/10,3**	350 61 500 **2I/10,3**	453 82 500 **2I/10,7**	10	560	
630 000	160	– **–**	– **–**	– **–**	– **–**	– **–**	1 150 **3I/151**	2 300 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	– **–**	– **–**	– **–**	– **–**	– **–**	1 400 **3I/123**	2 800 **3I/123**	3 600 **3I/123**	5 300 **3I/128**	7 500 **3I/131**	10 900 **3I/119**	15 000 **3I/123**	21 800 **3I/125**	30 000 **3I/123**	37 500 **3I/127**	45 000 **3I/127**	60 000 **3I/131**			
	100	– **–**	– **–**	– **–**	– **–**	– **–**	1 450 **3I/103**	2 900 **3I/101**	4 370 **3I/100**	6 500 **3I/107**	9 090 **3I/108**	13 350 **3I/100**	18 500 **3I/98,5**	26 810 **3I/98,5**	34 740 **3I/100**	46 250 **3I/105**	56 000 **3I/105**	66 500 **3I/103**			
	90	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	4 500 **3I/89,4**	6 700 **3I/93,7**	8 620 **3I/93,3**	13 600 **3I/86,4**	19 000 **3I/88,8**	27 410 **3I/89**	35 390 **3I/89,7**	43 630 **3I/90,1**	54 540 **3I/90,1**	61 770 **3I/92,7**			
	80	– **–**	300 **3I/75,2**	350 **3I/78,2**	530 **3I/82,7**	625 **3I/82,7**	1 320 **3I/75,5**	2 570 **3I/75,3**	4 490 **3I/81,4**	6 740 **3I/85,7**	9 090 **3I/86,1**	13 370 **3I/84**	19 090 **3I/82,7**	26 850 **3I/82,7**	34 800 **3I/84,3**	46 230 **3I/82,5**	57 790 **3I/82,5**	66 180 **3I/81,1**			
	71	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	4 690 **3I/72,8**	6 900 **3I/74,9**	10 000 **3I/74,6**	14 220 **3I/72,6**	19 500 **3I/74,5**	27 470 **3I/74,7**	35 630 **3I/75,3**	43 630 **3I/71**	54 540 **3I/71**	63 530 **3I/73**			
	63	– **–**	345 **3I/60,1**	385 **3I/62,6**	630 **3I/66,3**	740 **3I/66,3**	1 570 **3I/61,5**	3 070 **3I/60,2**	4 480 **3I/62**	6 730 **3I/63,5**	9 070 **3I/63,8**	13 350 **3I/62,6**	19 060 **3I/61,7**	26 800 **3I/61,5**	34 740 **3I/62,7**	46 280 **3I/67,1**	57 850 **3I/67,1**	66 350 **3I/66**			
	56	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	24,5 4 630 **3I/55,4**	37,5 7 100 **3I/55,5**	45,6 8 600 **3I/55,3**	76,9 14 200 **3I/54,1**	106 20 110 **3I/55,5**	145 27 420 **3I/55,6**	181 34 660 **3I/56**	222 43 670 **3I/57,8▲**	277 54 590 **3I/57,8▲**	323 65 360 **3I/59,4▲**	56	2800	**50**
	50	– **–**	1,88 355 **3I/49,4**	2,21 435 **3I/51,5**	3,92 745 **3I/49,8**	4,61 880 **3I/49,8**	8,19 1 600 **3I/51,2**	16,7 3 150 **3I/49,5**	23,3 4 490 **3I/50,4**	34,7 6 730 **3I/50,8**	46,5 9 070 **3I/51**	66,6 13 380 **3I/52,6**	96,5 19 090 **3I/51,8**	136 26 850 **3I/51,7**	173 34 800 **3I/52,7**	229 46 270 **3I/52,9**	286 57 830 **3I/52,9**	333 66 070 **3I/52**	50	2500	
	45	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	24,4 4 690 **3I/45,1**	38,7 7 320 **3I/44,4**	52,9 9 980 **3I/44,2**	73,4 14 220 **3I/45,4**	101 20 140 **3I/46,6**	138 27 460 **3I/46,7**	173 34 650 **3I/47,1**	225 43 650 **3I/45,5**	281 54 560 **3I/45,5**	336 67 130 **3I/46,8**	45	2240	
	40	– **–**	1,89 370 **3I/40,8**	1,89 385 **3I/42,5**	3,09 640 **3I/43,6**	3,57 745 **3I/43,6**	8,39 1 570 **3I/39,1**	15,8 3 080 **3I/40,8**	25,1 4 630 **3I/38,7**	40,7 7 470 **3I/38,5**	49,6 9 450 **3I/39,9**	74,9 14 860 **3I/41,5**	105 20 310 **3I/40,4**	142 28 750 **3I/42,4**	173 34 020 **3I/41,2**	228 44 270 **3I/40,7**	285 55 340 **3I/40,7**	337 68 040 **3I/42,3**	40	2000	
	35,5	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	– **–**	23,6 4 690 **3I/37,5**	37,9 7 330 **3I/36,5**	51,8 9 980 **3I/36,3**	77,7 14 190 **3I/34,4**	107 20 110 **3I/35,4**	140 27 440 **3I/36,9**	175 34 450 **3I/37,2**	220 43 680 **3I/37,4**	275 54 600 **3I/37,4**	338 68 900 **3I/38,4**	35,5	1800	
	31,5	– **–**	1,83 365 **3I/33,5**	1,98 410 **3I/34,9**	3,82 745 **3I/32,8**	4,5 880 **3I/32,8**	7,97 1 550 **3I/32,6**	16 3 200 **3I/33,5**	24 4 610 **3I/32,2**	39,6 7 480 **3I/31,6**	47,7 9 330 **3I/32,8**	78,9 14 840 **3I/31,5**	101 18 460 **3I/30,6**	144 28 740 **3I/33,5**	180 34 940 **3I/32,5**	222 44 290 **3I/33,5**	276 55 110 **3I/33,5**	337 69 880 **3I/34,7**	31,5	1600	
	28	– **–**	– **–**	– **–**	– **–**	– **–**	6,25 1 230 **2I/28,8**	– **–**	21,8 4 330 **3I/29,1**	32,5 6 300 **3I/28,4**	37,9 7 400 **3I/28,6**	80,1 14 880 **3I/27,2**	92 17 140 **3I/27,3**	140 27 420 **3I/28,7**	169 33 200 **3I/28,8**	220 45 000 **3I/30**	273 56 000 **3I/30**	330 68 170 **3I/30,3**	28	1400	
	25	0,69 130 **2I/24,4**	1,62 300 **2I/24,1**	1,83 350 **2I/25,1**	2,89 575 **2I/26**	3,34 665 **2I/26**	7,44 1 350 **2I/23,7**	14 2 570 **2I/24,1**	19,6 3 600 **2I/24,1**	30 5 640 **2I/24,6**	42,3 8 190 **2I/25,4**	61,5 11 380 **2I/24,2**	86 16 410 **2I/25**	123 23 440 **2I/25**	168 31 500 **2I/24,6**	211 40 380 **2I/25**	253 48 320 **2I/25**	350 68 860 **2I/25,7**	25	1250	

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
									P_{N2} kW												
									M_{N2} N m												
									... / i												
630 000									22,4	33,5	45,7	65	90,7	127	182	211	255	376	22,4	1120	**50**
	22,4	–	–	–	–	–	–	–	4 140 **2I/21,7**	6 430 **2I/22,5**	9 090 **2I/23,3**	12 280 **2I/22,2**	17 770 **2I/23**	23 890 **2I/22**	34 340 **2I/22,2**	41 040 **2I/22,8**	49 720 **2I/22,8**	74 850 **2I/23,4**			
		0,79	2	2,01	3,36	3,88	8,5	16,7	23,9	34,1	45,8	68,8	99,6	143	181	221	293	389	20	1000	
	20	150 **2I/20,1**	370 **2I/19,3**	385 **2I/20,1**	670 **2I/20,8**	775 **2I/20,8**	1 570 **2I/19,3**	3 080 **2I/19,3**	4 480 **2I/19,6**	6 740 **2I/20,7**	9 080 **2I/20,8**	13 360 **2I/20,3**	19 070 **2I/20**	26 810 **2I/19,7**	34 740 **2I/20,1**	43 480 **2I/20,6**	57 790 **2I/20,6**	75 510 **2I/20,3**			
									25,1	38,2	49	76,1	105	145	206	239	297	432	18	900	
	18	–	–	–	–	–	–	–	4 680 **2I/17,6**	7 330 **2I/18,1**	9 350 **2I/18**	14 200 **2I/17,6**	20 120 **2I/18,1**	27 410 **2I/17,8**	39 160 **2I/17,9**	45 000 **2I/17,8**	56 000 **2I/17,8**	83 870 **2I/18,3**			
		0,91	2,05	2,2	3,97	4,69	8,86	18,2	23,6	40	45,8	77,3	104	149	198	260	325	395	16	800	
	16	180 **2I/16,3**	385 **2I/15,8**	435 **2I/16,5**	740 **2I/15,7**	880 **2I/15,7**	1 700 **2I/16,1**	3 430 **2I/15,8**	4 240 **2I/15,1**	7 480 **2I/15,7**	9 080 **2I/16,6**	14 850 **2I/16,1**	19 460 **2I/15,6**	28 710 **2I/16,2**	37 170 **2I/15,7**	49 390 **2I/15,9**	61 730 **2I/15,9**	75 470 **2I/16**			
									21	38,9	51,6	79,6	90,4	122	174	278	347	433	14	710	
	14	–	–	–	–	–	–	–	4 150 **2I/14,7**	7 360 **2I/14,1**	9 990 **2I/14,4**	14 880 **2I/13,9**	17 770 **2I/14,6**	23 920 **2I/14,6**	34 390 **2I/14,7**	53 330 **2I/14,3**	66 660 **2I/14,3**	83 860 **2I/14,4**			
		0,95	1,86	1,87	3,22	3,73	8,41	15,5	22,3	32,5	43,9	68,1	98,3	136	172	215	286	376	12,5	630	
	12,5	180 **2I/12,3**	370 **2I/13,1**	385 **2I/13,6**	670 **2I/13,7**	775 **2I/13,7**	1 570 **2I/12,3**	3 070 **2I/13,1**	4 490 **2I/13,3**	6 700 **2I/13,6**	9 090 **2I/13,6**	13 370 **2I/13**	19 000 **2I/12,8**	26 850 **2I/13,1**	34 800 **2I/13,3**	43 550 **2I/13,4**	57 840 **2I/13,4**	75 000 **2I/13,1**			
									23,1	36	49,6	74,5	102	135	193	229	286	416	11,2	560	
	11,2	–	–	–	–	–	–	–	4 700 **2I/11,9**	7 300 **2I/11,9**	10 000 **2I/11,8**	14 210 **2I/11,2**	20 000 **2I/11,5**	27 200 **2I/11,8**	39 240 **2I/11,9**	45 000 **2I/11,5**	56 000 **2I/11,5**	83 970 **2I/11,8**			
560 000	160	–	–	–	–	–	1 180 **3I/151**	2 360 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 450 **3I/123**	2 900 **3I/123**	3 620 **3I/123**	5 450 **3I/128**	7 750 **3I/131**	11 420 **3I/119**	15 500 **3I/123**	22 400 **3I/125**	31 610 **3I/123**	38 700 **3I/127**	46 200 **3I/127**	61 500 **3I/131**			
	100	–	–	–	–	–	1 500 **3I/103**	3 000 **3I/101**	4 370 **3I/100**	6 500 **3I/107**	9 120 **3I/108**	13 400 **3I/100**	18 500 **3I/98,5**	26 890 **3I/98,5**	34 860 **3I/100**	46 410 **3I/105**	56 000 **3I/105**	68 640 **3I/103**			
	90	–	–	–	–	–	–	–	4 650 **3I/89,4**	6 700 **3I/93,7**	8 650 **3I/93,3**	13 600 **3I/86,4**	19 500 **3I/88,8**	27 510 **3I/89**	36 660 **3I/89,7**	43 790 **3I/90,1**	54 740 **3I/90,1**	64 000 **3I/92,7**			
	80	–	300 **3I/75,2**	350 **3I/78,2**	530 **3I/82,7**	625 **3I/82,7**	1 350 **3I/75,5**	2 580 **3I/75,3**	4 500 **3I/81,4**	6 770 **3I/85,7**	9 120 **3I/86,1**	13 430 **3I/84**	19 160 **3I/82,7**	26 950 **3I/82,7**	34 930 **3I/84,3**	46 410 **3I/82,5**	58 010 **3I/82,5**	68 590 **3I/81,1**			
	71	–	–	–	–	–	–	–	4 710 **3I/72,8**	6 900 **3I/74,9**	10 040 **3I/74,6**	14 280 **3I/72,6**	20 220 **3I/74,5**	27 570 **3I/74,7**	36 930 **3I/75,3**	43 790 **3I/71**	54 740 **3I/71**	64 450 **3I/73**			
			1,73	1,8	2,79	3,28	7,51	15	21,3	31,2	41,8	62,8	90,9	128	163	203	254	305	63	2800	**45**
	63	–	355 **3I/60,1**	385 **3I/62,6**	630 **3I/66,3**	740 **3I/66,3**	1 570 **3I/61,5**	3 090 **3I/60,2**	4 500 **3I/62**	6 760 **3I/63,5**	9 100 **3I/63,8**	13 400 **3I/62,6**	19 130 **3I/61,7**	26 900 **3I/61,5**	34 860 **3I/62,7**	46 450 **3I/67,1▲**	58 060 **3I/67,1▲**	68 740 **3I/66▲**			
									22	33,5	40,9	68,9	95,1	129	168	199	248	292	56	2500	
	56	–	–	–	–	–	–	–	4 640 **3I/55,4**	7 100 **3I/55,5**	8 630 **3I/55,3**	14 250 **3I/54,1**	20 180 **3I/55,5**	27 510 **3I/55,6**	35 860 **3I/56**	43 830 **3I/57,8**	54 780 **3I/57,8**	66 250 **3I/59,4**			
			1,73	1,99	3,52	4,15	7,33	15,4	20,9	31,2	41,8	59,9	86,8	122	156	206	257	308	50	2240	
	50	–	365 **3I/49,4**	435 **3I/51,5**	750 **3I/49,8**	880 **3I/49,8**	1 600 **3I/51,2**	3 250 **3I/49,5**	4 500 **3I/50,4**	6 760 **3I/50,8**	9 100 **3I/51**	13 420 **3I/52,6**	19 160 **3I/51,8**	26 940 **3I/51,7**	34 920 **3I/52,7**	46 430 **3I/52,9**	58 030 **3I/52,9**	68 290 **3I/52**			
									21,9	34,7	47,4	65,8	90,8	124	160	202	252	304	45	2000	
	45	–	–	–	–	–	–	–	4 700 **3I/45,1**	7 350 **3I/44,4**	10 020 **3I/44,2**	14 270 **3I/45,4**	20 210 **3I/46,6**	27 560 **3I/46,7**	35 850 **3I/47,1**	43 810 **3I/45,5**	54 760 **3I/45,5**	68 040 **3I/46,8**			
			1,71	1,71	2,81	3,25	7,58	14,3	22,6	36,7	44,8	67,7	95,1	128	158	211	264	307	40	1800	
	40	–	370 **3I/40,8**	385 **3I/42,5**	650 **3I/43,6**	750 **3I/43,6**	1 570 **3I/39,1**	3 090 **3I/40,8**	4 650 **3I/38,7**	7 500 **3I/38,5**	9 480 **3I/39,9**	14 910 **3I/41,5**	20 380 **3I/40,4**	28 850 **3I/42,4**	34 450 **3I/41,2**	45 690 **3I/40,7**	57 120 **3I/40,7**	68 900 **3I/42,3**			

For n_1 lower than 560 min^{-1} see page 107.
▲ Possible forced lubrication with heat exchanger: consult us.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
560 000									21	33,8	46,2	69,3	95,6	125	157	199	247	305	35,5	1600	**45**
	35,5	–	–	–	–	–	–	–	4 710 **3I/37,5**	7 360 **3I/36,5**	10 030 **3I/36,3**	14 250 **3I/34,4**	20 180 **3I/35,4**	27 540 **3I/36,9**	34 940 **3I/37,2**	44 290 **3I/37,4**	55 110 **3I/37,4**	69 880 **3I/38,4**			
			1,6	1,73	3,36	3,95	6,98	14,2	21,8	34,8	43,4	69,4	92	126	160	199	249	300	31,5	1400	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	750 **3I/32,8**	885 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	4 800 **3I/32,2**	7 510 **3I/31,6**	9 710 **3I/32,8**	14 900 **3I/31,5**	19 220 **3I/30,6**	28 860 **3I/33,5**	35 500 **3I/32,5**	45 500 **3I/33,5**	56 880 **3I/33,5**	71 000 **3I/34,7**			
							5,6		20,2	29,1	34,1	71,8	85	129	152	196	244	297	28	1250	
	28	–	–	–	–	–	1 230 **2I/28,8**	–	4 480 **3I/29,1**	6 300 **3I/28,4**	7 440 **3I/28,6**	14 930 **3I/27,2**	17 730 **3I/27,3**	28 370 **3I/28,7**	33 450 **3I/28,8**	45 000 **3I/30**	56 000 **3I/30**	68 590 **3I/30,3**			
		0,62	1,46	1,65	2,6	3	6,69	12,5	17,6	27	38	55,3	77,4	110	151	193	228	315	25	1120	
	25	130 **2I/24,4**	300 **2I/24,1**	350 **2I/25,1**	575 **2I/26**	665 **2I/26**	1 350 **2I/23,7**	2 580 **2I/24,1**	3 610 **2I/24,1**	5 660 **2I/24,6**	8 220 **2I/25,4**	11 420 **2I/24,2**	16 470 **2I/25**	23 530 **2I/25**	31 610 **2I/24,6**	41 210 **2I/25**	48 480 **2I/25**	69 100 **2I/25,7**			
									20,1	30,1	40,9	58,2	81,3	114	163	194	229	337	22,4	1000	
	22,4	–	–	–	–	–	–	–	4 150 **2I/21,7**	6 460 **2I/22,5**	9 120 **2I/23,3**	12 320 **2I/22,2**	17 840 **2I/23**	23 970 **2I/22**	34 470 **2I/22,2**	42 410 **2I/22,8**	49 900 **2I/22,8**	75 120 **2I/23,4**			
		0,71	1,8	1,81	3,03	3,51	7,67	15,1	21,6	30,8	41,3	62,1	90	129	164	199	265	352	20	900	
	20	150 **2I/20,1**	370 **2I/19,3**	385 **2I/20,1**	670 **2I/20,8**	775 **2I/20,8**	1 570 **2I/19,3**	3 090 **2I/19,3**	4 500 **2I/19,6**	6 760 **2I/20,7**	9 110 **2I/20,8**	13 410 **2I/20,3**	19 140 **2I/20**	26 890 **2I/19,7**	34 860 **2I/20,1**	43 700 **2I/20,6**	57 980 **2I/20,6**	75 760 **2I/20,3**			
									22,4	34,1	43,7	67,9	93,7	129	184	212	264	386	18	800	
	18	–	–	–	–	–	–	–	4 700 **2I/17,6**	7 350 **2I/18,1**	9 390 **2I/18**	14 260 **2I/17,6**	20 190 **2I/18,1**	27 510 **2I/17,8**	39 310 **2I/17,9**	45 000 **2I/17,8**	56 000 **2I/17,8**	84 180 **2I/18,3**			
		0,81	1,82	1,96	3,54	4,18	7,86	16,2	21	35,6	40,8	68,9	92,7	132	177	232	290	352	16	710	
	16	180 **2I/16,3**	385 **2I/15,8**	435 **2I/16,5**	745 **2I/15,7**	880 **2I/15,7**	1 700 **2I/16,1**	3 450 **2I/15,8**	4 250 **2I/15,1**	7 500 **2I/15,7**	9 110 **2I/16,6**	14 900 **2I/16,1**	19 500 **2I/15,6**	28 820 **2I/16,2**	37 310 **2I/15,7**	49 570 **2I/15,9**	61 960 **2I/15,9**	75 760 **2I/16**			
									18,7	34,7	45,8	70,9	80,5	109	155	247	309	386	14	630	
	14	–	–	–	–	–	–	–	4 160 **2I/14,7**	7 390 **2I/14,1**	10 000 **2I/14,4**	14 940 **2I/13,9**	17 840 **2I/14,6**	24 010 **2I/14,6**	34 500 **2I/14,7**	53 530 **2I/14,3**	66 910 **2I/14,3**	84 180 **2I/14,4**			
		0,85	1,66	1,67	2,87	3,32	7,51	13,8	19,8	28,9	39,2	60,7	87,3	121	154	192	255	335	12,5	560	
	12,5	180 **2I/12,3**	370 **2I/13,1**	385 **2I/13,6**	670 **2I/13,7**	775 **2I/13,7**	1 570 **2I/12,3**	3 070 **2I/13,1**	4 500 **2I/13,3**	6 700 **2I/13,6**	9 120 **2I/13,6**	13 420 **2I/13**	19 000 **2I/12,8**	26 950 **2I/13,1**	34 930 **2I/13,3**	43 700 **2I/13,4**	58 000 **2I/13,4**	75 000 **2I/13,1**			
500 000	160	–	–	–	–	–	1 220 **3I/151**	2 430 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 450 **3I/123**	2 900 **3I/123**	3 630 **3I/123**	5 690 **3I/128**	7 750 **3I/131**	11 460 **3I/119**	15 500 **3I/123**	23 000 **3I/125**	31 720 **3I/123**	38 700 **3I/127**	47 500 **3I/127**	63 000 **3I/131**			
	100	–	–	–	–	–	1 500 **3I/103**	3 000 **3I/101**	4 520 **3I/100**	6 700 **3I/107**	9 150 **3I/108**	13 450 **3I/100**	19 200 **3I/98,5**	26 990 **3I/98,5**	34 990 **3I/100**	46 580 **3I/105**	58 220 **3I/105**	71 110 **3I/103**			
	90	–	–	–	–	–	–	–	4 660 **3I/89,4**	6 900 **3I/93,7**	8 680 **3I/93,3**	14 300 **3I/86,4**	19 500 **3I/88,8**	27 620 **3I/89**	38 000 **3I/89,7**	43 960 **3I/90,1**	54 950 **3I/90,1**	66 330 **3I/92,7**			
	80	–	300 **3I/75,2**	355 **3I/78,2**	535 **3I/82,7**	625 **3I/82,7**	1 360 **3I/75,5**	2 590 **3I/75,3**	4 520 **3I/81,4**	6 790 **3I/85,7**	9 160 **3I/86,1**	13 480 **3I/84**	19 240 **3I/82,7**	27 050 **3I/82,7**	35 060 **3I/84,3**	46 580 **3I/82,5**	58 230 **3I/82,5**	71 090 **3I/81,1**			
									19	27,8	39,6	57,9	79,9	109	149	182	227	266	71	2800	**40**
	71	–	–	–	–	–	–	–	4 730 **3I/72,8**	7 100 **3I/74,9**	10 080 **3I/74,6**	14 330 **3I/72,6**	20 300 **3I/74,5**	27 670 **3I/74,7**	38 260 **3I/75,3**	43 960 **3I/71**	54 950 **3I/71**	66 280 **3I/73**			
			1,55	1,61	2,5	2,94	6,73	13,5	19,1	28	37,5	56,2	81,5	115	146	182	227	282	63	2500	
	63	–	355 **3I/60,1**	385 **3I/62,6**	635 **3I/66,3**	745 **3I/66,3**	1 580 **3I/61,5**	3 100 **3I/60,2**	4 510 **3I/62**	6 780 **3I/63,5**	9 140 **3I/63,8**	13 450 **3I/62,6**	19 200 **3I/61,7**	26 990 **3I/61,5**	34 990 **3I/62,7**	46 620 **3I/67,1**	58 270 **3I/67,1**	71 120 **3I/66**			
									19,7	31,2	36,8	62	85,5	116	155	179	223	265	56	2240	
	56	–	–	–	–	–	–	–	4 660 **3I/55,4**	7 380 **3I/55,5**	8 660 **3I/55,3**	14 300 **3I/54,1**	20 250 **3I/55,5**	27 610 **3I/55,6**	37 060 **3I/56**	43 980 **3I/57,8**	54 970 **3I/57,8**	67 130 **3I/59,4**			

For n_1 lower than 560 min^{-1} see page 107.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
500 000			1,55	1,78	3,16	3,72	6,75	13,8	18,8	28	37,5	53,7	77,8	110	139	185	231	285	50	2000	**40**
	50	–	365 **3I/49,4**	440 **3I/51,5**	750 **3I/49,8**	885 **3I/49,8**	1 650 **3I/51,2**	3 250 **3I/49,5**	4 520 **3I/50,4**	6 780 **3I/50,8**	9 140 **3I/51**	13 470 **3I/52,6**	19 230 **3I/51,8**	27 040 **3I/51,7**	35 040 **3I/52,7**	46 590 **3I/52,9**	58 240 **3I/52,9**	70 650 **3I/52**			
									19,7	31,3	42,8	59,4	82	112	148	182	228	277	45	1800	
	45	–	–	–	–	–	–	–	4 720 **3I/45,1**	7 370 **3I/44,4**	10 050 **3I/44,2**	14 320 **3I/45,4**	20 280 **3I/46,6**	27 650 **3I/46,7**	37 000 **3I/47,1**	43 950 **3I/45,5**	54 940 **3I/45,5**	68 900 **3I/46,8**			
			1,52	1,53	2,54	2,93	6,76	12,7	20,2	32,8	39,9	60,4	84,8	114	142	195	243	277	40	1600	
	40	–	370 **3I/40,8**	385 **3I/42,5**	660 **3I/43,6**	765 **3I/43,6**	1 580 **3I/39,1**	3 100 **3I/40,8**	4 660 **3I/38,7**	7 530 **3I/38,5**	9 520 **3I/39,9**	14 970 **3I/41,5**	20 460 **3I/40,4**	28 950 **3I/42,4**	34 940 **3I/41,2**	47 340 **3I/40,7**	59 170 **3I/40,7**	69 880 **3I/42,3**			
									18,5	29,7	40,6	60,9	84	110	140	177	220	271	35,5	1400	
	35,5	–	–	–	–	–	–	–	4 730 **3I/37,5**	7 390 **3I/36,5**	10 070 **3I/36,3**	14 310 **3I/34,4**	20 270 **3I/35,4**	27 660 **3I/36,9**	35 510 **3I/37,2**	45 000 **3I/37,4**	56 000 **3I/37,4**	71 000 **3I/38,4**			
			1,43	1,54	3,01	3,54	6,23	12,7	20,2	31,2	40,1	62,1	85	113	143	184	230	268	31,5	1250	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	755 **3I/32,8**	885 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	4 960 **3I/32,2**	7 540 **3I/31,6**	10 050 **3I/32,8**	14 950 **3I/31,5**	19 880 **3I/30,6**	28 960 **3I/33,5**	35 500 **3I/32,5**	47 080 **3I/33,5**	58 840 **3I/33,5**	71 000 **3I/34,7**			
							5,04		18,7	26	30,7	64,6	78,7	120	137	176	219	267	28	1120	
	28	–	–	–	–	–	1 240 **2I/28,8**	–	4 630 **3I/29,1**	6 300 **3I/28,4**	7 490 **3I/28,6**	14 980 **3I/27,2**	18 330 **3I/27,3**	29 320 **3I/28,7**	33 690 **3I/28,8**	45 000 **3I/30**	56 000 **3I/30**	68 990 **3I/30,3**			
		0,56	1,31	1,48	2,33	2,69	5,99	11,2	15,8	24,2	34,1	49,5	69,3	98,9	135	173	204	282	25	1000	
	25	130 **2I/24,4**	300 **2I/24,1**	355 **2I/25,1**	580 **2I/26**	670 **2I/26**	1 360 **2I/23,7**	2 590 **2I/24,1**	3 630 **2I/24,1**	5 680 **2I/24,6**	8 250 **2I/25,4**	11 460 **2I/24,2**	16 530 **2I/25**	23 610 **2I/25**	31 720 **2I/24,6**	41 360 **2I/25**	48 660 **2I/25**	69 350 **2I/25,7**			
									18,1	27,1	37	52,6	73,4	103	147	176	207	304	22,4	900	
	22,4	–	–	–	–	–	–	–	4 170 **2I/21,7**	6 480 **2I/22,5**	9 150 **2I/23,3**	12 360 **2I/22,2**	17 900 **2I/23**	24 050 **2I/22**	34 580 **2I/22,2**	42 550 **2I/22,8**	50 060 **2I/22,8**	75 370 **2I/23,4**			
		0,63	1,61	1,61	2,69	3,12	6,84	13,5	19,2	27,5	36,9	55,4	80,3	115	146	179	236	314	20	800	
	20	150 **2I/20,1**	370 **2I/19,3**	385 **2I/20,1**	670 **2I/20,8**	775 **2I/20,8**	1 580 **2I/19,3**	3 100 **2I/19,3**	4 510 **2I/19,6**	6 780 **2I/20,7**	9 140 **2I/20,8**	13 460 **2I/20,3**	19 210 **2I/20**	26 990 **2I/19,7**	34 990 **2I/20,1**	44 210 **2I/20,6**	58 200 **2I/20,6**	76 040 **2I/20,3**			
									20	30,4	38,9	60,5	83,5	115	164	188	234	344	18	710	
	18	–	–	–	–	–	–	–	4 720 **2I/17,6**	7 380 **2I/18,1**	9 420 **2I/18**	14 310 **2I/17,6**	20 270 **2I/18,1**	27 620 **2I/17,8**	39 460 **2I/17,9**	45 000 **2I/17,8**	56 000 **2I/17,8**	84 500 **2I/18,3**			
		0,72	1,61	1,75	3,15	3,72	6,97	14,4	18,6	31,6	36,3	61,4	82,3	118	157	206	258	314	16	630	
	16	180 **2I/16,3**	385 **2I/15,8**	435 **2I/16,5**	750 **2I/15,7**	885 **2I/15,7**	1 700 **2I/16,1**	3 450 **2I/15,8**	4 250 **2I/15,1**	7 500 **2I/15,7**	9 150 **2I/16,6**	14 960 **2I/16,1**	19 500 **2I/15,6**	28 920 **2I/16,2**	37 450 **2I/15,7**	49 760 **2I/15,9**	62 200 **2I/15,9**	76 040 **2I/16**			
									16,7	30,9	40,7	63,3	71,8	96,8	138	221	275	344	14	560	
	14	–	–	–	–	–	–	–	4 180 **2I/14,7**	7 420 **2I/14,1**	10 000 **2I/14,4**	14 990 **2I/13,9**	17 910 **2I/14,6**	24 100 **2I/14,6**	34 500 **2I/14,7**	53 730 **2I/14,3**	67 000 **2I/14,3**	84 490 **2I/14,4**			
450 000	160	–	–	–	–	–	1 250 **3I/151**	2 500 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 500 **3I/123**	3 000 **3I/123**	3 640 **3I/123**	5 710 **3I/128**	8 000 **3I/131**	11 500 **3I/119**	16 000 **3I/123**	23 690 **3I/125**	31 830 **3I/123**	40 000 **3I/127**	48 840 **3I/127**	63 000 **3I/131**			
	100	–	–	–	–	–	1 550 **3I/103**	3 070 **3I/101**	4 530 **3I/100**	6 820 **3I/107**	9 190 **3I/108**	13 500 **3I/100**	19 270 **3I/98,5**	27 100 **3I/98,5**	35 120 **3I/100**	46 750 **3I/105**	58 440 **3I/105**	73 700 **3I/103**			
	90	–	–	–	–	–	–	–	4 680 **3I/89,4**	6 900 **3I/93,7**	8 710 **3I/93,3**	14 360 **3I/86,4**	20 340 **3I/88,8**	27 720 **3I/89**	39 390 **3I/89,7**	44 120 **3I/90,1**	55 150 **3I/90,1**	68 750 **3I/92,7**			
			1,18	1,33	1,9	2,23	5,3	10,1	16,3	23,3	31,3	47,2	68,4	96,3	122	166	208	266	80	2800	**35,5**
	80	–	300 **3I/75,2**	355 **3I/78,2**	535 **3I/82,7**	630 **3I/82,7**	1 360 **3I/75,5**	2 590 **3I/75,3**	4 540 **3I/81,4**	6 820 **3I/85,7**	9 190 **3I/86,1**	13 530 **3I/84**	19 310 **3I/82,7**	27 150 **3I/82,7**	35 190 **3I/84,3**	46 750 **3I/82,5**	58 440 **3I/82,5**	73 650 **3I/81,1**			
									17,1	24,8	35,5	51,9	71,6	97,3	138	163	203	246	71	2500	
	71	–	–	–	–	–	–	–	4 740 **3I/72,8**	7 100 **3I/74,9**	10 110 **3I/74,6**	14 380 **3I/72,6**	20 370 **3I/74,5**	27 770 **3I/74,7**	39 580 **3I/75,3**	44 110 **3I/71**	55 140 **3I/71**	68 580 **3I/73**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
450 000			1,45	1,45	2,25	2,64	6,05	12,1	17,2	25,1	33,7	50,6	73,3	103	131	164	204	261	63	2240	**35,5**
	63	–	370 **3I/60,1**	385 **3I/62,6**	635 **3I/66,3**	745 **3I/66,3**	1 580 **3I/61,5**	3 110 **3I/60,2**	4 530 **3I/62**	6 800 **3I/63,5**	9 170 **3I/63,8**	13 500 **3I/62,6**	19 260 **3I/61,7**	27 090 **3I/61,5**	35 110 **3I/62,7**	46 780 **3I/67,1**	58 470 **3I/67,1**	73 500 **3I/66**			
									17,7	27,9	32,9	55,5	76,6	104	143	160	200	241	56	2000	
	56	–	–	–	–	–	–	–	4 680 **3I/55,4**	7 400 **3I/55,5**	8 700 **3I/55,3**	14 350 **3I/54,1**	20 330 **3I/55,5**	27 710 **3I/55,6**	38 340 **3I/56**	44 140 **3I/57,8**	55 170 **3I/57,8**	68 440 **3I/59,4**			
			1,43	1,61	2,85	3,36	6,08	12,8	16,9	25,2	33,9	48,5	70,2	99	126	167	208	264	50	1800	
	50	–	375 **3I/49,4**	440 **3I/51,5**	755 **3I/49,8**	885 **3I/49,8**	1 650 **3I/51,2**	3 350 **3I/49,5**	4 530 **3I/50,4**	6 800 **3I/50,8**	9 170 **3I/51**	13 510 **3I/52,6**	19 290 **3I/51,8**	27 130 **3I/51,7**	35 160 **3I/52,7**	46 750 **3I/52,9**	58 440 **3I/52,9**	72 920 **3I/52**			
									17,6	27,9	38,2	53	73,1	99,6	136	163	203	250	45	1600	
	45	–	–	–	–	–	–	–	4 740 **3I/45,1**	7 400 **3I/44,4**	10 090 **3I/44,2**	14 370 **3I/45,4**	20 360 **3I/46,6**	27 750 **3I/46,7**	38 330 **3I/47,1**	44 290 **3I/45,5**	55 140 **3I/45,5**	69 880 **3I/46,8**			
			1,34	1,34	2,25	2,61	5,94	11,2	17,8	28,8	35,1	53	74,5	100	126	177	222	246	40	1400	
	40	–	375 **3I/40,8**	390 **3I/42,5**	670 **3I/43,6**	775 **3I/43,6**	1 590 **3I/39,1**	3 120 **3I/40,8**	4 680 **3I/38,7**	7 560 **3I/38,5**	9 560 **3I/39,9**	15 030 **3I/41,5**	20 540 **3I/40,4**	29 080 **3I/42,4**	35 500 **3I/41,2**	49 270 **3I/40,7**	61 590 **3I/40,7**	71 000 **3I/42,3**			
									16,6	26,6	36,4	54,6	75,3	98,4	129	158	196	242	35,5	1250	
	35,5	–	–	–	–	–	–	–	4 750 **3I/37,5**	7 410 **3I/36,5**	10 110 **3I/36,3**	14 360 **3I/34,4**	20 340 **3I/35,4**	27 760 **3I/36,9**	36 740 **3I/37,2**	45 000 **3I/37,4**	56 000 **3I/37,4**	71 000 **3I/38,4**			
			1,28	1,38	2,71	3,18	5,58	11,4	18,7	28,1	37,1	55,9	78,7	102	128	171	213	240	31,5	1120	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	755 **3I/32,8**	890 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	5 130 **3I/32,2**	7 570 **3I/31,6**	10 390 **3I/32,8**	15 000 **3I/31,5**	20 550 **3I/30,6**	29 060 **3I/33,5**	35 500 **3I/32,5**	48 650 **3I/33,5**	60 820 **3I/33,5**	71 000 **3I/34,7**			
							4,52		16,6	23,2	27,6	57,8	72,7	108	123	158	197	240	28	1000	
	28	–	–	–	–	–	1 240 **2I/28,8**	–	4 620 **3I/29,1**	6 300 **3I/28,4**	7 530 **3I/28,6**	15 040 **3I/27,2**	18 960 **3I/27,3**	29 640 **3I/28,7**	33 930 **3I/28,8**	45 180 **3I/30**	56 480 **3I/30**	69 400 **3I/30,3**			
		0,5	1,18	1,33	2,1	2,43	5,41	10,1	14,2	21,8	30,8	44,7	62,6	89,3	122	156	184	255	25	900	
	25	130 **2I/24,4**	300 **2I/24,1**	355 **2I/25,1**	580 **2I/26**	670 **2I/26**	1 360 **2I/23,7**	2 590 **2I/24,1**	3 640 **2I/24,1**	5 700 **2I/24,6**	8 280 **2I/25,4**	11 500 **2I/24,2**	16 580 **2I/25**	23 690 **2I/25**	31 830 **2I/24,6**	41 500 **2I/25**	48 820 **2I/25**	69 580 **2I/25,7**			
									16,2	24,2	33	46,9	65,5	92	131	157	184	271	22,4	800	
	22,4	–	–	–	–	–	–	–	4 180 **2I/21,7**	6 500 **2I/22,5**	9 180 **2I/23,3**	12 410 **2I/22,2**	17 960 **2I/23**	24 140 **2I/22**	34 710 **2I/22,2**	42 710 **2I/22,8**	50 250 **2I/22,8**	75 650 **2I/23,4**			
		0,56	1,43	1,43	2,39	2,77	6,1	12	17,1	24,5	32,8	49,3	71,5	102	130	165	210	279	20	710	
	20	150 **2I/20,1**	370 **2I/19,3**	385 **2I/20,1**	670 **2I/20,8**	775 **2I/20,8**	1 580 **2I/19,3**	3 110 **2I/19,3**	4 530 **2I/19,6**	6 810 **2I/20,7**	9 180 **2I/20,8**	13 510 **2I/20,3**	19 280 **2I/20**	27 100 **2I/19,7**	35 120 **2I/20,1**	45 820 **2I/20,6**	58 420 **2I/20,6**	76 330 **2I/20,3**			
									17,8	27	34,7	53,9	74,4	103	146	167	208	306	18	630	
	18	–	–	–	–	–	–	–	4 740 **2I/17,6**	7 410 **2I/18,1**	9 460 **2I/18**	14 360 **2I/17,6**	20 350 **2I/18,1**	27 720 **2I/17,8**	39 600 **2I/17,9**	45 000 **2I/17,8**	56 000 **2I/17,8**	84 820 **2I/18,3**			
		0,65	1,43	1,55	2,81	3,32	6,2	12,8	16,6	28,1	32,4	54,7	73,1	105	140	184	230	280	16	560	
	16	180 **2I/16,3**	385 **2I/15,8**	435 **2I/16,5**	750 **2I/15,7**	890 **2I/15,7**	1 700 **2I/16,1**	3 450 **2I/15,8**	4 250 **2I/15,1**	7 500 **2I/15,7**	9 180 **2I/16,6**	15 000 **2I/16,1**	19 500 **2I/15,6**	29 000 **2I/16,2**	37 500 **2I/15,7**	49 940 **2I/15,9**	62 430 **2I/15,9**	76 330 **2I/16**			
400 000	160	–	–	–	–	–	1 280 **3I/151**	2 610 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 500 **3I/123**	3 000 **3I/123**	3 650 **3I/123**	5 730 **3I/128**	8 000 **3I/131**	11 540 **3I/119**	16 000 **3I/123**	23 780 **3I/125**	31 950 **3I/123**	40 000 **3I/127**	49 020 **3I/127**	65 000 **3I/131**			
	100	–	–	–	–	–	1 550 **3I/103**	3 070 **3I/101**	4 550 **3I/100**	6 840 **3I/107**	9 220 **3I/108**	13 550 **3I/100**	19 340 **3I/98,5**	27 200 **3I/98,5**	35 250 **3I/100**	46 930 **3I/105**	58 660 **3I/105**	76 390 **3I/103**			
									15,4	22,2	27,5	48,9	67,4	91,7	130	144	180	225	90	2800	**31,5**
	90	–	–	–	–	–	–	–	4 700 **3I/89,4**	7 100 **3I/93,7**	8 750 **3I/93,3**	14 410 **3I/86,4**	20 410 **3I/88,8**	27 820 **3I/89**	39 750 **3I/89,7**	44 290 **3I/90,1**	55 360 **3I/90,1**	71 220 **3I/92,7**			
			1,06	1,19	1,71	2	4,75	9,06	14,6	20,9	28	42,3	61,3	86,3	110	149	186	246	80	2500	
	80	–	305 **3I/75,2**	355 **3I/78,2**	540 **3I/82,7**	630 **3I/82,7**	1 370 **3I/75,5**	2 600 **3I/75,3**	4 550 **3I/81,4**	6 840 **3I/85,7**	9 220 **3I/86,1**	13 570 **3I/84**	19 380 **3I/82,7**	27 250 **3I/82,7**	35 320 **3I/84,3**	46 920 **3I/82,5**	58 650 **3I/82,5**	76 200 **3I/81,1**			

For n_1 lower than 560 min^{-1} see page 107.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
400 000									15,3	22,8	31,9	46,6	64,3	87,5	124	146	183	228	71	2240	**31,5**
	71	–	–	–	–	–	–	–	4 760 **3I/72,8**	7 300 **3I/74,9**	10 150 **3I/74,6**	14 430 **3I/72,6**	20 440 **3I/74,5**	27 870 **3I/74,7**	39 810 **3I/75,3**	44 270 **3I/71**	55 330 **3I/71**	70 870 **3I/73**			
			1,3	1,3	2,03	2,37	5,42	10,8	15,4	22,5	30,2	45,3	65,7	92,5	118	147	183	241	63	2000	
	63	–	375 **3I/60,1**	390 **3I/62,6**	640 **3I/66,3**	750 **3I/66,3**	1 590 **3I/61,5**	3 120 **3I/60,2**	4 550 **3I/62**	6 830 **3I/63,5**	9 200 **3I/63,8**	13 540 **3I/62,6**	19 330 **3I/61,7**	27 180 **3I/61,5**	35 240 **3I/62,7**	46 940 **3I/67,1**	58 680 **3I/67,1**	76 040 **3I/66**			
									16	25,2	29,7	50,2	69,2	94,2	133	145	181	224	56	1800	
	56	–	–	–	–	–	–	–	4 690 **3I/55,4**	7 430 **3I/55,5**	8 720 **3I/55,3**	14 400 **3I/54,1**	20 390 **3I/55,5**	27 800 **3I/55,6**	39 580 **3I/56**	44 280 **3I/57,8**	55 350 **3I/57,8**	70 640 **3I/59,4**			
			1,31	1,43	2,54	2,99	5,57	11,3	15,1	22,5	30,2	43,2	62,7	88,3	112	149	186	243	50	1600	
	50	–	385 **3I/49,4**	440 **3I/51,5**	755 **3I/49,8**	890 **3I/49,8**	1 700 **3I/51,2**	3 350 **3I/49,5**	4 550 **3I/50,4**	6 830 **3I/50,8**	9 200 **3I/51**	13 560 **3I/52,6**	19 360 **3I/51,8**	27 230 **3I/51,7**	35 290 **3I/52,7**	46 920 **3I/52,9**	58 650 **3I/52,9**	75 540 **3I/52**			
									15,5	24,5	33,6	46,6	64,3	87,5	124	145	180	222	45	1400	
	45	–	–	–	–	–	–	–	4 760 **3I/45,1**	7 430 **3I/44,4**	10 130 **3I/44,2**	14 430 **3I/45,4**	20 440 **3I/46,6**	27 870 **3I/46,7**	39 810 **3I/47,1**	45 000 **3I/45,5**	56 000 **3I/45,5**	71 000 **3I/46,8**			
			1,2	1,2	2,01	2,33	5,32	10	15,9	25,8	31,4	47,5	66,8	90	115	161	201	220	40	1250	
	40	–	375 **3I/40,8**	390 **3I/42,5**	670 **3I/43,6**	775 **3I/43,6**	1 590 **3I/39,1**	3 130 **3I/40,8**	4 700 **3I/38,7**	7 590 **3I/38,5**	9 590 **3I/39,9**	15 080 **3I/41,5**	20 610 **3I/40,4**	29 180 **3I/42,4**	36 110 **3I/41,2**	50 160 **3I/40,7**	62 700 **3I/40,7**	71 000 **3I/42,3**			
									14,9	23,9	32,7	49,1	67,7	88,5	120	141	176	217	35,5	1120	
	35,5	–	–	–	–	–	–	–	4 760 **3I/37,5**	7 440 **3I/36,5**	10 140 **3I/36,3**	14 410 **3I/34,4**	20 410 **3I/35,4**	27 860 **3I/36,9**	37 970 **3I/37,2**	45 000 **3I/37,4**	56 000 **3I/37,4**	71 000 **3I/38,4**			
			1,14	1,23	2,42	2,85	4,98	10,1	16,7	25,1	33,6	50,1	72,7	91,1	114	157	196	214	31,5	1000	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	760 **3I/32,8**	890 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	5 150 **3I/32,2**	7 590 **3I/31,6**	10 530 **3I/32,8**	15 060 **3I/31,5**	21 260 **3I/30,6**	29 170 **3I/33,5**	35 500 **3I/32,5**	50 200 **3I/33,5**	62 750 **3I/33,5**	71 000 **3I/34,7**			
							4,08		15	20,9	25	52,2	67,5	97,6	112	146	183	217	28	900	
	28	–	–	–	–	–	1 250 **2I/28,8**	–	4 620 **3I/29,1**	6 300 **3I/28,4**	7 580 **3I/28,6**	15 090 **3I/27,2**	19 570 **3I/27,3**	29 740 **3I/28,7**	34 160 **3I/28,8**	46 630 **3I/30**	58 290 **3I/30**	69 790 **3I/30,3**			
		0,45	1,05	1,19	1,87	2,16	4,83	9,06	12,7	19,5	27,5	39,9	55,8	79,7	109	140	164	227	25	800	
	25	130 **2I/24,4**	305 **2I/24,1**	355 **2I/25,1**	580 **2I/26**	670 **2I/26**	1 370 **2I/23,7**	2 600 **2I/24,1**	3 650 **2I/24,1**	5 720 **2I/24,6**	8 310 **2I/25,4**	11 550 **2I/24,2**	16 640 **2I/25**	23 780 **2I/25**	31 950 **2I/24,6**	41 650 **2I/25**	49 000 **2I/25**	69 840 **2I/25,7**			
									14,4	21,5	29,4	41,8	58,2	81,9	117	140	164	242	22,4	710	
	22,4	–	–	–	–	–	–	–	4 200 **2I/21,7**	6 500 **2I/22,5**	9 220 **2I/23,3**	12 450 **2I/22,2**	18 000 **2I/23**	24 230 **2I/22**	34 840 **2I/22,2**	42 870 **2I/22,8**	50 440 **2I/22,8**	75 930 **2I/23,4**			
		0,5	1,28	1,27	2,12	2,45	5,43	10,7	15,3	21,8	29,3	44	63,7	91,1	116	150	187	249	20	630	
	20	155 **2I/20,1**	375 **2I/19,3**	385 **2I/20,1**	670 **2I/20,8**	775 **2I/20,8**	1 590 **2I/19,3**	3 120 **2I/19,3**	4 550 **2I/19,6**	6 830 **2I/20,7**	9 210 **2I/20,8**	13 560 **2I/20,3**	19 350 **2I/20**	27 200 **2I/19,7**	35 250 **2I/20,1**	46 910 **2I/20,6**	58 640 **2I/20,6**	76 620 **2I/20,3**			
									15,9	24,1	30,9	48,1	66,3	91,7	130	149	185	273	18	560	
	18	–	–	–	–	–	–	–	4 750 **2I/17,6**	7 440 **2I/18,1**	9 490 **2I/18**	14 420 **2I/17,6**	20 420 **2I/18,1**	27 820 **2I/17,8**	39 750 **2I/17,9**	45 000 **2I/17,8**	56 000 **2I/17,8**	85 000 **2I/18,3**			
355 000	160	–	–	–	–	–	1 280 **3I/151**	2 610 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 550 **3I/123**	3 070 **3I/123**	3 670 **3I/123**	5 750 **3I/128**	8 350 **3I/131**	11 580 **3I/119**	16 700 **3I/123**	23 870 **3I/125**	32 070 **3I/123**	41 830 **3I/127**	49 210 **3I/127**	65 000 **3I/131**			
							4,43	9,18	13,4	18,8	25,2	39,9	57,8	81,3	103	132	165	219	100	2800	**28**
	100	–	–	–	–	–	1 550 **3I/103**	3 150 **3I/101**	4 570 **3I/100**	6 870 **3I/107**	9 250 **3I/108**	13 600 **3I/100**	19 410 **3I/98,5**	27 300 **3I/98,5**	35 380 **3I/100**	47 110 **3I/105**	58 880 **3I/105**	76 940 **3I/103**			
									13,8	19,8	24,6	43,8	60,4	82,1	116	129	161	208	90	2500	
	90	–	–	–	–	–	–	–	4 710 **3I/89,4**	7 100 **3I/93,7**	8 780 **3I/93,3**	14 460 **3I/86,4**	20 480 **3I/88,8**	27 920 **3I/89**	39 890 **3I/89,7**	44 450 **3I/90,1**	55 560 **3I/90,1**	73 690 **3I/92,7**			
			0,95	1,07	1,55	1,8	4,27	8,14	13,2	18,8	25,2	38	55,1	77,6	98,7	134	167	222	80	2240	
	80	–	305 **3I/75,2**	355 **3I/78,2**	550 **3I/82,7**	635 **3I/82,7**	1 370 **3I/75,5**	2 610 **3I/75,3**	4 570 **3I/81,4**	6 870 **3I/85,7**	9 250 **3I/86,1**	13 620 **3I/84**	19 440 **3I/82,7**	27 340 **3I/82,7**	35 440 **3I/84,3**	47 080 **3I/82,5**	58 850 **3I/82,5**	76 900 **3I/81,1**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
355 000									13,7	20,9	28,6	41,8	57,7	78,4	111	131	164	210	71	2000	**28**
	71	–	–	–	–	–	–	–	4 780 **3I/72,8**	7 470 **3I/74,9**	10 180 **3I/74,6**	14 480 **3I/72,6**	20 520 **3I/74,5**	27 970 **3I/74,7**	39 950 **3I/75,3**	44 420 **3I/71**	55 530 **3I/71**	73 320 **3I/73**			
			1,17	1,17	1,85	2,14	4,89	9,79	13,9	20,3	27,3	40,9	59,3	83,5	106	132	165	220	63	1800	
	63	–	375 **3I/60,1**	390 **3I/62,6**	650 **3I/66,3**	750 **3I/66,3**	1 600 **3I/61,5**	3 130 **3I/60,2**	4 560 **3I/62**	6 850 **3I/63,5**	9 230 **3I/63,8**	13 590 **3I/62,6**	19 400 **3I/61,7**	27 280 **3I/61,5**	35 350 **3I/62,7**	47 100 **3I/67,1**	58 880 **3I/67,1**	76 930 **3I/66**			
									14,3	22,5	26,5	44,7	61,7	84	119	129	161	206	56	1600	
	56	–	–	–	–	–	–	–	4 710 **3I/55,4**	7 450 **3I/55,5**	8 760 **3I/55,3**	14 450 **3I/54,1**	20 470 **3I/55,5**	27 900 **3I/55,6**	39 860 **3I/56**	44 450 **3I/57,8**	55 560 **3I/57,8**	73 180 **3I/59,4**			
			1,15	1,26	2,24	2,63	4,87	10,2	13,3	19,8	26,5	38	55,1	77,6	98,7	131	163	217	50	1400	
	50	–	385 **3I/49,4**	445 **3I/51,5**	760 **3I/49,8**	895 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 570 **3I/50,4**	6 860 **3I/50,8**	9 240 **3I/51**	13 620 **3I/52,6**	19 440 **3I/51,8**	27 340 **3I/51,7**	35 440 **3I/52,7**	47 120 **3I/52,9**	58 900 **3I/52,9**	76 960 **3I/52**			
									13,9	22	30,1	41,7	57,6	78,4	111	129	161	205	45	1250	
	45	–	–	–	–	–	–	–	4 770 **3I/45,1**	7 460 **3I/44,4**	10 170 **3I/44,2**	14 480 **3I/45,4**	20 520 **3I/46,6**	27 970 **3I/46,7**	39 950 **3I/47,1**	45 000 **3I/45,5**	56 000 **3I/45,5**	73 210 **3I/46,8**			
			1,08	1,08	1,8	2,09	4,79	9,01	14,3	23,2	28,3	42,7	60,1	80,9	106	145	181	197	40	1120	
	40	–	375 **3I/40,8**	390 **3I/42,5**	670 **3I/43,6**	775 **3I/43,6**	1 600 **3I/39,1**	3 140 **3I/40,8**	4 720 **3I/38,7**	7 610 **3I/38,5**	9 620 **3I/39,9**	15 140 **3I/41,5**	20 690 **3I/40,4**	29 280 **3I/42,4**	37 320 **3I/41,2**	50 330 **3I/40,7**	62 920 **3I/40,7**	71 000 **3I/42,3**			
									13,3	21,4	29,3	44	60,7	79,3	111	126	157	197	35,5	1000	
	35,5	–	–	–	–	–	–	–	4 780 **3I/37,5**	7 470 **3I/36,5**	10 180 **3I/36,3**	14 460 **3I/34,4**	20 480 **3I/35,4**	27 960 **3I/36,9**	39 290 **3I/37,2**	45 000 **3I/37,4**	56 000 **3I/37,4**	72 290 **3I/38,4**			
			1,03	1,11	2,19	2,57	4,49	9,13	15,1	22,7	30,4	45,2	67,1	82,2	103	142	177	193	31,5	900	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	760 **3I/32,8**	895 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	5 150 **3I/32,2**	7 620 **3I/31,6**	10 570 **3I/32,8**	15 110 **3I/31,5**	21 800 **3I/30,6**	29 270 **3I/33,5**	35 500 **3I/32,5**	50 370 **3I/33,5**	62 960 **3I/33,5**	71 000 **3I/34,7**			
							3,64		13,7	18,6	22,3	46,6	62,2	87,1	100	135	168	194	28	800	
	28	–	–	–	–	–	1 250 **2I/28,8**	–	4 750 **3I/29,1**	6 300 **3I/28,4**	7 620 **3I/28,6**	15 140 **3I/27,2**	20 270 **3I/27,3**	29 850 **3I/28,7**	34 410 **3I/28,8**	48 310 **3I/30**	60 390 **3I/30**	70 220 **3I/30,3**			
		0,4	0,94	1,06	1,66	1,92	4,3	8,07	11,3	17,4	24,5	35,5	49,7	71	96,9	124	146	202	25	710	
	25	130 **2I/24,4**	305 **2I/24,1**	355 **2I/25,1**	580 **2I/26**	670 **2I/26**	1 370 **2I/23,7**	2 610 **2I/24,1**	3 670 **2I/24,1**	5 750 **2I/24,6**	8 340 **2I/25,4**	11 590 **2I/24,2**	16 710 **2I/25**	23 870 **2I/25**	32 070 **2I/24,6**	41 810 **2I/25**	49 190 **2I/25**	70 100 **2I/25,7**			
									12,8	19,1	26,2	37,2	51,7	72,9	104	124	146	215	22,4	630	
	22,4	–	–	–	–	–	–	–	4 210 **2I/21,7**	6 500 **2I/22,5**	9 250 **2I/23,3**	12 500 **2I/22,2**	18 000 **2I/23**	24 300 **2I/22**	34 970 **2I/22,2**	43 030 **2I/22,8**	50 630 **2I/22,8**	76 220 **2I/23,4**			
		0,45	1,14	1,13	1,89	2,18	4,85	9,53	13,6	19,5	26,1	39,2	56,8	81	103	134	167	222	20	560	
	20	155 **2I/20,1**	375 **2I/19,3**	385 **2I/20,1**	670 **2I/20,8**	775 **2I/20,8**	1 600 **2I/19,3**	3 130 **2I/19,3**	4 560 **2I/19,6**	6 860 **2I/20,7**	9 240 **2I/20,8**	13 600 **2I/20,3**	19 420 **2I/20**	27 200 **2I/19,7**	35 380 **2I/20,1**	47 080 **2I/20,6**	58 860 **2I/20,6**	76 900 **2I/20,3**			
315 000																					
	160	–	–	–	–	–	1 320 **3I/151**	2 620 **3I/153**	–	–	–	–	–	–	–	–	–	–			
	125	–	–	–	–	–	1 550 **3I/123**	3 140 **3I/123**	3 680 **3I/123**	5 770 **3I/128**	8 380 **3I/131**	11 630 **3I/119**	16 760 **3I/123**	23 960 **3I/125**	32 190 **3I/123**	41 980 **3I/127**	49 390 **3I/127**	67 000 **3I/131**			
							4,08	8,19	12	16,8	22,6	35,7	51,8	72,8	92,6	118	148	196	100	2500	**25**
	100	–	–	–	–	–	1 600 **3I/103**	3 150 **3I/101**	4 580 **3I/100**	6 890 **3I/107**	9 290 **3I/108**	13 650 **3I/100**	19 480 **3I/98,5**	27 400 **3I/98,5**	35 510 **3I/100**	47 270 **3I/105**	59 090 **3I/105**	77 210 **3I/103**			
									12,4	18,3	22,2	39,4	54,3	73,9	105	116	145	193	90	2240	
	90	–	–	–	–	–	–	–	4 730 **3I/89,4**	7 300 **3I/93,7**	8 810 **3I/93,3**	14 510 **3I/86,4**	20 550 **3I/88,8**	28 020 **3I/89**	40 030 **3I/89,7**	44 600 **3I/90,1**	55 750 **3I/90,1**	76 150 **3I/92,7**			
			0,85	0,96	1,41	1,63	3,82	7,3	11,8	16,8	22,6	34,1	49,4	69,5	88,4	120	150	199	80	2000	
	80	–	305 **3I/75,2**	360 **3I/78,2**	555 **3I/82,7**	640 **3I/82,7**	1 380 **3I/75,5**	2 620 **3I/75,3**	4 590 **3I/81,4**	6 890 **3I/85,7**	9 290 **3I/86,1**	13 670 **3I/84**	19 510 **3I/82,7**	27 440 **3I/82,7**	35 560 **3I/84,3**	47 250 **3I/82,5**	59 060 **3I/82,5**	77 170 **3I/81,1**			
									12,4	18,9	25,8	37,7	52,1	70,8	100	118	148	195	71	1800	
	71	–	–	–	–	–	–	–	4 790 **3I/72,8**	7 500 **3I/74,9**	10 220 **3I/74,6**	14 530 **3I/72,6**	20 580 **3I/74,5**	28 060 **3I/74,7**	40 090 **3I/75,3**	44 570 **3I/71**	55 710 **3I/71**	75 680 **3I/73**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
315 000			1,05	1,05	1,67	1,93	4,37	8,74	12,4	18,1	24,3	36,5	52,9	74,5	94,8	118	148	196	63	1600	**25**
	63	–	375 **3I/60,1**	390 **3I/62,6**	660 **3I/66,3**	765 **3I/66,3**	1 600 **3I/61,5**	3 140 **3I/60,2**	4 580 **3I/62**	6 880 **3I/63,5**	9 270 **3I/63,8**	13 640 **3I/62,6**	19 470 **3I/61,7**	27 380 **3I/61,5**	35 480 **3I/62,7**	47 280 **3I/67,1**	59 090 **3I/67,1**	77 210 **3I/66**			
									12,5	19,8	23,3	39,3	54,3	73,9	105	114	142	188	56	1400	
	56	–	–	–	–	–	–	–	4 730 **3I/55,4**	7 490 **3I/55,5**	8 790 **3I/55,3**	14 510 **3I/54,1**	20 560 **3I/55,5**	28 020 **3I/55,6**	40 030 **3I/56**	45 000 **3I/57,8**	56 000 **3I/57,8**	76 170 **3I/59,4**			
			1,03	1,13	2	2,36	4,35	9,13	11,9	17,7	23,8	34	49,3	69,5	88,4	117	146	194	50	1250	
	50	–	385 **3I/49,4**	445 **3I/51,5**	765 **3I/49,8**	900 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 580 **3I/50,4**	6 880 **3I/50,8**	9 270 **3I/51**	13 670 **3I/52,6**	19 510 **3I/51,8**	27 440 **3I/51,7**	35 560 **3I/52,7**	47 290 **3I/52,9**	59 110 **3I/52,9**	77 230 **3I/52**			
									12,5	19,8	27,1	37,5	51,8	70,5	99,9	116	144	190	45	1120	
	45	–	–	–	–	–	–	–	4 790 **3I/45,1**	7 490 **3I/44,4**	10 200 **3I/44,2**	14 530 **3I/45,4**	20 590 **3I/46,6**	28 060 **3I/46,7**	40 090 **3I/47,1**	45 000 **3I/45,5**	56 000 **3I/45,5**	75 660 **3I/46,8**			
			0,97	0,97	1,61	1,86	4,29	8,08	12,8	20,8	25,3	38,3	53,8	72,5	98,2	130	162	176	40	1000	
	40	–	375 **3I/40,8**	390 **3I/42,5**	670 **3I/43,6**	775 **3I/43,6**	1 600 **3I/39,1**	3 150 **3I/40,8**	4 730 **3I/38,7**	7 640 **3I/38,5**	9 660 **3I/39,9**	15 190 **3I/41,5**	20 760 **3I/40,4**	29 390 **3I/42,4**	38 620 **3I/41,2**	50 510 **3I/40,7**	63 140 **3I/40,7**	71 000 **3I/42,3**			
									12	19,3	26,5	39,7	54,8	71,6	102	113	141	183	35,5	900	
	35,5	–	–	–	–	–	–	–	4 800 **3I/37,5**	7 490 **3I/36,5**	10 210 **3I/36,3**	14 510 **3I/34,4**	20 550 **3I/35,4**	28 050 **3I/36,9**	40 070 **3I/37,2**	45 000 **3I/37,4**	56 000 **3I/37,4**	74 610 **3I/38,4**			
			0,91	0,99	1,95	2,3	3,99	8,12	13,4	20,3	27,1	40,3	59,6	73,4	94,6	127	158	171	31,5	800	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	765 **3I/32,8**	900 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	5 150 **3I/32,2**	7 650 **3I/31,6**	10 610 **3I/32,8**	15 160 **3I/31,5**	21 800 **3I/30,6**	29 370 **3I/33,5**	36 750 **3I/32,5**	50 550 **3I/33,5**	63 190 **3I/33,5**	71 000 **3I/34,7**			
							3,24		12,1	16,5	20	41,5	55,9	77,6	89,4	124	155	174	28	710	
	28	–	–	–	–	–	1 260 **2I/28,8**	–	4 750 **3I/29,1**	6 300 **3I/28,4**	7 670 **3I/28,6**	15 200 **3I/27,2**	20 530 **3I/27,3**	29 960 **3I/28,7**	34 670 **3I/28,8**	50 070 **3I/30**	62 590 **3I/30**	70 650 **3I/30,3**			
		0,36	0,84	0,94	1,47	1,7	3,83	7,19	10,1	15,5	21,8	31,7	44,3	63,2	86,3	111	130	180	25	630	
	25	130 **2I/24,4**	305 **2I/24,1**	360 **2I/25,1**	580 **2I/26**	670 **2I/26**	1 380 **2I/23,7**	2 620 **2I/24,1**	3 680 **2I/24,1**	5 770 **2I/24,6**	8 370 **2I/25,4**	11 630 **2I/24,2**	16 770 **2I/25**	23 960 **2I/25**	32 190 **2I/24,6**	41 970 **2I/25**	49 370 **2I/25**	70 370 **2I/25,7**			
									11,4	16,9	23,2	33,1	45,9	64,8	92,9	111	130	192	22,4	560	
	22,4	–	–	–	–	–	–	–	4 230 **2I/21,7**	6 500 **2I/22,5**	9 250 **2I/23,3**	12 500 **2I/22,2**	18 000 **2I/23**	24 300 **2I/22**	35 100 **2I/22,2**	43 190 **2I/22,8**	50 820 **2I/22,8**	76 500 **2I/23,4**			
280 000	160	–	–	–	–	–	1 320 **3I/151**	2 630 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							3,82	7,55	8,83	13,3	18,8	28,7	40,2	56,4	77	97,5	115	150	125	2800	**22,4**
	125	–	–	–	–	–	1 610 **3I/123**	3 160 **3I/123**	3 700 **3I/123**	5 790 **3I/128**	8 410 **3I/131**	11 670 **3I/119**	16 820 **3I/123**	24 040 **3I/125**	32 310 **3I/123**	42 140 **3I/127**	49 580 **3I/127**	67 000 **3I/131**			
							3,66	7,57	10,8	15,1	20,3	32,1	46,5	65,5	83,3	106	133	176	100	2240	
	100	–	–	–	–	–	1 600 **3I/103**	3 250 **3I/101**	4 600 **3I/100**	6 920 **3I/107**	9 320 **3I/108**	13 700 **3I/100**	19 550 **3I/98,5**	27 490 **3I/98,5**	35 630 **3I/100**	47 440 **3I/105**	59 300 **3I/105**	77 480 **3I/103**			
									11,1	16,8	19,8	35,3	48,7	66,2	93,8	104	130	178	90	2000	
	90	–	–	–	–	–	–	–	4 750 **3I/89,4**	7 530 **3I/93,7**	8 840 **3I/93,3**	14 560 **3I/86,4**	20 630 **3I/88,8**	28 120 **3I/89**	40 180 **3I/89,7**	44 760 **3I/90,1**	55 950 **3I/90,1**	78 790 **3I/92,7**			
			0,77	0,87	1,28	1,48	3,45	6,59	10,7	15,2	20,4	30,8	44,6	62,8	79,8	108	135	180	80	1800	
	80	–	305 **3I/75,2**	360 **3I/78,2**	565 **3I/82,7**	650 **3I/82,7**	1 380 **3I/75,5**	2 630 **3I/75,3**	4 600 **3I/81,4**	6 910 **3I/85,7**	9 320 **3I/86,1**	13 720 **3I/84**	19 580 **3I/82,7**	27 530 **3I/82,7**	35 680 **3I/84,3**	47 410 **3I/82,5**	59 260 **3I/82,5**	77 430 **3I/81,1**			
									11,1	16,8	23	33,7	46,5	63,2	89,5	106	132	180	71	1600	
	71	–	–	–	–	–	–	–	4 810 **3I/72,8**	7 530 **3I/74,9**	10 260 **3I/74,6**	14 580 **3I/72,6**	20 660 **3I/74,5**	28 160 **3I/74,7**	40 240 **3I/75,3**	44 740 **3I/71**	55 920 **3I/71**	78 400 **3I/73**			
			0,92	0,92	1,48	1,71	3,84	7,68	10,9	15,9	21,4	32,1	46,5	65,5	83,3	104	130	172	63	1400	
	63	–	375 **3I/60,1**	395 **3I/62,6**	670 **3I/66,3**	775 **3I/66,3**	1 610 **3I/61,5**	3 150 **3I/60,2**	4 600 **3I/62**	6 900 **3I/63,5**	9 300 **3I/63,8**	13 700 **3I/62,6**	19 550 **3I/61,7**	27 490 **3I/61,5**	35 630 **3I/62,7**	47 470 **3I/67,1**	59 340 **3I/67,1**	77 540 **3I/66**			
									11,2	17,7	20,9	35,2	48,6	66,2	93,8	102	127	174	56	1250	
	56	–	–	–	–	–	–	–	4 750 **3I/55,4**	7 510 **3I/55,5**	8 830 **3I/55,3**	14 560 **3I/54,1**	20 630 **3I/55,5**	28 120 **3I/55,6**	40 180 **3I/56**	45 000 **3I/57,8**	56 000 **3I/57,8**	78 800 **3I/59,4**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m … / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
280 000			0,92	1,01	1,8	2,12	3,9	8,18	10,7	15,9	21,4	30,6	44,4	62,5	79,5	105	132	175	50	1120	**22,4**
	50	–	385 **3I/49,4**	445 **3I/51,5**	765 **3I/49,8**	900 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 600 **3I/50,4**	6 900 **3I/50,8**	9 300 **3I/51**	13 720 **3I/52,6**	19 580 **3I/51,8**	27 530 **3I/51,7**	35 690 **3I/52,7**	47 450 **3I/52,9**	59 310 **3I/52,9**	77 500 **3I/52**			
									11,2	17,7	24,2	33,6	46,4	63,2	89,5	104	129	175	45	1000	
	45	–	–	–	–	–	–	–	4 810 **3I/45,1**	7 510 **3I/44,4**	10 240 **3I/44,2**	14 580 **3I/45,4**	20 660 **3I/46,6**	28 160 **3I/46,7**	40 240 **3I/47,1**	45 000 **3I/45,5**	56 000 **3I/45,5**	78 280 **3I/46,8**			
			0,87	0,87	1,45	1,68	3,87	7,29	11,6	18,8	22,9	34,6	48,6	65,5	91,2	117	147	163	40	900	
	40	–	380 **3I/40,8**	395 **3I/42,5**	670 **3I/43,6**	775 **3I/43,6**	1 610 **3I/39,1**	3 160 **3I/40,8**	4 750 **3I/38,7**	7 670 **3I/38,5**	9 690 **3I/39,9**	15 240 **3I/41,5**	20 830 **3I/40,4**	29 480 **3I/42,4**	39 860 **3I/41,2**	50 680 **3I/40,7**	63 350 **3I/40,7**	72 940 **3I/42,3**			
									10,7	17,3	23,6	35,4	48,9	63,9	90,6	101	126	168	35,5	800	
	35,5	–	–	–	–	–	–	–	4 810 **3I/37,5**	7 520 **3I/36,5**	10 250 **3I/36,3**	14 560 **3I/34,4**	20 630 **3I/35,4**	28 150 **3I/36,9**	40 220 **3I/37,2**	45 000 **3I/37,4**	56 010 **3I/37,4**	77 290 **3I/38,4**			
			0,81	0,88	1,74	2,05	3,54	7,2	11,9	18	24,1	35,9	52,9	65,4	87	113	141	155	31,5	710	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	765 **3I/32,8**	900 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	5 150 **3I/32,2**	7 670 **3I/31,6**	10 650 **3I/32,8**	15 220 **3I/31,5**	21 800 **3I/30,6**	29 480 **3I/33,5**	38 090 **3I/32,5**	50 760 **3I/33,5**	63 450 **3I/33,5**	72 320 **3I/34,7**			
							2,89		10,8	14,6	17,8	37,1	49,7	69,8	80,1	114	142	155	28	630	
	28	–	–	–	–	–	1 260 **2I/28,8**	–	4 750 **3I/29,1**	6 300 **3I/28,4**	7 720 **3I/28,6**	15 290 **3I/27,2**	20 600 **3I/27,3**	30 360 **3I/28,7**	34 980 **3I/28,8**	51 900 **3I/30**	64 870 **3I/30**	71 000 **3I/30,3**			
		0,32	0,75	0,84	1,31	1,51	3,42	6,41	8,99	13,8	19,4	28,2	39,5	56,4	77	98,8	116	161	25	560	
	25	130 **2I/24,4**	305 **2I/24,1**	360 **2I/25,1**	580 **2I/26**	670 **2I/26**	1 380 **2I/23,7**	2 630 **2I/24,1**	3 690 **2I/24,1**	5 790 **2I/24,6**	8 400 **2I/25,4**	11 680 **2I/24,2**	16 830 **2I/25**	24 040 **2I/25**	32 310 **2I/24,6**	42 120 **2I/25**	49 550 **2I/25**	70 630 **2I/25,7**			
250 000	160	–	–	–	–	–	1 360 **3I/151**	2 640 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							3,43	6,77	7,92	11,9	16,8	25,7	36	50,5	69	87,3	103	138	125	2500	**20**
	125	–	–	–	–	–	1 610 **3I/123**	3 170 **3I/123**	3 710 **3I/123**	5 820 **3I/128**	8 440 **3I/131**	11 710 **3I/119**	16 880 **3I/123**	24 130 **3I/125**	32 420 **3I/123**	42 290 **3I/127**	49 750 **3I/127**	69 000 **3I/131**			
							3,37	6,76	9,67	13,6	18,2	28,8	41,7	58,7	74,6	95,2	119	158	100	2000	
	100	–	–	–	–	–	1 650 **3I/103**	3 250 **3I/101**	4 620 **3I/100**	6 940 **3I/107**	9 350 **3I/108**	13 750 **3I/100**	19 620 **3I/98,5**	27 590 **3I/98,5**	35 760 **3I/100**	47 610 **3I/105**	59 510 **3I/105**	77 750 **3I/103**			
									10	15,2	17,9	31,9	44	59,8	84,7	93,9	117	163	90	1800	
	90	–	–	–	–	–	–	–	4 760 **3I/89,4**	7 550 **3I/93,7**	8 870 **3I/93,3**	14 610 **3I/86,4**	20 700 **3I/88,8**	28 210 **3I/89**	40 310 **3I/89,7**	44 910 **3I/90,1**	56 130 **3I/90,1**	80 290 **3I/92,7**			
			0,68	0,77	1,16	1,34	3,08	5,88	9,5	13,6	18,2	27,5	39,8	56	71,2	96,6	121	160	80	1600	
	80	–	305 **3I/75,2**	360 **3I/78,2**	570 **3I/82,7**	660 **3I/82,7**	1 390 **3I/75,5**	2 640 **3I/75,3**	4 620 **3I/81,4**	6 940 **3I/85,7**	9 350 **3I/86,1**	13 770 **3I/84**	19 650 **3I/82,7**	27 630 **3I/82,7**	35 820 **3I/84,3**	47 580 **3I/82,5**	59 480 **3I/82,5**	77 720 **3I/81,1**			
									9,73	14,8	20,2	29,6	40,8	55,5	78,7	92,9	116	164	71	1400	
	71	–	–	–	–	–	–	–	4 830 **3I/72,8**	7 560 **3I/74,9**	10 300 **3I/74,6**	14 650 **3I/72,6**	20 750 **3I/74,5**	28 280 **3I/74,7**	40 410 **3I/75,3**	45 000 **3I/71**	56 160 **3I/71**	81 610 **3I/73**			
			0,82	0,82	1,32	1,53	3,44	6,88	9,75	14,3	19,2	28,7	41,6	58,7	74,6	92,9	116	154	63	1250	
	63	–	380 **3I/60,1**	395 **3I/62,6**	670 **3I/66,3**	775 **3I/66,3**	1 610 **3I/61,5**	3 170 **3I/60,2**	4 610 **3I/62**	6 930 **3I/63,5**	9 340 **3I/63,8**	13 750 **3I/62,6**	19 620 **3I/61,7**	27 590 **3I/61,5**	35 760 **3I/62,7**	47 640 **3I/67,1**	59 560 **3I/67,1**	77 820 **3I/66**			
									10,1	15,9	18,8	31,7	43,7	59,5	84,4	91,4	114	159	56	1120	
	56	–	–	–	–	–	–	–	4 760 **3I/55,4**	7 540 **3I/55,5**	8 860 **3I/55,3**	14 610 **3I/54,1**	20 700 **3I/55,5**	28 220 **3I/55,6**	40 310 **3I/56**	45 000 **3I/57,8**	56 190 **3I/57,8**	80 360 **3I/59,4**			
			0,82	0,91	1,63	1,91	3,48	7,3	9,58	14,3	19,2	27,4	39,7	56	71,2	94,3	118	157	50	1000	
	50	–	385 **3I/49,4**	450 **3I/51,5**	775 **3I/49,8**	910 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 620 **3I/50,4**	6 930 **3I/50,8**	9 340 **3I/51**	13 770 **3I/52,6**	19 650 **3I/51,8**	27 630 **3I/51,7**	35 820 **3I/52,7**	47 620 **3I/52,9**	59 530 **3I/52,9**	77 780 **3I/52**			
									10,1	16	21,9	30,4	41,9	57	80,9	93,2	116	163	45	900	
	45	–	–	–	–	–	–	–	4 820 **3I/45,1**	7 540 **3I/44,4**	10 270 **3I/44,2**	14 630 **3I/45,4**	20 730 **3I/46,6**	28 260 **3I/46,7**	40 370 **3I/47,1**	45 000 **3I/45,5**	56 150 **3I/45,5**	80 790 **3I/46,8**			
			0,78	0,78	1,29	1,49	3,46	6,51	10,3	16,8	20,4	31,1	43,4	58,9	83,6	106	132	150	40	800	
	40	–	380 **3I/40,8**	395 **3I/42,5**	670 **3I/43,6**	775 **3I/43,6**	1 610 **3I/39,1**	3 170 **3I/40,8**	4 770 **3I/38,7**	7 720 **3I/38,5**	9 730 **3I/39,9**	15 400 **3I/41,5**	20 910 **3I/40,4**	29 850 **3I/42,4**	41 080 **3I/41,2**	51 360 **3I/40,7**	64 200 **3I/40,7**	75 560 **3I/42,3**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / … / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
250 000									9,57	15,4	21,1	31,6	43,5	56,9	80,7	89,5	112	155	35,5	710	**20**
	35,5	–	–	–	–	–	–	–	4 830 **3I/37,5**	7 550 **3I/36,5**	10 290 **3I/36,3**	14 610 **3I/34,4**	20 700 **3I/35,4**	28 260 **3I/36,9**	40 370 **3I/37,2**	45 000 **3I/37,4**	56 240 **3I/37,4**	80 110 **3I/38,4**			
			0,72	0,78	1,57	1,85	3,14	6,39	10,6	16,2	21,5	32,1	47	58,7	80,1	102	127	142	31,5	630	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	780 **3I/32,8**	915 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	5 150 **3I/32,2**	7 750 **3I/31,6**	10 690 **3I/32,8**	15 320 **3I/31,5**	21 800 **3I/30,6**	29 870 **3I/33,5**	39 490 **3I/32,5**	51 690 **3I/33,5**	64 610 **3I/33,5**	74 960 **3I/34,7**			
							2,58		9,58	13	15,9	33,4	44,2	63,1	73,7	105	131	138	28	560	
	28	–	–	–	–	–	1 270 **2I/28,8**	–	4 750 **3I/29,1**	6 300 **3I/28,4**	7 750 **3I/28,6**	15 500 **3I/27,2**	20 600 **3I/27,3**	30 900 **3I/28,7**	36 230 **3I/28,8**	53 760 **3I/30**	67 210 **3I/30**	71 000 **3I/30,3**			
224 000							2,7	5,08											160	2800	**18**
	160	–	–	–	–	–	1 390 **3I/151**	2 650 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							3,08	6,08	7,12	10,7	15,1	23,1	32,4	45,4	62	78,5	92,4	124	125	2240	
	125	–	–	–	–	–	1 620 **3I/123**	3 180 **3I/123**	3 720 **3I/123**	5 840 **3I/128**	8 470 **3I/131**	11 750 **3I/119**	16 940 **3I/123**	24 210 **3I/125**	32 540 **3I/123**	42 440 **3I/127**	49 930 **3I/127**	69 000 **3I/131**			
							3,03	6,27	8,73	12,3	16,4	26	37,7	53	67,4	86	107	143	100	1800	
	100	–	–	–	–	–	1 650 **3I/103**	3 350 **3I/101**	4 630 **3I/100**	6 960 **3I/107**	9 380 **3I/108**	13 790 **3I/100**	19 690 **3I/98,5**	27 680 **3I/98,5**	35 880 **3I/100**	47 760 **3I/105**	59 710 **3I/105**	78 010 **3I/103**			
									8,96	13,7	16	28,4	39,3	53,5	75,8	84,5	106	146	90	1600	
	90	–	–	–	–	–	–	–	4 780 **3I/89,4**	7 650 **3I/93,7**	8 900 **3I/93,3**	14 680 **3I/86,4**	20 800 **3I/88,8**	28 400 **3I/89**	40 580 **3I/89,7**	45 460 **3I/90,1**	56 820 **3I/90,1**	80 590 **3I/92,7**			
			0,6	0,68	1,03	1,19	2,71	5,16	8,35	11,9	16	24,1	35	49,2	62,6	84,9	106	141	80	1400	
	80	–	310 **3I/75,2**	360 **3I/78,2**	580 **3I/82,7**	670 **3I/82,7**	1 390 **3I/75,5**	2 650 **3I/75,3**	4 640 **3I/81,4**	6 970 **3I/85,7**	9 390 **3I/86,1**	13 820 **3I/84**	19 730 **3I/82,7**	27 750 **3I/82,7**	35 970 **3I/84,3**	47 780 **3I/82,5**	59 730 **3I/82,5**	78 040 **3I/81,1**			
									8,79	13,4	18,4	26,8	36,9	50,3	71,3	83,9	105	151	71	1250	
	71	–	–	–	–	–	–	–	4 880 **3I/72,8**	7 680 **3I/74,9**	10 460 **3I/74,6**	14 840 **3I/72,6**	21 020 **3I/74,5**	28 720 **3I/74,7**	41 030 **3I/75,3**	45 510 **3I/71**	56 890 **3I/71**	84 430 **3I/73**			
			0,74	0,74	1,19	1,37	3,09	6,19	8,77	12,8	17,2	25,8	37,4	52,8	67,1	83,6	104	139	63	1120	
	63	–	380 **3I/60,1**	395 **3I/62,6**	670 **3I/66,3**	775 **3I/66,3**	1 620 **3I/61,5**	3 180 **3I/60,2**	4 630 **3I/62**	6 950 **3I/63,5**	9 370 **3I/63,8**	13 790 **3I/62,6**	19 690 **3I/61,7**	27 690 **3I/61,5**	35 880 **3I/62,7**	47 810 **3I/67,1**	59 760 **3I/67,1**	78 090 **3I/66**			
									9,04	14,3	16,8	28,4	39,2	53,5	75,8	82,7	103	142	56	1000	
	56	–	–	–	–	–	–	–	4 780 **3I/55,4**	7 590 **3I/55,5**	8 890 **3I/55,3**	14 680 **3I/54,1**	20 800 **3I/55,5**	28 400 **3I/55,6**	40 580 **3I/56**	45 630 **3I/57,8**	57 030 **3I/57,8**	80 650 **3I/59,4**			
			0,74	0,83	1,49	1,75	3,13	6,57	8,65	12,9	17,3	24,8	35,9	50,6	64,3	85,2	106	141	50	900	
	50	–	385 **3I/49,4**	455 **3I/51,5**	785 **3I/49,8**	925 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 630 **3I/50,4**	6 950 **3I/50,8**	9 370 **3I/51**	13 810 **3I/52,6**	19 720 **3I/51,8**	27 720 **3I/51,7**	35 930 **3I/52,7**	47 780 **3I/52,9**	59 720 **3I/52,9**	78 040 **3I/52**			
									9,03	14,3	19,6	27,3	37,6	51,3	72,8	83,8	105	150	45	800	
	45	–	–	–	–	–	–	–	4 860 **3I/45,1**	7 590 **3I/44,4**	10 340 **3I/44,2**	14 790 **3I/45,4**	20 950 **3I/46,6**	28 610 **3I/46,7**	40 880 **3I/47,1**	45 520 **3I/45,5**	56 900 **3I/45,5**	83 700 **3I/46,8**			
			0,69	0,69	1,14	1,32	3,08	5,8	9,2	15	18,2	27,7	38,6	53,3	75,4	95,4	119	138	40	710	
	40	–	380 **3I/40,8**	395 **3I/42,5**	670 **3I/43,6**	775 **3I/43,6**	1 620 **3I/39,1**	3 180 **3I/40,8**	4 780 **3I/38,7**	7 750 **3I/38,5**	9 750 **3I/39,9**	15 500 **3I/41,5**	20 990 **3I/40,4**	30 400 **3I/42,4**	41 770 **3I/41,2**	52 290 **3I/40,7**	65 370 **3I/40,7**	78 320 **3I/42,3**			
									8,61	13,8	18,9	28,2	38,9	51,2	72,6	80,9	101	142	35,5	630	
	35,5	–	–	–	–	–	–	–	4 900 **3I/37,5**	7 640 **3I/36,5**	10 410 **3I/36,3**	14 710 **3I/34,4**	20 830 **3I/35,4**	28 630 **3I/36,9**	40 900 **3I/37,2**	45 810 **3I/37,4**	57 270 **3I/37,4**	83 040 **3I/38,4**			
			0,64	0,69	1,42	1,66	2,79	5,68	9,38	14,4	19,2	28,9	41,7	53,2	73,7	92,2	115	131	31,5	560	
	31,5	–	365 **3I/33,5**	410 **3I/34,9**	795 **3I/32,8**	925 **3I/32,8**	1 550 **3I/32,6**	3 250 **3I/33,5**	5 150 **3I/32,2**	7 750 **3I/31,6**	10 730 **3I/32,8**	15 500 **3I/31,5**	21 800 **3I/30,6**	30 410 **3I/33,5**	40 910 **3I/32,5**	52 620 **3I/33,5**	65 770 **3I/33,5**	77 660 **3I/34,7**			
200 000							2,42	4,55											160	2500	**16**
	160	–	–	–	–	–	1 400 **3I/151**	2 660 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							2,78	5,47	6,38	9,62	13,6	20,7	29	40,7	55,6	70,4	82,8	115	125	2000	
	125	–	–	–	–	–	1 630 **3I/123**	3 200 **3I/123**	3 730 **3I/123**	5 860 **3I/128**	8 500 **3I/131**	11 790 **3I/119**	17 000 **3I/123**	24 300 **3I/125**	32 650 **3I/123**	42 590 **3I/127**	50 100 **3I/127**	71 410 **3I/131**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
200 000	100	–	–	–	–	–	2,77 1 700 3I/103	5,58 3 350 3I/101	7,81 4 660 3I/100	11 7 050 3I/107	14,8 9 510 3I/108	23,2 13 860 3I/100	33,6 19 780 3I/98,5	47,4 27 870 3I/98,5	60,3 36 120 3I/100	77,4 48 350 3I/105	96,7 60 430 3I/105	128 78 960 3I/103	100	1600	**16**
	90	–	–	–	–	–	–	–	7,88 4 800 3I/89,4	12,1 7 750 3I/93,7	14,1 8 940 3I/93,3	25,4 14 980 3I/86,4	35 21 220 3I/88,8	47,7 28 980 3I/89	67,7 41 410 3I/89,7	75,5 46 380 3I/90,1	94,3 57 980 3I/90,1	128 80 930 3I/92,7	90	1400	
	80	–	0,54 310 3I/75,2	0,61 365 3I/78,2	0,92 580 3I/82,7	1,06 670 3I/82,7	2,43 1 400 3I/75,5	4,63 2 660 3I/75,3	7,54 4 690 3I/81,4	10,8 7 080 3I/85,7	14,5 9 540 3I/86,1	21,8 14 010 3I/84	31,6 20 000 3I/82,7	44,6 28 170 3I/82,7	56,7 36 520 3I/84,3	76,8 48 410 3I/82,5	96 60 510 3I/82,5	128 79 070 3I/81,1	80	1250	
	71	–	–	–	–	–	–	–	8 4 970 3I/72,8	12,1 7 750 3I/74,9	16,7 10 640 3I/74,6	24,4 15 090 3I/72,6	33,6 21 370 3I/74,5	45,8 29 200 3I/74,7	65 41 710 3I/75,3	76,4 46 280 3I/71	95,5 57 840 3I/71	140 87 260 3I/73	71	1120	
	63	–	0,66 380 3I/60,1	0,66 395 3I/62,6	1,06 670 3I/66,3	1,22 775 3I/66,3	2,78 1 630 3I/61,5	5,54 3 190 3I/60,2	7,87 4 650 3I/62	11,5 7 000 3I/63,5	15,5 9 430 3I/63,8	23,2 13 860 3I/62,6	33,6 19 780 3I/61,7	47,4 27 870 3I/61,5	60,3 36 120 3I/62,7	75,7 48 530 3I/67,1	94,7 60 660 3I/67,1	126 79 260 3I/66	63	1000	
	56	–	–	–	–	–	–	–	8,16 4 800 3I/55,4	13,1 7 710 3I/55,5	15,2 8 920 3I/55,3	26 14 920 3I/54,1	35,9 21 130 3I/55,5	48,9 28 860 3I/55,6	69,3 41 230 3I/56	75,7 46 360 3I/57,8	94,6 57 950 3I/57,8	128 80 920 3I/59,4	56	900	
	50	–	0,66 385 3I/49,4	0,75 465 3I/51,5	1,34 800 3I/49,8	1,58 940 3I/49,8	2,78 1 700 3I/51,2	5,84 3 450 3I/49,5	7,75 4 670 3I/50,4	11,5 7 000 3I/50,8	15,5 9 430 3I/51	22,2 13 960 3I/52,6	32,2 19 930 3I/51,8	45,5 28 070 3I/51,7	57,9 36 390 3I/52,7	76,7 48 420 3I/52,9	95,9 60 520 3I/52,9	127 79 080 3I/52	50	800	
	45	–	–	–	–	–	–	–	8,16 4 950 3I/45,1	12,9 7 730 3I/44,4	17,7 10 530 3I/44,2	24,6 15 060 3I/45,4	34 21 330 3I/46,6	46,4 29 130 3I/46,7	65,8 41 620 3I/47,1	75,7 46 350 3I/45,5	94,7 57 940 3I/45,5	138 86 750 3I/46,8	45	710	
	40	–	0,62 385 3I/40,8	0,62 400 3I/42,5	1,01 670 3I/43,6	1,18 775 3I/43,6	2,76 1 640 3I/39,1	5,21 3 220 3I/40,8	8,19 4 800 3I/38,7	13,3 7 750 3I/38,5	16,1 9 750 3I/39,9	24,6 15 500 3I/41,5	34,4 21 060 3I/40,4	48,1 30 950 3I/42,4	67,2 41 930 3I/41,2	86,2 53 250 3I/40,7	108 66 560 3I/40,7	127 81 180 3I/42,3	40	630	
	35,5	–	–	–	–	–	–	–	7,79 4 990 3I/37,5	12,5 7 750 3I/36,5	17,1 10 590 3I/36,3	25,5 14 970 3I/34,4	35,2 21 210 3I/35,4	46,3 29 140 3I/36,9	65,7 41 640 3I/37,2	73,2 46 640 3I/37,4	91,5 58 300 3I/37,4	131 86 020 3I/38,4	35,5	560	
180 000	160	–	–	–	–	–	2,17 1 400 3I/151	4,09 2 670 3I/153	–	–	–	–	–	–	–	–	–	–	160	2240	**14**
	125	–	–	–	–	–	2,54 1 660 3I/123	5 3 250 3I/123	5,76 3 750 3I/123	8,68 5 880 3I/128	12,2 8 530 3I/131	18,7 11 830 3I/119	26,2 17 060 3I/123	36,8 24 380 3I/125	50,2 32 760 3I/123	63,5 42 730 3I/127	74,8 50 270 3I/127	103 71 650 3I/131	125	1800	
	100	–	–	–	–	–	2,43 1 700 3I/103	5,03 3 450 3I/101	6,97 4 760 3I/100	9,85 7 200 3I/107	13,2 9 700 3I/108	20,7 14 140 3I/100	30 20 180 3I/98,5	42,3 28 440 3I/98,5	53,8 36 860 3I/100	69,1 49 330 3I/105	86,3 61 670 3I/105	115 80 580 3I/103	100	1400	
	90	–	–	–	–	–	–	–	7,06 4 820 3I/89,4	10,8 7 750 3I/93,7	12,6 8 970 3I/93,3	23,1 15 240 3I/86,4	31,7 21 480 3I/88,8	43,4 29 490 3I/89	61,2 41 940 3I/89,7	68,5 47 180 3I/90,1	85,7 58 980 3I/90,1	115 81 220 3I/92,7	90	1250	
	80	–	0,48 310 3I/75,2	0,55 365 3I/78,2	0,82 580 3I/82,7	0,95 670 3I/82,7	2,18 1 400 3I/75,5	4,16 2 670 3I/75,3	6,87 4 770 3I/81,4	9,85 7 200 3I/85,7	13,2 9 700 3I/86,1	19,9 14 240 3I/84	28,8 20 330 3I/82,7	40,6 28 650 3I/82,7	51,7 37 130 3I/84,3	70 49 220 3I/82,5	87,5 61 530 3I/82,5	116 80 390 3I/81,1	80	1120	
	71	–	–	–	–	–	–	–	7,27 5 050 3I/72,8	10,8 7 750 3I/74,9	15,2 10 820 3I/74,6	22,1 15 350 3I/72,6	30,6 21 740 3I/74,5	41,6 29 700 3I/74,7	59 42 430 3I/75,3	69,4 47 080 3I/71	86,8 58 840 3I/71	125 87 500 3I/73	71	1000	
	63	–	0,61 385 3I/60,1	0,61 405 3I/62,6	0,95 670 3I/66,3	1,11 785 3I/66,3	2,55 1 660 3I/61,5	5,07 3 240 3I/60,2	7,19 4 730 3I/62	10,6 7 110 3I/63,5	14,2 9 580 3I/63,8	21,2 14 080 3I/62,6	30,7 20 100 3I/61,7	43,4 28 320 3I/61,5	55,1 36 700 3I/62,7	69,3 49 310 3I/67,1	86,6 61 640 3I/67,1	115 80 540 3I/66	63	900	
	56	–	–	–	–	–	–	–	7,28 4 810 3I/55,4	11,7 7 750 3I/55,5	13,6 8 950 3I/55,3	23,5 15 190 3I/54,1	32,4 21 470 3I/55,5	44,2 29 380 3I/55,6	62,6 41 910 3I/56	68,5 47 190 3I/57,8	85,6 58 990 3I/57,8	115 81 220 3I/59,4	56	800	

For n_1 lower than 560 min^{-1} see page 107.

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
180 000			0,58	0,68	1,22	1,43	2,47	5,18	7	10,4	14	20,1	29,1	41,1	52,3	69,3	86,7	115	50	710	**14**
	50	–	385 **3I/49,4**	470 **3I/51,5**	815 **3I/49,8**	960 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 750 **3I/50,4**	7 120 **3I/50,8**	9 600 **3I/51**	14 210 **3I/52,6**	20 290 **3I/51,8**	28 580 **3I/51,7**	37 050 **3I/52,7**	49 300 **3I/52,9**	61 630 **3I/52,9**	80 520 **3I/52**			
									7,37	11,5	16	22,3	30,7	41,9	59,4	68,4	85,5	123	45	630	
	45	–	–	–	–	–	–	–	5 040 **3I/45,1**	7 750 **3I/44,4**	10 720 **3I/44,2**	15 330 **3I/45,4**	21 720 **3I/46,6**	29 670 **3I/46,7**	42 380 **3I/47,1**	47 200 **3I/45,5**	59 000 **3I/45,5**	87 500 **3I/46,8**			
			0,56	0,56	0,9	1,06	2,5	4,71	7,31	11,8	14,3	21,9	30,7	43,5	59,9	78	97,5	117	40	560	
	40	–	385 **3I/40,8**	410 **3I/42,5**	670 **3I/43,6**	790 **3I/43,6**	1 670 **3I/39,1**	3 280 **3I/40,8**	4 820 **3I/38,7**	7 750 **3I/38,5**	9 750 **3I/39,9**	15 500 **3I/41,5**	21 140 **3I/40,4**	31 500 **3I/42,4**	42 080 **3I/41,2**	54 210 **3I/40,7**	67 760 **3I/40,7**	84 100 **3I/42,3**			
160 000							1,96	3,68											160	2000	**12,5**
	160	–	–	–	–	–	1 420 **3I/151**	2 690 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							2,3	4,52	5,15	7,82	11	16,7	23,4	32,9	44,9	57,2	67,3	93,1	125	1600	
	125	–	–	–	–	–	1 690 **3I/123**	3 310 **3I/123**	3 770 **3I/123**	5 950 **3I/128**	8 640 **3I/131**	11 890 **3I/119**	17 140 **3I/123**	24 550 **3I/125**	32 980 **3I/123**	43 250 **3I/127**	50 880 **3I/127**	72 520 **3I/131**			
							2,17	4,49	6,33	8,95	12	18,8	27,3	38,5	48,9	62,7	78,4	104	100	1250	
	100	–	–	–	–	–	1 700 **3I/103**	3 450 **3I/101**	4 840 **3I/100**	7 320 **3I/107**	9 870 **3I/108**	14 380 **3I/100**	20 530 **3I/98,5**	28 930 **3I/98,5**	37 500 **3I/100**	50 190 **3I/105**	62 730 **3I/105**	81 970 **3I/103**			
									6,35	9,7	11,3	21	28,5	39,5	55	62,4	78	103	90	1120	
	90	–	–	–	–	–	–	–	4 840 **3I/89,4**	7 750 **3I/93,7**	9 000 **3I/93,3**	15 490 **3I/86,4**	21 560 **3I/88,8**	29 980 **3I/89**	42 090 **3I/89,7**	47 980 **3I/90,1**	59 970 **3I/90,1**	81 500 **3I/92,7**			
			0,43	0,49	0,73	0,85	1,96	3,73	6,24	8,95	12	18,1	26,2	36,9	46,9	63,6	79,4	106	80	1000	
	80	–	310 **3I/75,2**	365 **3I/78,2**	580 **3I/82,7**	670 **3I/82,7**	1 420 **3I/75,5**	2 680 **3I/75,3**	4 850 **3I/81,4**	7 320 **3I/85,7**	9 870 **3I/86,1**	14 490 **3I/84**	20 680 **3I/82,7**	29 140 **3I/82,7**	37 770 **3I/84,3**	50 070 **3I/82,5**	62 590 **3I/82,5**	81 780 **3I/81,1**			
									6,65	9,75	13,8	20,1	27,6	38,1	54	63,5	79,4	113	71	900	
	71	–	–	–	–	–	–	–	5 130 **3I/72,8**	7 750 **3I/74,9**	10 900 **3I/74,6**	15 500 **3I/72,6**	21 800 **3I/74,5**	30 180 **3I/74,7**	43 120 **3I/75,3**	47 830 **3I/71**	59 790 **3I/71**	87 500 **3I/73**			
			0,54	0,55	0,86	1,01	2,3	4,59	6,51	9,55	12,8	19,2	27,8	39,2	49,9	62,7	78,3	104	63	800	
	63	–	385 **3I/60,1**	410 **3I/62,6**	680 **3I/66,3**	800 **3I/66,3**	1 690 **3I/61,5**	3 300 **3I/60,2**	4 810 **3I/62**	7 240 **3I/63,5**	9 750 **3I/63,8**	14 330 **3I/62,6**	20 460 **3I/61,7**	28 830 **3I/61,5**	37 360 **3I/62,7**	50 200 **3I/67,1**	62 750 **3I/67,1**	81 980 **3I/66**			
									6,49	10,4	12,1	21,2	28,8	40	55,8	61,9	77,3	102	56	710	
	56	–	–	–	–	–	–	–	4 830 **3I/55,4**	7 750 **3I/55,5**	8 980 **3I/55,3**	15 460 **3I/54,1**	21 550 **3I/55,5**	29 910 **3I/55,6**	42 070 **3I/56**	48 050 **3I/57,8**	60 070 **3I/57,8**	81 530 **3I/59,4**			
			0,52	0,61	1,09	1,28	2,19	4,6	6,33	9,42	12,6	18,2	26,3	37,2	47,3	62,6	78,3	104	50	630	
	50	–	385 **3I/49,4**	480 **3I/51,5**	825 **3I/49,8**	965 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 840 **3I/50,4**	7 250 **3I/50,8**	9 780 **3I/51**	14 470 **3I/52,6**	20 660 **3I/51,8**	29 110 **3I/51,7**	37 730 **3I/52,7**	50 200 **3I/52,9**	62 750 **3I/52,9**	81 990 **3I/52**			
									6,67	10,2	14,4	20	27,4	37,9	53,8	61,9	77,4	110	45	560	
	45	–	–	–	–	–	–	–	5 130 **3I/45,1**	7 750 **3I/44,4**	10 890 **3I/44,2**	15 500 **3I/45,4**	21 800 **3I/46,6**	30 200 **3I/46,7**	43 140 **3I/47,1**	48 050 **3I/45,5**	60 060 **3I/45,5**	87 500 **3I/46,8**			
140 000							1,79	3,36											160	1800	**11,2**
	160	–	–	–	–	–	1 440 **3I/151**	2 730 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							2,02	4,04	4,6	6,98	9,84	14,9	20,9	29,4	40,1	51	60	82	125	1400	
	125	–	–	–	–	–	1 700 **3I/123**	3 370 **3I/123**	3 850 **3I/123**	6 070 **3I/128**	8 820 **3I/131**	12 130 **3I/119**	17 490 **3I/123**	25 050 **3I/125**	33 650 **3I/123**	44 130 **3I/127**	51 920 **3I/127**	73 000 **3I/131**			
							1,94	4,02	5,77	8,15	10,9	17,1	24,8	35	44,6	57,2	71,4	94,9	100	1120	
	100	–	–	–	–	–	1 700 **3I/103**	3 450 **3I/101**	4 920 **3I/100**	7 440 **3I/107**	10 030 **3I/108**	14 620 **3I/100**	20 880 **3I/98,5**	29 410 **3I/98,5**	38 120 **3I/100**	51 030 **3I/105**	63 780 **3I/105**	83 340 **3I/103**			
									5,69	8,66	10,1	18,8	25,5	35,9	49,3	56,7	70,9	92,4	90	1000	
	90	–	–	–	–	–	–	–	4 850 **3I/89,4**	7 750 **3I/93,7**	9 040 **3I/93,3**	15 500 **3I/86,4**	21 630 **3I/88,8**	30 500 **3I/89**	42 240 **3I/89,7**	48 800 **3I/90,1**	61 010 **3I/90,1**	81 790 **3I/92,7**			
			0,4	0,45	0,66	0,76	1,8	3,41	5,7	8,18	11	16,5	23,9	33,8	42,9	58,1	72,6	96,5	80	900	
	80	–	315 **3I/75,2**	370 **3I/78,2**	580 **3I/82,7**	670 **3I/82,7**	1 440 **3I/75,5**	2 720 **3I/75,3**	4 930 **3I/81,4**	7 440 **3I/85,7**	10 030 **3I/86,1**	14 720 **3I/84**	21 010 **3I/82,7**	29 610 **3I/82,7**	38 380 **3I/84,3**	50 880 **3I/82,5**	63 590 **3I/82,5**	83 090 **3I/81,1**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
140 000									5,93	8,66	12,2	17,9	24,5	34,4	48,6	57,4	71,8	100	71	800	**11,2**
	71	–	–	–	–	–	–	–	5 150 **3I/72,8**	7 750 **3I/74,9**	10 900 **3I/74,6**	15 500 **3I/72,6**	21 800 **3I/74,5**	30 720 **3I/74,7**	43 700 **3I/75,3**	48 690 **3I/71**	60 860 **3I/71**	87 500 **3I/73**			
			0,48	0,5	0,77	0,91	2,06	4,15	5,88	8,63	11,6	17,3	25,1	35,5	45,1	56,6	70,8	94	63	710	
	63	–	385 **3I/60,1**	420 **3I/62,6**	690 **3I/66,3**	810 **3I/66,3**	1 700 **3I/61,5**	3 360 **3I/60,2**	4 900 **3I/62**	7 370 **3I/63,5**	9 930 **3I/63,8**	14 600 **3I/62,6**	20 840 **3I/61,7**	29 350 **3I/61,5**	38 040 **3I/62,7**	51 110 **3I/67,1**	63 890 **3I/67,1**	83 480 **3I/66**			
									5,78	9,21	10,7	18,9	25,7	36,1	49,7	55,9	69,9	90,9	56	630	
	56	–	–	–	–	–	–	–	4 850 **3I/55,4**	7 750 **3I/55,5**	9 000 **3I/55,3**	15 500 **3I/54,1**	21 630 **3I/55,5**	30 460 **3I/55,6**	42 230 **3I/56**	48 930 **3I/57,8**	61 160 **3I/57,8**	81 830 **3I/59,4**			
			0,46	0,55	0,97	1,14	1,95	4,09	5,73	8,53	11,4	16,4	23,8	33,6	42,8	56,7	70,9	94,1	50	560	
	50	–	385 **3I/49,4**	485 **3I/51,5**	825 **3I/49,8**	970 **3I/49,8**	1 700 **3I/51,2**	3 450 **3I/49,5**	4 930 **3I/50,4**	7 390 **3I/50,8**	9 950 **3I/51**	14 730 **3I/52,6**	21 030 **3I/51,8**	29 630 **3I/51,7**	38 400 **3I/52,7**	51 100 **3I/52,9**	63 880 **3I/52,9**	83 460 **3I/52**			
125 000							1,62	3,04											160	1600	**10**
	160	–	–	–	–	–	1 460 **3I/151**	2 780 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							1,8	3,67	4,18	6,34	8,94	13,6	19	26,7	36,4	46,4	54,5	73,2	125	1250	
	125	–	–	–	–	–	1 700 **3I/123**	3 430 **3I/123**	3 910 **3I/123**	6 180 **3I/128**	8 970 **3I/131**	12 340 **3I/119**	17 790 **3I/123**	25 480 **3I/125**	34 240 **3I/123**	44 900 **3I/127**	52 820 **3I/127**	73 000 **3I/131**			
							1,73	3,59	5,24	7,33	9,93	15,6	22,5	31,8	40,5	51,9	64,9	86,2	100	1000	
	100	–	–	–	–	–	1 700 **3I/103**	3 450 **3I/101**	5 000 **3I/100**	7 500 **3I/107**	10 210 **3I/108**	14 880 **3I/100**	21 200 **3I/98,5**	29 920 **3I/98,5**	38 780 **3I/100**	51 910 **3I/105**	64 890 **3I/105**	84 780 **3I/103**			
									5,13	7,8	9,16	16,9	23	32,8	44,5	51,9	64,8	83,4	90	900	
	90	–	–	–	–	–	–	–	4 870 **3I/89,4**	7 750 **3I/93,7**	9 070 **3I/93,3**	15 500 **3I/86,4**	21 710 **3I/88,8**	30 990 **3I/89**	42 380 **3I/89,7**	49 590 **3I/90,1**	61 990 **3I/90,1**	82 060 **3I/92,7**			
			0,36	0,41	0,59	0,69	1,63	3,09	5,14	7,33	9,93	14,9	21,5	30,5	38,8	52,6	65,7	87,3	80	800	
	80	–	325 **3I/75,2**	380 **3I/78,2**	580 **3I/82,7**	675 **3I/82,7**	1 460 **3I/75,5**	2 770 **3I/75,3**	5 000 **3I/81,4**	7 500 **3I/85,7**	10 210 **3I/86,1**	14 990 **3I/84**	21 200 **3I/82,7**	30 140 **3I/82,7**	39 070 **3I/84,3**	51 790 **3I/82,5**	64 740 **3I/82,5**	84 590 **3I/81,1**			
									5,26	7,69	10,9	15,9	21,8	31,1	43,2	51,9	64,9	89,1	71	710	
	71	–	–	–	–	–	–	–	5 150 **3I/72,8**	7 750 **3I/74,9**	10 900 **3I/74,6**	15 500 **3I/72,6**	21 800 **3I/74,5**	31 280 **3I/74,7**	43 700 **3I/75,3**	49 580 **3I/71**	61 970 **3I/71**	87 500 **3I/73**			
			0,42	0,45	0,7	0,82	1,82	3,75	5,31	7,79	10,5	15,7	22,7	32	40,7	51,2	63,9	85	63	630	
	63	–	385 **3I/60,1**	425 **3I/62,6**	705 **3I/66,3**	825 **3I/66,3**	1 700 **3I/61,5**	3 420 **3I/60,2**	4 990 **3I/62**	7 500 **3I/63,5**	10 110 **3I/63,8**	14 860 **3I/62,6**	21 200 **3I/61,7**	29 890 **3I/61,5**	38 740 **3I/62,7**	52 040 **3I/67,1**	65 000 **3I/67,1**	85 000 **3I/66**			
									5,16	8,19	9,55	16,8	22,9	32,7	44,3	50,6	63,2	81,1	56	560	
	56	–	–	–	–	–	–	–	4 870 **3I/55,4**	7 750 **3I/55,5**	9 000 **3I/55,3**	15 500 **3I/54,1**	21 710 **3I/55,5**	31 010 **3I/55,6**	42 380 **3I/56**	49 810 **3I/57,8**	62 260 **3I/57,8**	82 140 **3I/59,4**			
112 000							1,45	2,72											160	1400	**9**
	160	–	–	–	–	–	1 490 **3I/151**	2 840 **3I/153**	–	–	–	–	–	–	–	–	–	–			
							1,62	3,3	3,81	5,78	8,14	12,3	17,3	24,3	33,2	42,2	49,7	65,6	125	1120	
	125	–	–	–	–	–	1 700 **3I/123**	3 450 **3I/123**	3 980 **3I/123**	6 280 **3I/128**	9 120 **3I/131**	12 550 **3I/119**	18 090 **3I/123**	25 910 **3I/125**	34 810 **3I/123**	45 650 **3I/127**	53 700 **3I/127**	73 000 **3I/131**			
							1,56	3,23	4,71	6,6	9,08	14,2	20,3	29,1	37	47,5	58,5	77,8	100	900	
	100	–	–	–	–	–	1 700 **3I/103**	3 450 **3I/101**	5 000 **3I/100**	7 500 **3I/107**	10 370 **3I/108**	15 120 **3I/100**	21 200 **3I/98,5**	30 400 **3I/98,5**	39 410 **3I/100**	52 740 **3I/105**	65 000 **3I/105**	85 000 **3I/103**			
									4,58	6,93	8,17	15	20,6	29,7	39,7	46,9	58,7	74,4	90	800	
	90	–	–	–	–	–	–	–	4 890 **3I/89,4**	7 750 **3I/93,7**	9 100 **3I/93,3**	15 500 **3I/86,4**	21 790 **3I/88,8**	31 500 **3I/89**	42 530 **3I/89,7**	50 480 **3I/90,1**	63 100 **3I/90,1**	82 370 **3I/92,7**			
			0,32	0,37	0,53	0,62	1,47	2,79	4,57	6,51	8,97	13,5	19	27,6	35,1	47,5	58,6	77,9	80	710	
	80	–	330 **3I/75,2**	385 **3I/78,2**	585 **3I/82,7**	690 **3I/82,7**	1 490 **3I/75,5**	2 820 **3I/75,3**	5 000 **3I/81,4**	7 500 **3I/85,7**	10 390 **3I/86,1**	15 260 **3I/84**	21 200 **3I/82,7**	30 690 **3I/82,7**	39 780 **3I/84,3**	52 730 **3I/82,5**	65 000 **3I/82,5**	85 000 **3I/81,1**			
									4,67	6,82	9,64	14,1	19,3	27,8	38,3	46,9	58,6	79	71	630	
	71	–	–	–	–	–	–	–	5 150 **3I/72,8**	7 750 **3I/74,9**	10 900 **3I/74,6**	15 500 **3I/72,6**	21 800 **3I/74,5**	31 500 **3I/74,7**	43 700 **3I/75,3**	50 480 **3I/71**	63 100 **3I/71**	87 500 **3I/73**			

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
112 000	63	–	0,38 385 **3I/60,1**	0,41 435 **3I/62,6**	0,63 715 **3I/66,3**	0,74 840 **3I/66,3**	1,62 1 700 **3I/61,5**	3,36 3 450 **3I/60,2**	4,73 5 000 **3I/62**	6,93 7 500 **3I/63,5**	9,46 10 290 **3I/63,8**	14,2 15 130 **3I/62,6**	20,2 21 200 **3I/61,7**	29 30 420 **3I/61,5**	36,9 39 430 **3I/62,7**	46,3 52 980 **3I/67,1**	56,8 65 000 **3I/67,1**	75,5 85 000 **3I/66**	63	560	**9**
100 000	160	–	–	–	–	–	1,3 1 500 **3I/151**	2,47 2 890 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	1250	**8**
	125	–	–	–	–	–	1,44 1 700 **3I/123**	2,95 3 450 **3I/123**	3,46 4 050 **3I/123**	5,25 6 390 **3I/128**	7,37 9 250 **3I/131**	11,2 12 760 **3I/119**	15,7 18 400 **3I/123**	22,1 26 350 **3I/125**	30,1 35 410 **3I/123**	38,2 46 200 **3I/127**	45 54 500 **3I/127**	58,5 73 000 **3I/131**	125	1000	
	100	–	–	–	–	–	1,39 1 700 **3I/103**	2,87 3 450 **3I/101**	4,19 5 000 **3I/100**	5,87 7 500 **3I/107**	8,17 10 500 **3I/108**	12,9 15 390 **3I/100**	18 21 200 **3I/98,5**	26,1 30 700 **3I/98,5**	33,5 40 120 **3I/100**	42,4 53 000 **3I/105**	52 65 000 **3I/105**	69,1 85 000 **3I/103**	100	800	
	90	–	–	–	–	–	–	–	4,08 4 910 **3I/89,4**	6,15 7 750 **3I/93,7**	7,28 9 130 **3I/93,3**	13,3 15 500 **3I/86,4**	18,3 21 800 **3I/88,8**	26,3 31 500 **3I/89**	35,4 42 690 **3I/89,7**	42,4 51 400 **3I/90,1**	53 64 250 **3I/90,1**	66,2 82 500 **3I/92,7**	90	710	
	80	–	0,29 335 **3I/75,2**	0,33 395 **3I/78,2**	0,48 595 **3I/82,7**	0,56 700 **3I/82,7**	1,31 1 500 **3I/75,5**	2,52 2 880 **3I/75,3**	4,05 5 000 **3I/81,4**	5,78 7 500 **3I/85,7**	8,11 10 580 **3I/86,1**	12,2 15 500 **3I/84**	16,9 21 200 **3I/82,7**	24,5 30 700 **3I/82,7**	31,7 40 510 **3I/84,3**	42,4 53 000 **3I/82,5**	52 65 000 **3I/82,5**	69,1 85 000 **3I/81,1**	80	630	
	71	–	–	–	–	–	–	–	4,15 5 150 **3I/72,8**	6,06 7 750 **3I/74,9**	8,57 10 900 **3I/74,6**	12,5 15 500 **3I/72,6**	17,2 21 800 **3I/74,5**	24,7 31 500 **3I/74,7**	34 43 700 **3I/75,3**	42,4 51 390 **3I/71**	53,1 64 240 **3I/71**	70,3 87 500 **3I/73**	71	560	
90 000	160	–	–	–	–	–	1,16 1 500 **3I/151**	2,25 2 930 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	1120	**7,1**
	125	–	–	–	–	–	1,3 1 700 **3I/123**	2,65 3 450 **3I/123**	3,16 4 110 **3I/123**	4,8 6 490 **3I/128**	6,63 9 250 **3I/131**	10,3 12 970 **3I/119**	14,2 18 500 **3I/123**	20 26 500 **3I/125**	27,6 35 980 **3I/123**	34,3 46 200 **3I/127**	40,5 54 500 **3I/127**	52,7 73 000 **3I/131**	125	900	
	100	–	–	–	–	–	1,23 1 700 **3I/103**	2,55 3 450 **3I/101**	3,72 5 000 **3I/100**	5,21 7 500 **3I/107**	7,28 10 540 **3I/108**	11,5 15 500 **3I/100**	16 21 200 **3I/98,5**	23,2 30 700 **3I/98,5**	30,3 40 850 **3I/100**	37,6 53 000 **3I/105**	46,2 65 000 **3I/105**	61,4 85 000 **3I/103**	100	710	
	90	–	–	–	–	–	–	–	3,63 4 920 **3I/89,4**	5,46 7 750 **3I/93,7**	6,48 9 170 **3I/93,3**	11,8 15 500 **3I/86,4**	16,2 21 800 **3I/88,8**	23,3 31 500 **3I/89**	31,5 42 860 **3I/89,7**	38,3 52 340 **3I/90,1**	47,9 65 420 **3I/90,1**	58,7 82 500 **3I/92,7**	90	630	
	80	–	0,26 335 **3I/75,2**	0,3 400 **3I/78,2**	0,43 610 **3I/82,7**	0,51 715 **3I/82,7**	1,17 1 500 **3I/75,5**	2,28 2 930 **3I/75,3**	3,6 5 000 **3I/81,4**	5,13 7 500 **3I/85,7**	7,22 10 600 **3I/86,1**	10,8 15 500 **3I/84**	15 21 200 **3I/82,7**	21,8 30 700 **3I/82,7**	28,7 41 230 **3I/84,3**	37,7 53 000 **3I/82,5**	46,2 65 000 **3I/82,5**	61,4 85 000 **3I/81,1**	80	560	
80 000	160	–	–	–	–	–	1,04 1 500 **3I/151**	2,04 2 990 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	1000	**6,3**
	125	–	–	–	–	–	1,15 1 700 **3I/123**	2,36 3 450 **3I/123**	2,86 4 190 **3I/123**	4,27 6 500 **3I/128**	5,9 9 250 **3I/131**	9,28 13 200 **3I/119**	12,6 18 500 **3I/123**	17,8 26 500 **3I/125**	24,8 36 500 **3I/123**	30,5 46 200 **3I/127**	36 54 500 **3I/127**	46,8 73 000 **3I/131**	125	800	
	100	–	–	–	–	–	1,09 1 700 **3I/103**	2,26 3 450 **3I/101**	3,3 5 000 **3I/100**	4,62 7 500 **3I/107**	6,48 10 580 **3I/108**	10,2 15 500 **3I/100**	14,2 21 200 **3I/98,5**	20,6 30 700 **3I/98,5**	27,3 41 590 **3I/100**	33,4 53 000 **3I/105**	41 65 000 **3I/105**	54,4 85 000 **3I/103**	100	630	
	90	–	–	–	–	–	–	–	3,24 4 940 **3I/89,4**	4,85 7 750 **3I/93,7**	5,78 9 200 **3I/93,3**	10,5 15 500 **3I/86,4**	14,4 21 800 **3I/88,8**	20,8 31 500 **3I/89**	28,1 43 020 **3I/89,7**	34,7 53 280 **3I/90,1**	43,3 66 600 **3I/90,1**	52,2 82 500 **3I/92,7**	90	560	
71 000	160	–	–	–	–	–	0,93 1 500 **3I/151**	1,85 3 000 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	900	**5,6**
	125	–	–	–	–	–	1,02 1 700 **3I/123**	2,09 3 450 **3I/123**	2,58 4 260 **3I/123**	3,79 6 500 **3I/128**	5,23 9 250 **3I/131**	8,24 13 200 **3I/119**	11,2 18 500 **3I/123**	15,8 26 500 **3I/125**	22 36 500 **3I/123**	27,1 46 200 **3I/127**	32 54 500 **3I/127**	41,6 73 000 **3I/131**	125	710	

For n_1 lower than 560 min^{-1} see page 107.

7 - Helical gear reducer selection tables

$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ...	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
71 000	100		–	–	–	–	–	0,97 1 700 **3I/103**	2,01 3 450 **3I/101**	2,93 5 000 **3I/100**	4,11 7 500 **3I/107**	5,78 10 600 **3I/108**	9,08 15 500 **3I/100**	12,6 21 200 **3I/98,5**	18,3 30 700 **3I/98,5**	24,7 42 340 **3I/100**	29,7 53 000 **3I/105**	36,4 65 000 **3I/105**	48,4 85 000 **3I/103**	100	560	**5,6**
63 000	160		–	–	–	–	–	0,83 1 500 **3I/151**	1,64 3 000 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	800	**5**
	125		–	–	–	–	–	0,91 1 700 **3I/123**	1,86 3 450 **3I/123**	2,34 4 340 **3I/123**	3,36 6 500 **3I/128**	4,64 9 250 **3I/131**	7,31 13 200 **3I/119**	9,94 18 500 **3I/123**	14 26 500 **3I/125**	19,6 36 500 **3I/123**	24 46 200 **3I/127**	28,4 54 500 **3I/127**	36,9 73 000 **3I/131**	125	630	
56 000	160		–	–	–	–	–	0,74 1 500 **3I/151**	1,46 3 000 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	710	**4,5**
	125		–	–	–	–	–	0,81 1 700 **3I/123**	1,65 3 450 **3I/123**	2,09 4 370 **3I/123**	2,99 6 500 **3I/128**	4,13 9 250 **3I/131**	6,5 13 200 **3I/119**	8,84 18 500 **3I/123**	12,4 26 500 **3I/125**	17,4 36 500 **3I/123**	21,4 46 200 **3I/127**	25,2 54 500 **3I/127**	32,8 73 000 **3I/131**	125	560	
50 000	160		–	–	–	–	–	0,65 1 500 **3I/151**	1,29 3 000 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	630	**4**
45 000	160		–	–	–	–	–	0,58 1 500 **3I/151**	1,15 3 000 **3I/153**	–	–	–	–	–	–	–	–	–	–	160	560	**3,55**

For n_1 lower than 560 min^{-1} see page 107.

Summary of transmission ratios *i*, torques M_{N2} [N m] valid for $n_1 \leqslant$ 90 min^{-1}

	i_N	*i* M_{N2} [N m]																
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**
R I	2	–	–	–	–	–	–	***2*** [1] 2 500	**–**	***1,95*** 3 870	–	***2,05*** 8 250	–	***2*** [1] 17 500	–	***1,95*** 30 000	***1,95*** 35 500	–
	2,24	–	–	–	–	–	–	***2,28*** 2 900	***2,3*** [1] 3 650	***2,21*** 4 370	***2,24*** 5 450	***2,2*** [1] 9 000	***2,27*** 11 500	***2,33*** 20 600	***2,3*** [1] 25 000	***2,26*** 34 500	***2,26*** 41 200	***2,29*** 46 200
	2,5	**–**	***2,53*** 387	–	***2,44*** 750	–	***2,55*** 1 320	***2,53*** 3 250	***2,53*** 4 000	***2,44*** 4 750	***2,5*** [1] 6 150	***2,55*** 10 300	***2,43*** 12 200	***2,53*** 22 400	***2,53*** 27 200	***2,44*** 37 500	***2,44*** 45 000	***2,5*** [1] 51 500
	2,8	–	–	–	–	–	–	***2,75*** [1] 3 450	***2,82*** 4 500	***2,81*** 5 450	***2,83*** 6 900	***2,82*** 11 500	***2,83*** 14 500	***2,81*** 25 000	***2,82*** 30 700	***2,81*** 43 700	***2,81*** 51 500	***2,83*** 58 000
	3,15	–	***3,28*** 387	–	***3,13*** 825	–	***3,27*** 1 450	***3,28*** 3 450	***3,13*** 5 000	***3,13*** 6 150	***3,25*** [1] 8 000	***3,27*** 13 200	***3,18*** 16 000	***3,28*** 27 200	***3,19*** 34 500	***3,13*** 48 700	***3,13*** 56 000	***3,25*** [1] 67 000
	3,55	–	–	–	–	–	–	***3,62*** 3 250	***3,64*** 4 620	***3,62*** 6 700	***3,6*** [1] 8 250	***3,57*** 14 000	***3,67*** 16 500	***3,62*** 28 000	***3,64*** 35 500	***3,5*** [1] 43 700	***3,5*** [1] 56 000	***3,6*** [1] 65 000
	4	–	***4*** [1] 345	–	***4,16*** 750	–	***3,92*** 1 400	***4*** [1] 3 000	***4,08*** 4 370	***4,13*** 6 700	***4,15*** 9 000	***4,13*** 13 200	***4,07*** 18 500	***4*** [1] 26 500	***4,08*** 35 500	***4,07*** 47 500	***4,07*** 56 000	***4*** [1] 73 000
	4,5	–	–	–	–	–	–	***4,45*** 2 720	***4,5*** [1] 3 650	***4,5*** [1] 6 300	***4,67*** 8 000	***4,5*** [1] 12 500	***4,67*** 15 500	***4,47*** 24 300	***4,5*** [1] 30 000	***4,5*** [1] 41 200	***4,5*** [1] 51 500	***4,6*** [1] 63 000
	5	–	***5*** [1] 325	–	***5,2*** [1] 630	–	***4,82*** 1 320	***5*** [1] 2 720	***5*** [1] 3 450	***4,92*** 5 800	***5,07*** 7 300	***4,92*** 11 800	***5,07*** 14 000	***5,08*** 24 300	***5*** [1] 28 000	***4,92*** 40 000	***4,92*** 50 000	***5,07*** 58 000
R 2I	6,3	***6,42*** 150	***6,53*** 345	***6,86*** [1] 412	***6,41*** 650	***6,41*** 825	***6,42*** 1 550	***6,53*** 2 500	–	***6,41*** 5 300	–	***6,42*** 11 500	–	***6,53*** 23 000	–	***6,41*** 40 000	***6,41*** 48 700	–
	8	***8,01*** 206	***8,26*** 387	***7,99*** 487	***8,03*** 825	***8,03*** 975	***8,01*** 1 700	***8,26*** 3 450	–	***8,03*** 6 300	–	***8,01*** 15 500	–	***8,26*** 31 500	–	***8,03*** 54 500	***8,03*** 69 000	–
	9	–	–	–	–	–	–	–	***9,22*** 4 000	***9,24*** 6 300	***9,31*** 7 750	***8,85*** 15 500	***8,88*** 19 000	***9,19*** 31 500	***9,22*** 41 200	***9,24*** 54 500	***9,24*** 69 000	***9,31*** 87 500
	10	***10,2*** 206	***10,7*** 387	***11,2*** [1] 487	***10,3*** 825	***10,3*** 975	***10,2*** 1 700	***10,7*** 3 450	***10,2*** 4 370	***10,3*** 7 750	***10,7*** 10 000	***10,2*** 15 500	***9,95*** 21 200	***10,7*** 31 500	***10,4*** 43 700	***10,3*** 54 500	***10,3*** 69 000	***10,7*** 87 500
	11,2	–	–	–	–	–	–	–	***11,9*** [1] 5 150	***11,9*** 7 750	***11,8*** 10 900	***11,2*** 15 500	***11,5*** 21 800	***11,8*** 31 500	***11,9*** [1] 43 700	***11,5*** [1] 51 500	***11,5*** [1] 65 000	***11,8*** 87 500
	12,5	***12,3*** 200	***13,1*** 387	***13,6*** 450	***13,7*** 750	***13,7*** 875	***12,3*** 1 700	***13,1*** 3 450	***13,3*** 5 000	***13,6*** 7 500	***13,6*** 10 600	***13*** 15 500	***12,8*** 21 200	***13,1*** 30 700	***13,3*** 41 200	***13,4*** 53 000	***13,4*** 65 000	***13,1*** 85 000
	14	–	–	–	–	–	–	–	***14,7*** [1] 4 870	***14,1*** 7 750	***14,4*** [1] 10 900	***13,9*** 15 500	***14,6*** 20 000	***14,6*** 28 000	***14,7*** [1] 40 000	***14,3*** 54 500	***14,3*** 69 000	***14,4*** [1] 87 500
	16	***16,3*** 200	***15,8*** 387	***16,5*** 487	***15,7*** 800	***15,7*** 975	***16,1*** 1 700	***15,8*** 3 450	***15,1*** 4 500	***15,7*** 7 750	***16,6*** 10 600	***16,1*** 15 500	***15,6*** 20 000	***16,2*** 31 500	***15,7*** 40 000	***15,9*** 54 500	***15,9*** 69 000	***16*** [1] 85 000
	18	–	–	–	–	–	–	–	***17,6*** 5 150	***18,1*** 7 750	***18*** [1] 10 000	***17,6*** 15 500	***18,1*** 21 800	***17,8*** 31 500	***17,9*** 43 700	***17,8*** 54 500	***17,8*** 69 000	***18,3*** 87 500
	20	***20,1*** 175	***19,3*** 387	***20,1*** 475	***20,8*** 800	***20,8*** 925	***19,3*** 1 700	***19,3*** 3 450	***19,6*** 5 000	***20,7*** 7 500	***20,8*** 10 600	***20,3*** 15 500	***20*** 21 200	***19,7*** 30 700	***20,1*** 42 500	***20,6*** 53 000	***20,6*** 65 000	***20,3*** 85 000
	22,4	–	–	–	–	–	–	–	***21,7*** 4 750	***22,5*** [1] 7 100	***23,3*** 10 000	***22,2*** 14 500	***23*** 20 000	***22*** 29 000	***22,2*** 40 000	***22,8*** 50 000	***22,8*** 60 000	***23,4*** 80 000
	25	***24,4*** 155	***24,1*** 335	***25,1*** 412	***26*** [1] 670	***26*** [1] 800	***23,7*** 1 500	***24,1*** 3 000	***24,1*** 4 370	***24,6*** 6 500	***25,4*** 9 250	***24,2*** 13 200	***25*** 18 500	***25*** 26 500	***24,6*** 36 500	***25*** 46 200	***25*** 54 500	***25,7*** 73 000
	28	–	–	–	–	–	***28,8*** 1 320	–	–	–	–	–	–	–	–	–	–	–
R 3I	28	–	–	–	–	–	–	–	***29,1*** 4 750	***28,4*** 6 300	***28,6*** 7 750	***27,2*** 15 500	***27,3*** 21 200	***28,7*** 31 500	***28,8*** 43 700	***30*** 54 500	***30*** 69 000	***30,3*** 87 500
	31,5	–	***33,5*** 365	***34,9*** 412	***32,8*** 825	***32,8*** 925	***32,6*** 1 550	***33,5*** 3 250	***32,2*** 5 150	***31,6*** 7 750	***32,8*** 10 900	***31,5*** 15 500	***30,6*** 21 800	***33,5*** 31 500	***32,5*** 43 700	***33,5*** 54 500	***33,5*** 69 000	***34,7*** 87 500
	35,5	–	–	–	–	–	–	–	***37,5*** 5 150	***36,5*** 7 750	***36,3*** 10 900	***34,4*** 15 500	***35,4*** 21 800	***36,9*** 31 500	***37,2*** 43 700	***37,4*** 54 500	***37,4*** 69 000	***38,4*** 87 500
	40	–	***40,8*** 387	***42,5*** 475	***43,6*** 825	***43,6*** 950	***39,1*** 1 700	***40,8*** 3 450	***38,7*** 5 150	***38,5*** 7 750	***39,9*** 10 900	***41,5*** 15 500	***40,4*** 21 800	***42,4*** 31 500	***41,2*** 43 700	***40,7*** 54 500	***40,7*** 69 000	***42,3*** 87 500
	45	–	–	–	–	–	–	–	***45,1*** 5 150	***44,4*** 7 750	***44,2*** 10 900	***45,4*** 15 500	***46,6*** 21 800	***46,7*** 31 500	***47,1*** 43 700	***45,5*** 54 500	***45,5*** 69 000	***46,8*** [1] 87 500
	50	–	***49,4*** 387	***51,5*** 487	***49,8*** 825	***49,8*** 975	***51,2*** 1 700	***49,5*** 3 450	***50,4*** 5 000	***50,8*** 7 500	***51*** 10 600	***52,6*** 15 500	***51,8*** 21 200	***51,7*** 30 700	***52,7*** 42 500	***52,9*** 53 000	***52,9*** 65 000	***52*** [1] 85 000
	56	–	–	–	–	–	–	–	***55,4*** 5 150	***55,5*** 7 750	***55,3*** 10 600	***54,1*** 15 500	***55,5*** 21 800	***55,6*** 31 500	***56*** 43 700	***57,8*** 54 500	***57,8*** 69 000	***59,4*** [1] 87 500
	63	**–**	***60,1*** 387	***62,6*** 475	***66,3*** 825	***66,3*** 950	***61,5*** 1 700	***60,2*** 3 450	***62*** 5 000	***63,5*** 7 500	***63,8*** 10 600	***62,6*** 15 500	***61,7*** 21 200	***61,5*** 30 700	***62,7*** 42 500	***67,1*** [1] 53 000	***67,1*** [1] 65 000	***66*** [1] 85 000
	71	–	–	–	–	–	–	–	***72,8*** 5 150	***74,9*** 7 750	***74,6*** 10 900	***72,6*** 15 500	***74,5*** 21 800	***74,7*** 31 500	***75,3*** 43 700	***71*** [1] 54 500	***71*** [1] 69 000	***73*** 87 500
	80	–	***75,2*** 335	***78,2*** 412	***82,7*** 710	***82,7*** 825	***75,5*** 1 500	***75,3*** 3 000	***81,4*** 5 000	***85,7*** 7 500	***86,1*** 10 600	***84*** 15 500	***82,7*** 21 200	***82,7*** 30 700	***84,3*** 42 500	***82,5*** 53 000	***82,5*** 65 000	***81,1*** 85 000
	90	–	–	–	–	–	–	–	***89,4*** 5 150	***93,7*** 7 750	***93,3*** 10 600	***86,4*** 15 500	***88,8*** 21 800	***89*** 31 500	***89,7*** 43 700	***90,1*** 54 500	***90,1*** 69 000	***92,7*** 87 500
	100	–	–	–	–	–	***103*** 1 700	***101*** 3 450	***100*** 5 000	***107*** 7 500	***108*** 10 600	***100*** 15 500	***98,5*** 21 200	***98,5*** 30 700	***100*** 42 500	***105*** 53 000	***105*** 65 000	***103*** 85 000
	125	–	–	–	–	–	***123*** 1 700	***123*** 3 450	***123*** 4 370	***128*** 6 500	***131*** 9 250	***119*** 13 200	***123*** 18 500	***125*** 26 500	***123*** 36 500	***127*** 46 200	***127*** 54 500	***131*** 73 000
	160	–	–	–	–	–	***151*** 1 500	***153*** 3 000	–	–	–	–	–	–	–	–	–	–

1) **Finite** transmission ratio.

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8 – Dimensions, designs, mounting positions of helical gear reducers

8.1 - Gear reducers R I 110

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Designs (direction of rotation) 111
Mounting positions 112
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8.2 - Gear reducers R 2I 114

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8.4 - Gear reducers R 2I – Long model 122

Dimensions 122
Designs (direction of rotation) 123
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8.5 - Gear reducers R 3I – Long model 126

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Designs (direction of rotation) 126
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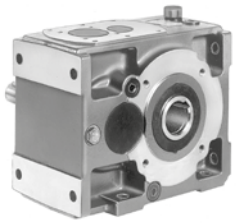
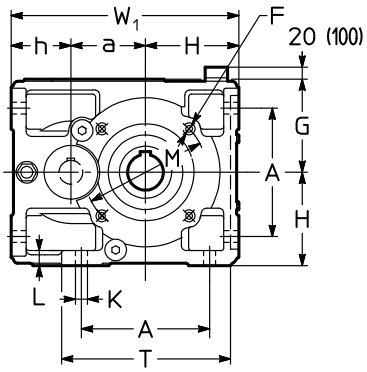
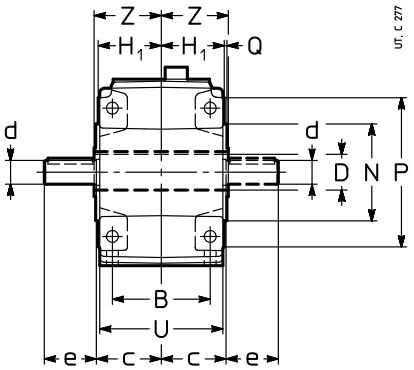
8.1 - Gear reducers R I

Dimensions

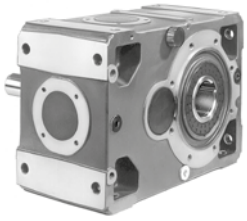
R I 63 ... 100

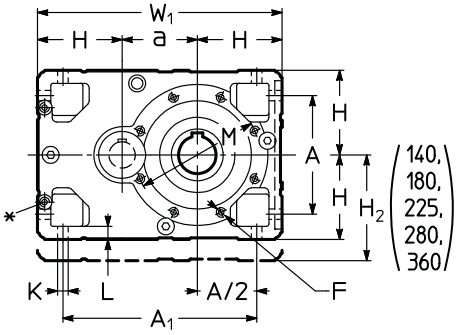


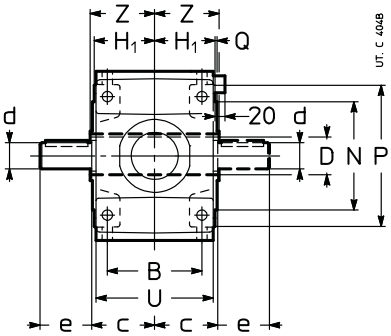




R I 125 ... 360





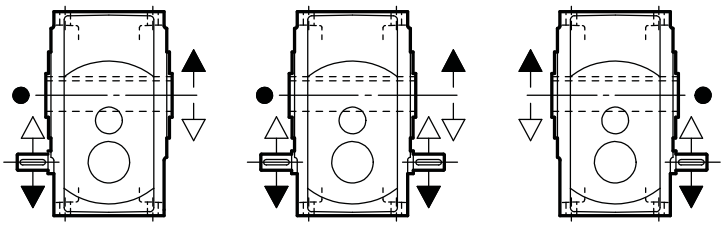


Size	a	A	A_1	B	c	D Ø H7	d Ø $i_N \leq 3{,}55$ $i_N \leq 4^{3)}$	e $i_N \leq 3{,}55$ $i_N \leq 4^{3)}$	d Ø $i_N \geq 4$ $i_N \geq 4{,}5^{3)}$	e $i_N \geq 4$ $i_N \geq 4{,}5^{3)}$	F 1)	H h11 G	H_1	H_2 h11	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	W_1	Z	kg
63	63	102	-	90	61	30	24	50	19	40	M8	80	58,5	-	62	11,5	14	100	80	120	3	143	114	205	63	12
80	80	132	-	106	72	38	28	60	24	50	M10	100	69,5	-	70	14	17	130	110	160	3,5	180	135	250	75	23
100	100	172	-	131	87	48	32	80	28	60	M12	125	84,5	-	80	16	20	165	130	200	3,5	228	165	305	90	43
125	125	212	337	162	107	60	48	110	38	80	2)	150	103,5	-	-	18	23	215	180	250	4	-	201	425	110	84
140	140	212	352	162	107	70	48	110	38	80	2)	150	103,5	180	-	18	23	265	230	300	4	-	201	440	125	97
160	160	252	412	201	132	80	55	110	48	110	M16	180	128,5	-	-	22	28	265	230	300	4	-	249	520	136	148
180	180	252	432	201	132	90	55	110	48	110	M16	180	128,5	225	-	22	28	300	250	350	5	-	249	540	150	171
200	200	320	520	250	162	100	70	140	60	140	2)	225	158	-	-	27	34	350	300	400	5	-	307	650	167	262
225	225	320	545	250	162	110	70	140	60	140	M20	225	158	280	-	27	34	400	350	450	5	-	307	675	180	303
250	250	396	646	310	204	125	90	170	75	140	2)	280	195	-	-	33	42	500	450	550	5	-	380	810	206	467
280	280	396	676	310	204	140	90	170	75	140	M24	280	195	355	-	33	42	500	450	550	5	-	380	840	222	540
320, 321	320	510	830	386	256	160	110	210	95	170	2)	355	241	-	-	39	52	600	550	660	6	-	470	1030	254	832
360	360	510	870	386	256	180	110	210	95	170	M30	355	241	450	-	39	52	600	550	660	6	-	470	1070	273	963

* Machined surface and N. 2 threaded holes (dimensions in ch. 6 «Gear reducer input face») on opposite side (not in view) too.
1) Working length of thread 2 · F.
2) For dimension, number and angular position, see ch. 8.
3) Valid for sizes 140, 180, 225, 280 and 360.

Designs (direction of rotation)

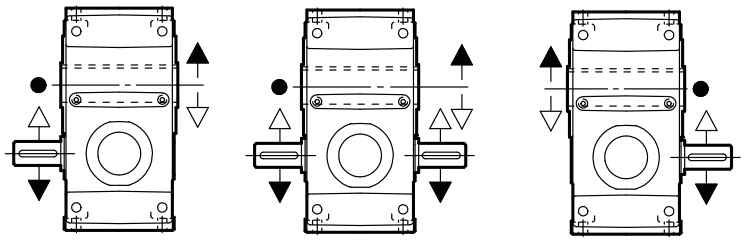
R I 63 ... 100



UP3A UP3D UP3L

UT. C 297

R I 125 ... 360



UP2A UP2D UP2L (140, 180, 225, 280, 360)

UT. C 4078

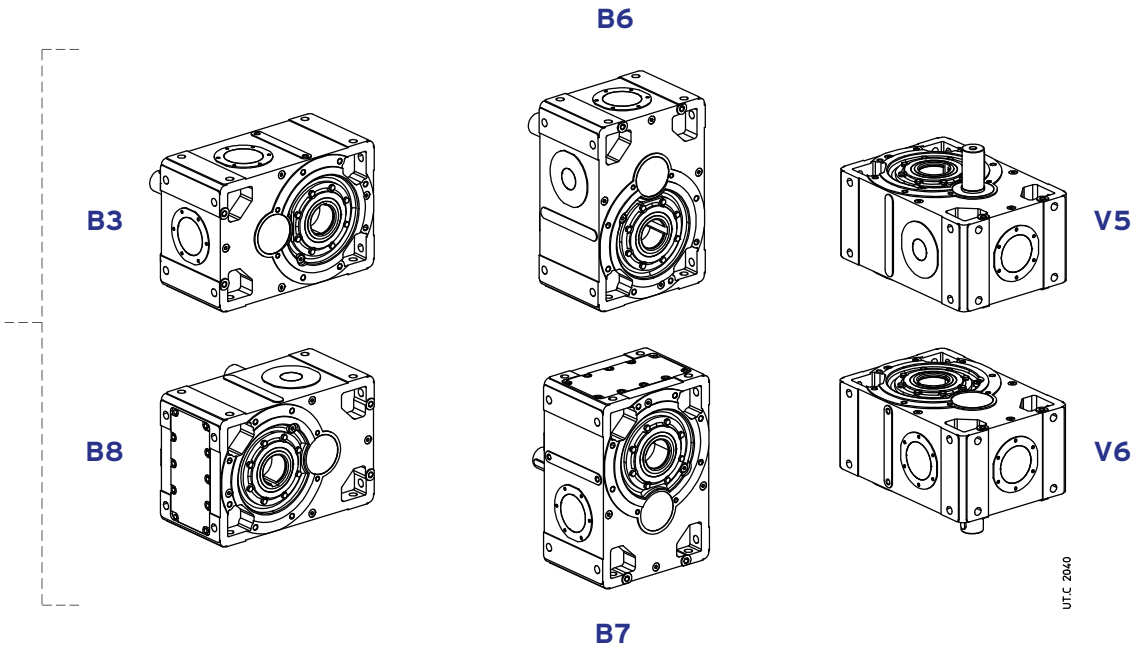
● Position of reference groove (see ch. 16) for radial load verification.

Mounting positions R I 63 ... 360

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

Designs:

UP3A
UP3D
UP3L
UP2A
UP2D
UP2L



Oil quantity R I 63 ... 360

Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	63	80	100	125	140	160	180	200	225	250	280	320, 321	360
B3	0,7	1,2	2,1	5,3	8,2	10,5	16,1	20,5	31,5	40	61	78	120
B8	0,7	1,2	2,1	5,3	5,5	10,5	10,7	20,5	21	40	41	78	80
B6	1	1,9	3,6	7	8,7	13,7	17	26,7	33,3	52	65	102	127
B7	0,8	1,5	2,6	7,6	9,7	15	19	29	37	57	72	111	141
V5	1	1,9	3,6	8,9	10,3	17,5	20,1	34	39,3	67	77	130	150
V6	0,5	0,95	1,8	4,7	4,9	9,3	9,5	18	18,6	35	36	67	71

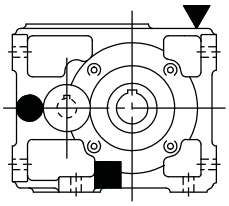
Lubrication details

R I 100

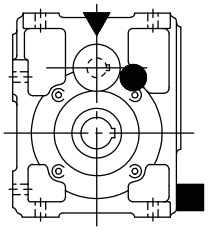
Designs:

UP3A
UP3D
UP3L

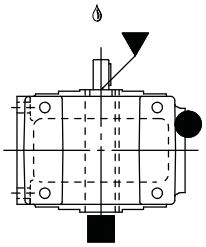
B3



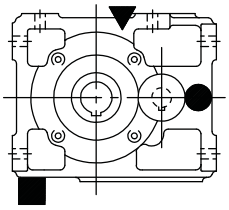
B6



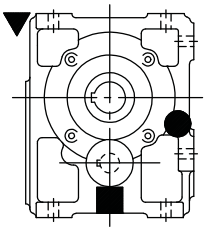
V5



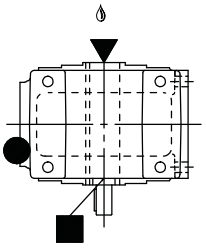
B8



B7



V6



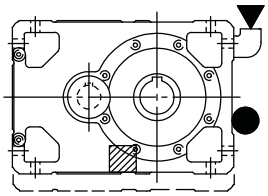
UT.C 1042

R I 125 ... 360

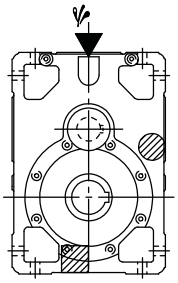
Designs:

UP2A
UP2D
UP2L

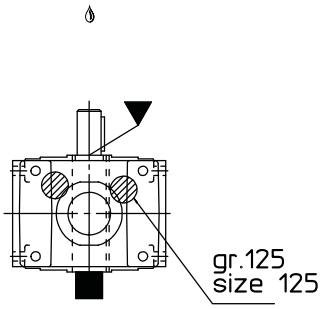
B3



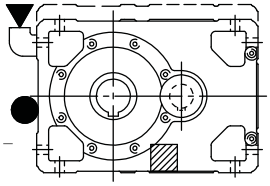
B6



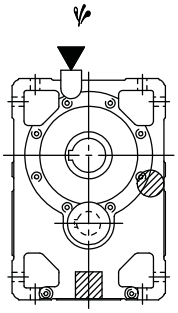
V5



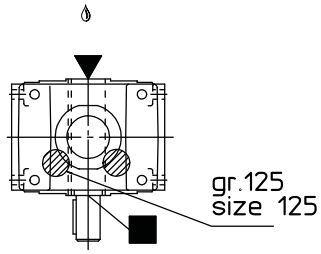
B8



B7



V6



UT.C 1043

Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.

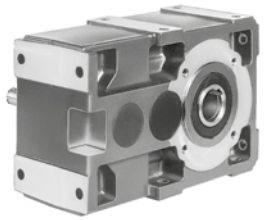
Possible bearing lubrication pump or lubrication device on high speed shaft (see ch. 17 (19)).

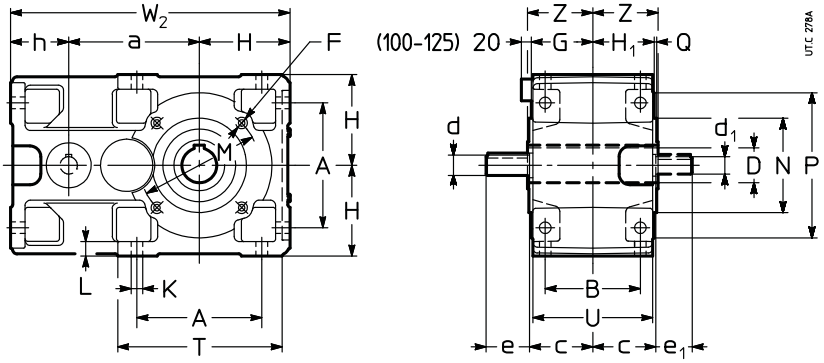
▼ oil filler plug
● oil level plug
■ oil drain plug
▨ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

8.2 - Gear reducers R 2I

Dimensions

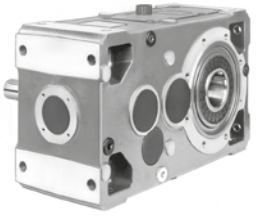
R 2I 50 ... 125

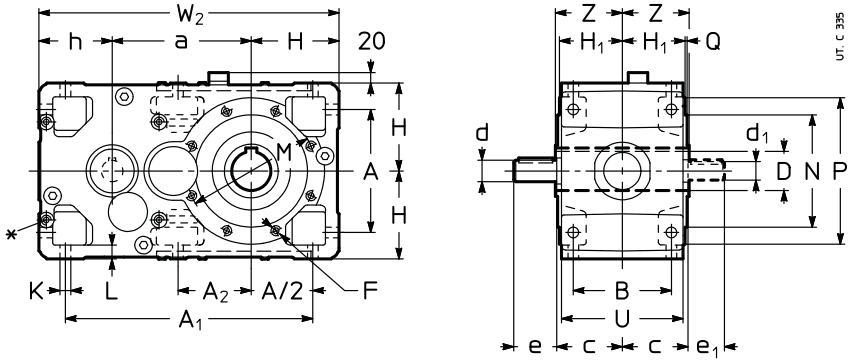




Size	a	A	B	c	D Ø H7	d Ø $i_N \leq 12,5$	e	d Ø $i_N \geq 16$	e	d_1 Ø	e_1	F 1)	H h11	H_1 G	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	W_2	Z	kg
50	90	86	75	51	24	16	30	14	30	14	30	M6	67	49	50	9,5	12	85	70	105	2,5	120	95	207	53	9
63	113	102	90	61	30	19	40	16	30	16	30	M8	80	58,5	62	11,5	14	100	80	120	3	143	114	255	63	14
64	115	102	90	61	32	19	40	16	30	16	30	M8	80	58,5	62	11,5	14	100	80	120	3	143	114	257	63	14
80	142,5	132	106	72	38	24	50	19	40	19	40	M10	100	69,5	70	14	17	130	110	160	3,5	180	135	313	75	26
81	142,5	132	106	72	40	24	50	19	40	19	40	M10	100	69,5	70	14	17	130	110	160	3,5	180	135	313	75	26
100	180	172	131	87	48	28	60	24	50	24	50	M12	125	84,5	80	16	20	165	130	200	3,5	228	165	385	90	47
125	225	212	162	107	60	32	80	32	80	28	60	2)	150	103,5	100	18	23	215	180	250	4	274	201	475	110	84

R 2I 140 ... 360



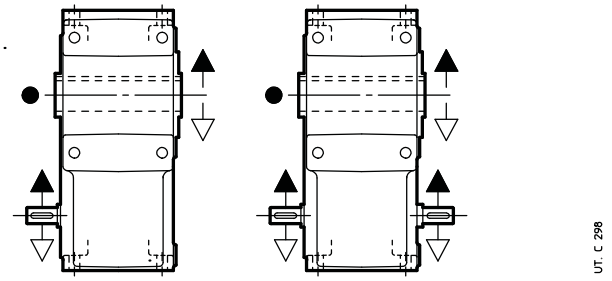


Size	a	A	A_1	A_2	B	c	D Ø H7	d Ø	e	d_1 Ø	e_1	F 1)	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	U	W_2	Z	kg
140	240	212	427	127	162	107	70	32	80	28	60	2)	150	103,5	125	18	23	265	230	300	4	201	515	125	108
160	285	252	507	-	201	132	80	42	110	38	80	M16	180	128,5	150	22	28	265	230	300	4	249	615	136	176
180	305	252	527	170	201	132	90	42	110	38	80	M16	180	128,5	150	22	28	300	250	350	5	249	635	150	194
200	360	320	635	-	250	162	100	55	110	48	110	2)	225	158	180	27	34	350	300	400	5	307	765	167	309
225	385	320	660	223	250	162	110	55	110	48	110	M20	225	158	180	27	34	400	350	450	5	307	790	180	340
250	450	396	791	-	310	200	125	70	140	55	110	2)	280	195	225	33	42	500	450	550	5	380	955	206	543
280	480	396	821	277	310	200	140	70	140	55	110	M24	280	195	225	33	42	500	450	550	5	380	985	222	597
320, 321	570	510	1005	-	386	245	160	90	170	70	140	2)	355	241	280	39	52	600	550	660	6	470	1205	254	1150
360	610	510	1045	358	386	245	180	90	170	70	140	M30	355	241	280	39	52	600	550	660	6	470	1245	273	1300

∗ Machined surface and N.4 threaded holes (dimensions in ch. 6 «Gear reducer input face») on opposite side (not in view) too.
1) Working length of thread 2 · F.
2) For dimension, number and angular position see ch. 6.

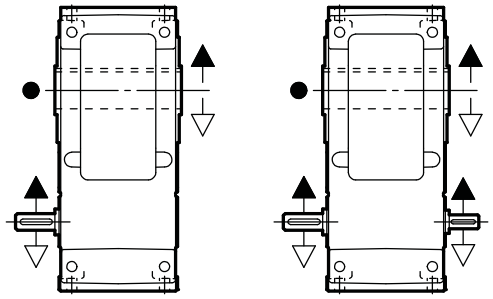
Designs (direction of rotation)

R 2I 50 ... 125



UP2A UP2D

R 2I 140 ... 360



UP2A UP2D

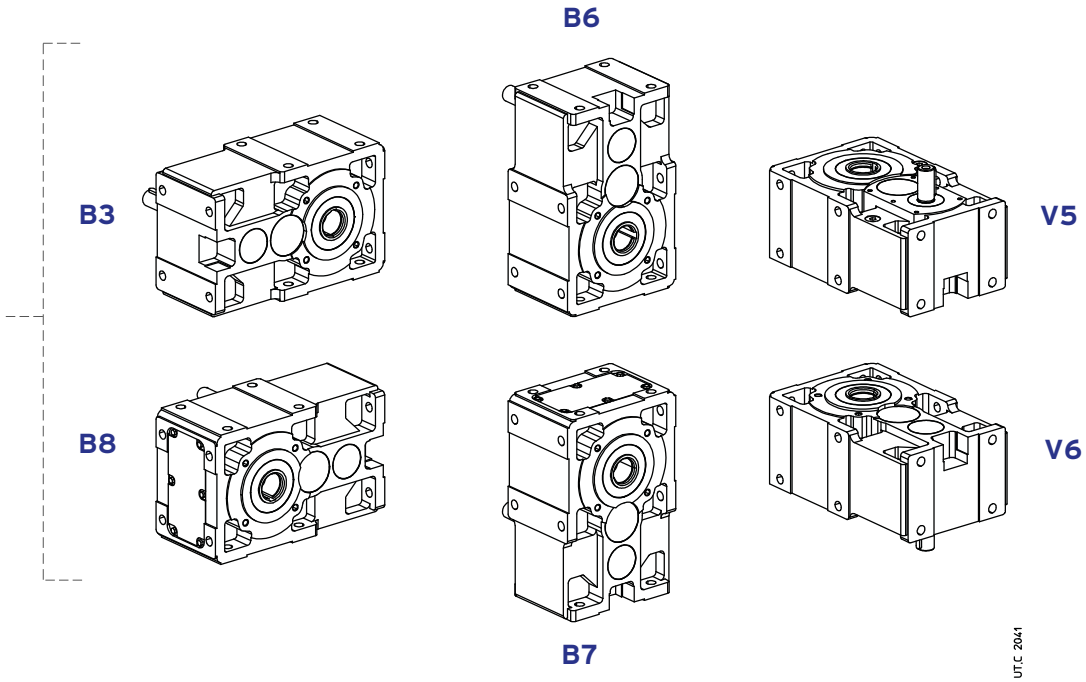
● Position of the reference groove (see ch. 16) for the verification of the radial load.

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

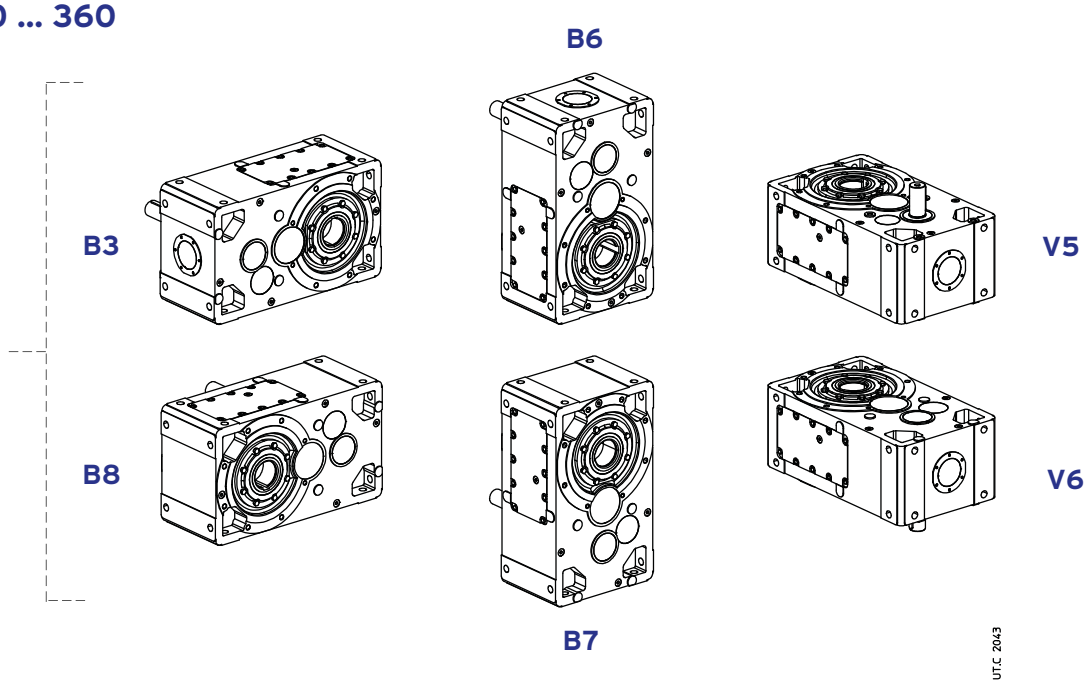
R 2I 50 ... 125

Designs:
UP2A
UP2D



R 2I 140 ... 360

Designs:
UP2A
UP2D



Oil quantity R 2I 50 ... 360

Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

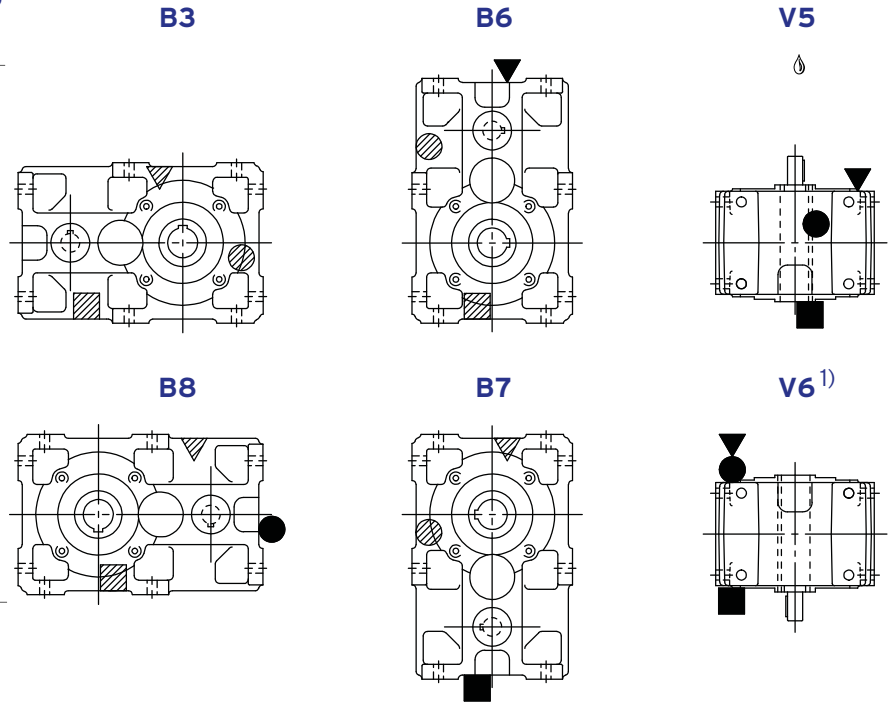
Mounting position	50	63, 64	80, 81	100	125	140	160	180	200	225	250	280	320, 321	360
B3	0,6	0,9	1,5	3,2	5,8	6,6	12	13	25	26	47	51	97	100
B8	0,6	0,9	1,5	3,2	5,8	6,6	12	13	25	26	47	51	97	100
B6	0,9	1,4	2,7	5,4	10,5	10,8	20	21	39	41	75	80	152	156
B7	0,8	1,2	2,3	5	9	9,7	18	19	35	37	67	72	137	140
V5	0,8	1,2	2,3	5	9	9,7	18	19	35	37	67	72	137	140
V6	0,8	1,2	2,3	5	9	9,7	18	19	35	37	67	72	137	140

Lubrication details

R 2I 100, 125

Designs:

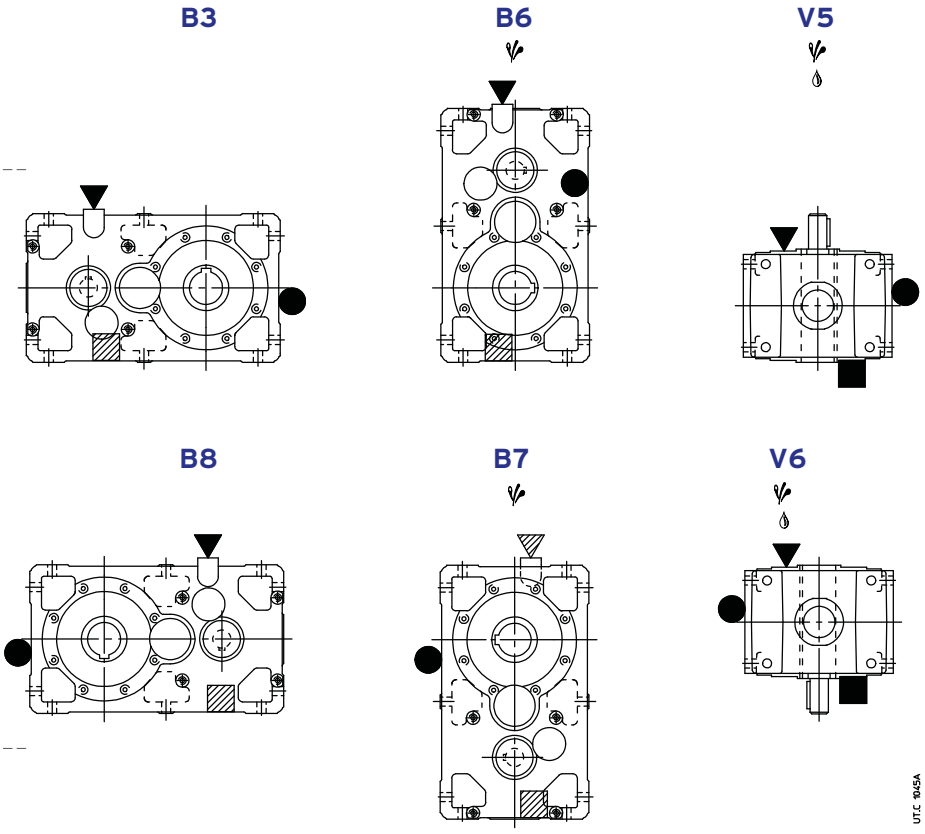
UP2A
UP2D



R 2I 140 ... 360

Designs:

UP2A
UP2D



Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.

Possible bearing lubrication pump or lubrication device on high speed shaft (see ch. 17 (19)).

1) See also ch. 6 page 43.

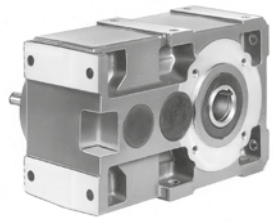
▼ oil filler plug
● oil level plug
■ oil drain plug
▼● oil filler plug with oil level dip stick

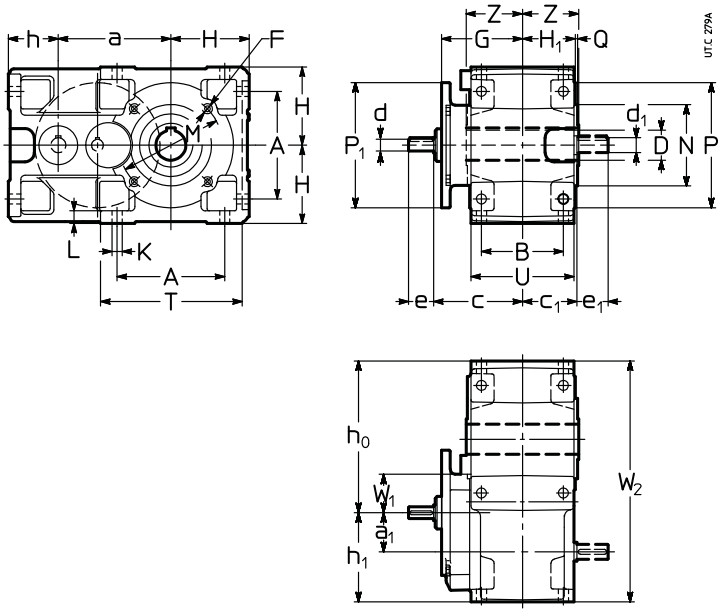
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

8.3 - Gear reducers R 3I

Dimensions

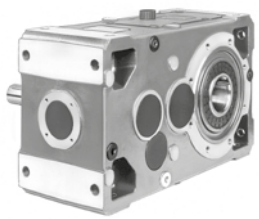
R 3I 63 ... 125

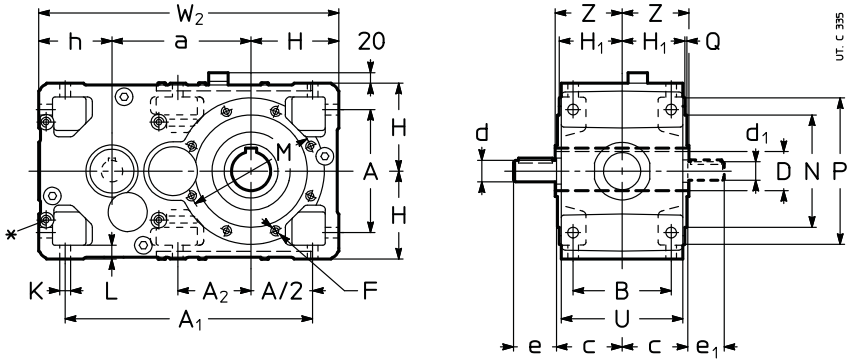




Size	a	a1	A	B	c	c1	D Ø H7	d Ø	e	d Ø	e	d1 Ø	e1	F	G	H h11	H1	h h11	h0 h11	h1 h11	K Ø	L	M Ø	N Ø h6	P Ø	P1 Ø	Q	T	U	W1	W2	Z	kg
								$i_N \leq 80$		$i_N \geq 100$				1)																			
63	113	40	102	90	99	61	30	11	23	-	-	16	30	M8	90	80	58,5	62	153	102	11,5	14	100	80	120	140[3]	3	143	114	40	255	63	17
64	115	40	102	90	99	61	32	11	23	-	-	16	30	M8	90	80	58,5	62	155	102	11,5	14	100	80	120	140[3]	3	143	114	40	257	63	17
80	142,5	50	132	106	117	72	38	14	30	-	-	19	40	M10	108	100	69,5	70	192,5	120	14	17	130	110	160	160[3]	3,5	180	135	50	313	75	29
81	142,5	50	132	106	117	72	40	14	30	-	-	19	40	M10	108	100	69,5	70	192,5	120	14	17	130	110	160	160[3]	3,5	180	135	50	313	75	29
100	180	62,5	172	131	141	87	48	19	40	16	30	24	50	M12	130	125	84,5	80	242	143	16	20	165	130	200	200	3,5	228	165	62	385	90	52
125	225	80	212	162	170	107	60	24	50	19	40	28	60	2)	159	150	103,5	100	295	180	18	23	215	180	250	200	4	274	201	86	475	110	92

R 3I 140 ... 360





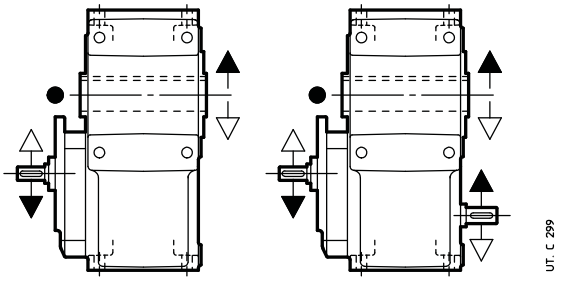
Size	a	A	A1	A2	B	c	D Ø H7	d Ø	e	d Ø	e	d1 Ø	e1	F	H h11	H1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	U	W2	Z	kg
								$i_N \leq 63$		$i_N \geq 71$				1)													
140	240	212	427	127	162	107	70	28	60	24	50	24	50	2)	150	103,5	125	18	23	265	230	300	4	201	515	125	108
160	285	252	507	-	201	132	80	32	80	28	60	28	60	M16	180	128,5	150	22	28	265	230	300	4	249	615	136	176
180	305	252	527	170	201	132	90	32	80	28	60	28	60	M16	180	128,5	150	22	28	300	250	350	5	249	635	150	194
200	360	320	635	-	250	162	100	42	110	38	80	38	80	2)	225	158	180	27	34	350	300	400	5	307	765	167	309
225	385	320	660	223	250	162	110	42	110	38	80	38	80	M20	225	158	180	27	34	400	350	450	5	307	790	180	340
250	450	396	791	-	310	200	125	55	110	48	110	45	110	2)	280	195	225	33	42	500	450	550	5	380	955	206	543
280	480	396	821	277	310	200	140	55	110	48	110	45	110	M24	280	195	225	33	42	500	450	550	5	380	985	222	597
320, 321	570	510	1005	-	386	245	160	70	140	55	110	55	110	2)	355	241	280	39	52	600	550	660	6	470	1205	254	1150
360	610	510	1045	358	386	245	180	70	140	55	110	55	110	M30	355	241	280	39	52	600	550	660	6	470	1245	273	1300

* Machined surface and N.4 threaded holes (dimensions in ch. 6 «Gear reducer input face») on opposite side (not in view) too.
1) Working length of thread 2 · F.
2) For dimension, number and angular position see ch. 6.
3) Square flange: for dimensions see ch. 6.

42

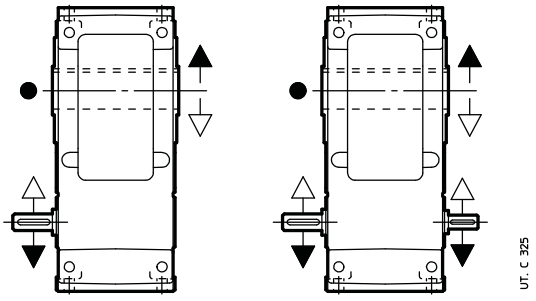
Designs (direction of rotation)

R 3I 63 ... 125



UP2A UP2D

R 3I 140 ... 360



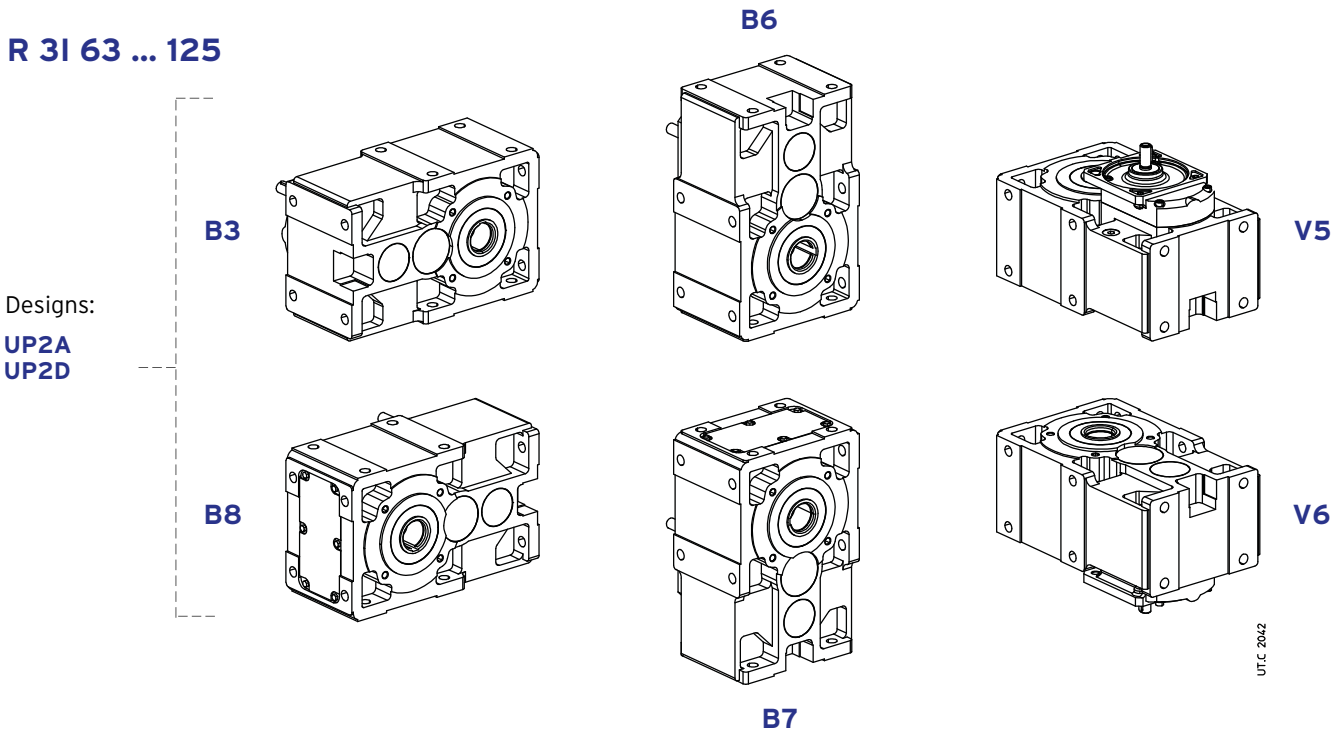
UP2A UP2D

● Position of the reference groove (see ch. 16) for radial load verification.

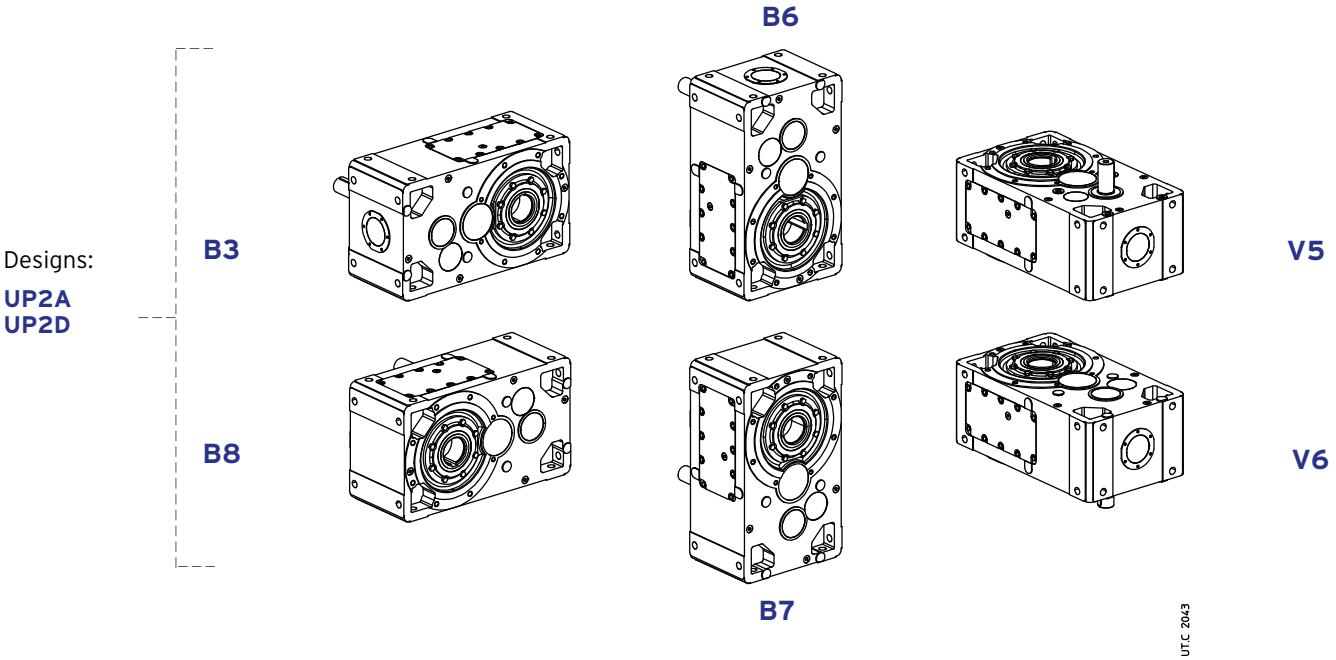
Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

R 3I 63 ... 125



R 3I 140 ... 360



Oil quantity R 3I 63 ... 360

Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

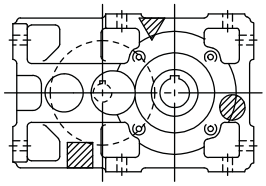
Mounting position	63, 64	80, 81	100	125	140	160	180	200	225	250	280	320, 321	360
B3	1	1,7	3,3	6,1	6,6	12	13	25	26	47	51	97	100
B8	1	1,7	3,3	6,1	9,7	18	19	35	37	67	72	137	140
B6	1,5	2,9	5,7	10,2	9,7	18	19	35	37	67	72	137	140
B7	1,3	2,5	4,9	8,8	9,7	18	19	35	37	67	72	137	140
V5	1,3	2,5	4,9	8,8	9,7	18	19	35	37	67	72	137	140
V6	1,3	2,5	4,9	8,8	9,7	18	19	35	37	67	72	137	140

Lubrication details

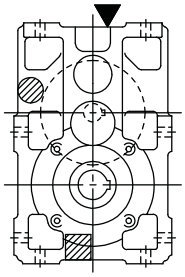
R 3I 100, 125

Designs:
UP2A
UP2D

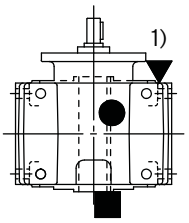
B3



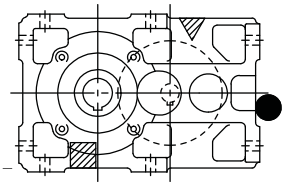
B6



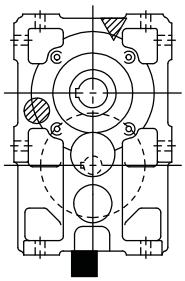
V5



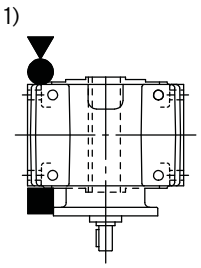
B8



B7



V6

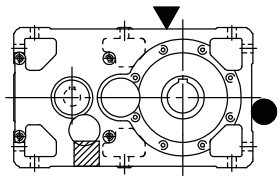


UT.C 1046

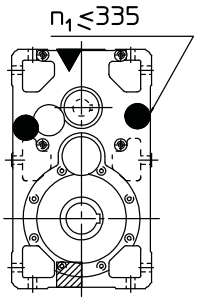
R 3I 140 ... 360

Designs:
UP2A
UP2D

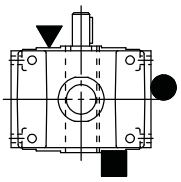
B3



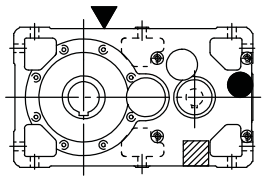
B6



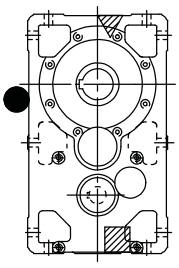
V5



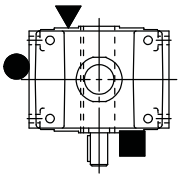
B8



B7



V6



UT.C 1047A

Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.

Possible bearing lubrication pump or lubrication device on high speed shaft (see ch. 17 (19)).

1) See also ch. 6 page. 43.

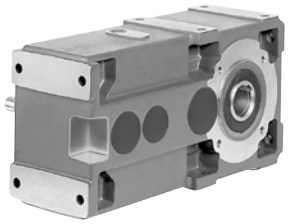
▼ oil filler plug
● oil level plug
■ oil drain plug
▼● oil filler plug with oil level dip stick

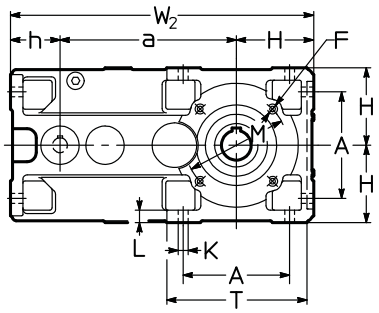
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

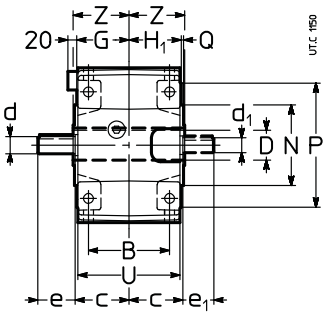
8.4 - Gear reducers R 21 - Long model

Dimensions

R 21 100, 125 - Long model

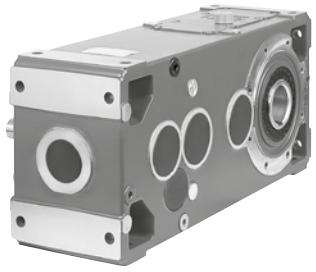


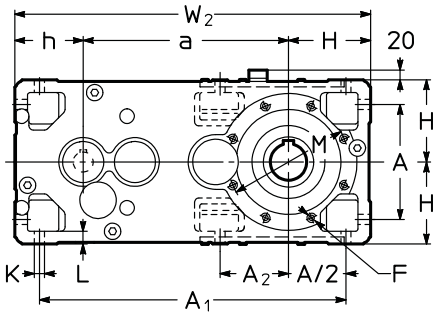


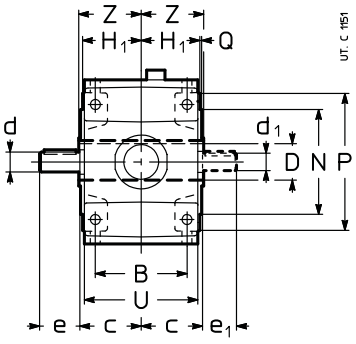


Size	a	A	B	c	D Ø H7	d Ø $i_N \leq 12,5$	e	d Ø $i_N \geq 16$	e	d_1 Ø	e_1	F 1)	H h11	H_1 G	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	W_2	Z	kg
100	284,7	172	131	87	48	28	60	24	50	24	50	M12	125	84,5	80,3	16	20	165	130	200	3,5	228	165	490	90	56
125	358	212	162	107	60	32	80	32	80	28	60	2)	150	103,5	100	18	23	215	180	250	4	274	201	608	110	100

R 21 140 ... 360 - Long model







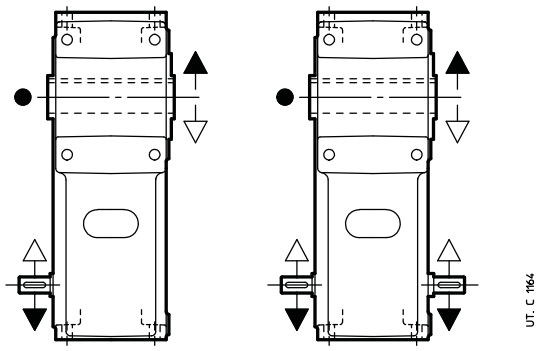
Size	a	A	A_1	A_2	B	c	D Ø H7	d Ø	e	d_1 Ø	e_1	F 1)	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	U	W_2	Z	kg
140	373	212	560	127	162	107	70	32	80	28	60	2)	150	103,5	125	18	23	265	230	300	4	201	648	125	124
160	450	252	672	-	201	132	80	42	110	38	80	M16	180	128,5	150	22	28	265	230	300	4	249	780	136	204
180	470	252	692	170	201	132	90	42	110	38	80	M16	180	128,5	150	22	28	300	250	350	5	249	800	150	222
200	556	320	831	-	250	162	100	55	110	48	110	2)	225	158	180	27	34	350	300	400	5	307	961	167	357
225	581	320	856	223	250	162	110	55	110	48	110	M20	225	158	180	27	34	400	350	450	5	307	986	180	389
250	690	396	1031	-	310	200	125	70	140	55	110	2)	280	195	225	33	42	500	450	550	5	380	1195	206	625
280	720	396	1061	277	310	200	140	70	140	55	110	M24	280	195	225	33	42	500	450	550	5	380	1225	222	682
320, 321	870	510	1305	-	386	245	160	90	170	70	140	2)	355	241	280	39	52	600	550	660	6	470	1505	254	1290
360	910	510	1345	358	386	245	180	90	170	70	140	M30	355	241	280	39	52	600	550	660	6	470	1545	273	1445

1) Working length of thread 2 · F.
2) For dimension, number and angular position see ch. 6.

42

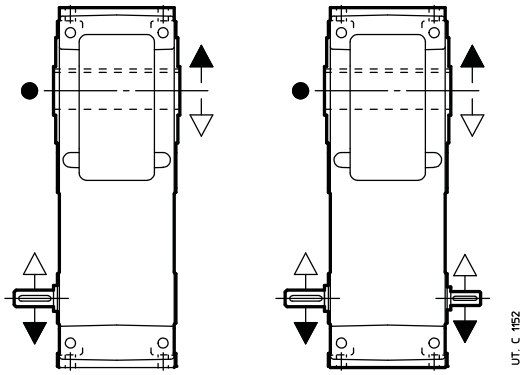
Designs (direction of rotation)

R 2I 100, 125 - Long model



UP4A UP4D

R 2I 140 ... 360 - Long model



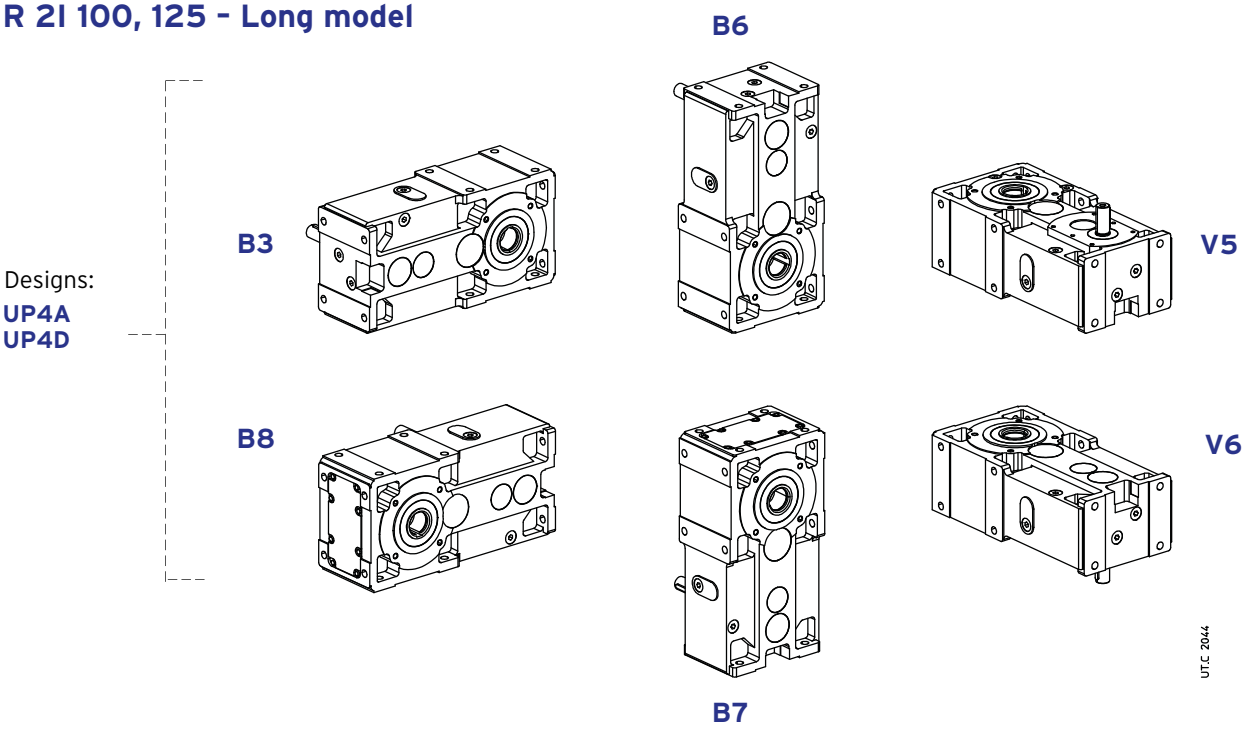
UP4A UP4D

● Position of reference groove (see ch. 16) for radial load verification.

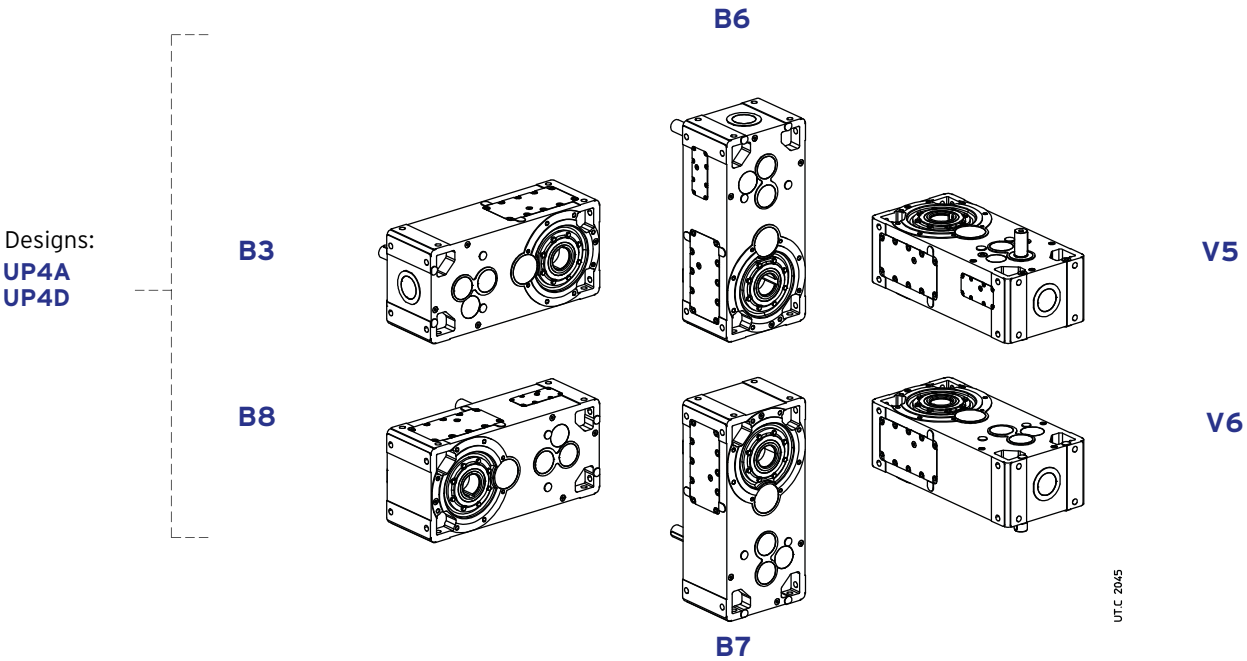
Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

R 2I 100, 125 - Long model



R 2I 140 ... 360 - Long model



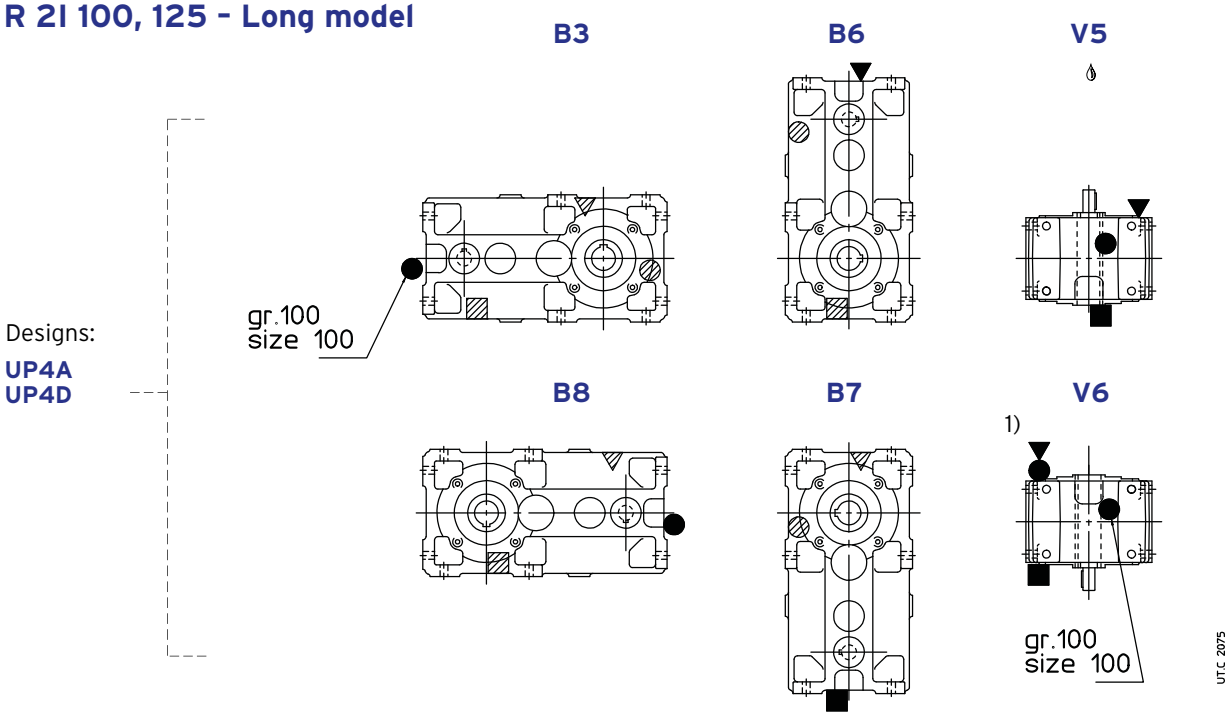
Oil quantity R 2I 100... 360 - Long model

Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

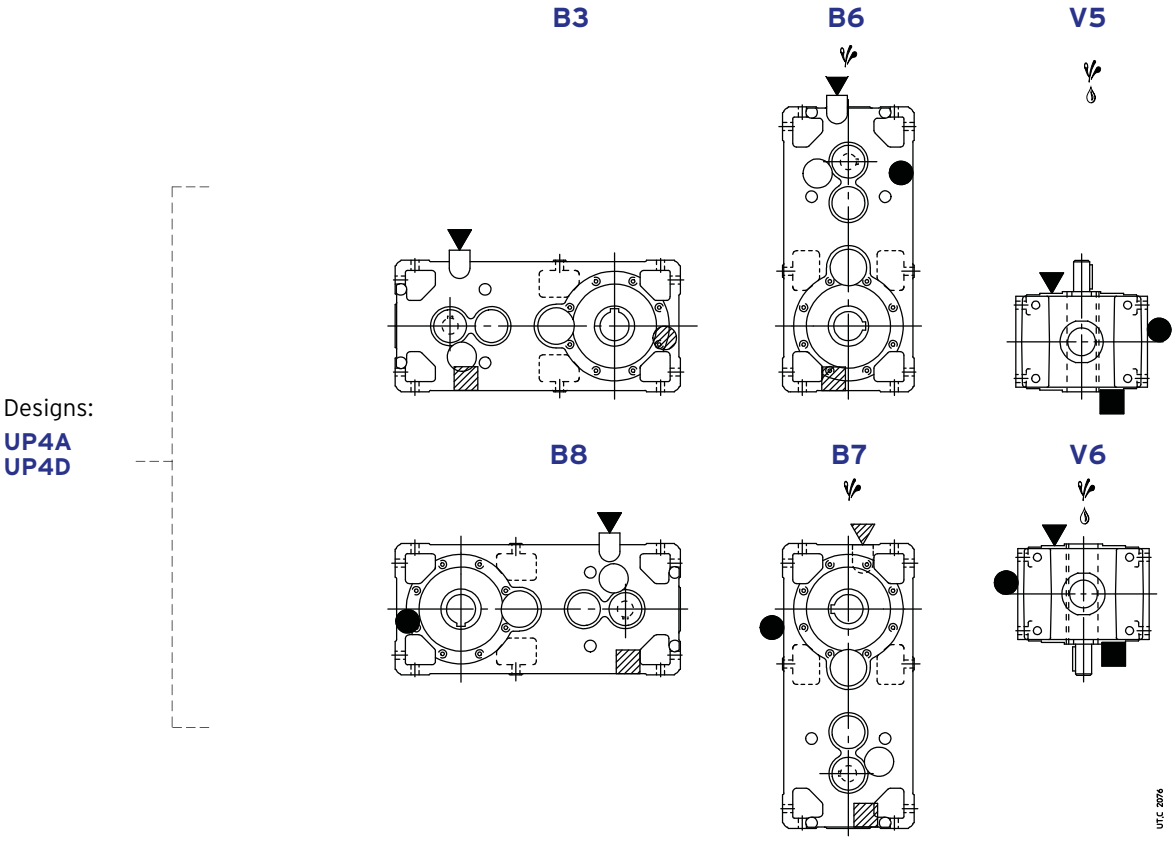
Mounting position	100	125	140	160	180	200	225	250	280	320, 321	360
B3	4,2	8	8,8	16	17,4	33	34	62	66	124	127
B8	4,2	8	8,8	16	17,4	33	34	62	66	124	127
B6	8	15,8	16,2	30	31	58	60	111	116	214	218
B7	7,6	14	15,2	28	29	54	56	103	108	199	202
V5	6,6	6,6	13,2	24	25	47	49	89	94	177	180
V6	12	12	13,2	24	25	47	49	89	94	177	180

Lubrication details

R 2I 100, 125 - Long model



R 2I 140 ... 360 - Long model



Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.

Possible bearing lubrication pump or lubrication device on high speed shaft (see ch. 17 (19)).

1) See also ch. 6 page. 43.

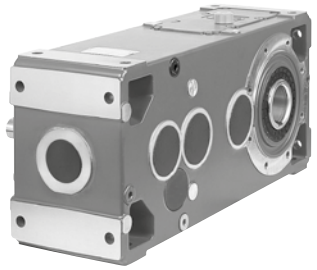
▼ oil filler plug
● oil level plug
■ oil drain plug
▼● oil drain plug with oil level dip stick

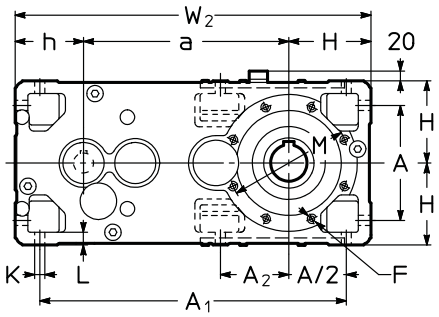
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

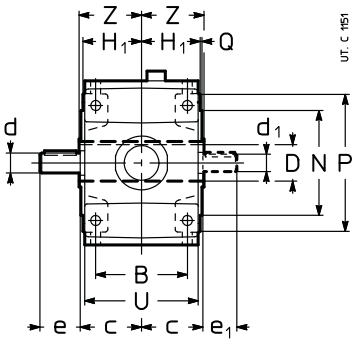
8.5 - Gear reducers R 3I – Long model

Dimensions

R 3I 140 ... 360 – Long model



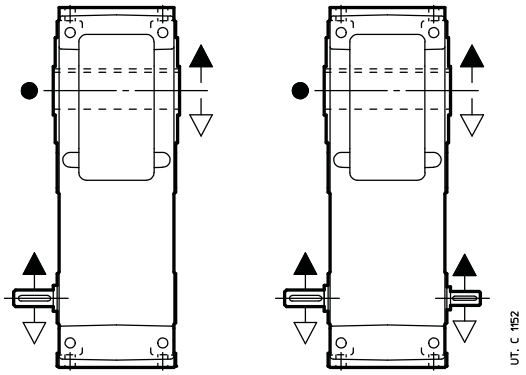




Size	a	A	A_1	A_2	B	c	D Ø H7	d Ø $i_N \leq 63$	e	d Ø $i_N \geq 71$	e	d_1 Ø	e_1	F 1)	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	U	W_2	Z	kg
140	373	212	560	127	162	107	70	28	60	24	50	24	50	2)	150	103,5	125	18	23	265	230	300	4	201	648	125	124
160	450	252	672	-	201	132	80	32	80	28	60	28	60	M16	180	128,5	150	22	28	265	230	300	4	249	780	136	204
180	470	252	692	170	201	132	90	32	80	28	60	28	60	M16	180	128,5	150	22	28	300	250	350	5	249	800	150	222
200	556	320	831	-	250	162	100	42	110	38	80	38	80	2)	225	158	180	27	34	350	300	400	5	307	961	167	357
225	581	320	856	223	250	162	110	42	110	38	80	38	80	M20	225	158	180	27	34	400	350	450	5	307	986	180	389
250	690	396	1031	-	310	200	125	55	110	48	110	45	110	2)	280	195	225	33	42	500	450	550	5	380	1195	206	625
280	720	396	1061	277	310	200	140	55	110	48	110	45	110	M24	280	195	225	33	42	500	450	550	5	380	1225	222	682
320, 321	870	510	1305	-	386	245	160	70	140	55	110	55	110	2)	355	241	280	39	52	600	550	660	6	470	1505	254	1290
360	910	510	1345	358	386	245	180	70	140	55	110	55	110	M30	355	241	280	39	52	600	550	660	6	470	1545	273	1445

Designs (direction of rotation)

R 3I 140 ... 360 – Long model



UP4A UP4D

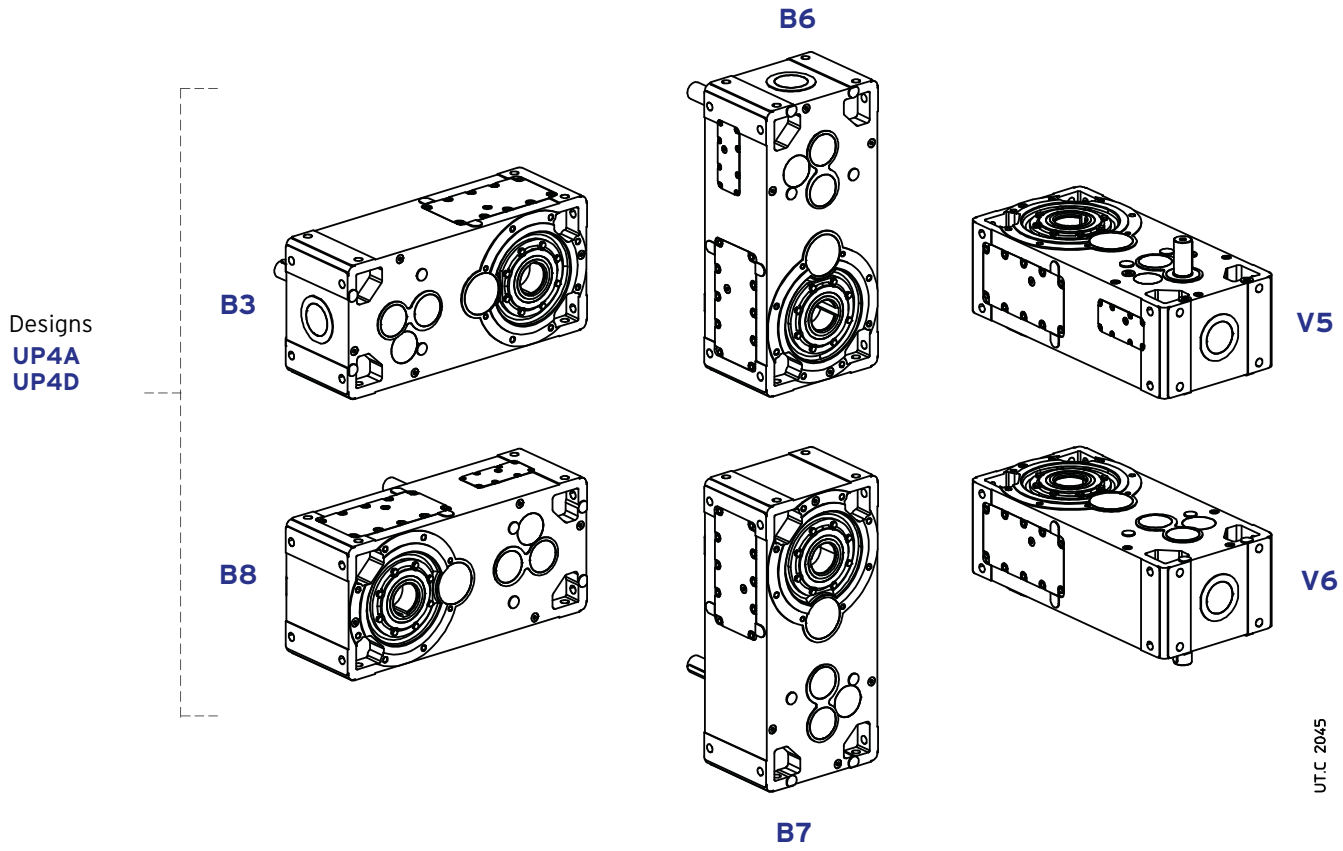
● Position of reference groove (see ch. 6) for radial load verification.
1) Working length of thread 2 · F.
2) For dimension, number and angular position see ch. 6.

42

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

R 3I 140 ... 360 - Long model



Oil quantity R 3I 140 ... 360 - Long model

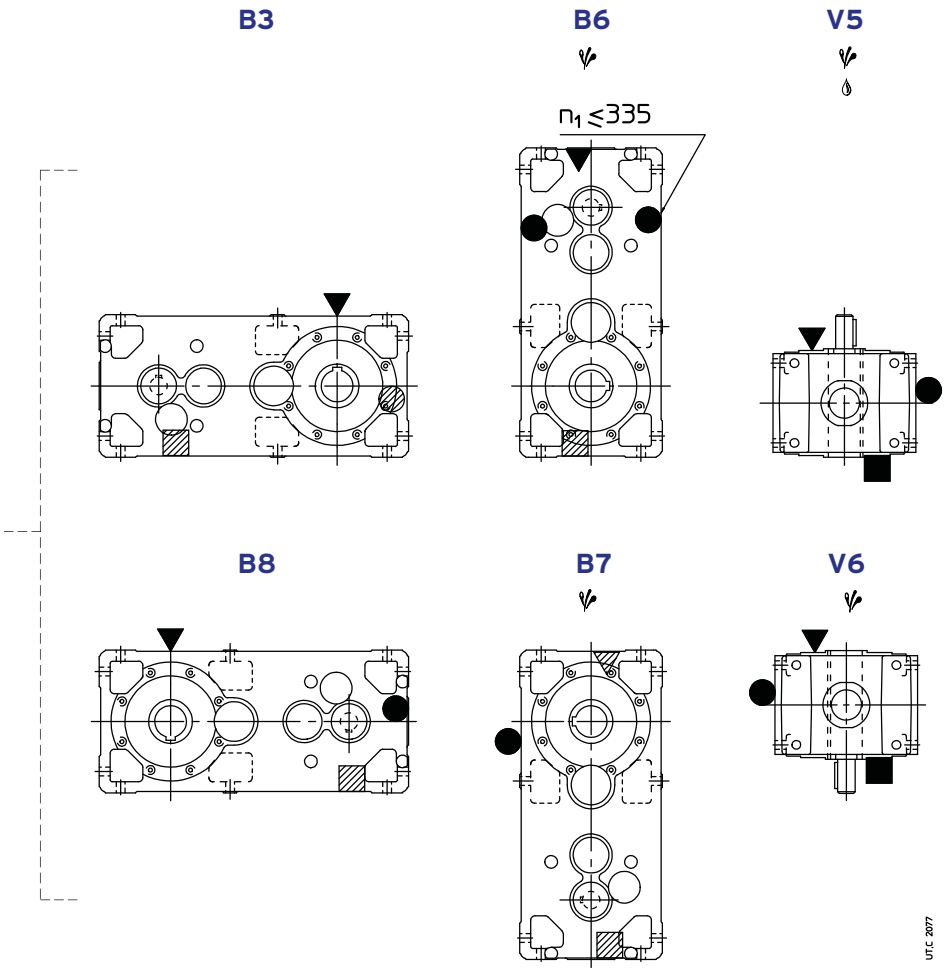
Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	140	160	180	200	225	250	280	320, 321	360
B3	8,8	16	17,4	33	34	62	66	124	127
B8	12,2	22	23	43	45	82	87	164	167
B6	15,2	28	29	54	56	103	108	199	202
B7	15,2	28	29	54	56	103	108	199	202
V5	13,2	24	25	47	49	89	94	177	180
V6	13,2	24	25	47	49	89	94	177	180

Lubrication details

R 3I 140 ... 360 - Long model

Designs:
UP4A
UP4D



Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.

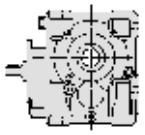
Possible bearing lubrication pump or lubrication device on high speed shaft (see ch. 17 (19)).

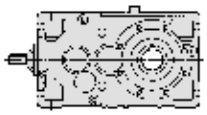
▼ oil filler plug
● oil level plug
■ oil drain plug

▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

9 – Bevel helical gear reducer selection tables

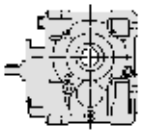
9 - Bevel helical gear reducer selection tables

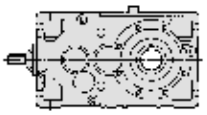




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / *i* 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
45 000 000	4	–	–	–	–	–	–	–	–	–	–	3 830 CI/4,1	–	7 480 CI/4	–	13 030 CI/3,9	16 290 CI/3,9	–			
40 000 000	4	–	–	–	–	–	–	–	–	–	–	3 930 CI/4,1	–	7 670 CI/4	–	13 380 CI/3,9	16 720 CI/3,9	–			
35 500 000	5	–	–	–	–	–	–	1 200 CI/5,06	–	2 280 CI/4,89	–	4 780 CI/5,11	–	9 450 CI/5,06	–	16 320 CI/4,89	20 390 CI/4,89	–			
	4	–	–	–	–	–	–	–	–	–	–	4 040 CI/4,1	–	7 880 CI/4	–	13 740 CI/3,9	17 180 CI/3,9	–			
31 500 000	5	–	–	–	–	–	–	1 230 CI/5,06	–	2 340 CI/4,89	–	4 900 CI/5,11	–	9 710 CI/5,06	–	16 750 CI/4,89	20 940 CI/4,89	–			
	4	–	–	–	–	–	–	–	–	–	–	4 140 CI/4,1	–	8 080 CI/4	–	14 090 CI/3,9	17 620 CI/3,9	–			
28 000 000	6,3	93 CI/6,53	165 CI/6,57	210 CI/6,57	355 CI/6,27	395 CI/6,27	730 CI/6,53	1 560 CI/6,57	–	2 930 CI/6,27	–	6 100 CI/6,53	–	12 280 CI/6,57	–	20 910 CI/6,27	26 140 CI/6,27	–			
	5	–	–	–	–	–	–	1 260 CI/5,06	–	2 410 CI/4,89	–	5 040 CI/5,11	–	9 970 CI/5,06	–	17 210 CI/4,89	21 510 CI/4,89	–			
	4	–	–	–	–	–	–	–	–	–	–	4 260 CI/4,1	–	8 320 CI/4	–	14 490 CI/3,9	18 120 CI/3,9	–			
25 000 000	6,3	95 CI/6,53	170 CI/6,57	215 CI/6,57	365 CI/6,27	410 CI/6,27	750 CI/6,53	1 600 CI/6,57	–	3 010 CI/6,27	–	6 270 CI/6,53	–	12 610 CI/6,57	–	21 470 CI/6,27	26 840 CI/6,27	–			
	5	–	–	–	–	–	–	1 300 CI/5,06	–	2 470 CI/4,89	–	5 170 CI/5,11	–	10 220 CI/5,06	–	17 650 CI/4,89	22 060 CI/4,89	–			
	4	–	–	–	–	–	–	–	–	–	–	4 390 CI/4,1	–	8 580 CI/4	–	14 960 CI/3,9	18 710 CI/3,9	–			
22 400 000	8	110 CI/7,85	200 CI/8	255 CI/8	440 CI/8,33	510 CI/8,33	875 CI/7,85	1 770 CI/8	2 180 CI/8,15	3 540 CI/8,27	4 440 CI/8,31	7 060 CI/8,27	8 560 CI/8,14	13 160 CI/8,21	17 140 CI/8,15	22 170 CI/7,83	27 610 CI/7,83	33 370 CI/8			
	6,3	98 CI/6,53	175 CI/6,57	220 CI/6,57	375 CI/6,27	420 CI/6,27	770 CI/6,53	1 640 CI/6,57	–	3 090 CI/6,27	–	6 440 CI/6,53	–	12 950 CI/6,57	–	22 060 CI/6,27	27 570 CI/6,27	–			
	5	–	–	–	–	–	–	1 330 CI/5,06	–	2 540 CI/4,89	–	5 310 CI/5,11	–	10 520 CI/5,06	–	18 150 CI/4,89	22 690 CI/4,89	–			
	4	–	–	–	–	–	–	–	–	–	–	4 510 CI/4,1	–	8 820 CI/4	–	15 370 CI/3,9	19 220 CI/3,9	–			
20 000 000	9	–	–	–	–	–	–	–	2 400 CI/9	3 620 CI/9,04	4 980 CI/9,33	7 150 CI/8,93	9 810 CI/9,33	14 480 CI/9,04	18 920 CI/9	24 760 CI/8,75	30 840 CI/8,75	37 400 CI/9,2			
	8	110 CI/7,85	205 CI/8	260 CI/8	450 CI/8,33	520 CI/8,33	900 CI/7,85	1 820 CI/8	2 230 CI/8,15	3 630 CI/8,27	4 550 CI/8,31	7 250 CI/8,27	8 790 CI/8,14	13 510 CI/8,21	17 600 CI/8,15	22 760 CI/7,83	28 340 CI/7,83	34 260 CI/8			

For n_1 lower than 560 min^{-1} see page 195.

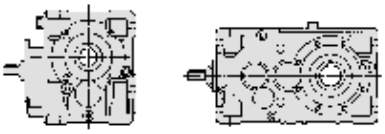




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
20 000 000	6,3	100 **CI/6,53**	180 **CI/6,57**	225 **CI/6,57**	385 **CI/6,27**	430 **CI/6,27**	790 **CI/6,53**	1 680 **CI/6,57**	–	3 170 **CI/6,27**	–	6 600 **CI/6,53**	–	13 280 **CI/6,57**	–	22 620 **CI/6,27**	28 270 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 380 **CI/5,06**	–	2 620 **CI/4,89**	–	5 480 **CI/5,11**	–	10 860 **CI/5,06**	–	18 740 **CI/4,89**	23 420 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	4 630 **CI/4,1**	–	9 050 **CI/4**	–	15 780 **CI/3,9**	19 730 **CI/3,9**	–			
18 000 000	10	105 **CI/10,3**	210 **CI/10**	255 **CI/10**	440 **CI/10,4**	510 **CI/10,4**	895 **CI/9,81**	1 790 **CI/10**	2 310 **CI/10,2**	3 610 **CI/10,3**	4 710 **CI/10,4**	7 200 **CI/10,3**	9 100 **CI/10,2**	14 370 **CI/10**	18 230 **CI/10,2**	25 590 **CI/10,2**	31 330 **CI/10,2**	35 240 **CI/10**			
	9	–	–	–	–	–	–	–	2 470 **CI/9**	3 720 **CI/9,04**	5 120 **CI/9,33**	7 340 **CI/8,93**	10 070 **CI/9,33**	14 860 **CI/9,04**	19 420 **CI/9**	25 420 **CI/8,75**	31 650 **CI/8,75**	38 390 **CI/9,2**			
	8	115 **CI/7,85**	210 **CI/8**	265 **CI/8**	460 **CI/8,33**	535 **CI/8,33**	925 **CI/7,85**	1 870 **CI/8**	2 300 **CI/8,15**	3 730 **CI/8,27**	4 680 **CI/8,31**	7 450 **CI/8,27**	9 030 **CI/8,14**	13 880 **CI/8,21**	18 080 **CI/8,15**	23 380 **CI/7,83**	29 110 **CI/7,83**	35 200 **CI/8**			
	6,3	105 **CI/6,53**	185 **CI/6,57**	230 **CI/6,57**	395 **CI/6,27**	440 **CI/6,27**	810 **CI/6,53**	1 730 **CI/6,57**	–	3 260 **CI/6,27**	–	6 790 **CI/6,53**	–	13 660 **CI/6,57**	–	23 260 **CI/6,27**	29 080 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 410 **CI/5,06**	–	2 690 **CI/4,89**	–	5 630 **CI/5,11**	–	11 150 **CI/5,06**	–	19 250 **CI/4,89**	24 060 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	4 760 **CI/4,1**	–	9 300 **CI/4**	–	16 210 **CI/3,9**	20 270 **CI/3,9**	–			
16 000 000	11,2	–	–	–	–	–	–	–	2 480 **CI/11,3**	3 380 **CI/11,4**	5 260 **CI/11,7**	6 670 **CI/11,3**	10 430 **CI/11,7**	13 510 **CI/11,4**	20 120 **CI/11,3**	23 360 **CI/11**	29 200 **CI/11**	38 140 **CI/11,5**			
	10	105 **CI/10,3**	215 **CI/10**	260 **CI/10**	455 **CI/10,4**	525 **CI/10,4**	920 **CI/9,81**	1 840 **CI/10**	2 370 **CI/10,2**	3 700 **CI/10,3**	4 840 **CI/10,4**	7 390 **CI/10,3**	9 350 **CI/10,2**	14 750 **CI/10**	18 720 **CI/10,2**	26 270 **CI/10,2**	32 160 **CI/10,2**	36 180 **CI/10**			
	9	–	–	–	–	–	–	–	2 530 **CI/9**	3 820 **CI/9,04**	5 260 **CI/9,33**	7 540 **CI/8,93**	10 350 **CI/9,33**	15 270 **CI/9,04**	19 960 **CI/9**	26 120 **CI/8,75**	32 520 **CI/8,75**	39 440 **CI/9,2**			
	8	115 **CI/7,85**	215 **CI/8**	275 **CI/8**	475 **CI/8,33**	550 **CI/8,33**	950 **CI/7,85**	1 920 **CI/8**	2 350 **CI/8,15**	3 830 **CI/8,27**	4 800 **CI/8,31**	7 640 **CI/8,27**	9 260 **CI/8,14**	14 230 **CI/8,21**	18 540 **CI/8,15**	23 980 **CI/7,83**	29 860 **CI/7,83**	36 090 **CI/8**			
	6,3	105 **CI/6,53**	190 **CI/6,57**	240 **CI/6,57**	410 **CI/6,27**	455 **CI/6,27**	840 **CI/6,53**	1 790 **CI/6,57**	–	3 360 **CI/6,27**	–	7 010 **CI/6,53**	–	14 100 **CI/6,57**	–	24 020 **CI/6,27**	30 020 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 450 **CI/5,06**	–	2 770 **CI/4,89**	–	5 780 **CI/5,11**	–	11 450 **CI/5,06**	–	19 760 **CI/4,89**	24 700 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	4 830 **CI/4,1**	–	9 430 **CI/4**	–	16 440 **CI/3,9**	20 540 **CI/3,9**	–			
14 000 000	12,5	110 **CI/12,4**	200 **CI/12,6**	255 **CI/12,6**	445 **CI/13,1**	515 **CI/13,1**	875 **CI/12,4**	1 820 **CI/12,6**	2 180 **CI/12,9**	3 860 **CI/13**	4 440 **CI/13,1**	7 720 **CI/13**	8 560 **CI/12,8**	14 950 **CI/12,6**	17 140 **CI/12,9**	23 190 **CI/12,8**	28 390 **CI/12,8**	33 370 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	2 540 **CI/11,3**	3 470 **CI/11,4**	5 400 **CI/11,7**	6 850 **CI/11,3**	10 710 **CI/11,7**	13 870 **CI/11,4**	20 660 **CI/11,3**	23 980 **CI/11**	29 980 **CI/11**	39 160 **CI/11,5**			

For n_1 lower than 560 min^{-1} see page 195.

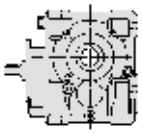
9 - Bevel helical gear reducer selection tables

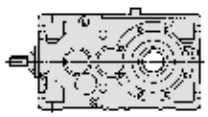


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
14 000 000	10	110 **CI/10,3**	220 **CI/10**	270 **CI/10**	465 **CI/10,4**	540 **CI/10,4**	945 **CI/9,81**	1 890 **CI/10**	2 440 **CI/10,2**	3 810 **CI/10,3**	4 970 **CI/10,4**	7 590 **CI/10,3**	9 600 **CI/10,2**	15 160 **CI/10**	19 230 **CI/10,2**	26 990 **CI/10,2**	33 050 **CI/10,2**	37 170 **CI/10**			
	9	–	–	–	–	–	–	–	2 600 **CI/9**	3 910 **CI/9,04**	5 390 **CI/9,33**	7 730 **CI/8,93**	10 610 **CI/9,33**	15 660 **CI/9,04**	20 460 **CI/9**	26 780 **CI/8,75**	33 350 **CI/8,75**	40 450 **CI/9,2**			
	8	120 **CI/7,85**	225 **CI/8**	280 **CI/8**	490 **CI/8,33**	565 **CI/8,33**	975 **CI/7,85**	1 970 **CI/8**	2 420 **CI/8,15**	3 930 **CI/8,27**	4 930 **CI/8,31**	7 860 **CI/8,27**	9 520 **CI/8,14**	14 640 **CI/8,21**	19 070 **CI/8,15**	24 660 **CI/7,83**	30 710 **CI/7,83**	37 120 **CI/8**			
	6,3	110 **CI/6,53**	195 **CI/6,57**	245 **CI/6,57**	420 **CI/6,27**	470 **CI/6,27**	860 **CI/6,53**	1 840 **CI/6,57**	–	3 450 **CI/6,27**	–	7 200 **CI/6,53**	–	14 490 **CI/6,57**	–	24 670 **CI/6,27**	30 840 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 490 **CI/5,06**	–	2 840 **CI/4,89**	–	5 940 **CI/5,11**	–	11 760 **CI/5,06**	–	20 300 **CI/4,89**	25 380 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	4 890 **CI/4,1**	–	9 550 **CI/4**	–	16 640 **CI/3,9**	20 800 **CI/3,9**	–			
12 500 000	14	–	–	–	–	–	–	–	2 400 **CI/14,2**	3 760 **CI/14,2**	4 980 **CI/14,7**	7 680 **CI/14,2**	9 810 **CI/14,7**	15 350 **CI/14,1**	18 920 **CI/14,2**	24 610 **CI/14,2**	29 210 **CI/14,2**	38 380 **CI/14,5**			
	12,5	110 **CI/12,4**	205 **CI/12,6**	260 **CI/12,6**	455 **CI/13,1**	530 **CI/13,1**	900 **CI/12,4**	1 870 **CI/12,6**	2 230 **CI/12,9**	3 960 **CI/13**	4 550 **CI/13,1**	7 930 **CI/13**	8 790 **CI/12,8**	15 350 **CI/12,6**	17 600 **CI/12,9**	23 800 **CI/12,8**	29 140 **CI/12,8**	34 260 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	2 610 **CI/11,3**	3 560 **CI/11,4**	5 550 **CI/11,7**	7 040 **CI/11,3**	11 000 **CI/11,7**	14 250 **CI/11,4**	21 220 **CI/11,3**	24 640 **CI/11**	30 800 **CI/11**	40 230 **CI/11,5**			
	10	110 **CI/10,3**	225 **CI/10**	275 **CI/10**	475 **CI/10,4**	555 **CI/10,4**	970 **CI/9,81**	1 940 **CI/10**	2 500 **CI/10,2**	3 900 **CI/10,3**	5 100 **CI/10,4**	7 780 **CI/10,3**	9 850 **CI/10,2**	15 540 **CI/10**	19 720 **CI/10,2**	27 670 **CI/10,2**	33 890 **CI/10,2**	38 110 **CI/10**			
	9	–	–	–	–	–	–	–	2 670 **CI/9**	4 030 **CI/9,04**	5 540 **CI/9,33**	7 950 **CI/8,93**	10 910 **CI/9,33**	16 100 **CI/9,04**	21 050 **CI/9**	27 540 **CI/8,75**	34 300 **CI/8,75**	41 600 **CI/9,2**			
	8	125 **CI/7,85**	230 **CI/8**	290 **CI/8**	505 **CI/8,33**	585 **CI/8,33**	1 010 **CI/7,85**	2 030 **CI/8**	2 500 **CI/8,15**	4 060 **CI/8,27**	5 090 **CI/8,31**	8 110 **CI/8,27**	9 830 **CI/8,14**	15 110 **CI/8,21**	19 690 **CI/8,15**	25 460 **CI/7,83**	31 700 **CI/7,83**	38 320 **CI/8**			
	6,3	110 **CI/6,53**	200 **CI/6,57**	250 **CI/6,57**	430 **CI/6,27**	480 **CI/6,27**	885 **CI/6,53**	1 890 **CI/6,57**	–	3 550 **CI/6,27**	–	7 390 **CI/6,53**	–	14 870 **CI/6,57**	–	25 330 **CI/6,27**	31 660 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 510 **CI/5,06**	–	2 880 **CI/4,89**	–	6 020 **CI/5,11**	–	11 920 **CI/5,06**	–	20 580 **CI/4,89**	25 720 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	4 960 **CI/4,1**	–	9 680 **CI/4**	–	16 880 **CI/3,9**	21 100 **CI/3,9**	–			
11 200 000	16	96 **CI/15,2**	180 **CI/15,8**	220 **CI/15,8**	385 **CI/16,4**	445 **CI/16,4**	790 **CI/15,2**	1 580 **CI/15,8**	2 300 **CI/15,8**	3 440 **CI/15,5**	4 870 **CI/16**	7 080 **CI/15,5**	9 680 **CI/16**	14 160 **CI/16**	19 380 **CI/15,8**	23 070 **CI/16,3**	28 770 **CI/16,3**	36 930 **CI/16**			
	14	–	–	–	–	–	–	–	2 470 **CI/14,2**	3 860 **CI/14,2**	5 120 **CI/14,7**	7 880 **CI/14,2**	10 070 **CI/14,7**	15 760 **CI/14,1**	19 420 **CI/14,2**	25 270 **CI/14,2**	29 980 **CI/14,2**	39 400 **CI/14,5**			
	12,5	115 **CI/12,4**	210 **CI/12,6**	265 **CI/12,6**	470 **CI/13,1**	540 **CI/13,1**	925 **CI/12,4**	1 920 **CI/12,6**	2 300 **CI/12,9**	4 070 **CI/13**	4 680 **CI/13,1**	8 150 **CI/13**	9 030 **CI/12,8**	15 770 **CI/12,6**	18 080 **CI/12,9**	24 460 **CI/12,8**	29 940 **CI/12,8**	35 200 **CI/12,6**			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

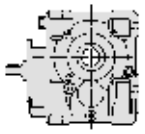


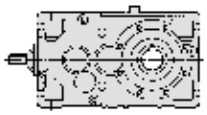


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
11 200 000	11,2	–	–	–	–	–	–	–	2 680 **CI/11,3**	3 650 **CI/11,4**	5 690 **CI/11,7**	7 220 **CI/11,3**	11 280 **CI/11,7**	14 610 **CI/11,4**	21 760 **CI/11,3**	25 260 **CI/11**	31 580 **CI/11**	41 250 **CI/11,5**			
	10	115 **CI/10,3**	230 **CI/10**	285 **CI/10**	490 **CI/10,4**	570 **CI/10,4**	1000 **CI/9,81**	2 000 **CI/10**	2 570 **CI/10,2**	4 010 **CI/10,3**	5 240 **CI/10,4**	8 010 **CI/10,3**	10 130 **CI/10,2**	15 990 **CI/10**	20 280 **CI/10,2**	28 460 **CI/10,2**	34 850 **CI/10,2**	39 200 **CI/10**			
	9	–	–	–	–	–	–	–	2 760 **CI/9**	4 160 **CI/9,04**	5 720 **CI/9,33**	8 210 **CI/8,93**	11 270 **CI/9,33**	16 630 **CI/9,04**	21 730 **CI/9**	28 440 **CI/8,75**	35 410 **CI/8,75**	42 940 **CI/9,2**			
	8	125 **CI/7,85**	235 **CI/8**	300 **CI/8**	515 **CI/8,33**	600 **CI/8,33**	1 030 **CI/7,85**	2 090 **CI/8**	2 570 **CI/8,15**	4 170 **CI/8,27**	5 230 **CI/8,31**	8 330 **CI/8,27**	10 100 **CI/8,14**	15 520 **CI/8,21**	20 230 **CI/8,15**	26 150 **CI/7,83**	32 570 **CI/7,83**	39 370 **CI/8**			
	6,3	115 **CI/6,53**	205 **CI/6,57**	260 **CI/6,57**	440 **CI/6,27**	495 **CI/6,27**	910 **CI/6,53**	1 940 **CI/6,57**	–	3 640 **CI/6,27**	–	7 600 **CI/6,53**	–	15 280 **CI/6,57**	–	26 020 **CI/6,27**	32 530 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 530 **CI/5,06**	–	2 920 **CI/4,89**	–	6 100 **CI/5,11**	–	12 080 **CI/5,06**	–	20 840 **CI/4,89**	26 050 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	5 030 **CI/4,1**	–	9 820 **CI/4**	–	17 120 **CI/3,9**	21 400 **CI/3,9**	–			
10 000 000	18	–	–	–	–	–	–	–	2 330 **CI/18**	3 660 **CI/18**	4 830 **CI/18,7**	7 300 **CI/18**	9 560 **CI/18,7**	14 520 **CI/17,9**	18 470 **CI/18**	22 330 **CI/18**	28 200 **CI/18**	37 460 **CI/18,4**			
	16	99 **CI/15,2**	185 **CI/15,8**	230 **CI/15,8**	395 **CI/16,4**	455 **CI/16,4**	815 **CI/15,2**	1 620 **CI/15,8**	2 360 **CI/15,8**	3 540 **CI/15,5**	5 000 **CI/16**	7 270 **CI/15,5**	9 930 **CI/16**	14 530 **CI/16**	19 900 **CI/15,8**	23 680 **CI/16,3**	29 540 **CI/16,3**	37 910 **CI/16**			
	14	–	–	–	–	–	–	–	2 530 **CI/14,2**	3 960 **CI/14,2**	5 260 **CI/14,7**	8 100 **CI/14,2**	10 350 **CI/14,7**	16 190 **CI/14,1**	19 960 **CI/14,2**	25 960 **CI/14,2**	30 800 **CI/14,2**	40 480 **CI/14,5**			
	12,5	120 **CI/12,4**	215 **CI/12,6**	275 **CI/12,6**	480 **CI/13,1**	555 **CI/13,1**	950 **CI/12,4**	1 970 **CI/12,6**	2 350 **CI/12,9**	4 180 **CI/13**	4 800 **CI/13,1**	8 350 **CI/13**	9 260 **CI/12,8**	16 170 **CI/12,6**	18 540 **CI/12,9**	25 080 **CI/12,8**	30 700 **CI/12,8**	36 090 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	2 760 **CI/11,3**	3 760 **CI/11,4**	5 850 **CI/11,7**	7 420 **CI/11,3**	11 610 **CI/11,7**	15 030 **CI/11,4**	22 380 **CI/11,3**	25 980 **CI/11**	32 480 **CI/11**	42 430 **CI/11,5**			
	10	120 **CI/10,3**	240 **CI/10**	295 **CI/10**	505 **CI/10,4**	585 **CI/10,4**	1 030 **CI/9,81**	2 060 **CI/10**	2 660 **CI/10,2**	4 140 **CI/10,3**	5 410 **CI/10,4**	8 270 **CI/10,3**	10 450 **CI/10,2**	16 500 **CI/10**	20 940 **CI/10,2**	29 380 **CI/10,2**	35 980 **CI/10,2**	40 470 **CI/10**			
	9	–	–	–	–	–	–	–	2 830 **CI/9**	4 270 **CI/9,04**	5 880 **CI/9,33**	8 440 **CI/8,93**	11 580 **CI/9,33**	17 080 **CI/9,04**	22 320 **CI/9**	29 210 **CI/8,75**	36 380 **CI/8,75**	44 120 **CI/9,2**			
	8	130 **CI/7,85**	245 **CI/8**	305 **CI/8**	530 **CI/8,33**	615 **CI/8,33**	1 060 **CI/7,85**	2 150 **CI/8**	2 640 **CI/8,15**	4 280 **CI/8,27**	5 370 **CI/8,31**	8 550 **CI/8,27**	10 370 **CI/8,14**	15 940 **CI/8,21**	20 760 **CI/8,15**	26 850 **CI/7,83**	33 430 **CI/7,83**	40 420 **CI/8**			
	6,3	115 **CI/6,53**	205 **CI/6,57**	265 **CI/6,57**	450 **CI/6,27**	500 **CI/6,27**	920 **CI/6,53**	1 960 **CI/6,57**	–	3 690 **CI/6,27**	–	7 700 **CI/6,53**	–	15 490 **CI/6,57**	–	26 380 **CI/6,27**	32 970 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 550 **CI/5,06**	–	2 960 **CI/4,89**	–	6 190 **CI/5,11**	–	12 250 **CI/5,06**	–	21 130 **CI/4,89**	26 420 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	5 100 **CI/4,1**	–	9 960 **CI/4**	–	17 370 **CI/3,9**	21 710 **CI/3,9**	–			

For n_1 lower than 560 min^{-1} see page 195.

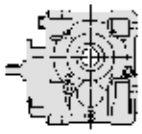
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
9 000 000	20	–	–	–	–	–	–	–	2 500 **C2I/20,4**	4 250 **C2I/20,6**	5 590 **C2I/21,4**	8 620 **C2I/20,5**	10 410 **C2I/19,9**	17 350 **C2I/21,5**	21 450 **C2I/20,8**	30 370 **C2I/20,6**	37 700 **C2I/20,6**	43 990 **C2I/21,4**			
	20	97 **CI/19,3**	180 **CI/20**	225 **CI/20**	385 **CI/20,8**	445 **CI/20,8**	800 **CI/19,3**	1 600 **CI/20**	2 300 **CI/20**	3 490 **CI/19,7**	4 600 **CI/20,3**	7 170 **CI/19,7**	9 210 **CI/20,3**	14 340 **CI/20,3**	18 190 **CI/20**	23 510 **CI/19,7**	28 080 **CI/19,7**	35 880 **CI/20,3**			
	18	–	–	–	–	–	–	–	2 390 **CI/18**	3 760 **CI/18**	4 960 **CI/18,7**	7 490 **CI/18**	9 820 **CI/18,7**	14 900 **CI/17,9**	18 960 **CI/18**	22 920 **CI/18**	28 940 **CI/18**	38 450 **CI/18,4**			
	16	100 **CI/15,2**	190 **CI/15,8**	235 **CI/15,8**	405 **CI/16,4**	470 **CI/16,4**	835 **CI/15,2**	1 670 **CI/15,8**	2 420 **CI/15,8**	3 630 **CI/15,5**	5 130 **CI/16**	7 470 **CI/15,5**	10 210 **CI/16**	14 930 **CI/16**	20 440 **CI/15,8**	24 330 **CI/16,3**	30 340 **CI/16,3**	38 950 **CI/16**			
	14	–	–	–	–	–	–	–	2 600 **CI/14,2**	4 060 **CI/14,2**	5 390 **CI/14,7**	8 300 **CI/14,2**	10 610 **CI/14,7**	16 610 **CI/14,1**	20 460 **CI/14,2**	26 620 **CI/14,2**	31 590 **CI/14,2**	41 510 **CI/14,5**			
	12,5	120 **CI/12,4**	225 **CI/12,6**	280 **CI/12,6**	495 **CI/13,1**	570 **CI/13,1**	975 **CI/12,4**	2 020 **CI/12,6**	2 420 **CI/12,9**	4 300 **CI/13**	4 930 **CI/13,1**	8 590 **CI/13**	9 520 **CI/12,8**	16 630 **CI/12,6**	19 070 **CI/12,9**	25 790 **CI/12,8**	31 580 **CI/12,8**	37 120 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	2 840 **CI/11,3**	3 880 **CI/11,4**	6 040 **CI/11,7**	7 660 **CI/11,3**	11 980 **CI/11,7**	15 520 **CI/11,4**	23 110 **CI/11,3**	26 830 **CI/11**	33 530 **CI/11**	43 800 **CI/11,5**			
	10	120 **CI/10,3**	245 **CI/10**	300 **CI/10**	520 **CI/10,4**	605 **CI/10,4**	1 060 **CI/9,81**	2 120 **CI/10**	2 730 **CI/10,2**	4 260 **CI/10,3**	5 560 **CI/10,4**	8 490 **CI/10,3**	10 740 **CI/10,2**	16 960 **CI/10**	21 510 **CI/10,2**	30 190 **CI/10,2**	36 970 **CI/10,2**	41 580 **CI/10**			
	9	–	–	–	–	–	–	–	2 910 **CI/9**	4 380 **CI/9,04**	6 040 **CI/9,33**	8 660 **CI/8,93**	11 880 **CI/9,33**	17 540 **CI/9,04**	22 920 **CI/9**	29 990 **CI/8,75**	37 350 **CI/8,75**	45 290 **CI/9,2**			
	8	135 **CI/7,85**	250 **CI/8**	315 **CI/8**	545 **CI/8,33**	630 **CI/8,33**	1 090 **CI/7,85**	2 200 **CI/8**	2 710 **CI/8,15**	4 400 **CI/8,27**	5 520 **CI/8,31**	8 790 **CI/8,27**	10 650 **CI/8,14**	16 370 **CI/8,21**	21 330 **CI/8,15**	27 580 **CI/7,83**	34 350 **CI/7,83**	41 530 **CI/8**			
	6,3	120 **CI/6,53**	210 **CI/6,57**	265 **CI/6,57**	455 **CI/6,27**	510 **CI/6,27**	935 **CI/6,53**	1 990 **CI/6,57**	–	3 740 **CI/6,27**	–	7 800 **CI/6,53**	–	15 690 **CI/6,57**	–	26 710 **CI/6,27**	33 390 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 570 **CI/5,06**	–	3 000 **CI/4,89**	–	6 280 **CI/5,11**	–	12 420 **CI/5,06**	–	21 440 **CI/4,89**	26 800 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	5 170 **CI/4,1**	–	10 100 **CI/4**	–	17 610 **CI/3,9**	22 020 **CI/3,9**	–			
8 000 000	22,4	–	–	–	–	–	–	–	2 870 **C2I/23,8**	4 250 **C2I/23,8**	6 070 **C2I/23,7**	8 620 **C2I/22,4**	12 020 **C2I/23**	17 350 **C2I/23,6**	23 950 **C2I/23,8**	30 370 **C2I/23**	37 800 **C2I/23**	47 910 **C2I/23,7**			
	20	–	–	–	–	–	–	–	2 570 **C2I/20,4**	4 360 **C2I/20,6**	5 730 **C2I/21,4**	8 850 **C2I/20,5**	10 690 **C2I/19,9**	17 810 **C2I/21,5**	22 010 **C2I/20,8**	31 170 **C2I/20,6**	38 700 **C2I/20,6**	45 150 **C2I/21,4**			
	20	99 **CI/19,3**	185 **CI/20**	230 **CI/20**	400 **CI/20,8**	460 **CI/20,8**	825 **CI/19,3**	1 640 **CI/20**	2 360 **CI/20**	3 580 **CI/19,7**	4 730 **CI/20,3**	7 360 **CI/19,7**	9 450 **CI/20,3**	14 720 **CI/20,3**	18 670 **CI/20**	24 130 **CI/19,7**	28 820 **CI/19,7**	36 830 **CI/20,3**			
	18	–	–	–	–	–	–	–	2 450 **CI/18**	3 860 **CI/18**	5 090 **CI/18,7**	7 700 **CI/18**	10 090 **CI/18,7**	15 310 **CI/17,9**	19 480 **CI/18**	23 550 **CI/18**	29 740 **CI/18**	39 510 **CI/18,4**			
	16	105 **CI/15,2**	195 **CI/15,8**	240 **CI/15,8**	415 **CI/16,4**	480 **CI/16,4**	855 **CI/15,2**	1 710 **CI/15,8**	2 490 **CI/15,8**	3 730 **CI/15,5**	5 270 **CI/16**	7 660 **CI/15,5**	10 470 **CI/16**	15 310 **CI/16**	20 960 **CI/15,8**	24 950 **CI/16,3**	31 120 **CI/16,3**	39 940 **CI/16**			

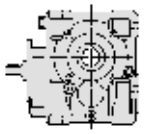
For n_1 lower than 560 min^{-1} see page 195.

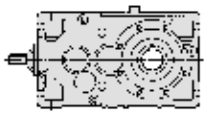


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
8 000 000	14	–	–	–	–	–	–	–	2 670 **CI/14,2**	4 180 **CI/14,2**	5 540 **CI/14,7**	8 540 **CI/14,2**	10 910 **CI/14,7**	17 080 **CI/14,1**	21 050 **CI/14,2**	27 380 **CI/14,2**	32 490 **CI/14,2**	42 690 **CI/14,5**			
	12,5	125 **CI/12,4**	230 **CI/12,6**	290 **CI/12,6**	510 **CI/13,1**	590 **CI/13,1**	1 010 **CI/12,4**	2 090 **CI/12,6**	2 500 **CI/12,9**	4 440 **CI/13**	5 090 **CI/13,1**	8 870 **CI/13**	9 830 **CI/12,8**	17 170 **CI/12,6**	19 690 **CI/12,9**	26 630 **CI/12,8**	32 600 **CI/12,8**	38 320 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	2 920 **CI/11,3**	3 990 **CI/11,4**	6 210 **CI/11,7**	7 870 **CI/11,3**	12 310 **CI/11,7**	15 940 **CI/11,4**	23 740 **CI/11,3**	27 560 **CI/11**	34 450 **CI/11**	45 000 **CI/11,5**			
	10	125 **CI/10,3**	255 **CI/10**	310 **CI/10**	535 **CI/10,4**	620 **CI/10,4**	1 090 **CI/9,81**	2 170 **CI/10**	2 800 **CI/10,2**	4 370 **CI/10,3**	5 710 **CI/10,4**	8 720 **CI/10,3**	11 030 **CI/10,2**	17 410 **CI/10**	22 080 **CI/10,2**	30 990 **CI/10,2**	37 950 **CI/10,2**	42 680 **CI/10**			
	9	–	–	–	–	–	–	–	2 990 **CI/9**	4 500 **CI/9,04**	6 200 **CI/9,33**	8 900 **CI/8,93**	12 210 **CI/9,33**	18 020 **CI/9,04**	23 540 **CI/9**	30 810 **CI/8,75**	38 370 **CI/8,75**	46 530 **CI/9,2**			
	8	135 **CI/7,85**	255 **CI/8**	320 **CI/8**	555 **CI/8,33**	640 **CI/8,33**	1 110 **CI/7,85**	2 230 **CI/8**	2 750 **CI/8,15**	4 460 **CI/8,27**	5 590 **CI/8,31**	8 910 **CI/8,27**	10 800 **CI/8,14**	16 600 **CI/8,21**	21 620 **CI/8,15**	27 960 **CI/7,83**	34 820 **CI/7,83**	42 090 **CI/8**			
	6,3	120 **CI/6,53**	215 **CI/6,57**	270 **CI/6,57**	460 **CI/6,27**	515 **CI/6,27**	945 **CI/6,53**	2 020 **CI/6,57**	–	3 790 **CI/6,27**	–	7 910 **CI/6,53**	–	15 910 **CI/6,57**	–	27 090 **CI/6,27**	33 860 **CI/6,27**	–			
	5	–	–	–	–	–	–	1 600 **CI/5,06**	–	3 040 **CI/4,89**	–	6 370 **CI/5,11**	–	12 600 **CI/5,06**	–	21 740 **CI/4,89**	27 180 **CI/4,89**	–			
	4	–	–	–	–	–	–	–	–	–	–	5 240 **CI/4,1**	–	10 240 **CI/4**	–	17 850 **CI/3,9**	22 320 **CI/3,9**	–			
7 100 000	25	–	–	–	–	–	–	–	2 710 **C2I/24,5**	4 290 **C2I/25,1**	5 640 **C2I/26**	8 720 **C2I/27**	12 060 **C2I/26,3**	17 500 **C2I/27,2**	24 180 **C2I/26,4**	30 650 **C2I/25,1**	38 140 **C2I/25,1**	48 360 **C2I/26**			
	25	97 **CI/24,1**	190 **CI/25**	240 **CI/25**	390 **CI/26**	450 **CI/26**	740 **CI/24,1**	1 620 **CI/25**	–	3 200 **CI/24,6**	–	6 410 **CI/24,6**	–	13 110 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	2 940 **C2I/23,8**	4 360 **C2I/23,8**	6 230 **C2I/23,7**	8 850 **C2I/22,4**	12 340 **C2I/23**	17 810 **C2I/23,6**	24 580 **C2I/23,8**	31 170 **C2I/23**	38 810 **C2I/23**	49 180 **C2I/23,7**			
	20	–	–	–	–	–	–	–	2 640 **C2I/20,4**	4 480 **C2I/20,6**	5 890 **C2I/21,4**	9 100 **C2I/20,5**	10 980 **C2I/19,9**	18 300 **C2I/21,5**	22 620 **C2I/20,8**	32 030 **C2I/20,6**	39 760 **C2I/20,6**	46 390 **C2I/21,4**			
	20	100 **CI/19,3**	190 **CI/20**	235 **CI/20**	410 **CI/20,8**	480 **CI/20,8**	845 **CI/19,3**	1 690 **CI/20**	2 430 **CI/20**	3 680 **CI/19,7**	4 860 **CI/20,3**	7 560 **CI/19,7**	9 710 **CI/20,3**	15 120 **CI/20,3**	19 180 **CI/20**	24 800 **CI/19,7**	29 610 **CI/19,7**	37 840 **CI/20,3**			
	18	–	–	–	–	–	–	–	2 520 **CI/18**	3 960 **CI/18**	5 220 **CI/18,7**	7 890 **CI/18**	10 340 **CI/18,7**	15 700 **CI/17,9**	19 980 **CI/18**	24 150 **CI/18**	30 490 **CI/18**	40 510 **CI/18,4**			
	16	105 **CI/15,2**	200 **CI/15,8**	245 **CI/15,8**	430 **CI/16,4**	500 **CI/16,4**	880 **CI/15,2**	1 760 **CI/15,8**	2 560 **CI/15,8**	3 830 **CI/15,5**	5 420 **CI/16**	7 870 **CI/15,5**	10 760 **CI/16**	15 750 **CI/16**	21 560 **CI/15,8**	25 660 **CI/16,3**	32 000 **CI/16,3**	41 080 **CI/16**			
	14	–	–	–	–	–	–	–	2 760 **CI/14,2**	4 310 **CI/14,2**	5 720 **CI/14,7**	8 820 **CI/14,2**	11 270 **CI/14,7**	17 630 **CI/14,1**	21 730 **CI/14,2**	28 270 **CI/14,2**	33 540 **CI/14,2**	44 070 **CI/14,5**			
	12,5	130 **CI/12,4**	235 **CI/12,6**	300 **CI/12,6**	525 **CI/13,1**	605 **CI/13,1**	1 030 **CI/12,4**	2 140 **CI/12,6**	2 570 **CI/12,9**	4 560 **CI/13**	5 230 **CI/13,1**	9 110 **CI/13**	10 100 **CI/12,8**	17 640 **CI/12,6**	20 230 **CI/12,9**	27 360 **CI/12,8**	33 500 **CI/12,8**	39 370 **CI/12,6**			

For n_1 lower than 560 min^{-1} see page 195.

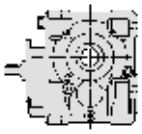
9 - Bevel helical gear reducer selection tables

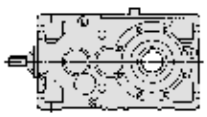




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
7 100 000	11,2	–	–	–	–	–	–	–	3 000 CI/11,3	4 090 CI/11,4	6 370 CI/11,7	8 080 CI/11,3	12 640 CI/11,7	16 370 CI/11,4	24 370 CI/11,3	28 290 CI/11	35 370 CI/11	46 200 CI/11,5			
	10	130 CI/10,3	260 CI/10	320 CI/10	550 CI/10,4	635 CI/10,4	1 120 CI/9,81	2 230 CI/10	2 880 CI/10,2	4 490 CI/10,3	5 860 CI/10,4	8 960 CI/10,3	11 330 CI/10,2	17 880 CI/10	22 690 CI/10,2	31 840 CI/10,2	38 990 CI/10,2	43 850 CI/10			
	9	–	–	–	–	–	–	–	3 030 CI/9	4 570 CI/9,04	6 290 CI/9,33	9 020 CI/8,93	12 370 CI/9,33	18 260 CI/9,04	23 870 CI/9	31 230 CI/8,75	38 890 CI/8,75	47 170 CI/9,2			
	8	140 CI/7,85	255 CI/8	325 CI/8	560 CI/8,33	650 CI/8,33	1 120 CI/7,85	2 260 CI/8	2 780 CI/8,15	4 520 CI/8,27	5 670 CI/8,31	9 020 CI/8,27	10 930 CI/8,14	16 810 CI/8,21	21 900 CI/8,15	28 310 CI/7,83	35 260 CI/7,83	42 620 CI/8			
	6,3	120 CI/6,53	215 CI/6,57	275 CI/6,57	465 CI/6,27	520 CI/6,27	960 CI/6,53	2 050 CI/6,57	–	3 850 CI/6,27	–	8 020 CI/6,53	–	16 140 CI/6,57	–	27 480 CI/6,27	34 350 CI/6,27	–			
								93,9		185		–		–		–	–		5	2800	**560**
	5	–	–	–	–	–	–	1 620 CI/5,06	–	3 090 CI/4,89▲	–	6 460 CI/5,11	–	12 780 CI/5,06	–	22 050 CI/4,89	27 570 CI/4,89	–			
												304		–		–	–		4	2240	
	4	–	–	–	–	–	–	–	–	–	–	5 310 CI/4,1▲	–	10 380 CI/4	–	18 090 CI/3,9	22 610 CI/3,9	–			
6 300 000	28	–	–	–	–	–	–	–	2 890 C2I/28,6	4 430 C2I/28,9	6 130 C2I/28,8	8 720 C2I/29,5	12 260 C2I/30,3	17 690 C2I/29,9	24 180 C2I/30,1	30 650 C2I/28	38 140 C2I/28	48 360 C2I/28,8			
	25	–	–	–	–	–	–	–	2 780 C2I/24,5	4 400 C2I/25,1	5 790 C2I/26	8 950 C2I/27	12 380 C2I/26,3	17 970 C2I/27,2	24 820 C2I/26,4	31 460 C2I/25,1	39 150 C2I/25,1	49 640 C2I/26			
	25	100 CI/24,1	200 CI/25	250 CI/25	400 CI/26	465 CI/26	760 CI/24,1	1 660 CI/25	–	3 290 CI/24,6	–	6 580 CI/24,6	–	13 460 CI/25,4	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 020 C2I/23,8	4 480 C2I/23,8	6 410 C2I/23,7	9 100 C2I/22,4	12 680 C2I/23	18 300 C2I/23,6	25 260 C2I/23,8	32 030 C2I/23	39 870 C2I/23	50 530 C2I/23,7			
	20	–	–	–	–	–	–	–	2 710 C2I/20,4	4 600 C2I/20,6	6 040 C2I/21,4	9 330 C2I/20,5	11 260 C2I/19,9	18 760 C2I/21,5	23 190 C2I/20,8	32 840 C2I/20,6	40 770 C2I/20,6	47 570 C2I/21,4			
	20	105 CI/19,3	195 CI/20	240 CI/20	420 CI/20,8	495 CI/20,8	870 CI/19,3	1 730 CI/20	2 490 CI/20	3 770 CI/19,7	4 980 CI/20,3	7 750 CI/19,7	9 960 CI/20,3	15 510 CI/20,3	19 670 CI/20	25 430 CI/19,7	30 370 CI/19,7	38 800 CI/20,3			
	18	–	–	–	–	–	–	–	2 590 CI/18	4 080 CI/18	5 370 CI/18,7	8 120 CI/18	10 640 CI/18,7	16 150 CI/17,9	20 550 CI/18	24 840 CI/18	31 360 CI/18	41 660 CI/18,4			
	16	110 CI/15,2	210 CI/15,8	255 CI/15,8	440 CI/16,4	515 CI/16,4	910 CI/15,2	1 810 CI/15,8	2 640 CI/15,8	3 960 CI/15,5	5 590 CI/16	8 130 CI/15,5	11 110 CI/16	16 260 CI/16	22 260 CI/15,8	26 490 CI/16,3	33 040 CI/16,3	42 410 CI/16			
	14	–	–	–	–	–	–	–	2 830 CI/14,2	4 430 CI/14,2	5 880 CI/14,7	9 060 CI/14,2	11 580 CI/14,7	18 110 CI/14,1	22 320 CI/14,2	29 040 CI/14,2	34 460 CI/14,2	45 280 CI/14,5			
	12,5	130 CI/12,4	245 CI/12,6	305 CI/12,6	540 CI/13,1	625 CI/13,1	1 060 CI/12,4	2 200 CI/12,6	2 640 CI/12,9	4 680 CI/13	5 370 CI/13,1	9 360 CI/13	10 370 CI/12,8	18 110 CI/12,6	20 760 CI/12,9	28 080 CI/12,8	34 380 CI/12,8	40 420 CI/12,6			
	11,2	–	–	–	–	–	–	–	3 080 CI/11,3	4 200 CI/11,4	6 550 CI/11,7	8 310 CI/11,3	12 980 CI/11,7	16 810 CI/11,4	25 040 CI/11,3	29 070 CI/11	36 330 CI/11	47 460 CI/11,5			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

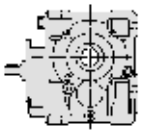


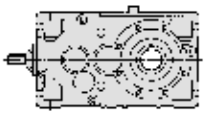


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i** 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2} min^{-1}
6 300 000	10	130 **CI/10,3**	265 **CI/10**	320 **CI/10**	555 **CI/10,4**	645 **CI/10,4**	1 130 **CI/9,81**	2 260 **CI/10**	2 920 **CI/10,2**	4 550 **CI/10,3**	5 940 **CI/10,4**	9 080 **CI/10,3**	11 480 **CI/10,2**	18 130 **CI/10**	22 990 **CI/10,2**	32 270 **CI/10,2**	39 520 **CI/10,2**	44 450 **CI/10**			
	9	–	–	–	–	–	–	–	3 070 **CI/9**	4 620 **CI/9,04**	6 370 **CI/9,33**	9 130 **CI/8,93**	12 530 **CI/9,33**	18 490 **CI/9,04**	24 170 **CI/9**	31 630 **CI/8,75**	39 380 **CI/8,75**	47 760 **CI/9,2**			
	8	140 **CI/7,85**	260 **CI/8**	330 **CI/8**	570 **CI/8,33**	655 **CI/8,33**	1 140 **CI/7,85**	2 290 **CI/8**	2 820 **CI/8,15**	4 580 **CI/8,27**	5 750 **CI/8,31**	9 150 **CI/8,27**	11 090 **CI/8,14**	17 040 **CI/8,21**	22 210 **CI/8,15**	28 710 **CI/7,83**	35 760 **CI/7,83**	43 230 **CI/8**			
	6,3	125 **CI/6,53**	220 **CI/6,57**	280 **CI/6,57**	475 **CI/6,27**	530 **CI/6,27**	975 **CI/6,53**	2 080 **CI/6,57**	–	3 900 **CI/6,27**	–	8 140 **CI/6,53**	–	16 370 **CI/6,57**	–	27 870 **CI/6,27**	34 840 **CI/6,27**	–			
								85		168		–		–		–	–		5	2500	**500**
	5	–	–	–	–	–	–	1 640 **CI/5,06**	–	3 130 **CI/4,89**	–	6 540 **CI/5,11**	–	12 950 **CI/5,06**	–	22 350 **CI/4,89**	27 940 **CI/4,89**	–			
												275		–		–	–		4	2000	
	4	–	–	–	–	–	–	–	–	–	–	5 380 **CI/4,1**	–	10 520 **CI/4**	–	18 340 **CI/3,9**	22 920 **CI/3,9**	–			
5 600 000	31,5	–	–	–	–	–	–	–	2 810 **C2I/32**	5 060 **C2I/33,1**	5 960 **C2I/33,2**	9 280 **C2I/34,2**	11 920 **C2I/33,7**	19 570 **C2I/33,1**	23 500 **C2I/33,7**	30 650 **C2I/31,3**	38 140 **C2I/31,3**	48 360 **C2I/32,5**			
	31,5	125 **ICI/32,1**	185 **ICI/33**	220 **ICI/33**	410 **ICI/31,4**	450 **ICI/31,4**	865 **ICI/32,8**	1 750 **ICI/32,4**	–	3 700 **ICI/31,4**	–	7 600 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	175 **CI/31,3**	205 **CI/31,3**	355 **CI/32,5**	435 **CI/32,5**	665 **CI/30,1**	1 330 **CI/31,3**	–	2 630 **CI/30,8**	–	4 600 **CI/30,8**	–	9 490 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	2 970 **C2I/28,6**	4 580 **C2I/28,9**	6 290 **C2I/28,8**	8 950 **C2I/29,5**	12 580 **C2I/30,3**	18 300 **C2I/29,9**	24 820 **C2I/30,1**	31 460 **C2I/28**	39 150 **C2I/28**	49 640 **C2I/28,8**			
	25	–	–	–	–	–	–	–	2 860 **C2I/24,5**	4 530 **C2I/25,1**	5 950 **C2I/26**	9 190 **C2I/27**	12 720 **C2I/26,3**	18 460 **C2I/27,2**	25 500 **C2I/26,4**	32 320 **C2I/25,1**	40 230 **C2I/25,1**	51 000 **C2I/26**			
	25	105 **CI/24,1**	205 **CI/25**	255 **CI/25**	410 **CI/26**	480 **CI/26**	780 **CI/24,1**	1 710 **CI/25**	–	3 380 **CI/24,6**	–	6 760 **CI/24,6**	–	13 830 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 100 **C2I/23,8**	4 600 **C2I/23,8**	6 570 **C2I/23,7**	9 330 **C2I/22,4**	13 000 **C2I/23**	18 760 **C2I/23,6**	25 900 **C2I/23,8**	32 840 **C2I/23**	40 890 **C2I/23**	51 810 **C2I/23,7**			
	20	–	–	–	–	–	–	–	2 780 **C2I/20,4**	4 730 **C2I/20,6**	6 210 **C2I/21,4**	9 590 **C2I/20,5**	11 580 **C2I/19,9**	19 300 **C2I/21,5**	23 850 **C2I/20,8**	33 780 **C2I/20,6**	41 930 **C2I/20,6**	48 930 **C2I/21,4**			
	20	110 **CI/19,3**	200 **CI/20**	250 **CI/20**	435 **CI/20,8**	510 **CI/20,8**	890 **CI/19,3**	1 780 **CI/20**	2 560 **CI/20**	3 880 **CI/19,7**	5 120 **CI/20,3**	7 980 **CI/19,7**	10 240 **CI/20,3**	15 950 **CI/20,3**	20 230 **CI/20**	26 150 **CI/19,7**	31 230 **CI/19,7**	39 910 **CI/20,3**			
	18	–	–	–	–	–	–	–	2 670 **CI/18**	4 210 **CI/18**	5 540 **CI/18,7**	8 380 **CI/18**	10 980 **CI/18,7**	16 670 **CI/17,9**	21 210 **CI/18**	25 640 **CI/18**	32 380 **CI/18**	43 010 **CI/18,4**			
	16	115 **CI/15,2**	215 **CI/15,8**	260 **CI/15,8**	455 **CI/16,4**	535 **CI/16,4**	935 **CI/15,2**	1 860 **CI/15,8**	2 710 **CI/15,8**	4 060 **CI/15,5**	5 740 **CI/16**	8 350 **CI/15,5**	11 420 **CI/16**	16 700 **CI/16**	22 870 **CI/15,8**	27 220 **CI/16,3**	33 940 **CI/16,3**	43 570 **CI/16**			
	14	–	–	–	–	–	–	–	2 910 **CI/14,2**	4 550 **CI/14,2**	6 040 **CI/14,7**	9 300 **CI/14,2**	11 880 **CI/14,7**	18 600 **CI/14,1**	22 920 **CI/14,2**	29 810 **CI/14,2**	35 370 **CI/14,2**	46 480 **CI/14,5**			

For n_1 lower than 560 min^{-1} see page 195.

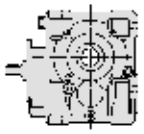
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
5 600 000	12,5	135 **CI/12,4**	250 **CI/12,6**	315 **CI/12,6**	555 **CI/13,1**	640 **CI/13,1**	1 090 **CI/12,4**	2 260 **CI/12,6**	2 710 **CI/12,9**	4 810 **CI/13**	5 520 **CI/13,1**	9 610 **CI/13**	10 650 **CI/12,8**	18 600 **CI/12,6**	21 330 **CI/12,9**	28 850 **CI/12,8**	35 330 **CI/12,8**	41 530 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	3 120 **CI/11,3**	4 260 **CI/11,4**	6 640 **CI/11,7**	8 420 **CI/11,3**	13 160 **CI/11,7**	17 040 **CI/11,4**	25 380 **CI/11,3**	29 460 **CI/11**	36 830 **CI/11**	48 110 **CI/11,5**			
	10	130 **CI/10,3**	265 **CI/10**	325 **CI/10**	565 **CI/10,4**	650 **CI/10,4**	1 150 **CI/9,81**	2 290 **CI/10**	2 950 **CI/10,2**	4 610 **CI/10,3**	6 020 **CI/10,4**	9 190 **CI/10,3**	11 630 **CI/10,2**	18 360 **CI/10**	23 290 **CI/10,2**	32 680 **CI/10,2**	40 020 **CI/10,2**	45 010 **CI/10**			
	9	–	–	–	–	–	–	–	3 110 **CI/9**	4 690 **CI/9,04**	6 460 **CI/9,33**	9 260 **CI/8,93**	12 710 **CI/9,33**	18 750 **CI/9,04**	24 510 **CI/9**	32 070 **CI/8,75**	39 940 **CI/8,75**	48 440 **CI/9,2**			
	8	140 **CI/7,85**	265 **CI/8**	335 **CI/8**	575 **CI/8,33**	665 **CI/8,33**	1 150 **CI/7,85**	2 330 **CI/8**	2 860 **CI/8,15**	4 650 **CI/8,27**	5 830 **CI/8,31**	9 280 **CI/8,27**	11 250 **CI/8,14**	17 290 **CI/8,21**	22 520 **CI/8,15**	29 130 **CI/7,83**	36 270 **CI/7,83**	43 850 **CI/8**			
		5,62	9,92	12,6	22,5	25,1	44,3	93,9		185		–		–		–	–		6,3	2800	**450**
	6,3	125 **CI/6,53**	220 **CI/6,57**	280 **CI/6,57**	480 **CI/6,27**	535 **CI/6,27**	985 **CI/6,53**	2 100 **CI/6,57**	–	3 960 **CI/6,27▲**	–	8 250 **CI/6,53**	–	16 600 **CI/6,57**	–	28 270 **CI/6,27**	35 330 **CI/6,27**	–			
								77,1		152		304		–		–	–		5	2240	
	5	–	–	–	–	–	–	1 660 **CI/5,06**	–	3 170 **CI/4,89**	–	6 630 **CI/5,11▲**	–	13 120 **CI/5,06**	–	22 650 **CI/4,89**	28 310 **CI/4,89**	–			
												251		502		–	–		4	1800	
	4	–	–	–	–	–	–	–	–	–	–	5 450 **CI/4,1**	–	10 650 **CI/4▲**	–	18 570 **CI/3,9**	23 210 **CI/3,9**	–			
5 000 000	35,5	–	–	–	–	–	–	–	2 890 **C2I/37,5**	4 290 **C2I/37,5**	6 130 **C2I/37,3**	8 720 **C2I/35,3**	12 020 **C2I/36,2**	17 500 **C2I/37,2**	24 180 **C2I/37,5**	30 650 **C2I/36,3**	38 140 **C2I/36,3**	48 360 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	2 880 **C2I/32**	5 240 **C2I/33,1**	6 120 **C2I/33,2**	9 600 **C2I/34,2**	12 240 **C2I/33,7**	20 240 **C2I/33,1**	24 120 **C2I/33,7**	31 460 **C2I/31,3**	39 150 **C2I/31,3**	49 640 **C2I/32,5**			
	31,5	130 **ICI/32,1**	190 **ICI/33**	225 **ICI/33**	425 **ICI/31,4**	465 **ICI/31,4**	885 **ICI/32,8**	1 800 **ICI/32,4**	–	3 800 **ICI/31,4**	–	7 800 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	180 **CI/31,3**	205 **CI/31,3**	365 **CI/32,5**	450 **CI/32,5**	690 **CI/30,1**	1 380 **CI/31,3**	–	2 720 **CI/30,8**	–	4 720 **CI/30,8**	–	9 740 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 050 **C2I/28,6**	4 730 **C2I/28,9**	6 460 **C2I/28,8**	9 190 **C2I/29,5**	12 930 **C2I/30,3**	18 910 **C2I/29,9**	25 500 **C2I/30,1**	32 320 **C2I/28**	40 230 **C2I/28**	51 000 **C2I/28,8**			
	25	–	–	–	–	–	–	–	2 930 **C2I/24,5**	4 640 **C2I/25,1**	6 100 **C2I/26**	9 430 **C2I/27**	13 040 **C2I/26,3**	18 930 **C2I/27,2**	26 150 **C2I/26,4**	33 150 **C2I/25,1**	41 250 **C2I/25,1**	52 300 **C2I/26**			
	25	105 **CI/24,1**	215 **CI/25**	265 **CI/25**	425 **CI/26**	495 **CI/26**	800 **CI/24,1**	1 750 **CI/25**	–	3 460 **CI/24,6**	–	6 930 **CI/24,6**	–	14 180 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 190 **C2I/23,8**	4 730 **C2I/23,8**	6 760 **C2I/23,7**	9 590 **C2I/22,4**	13 370 **C2I/23**	19 300 **C2I/23,6**	26 640 **C2I/23,8**	33 780 **C2I/23**	42 050 **C2I/23**	53 290 **C2I/23,7**			
	20	–	–	–	–	–	–	–	2 870 **C2I/20,4**	4 880 **C2I/20,6**	6 410 **C2I/21,4**	9 900 **C2I/20,5**	11 960 **C2I/19,9**	19 920 **C2I/21,5**	24 630 **C2I/20,8**	34 870 **C2I/20,6**	43 290 **C2I/20,6**	50 510 **C2I/21,4**			
	20	110 **CI/19,3**	210 **CI/20**	255 **CI/20**	450 **CI/20,8**	530 **CI/20,8**	920 **CI/19,3**	1 840 **CI/20**	2 640 **CI/20**	4 010 **CI/19,7**	5 290 **CI/20,3**	8 230 **CI/19,7**	10 570 **CI/20,3**	16 470 **CI/20,3**	20 890 **CI/20**	27 000 **CI/19,7**	32 240 **CI/19,7**	41 200 **CI/20,3**			

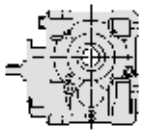
For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

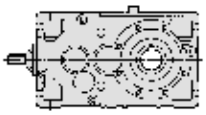


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
5 000 000	18	–	–	–	–	–	–	–	2 750 **CI/18**	4 320 **CI/18**	5 700 **CI/18,7**	8 610 **CI/18**	11 280 **CI/18,7**	17 130 **CI/17,9**	21 790 **CI/18**	26 350 **CI/18**	33 270 **CI/18**	44 190 **CI/18,4**			
	16	115 **CI/15,2**	220 **CI/15,8**	270 **CI/15,8**	470 **CI/16,4**	555 **CI/16,4**	960 **CI/15,2**	1 910 **CI/15,8**	2 780 **CI/15,8**	4 170 **CI/15,5**	5 900 **CI/16**	8 570 **CI/15,5**	11 720 **CI/16**	17 150 **CI/16**	23 480 **CI/15,8**	27 940 **CI/16,3**	34 850 **CI/16,3**	44 720 **CI/16**			
	14	–	–	–	–	–	–	–	2 990 **CI/14,2**	4 670 **CI/14,2**	6 200 **CI/14,7**	9 550 **CI/14,2**	12 210 **CI/14,7**	19 100 **CI/14,1**	23 540 **CI/14,2**	30 630 **CI/14,2**	36 340 **CI/14,2**	47 750 **CI/14,5**			
	12,5	140 **CI/12,4**	255 **CI/12,6**	320 **CI/12,6**	560 **CI/13,1**	650 **CI/13,1**	1 110 **CI/12,4**	2 290 **CI/12,6**	2 750 **CI/12,9**	4 870 **CI/13**	5 590 **CI/13,1**	9 740 **CI/13**	10 800 **CI/12,8**	18 860 **CI/12,6**	21 620 **CI/12,9**	29 250 **CI/12,8**	35 810 **CI/12,8**	42 090 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	3 160 **CI/11,3**	4 310 **CI/11,4**	6 720 **CI/11,7**	8 520 **CI/11,3**	13 330 **CI/11,7**	17 260 **CI/11,4**	25 700 **CI/11,3**	29 840 **CI/11**	37 300 **CI/11**	48 720 **CI/11,5**			
	10	135 **CI/10,3**	270 **CI/10**	330 **CI/10**	570 **CI/10,4**	660 **CI/10,4**	1 160 **CI/9,81**	2 320 **CI/10**	3 000 **CI/10,2**	4 670 **CI/10,3**	6 110 **CI/10,4**	9 320 **CI/10,3**	11 790 **CI/10,2**	18 620 **CI/10**	23 620 **CI/10,2**	33 150 **CI/10,2**	40 590 **CI/10,2**	45 650 **CI/10**			
	9	–	–	–	–	–	–	–	3 160 **CI/9**	4 760 **CI/9,04**	6 550 **CI/9,33**	9 400 **CI/8,93**	12 890 **CI/9,33**	19 020 **CI/9,04**	24 860 **CI/9**	32 540 **CI/8,75**	40 520 **CI/8,75**	49 140 **CI/9,2**			
	8	145 **CI/7,85**	265 **CI/8**	340 **CI/8**	585 **CI/8,33**	675 **CI/8,33**	1 170 **CI/7,85**	2 360 **CI/8**	2 900 **CI/8,15**	4 710 **CI/8,27**	5 910 **CI/8,31**	9 410 **CI/8,27**	11 410 **CI/8,14**	17 540 **CI/8,21**	22 850 **CI/8,15**	29 550 **CI/7,83**	36 790 **CI/7,83**	44 480 **CI/8**			
		5,09	8,98	11,4	20,3	22,7	40,1	85		168		–		–		–	–		6,3	2500	**400**
	6,3	125 **CI/6,53**	225 **CI/6,57**	285 **CI/6,57**	485 **CI/6,27**	545 **CI/6,27**	1000 **CI/6,53**	2 130 **CI/6,57**	–	4 010 **CI/6,27**	–	8 360 **CI/6,53**	–	16 830 **CI/6,57**	–	28 650 **CI/6,27**	35 820 **CI/6,27**	–			
								69,8		138		275		–		–	–		5	2000	
	5	–	–	–	–	–	–	1 690 **CI/5,06**	–	3 210 **CI/4,89**	–	6 720 **CI/5,11**	–	13 300 **CI/5,06**	–	22 960 **CI/4,89**	28 700 **CI/4,89**	–			
												226		452		–	–		4	1600	
	4	–	–	–	–	–	–	–	–	–	–	5 530 **CI/4,1**	–	10 800 **CI/4**	–	18 830 **CI/3,9**	23 540 **CI/3,9**	–			
4 500 000	40	–	–	–	–	–	–	–	2 780 **C2I/38,7**	4 290 **C2I/39,5**	5 790 **C2I/41**	8 720 **C2I/42,6**	12 260 **C2I/41,4**	17 500 **C2I/42,8**	24 180 **C2I/41,6**	30 650 **C2I/39,5**	38 140 **C2I/39,5**	48 360 **C2I/41**			
	40	135 **ICI/38,6**	215 **ICI/40,1**	265 **ICI/40,1**	455 **ICI/41,8**	530 **ICI/41,8**	960 **ICI/39,4**	1 910 **ICI/39,4**	2 210 **ICI/40,2**	4 190 **ICI/41,4**	4 900 **ICI/41,6**	8 510 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	2 970 **C2I/37,5**	4 400 **C2I/37,5**	6 290 **C2I/37,3**	8 950 **C2I/35,3**	12 340 **C2I/36,2**	17 970 **C2I/37,2**	24 820 **C2I/37,5**	31 460 **C2I/36,3**	39 150 **C2I/36,3**	49 640 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	2 960 **C2I/32**	5 410 **C2I/33,1**	6 290 **C2I/33,2**	9 920 **C2I/34,2**	12 570 **C2I/33,7**	20 920 **C2I/33,1**	24 780 **C2I/33,7**	32 320 **C2I/31,3**	40 230 **C2I/31,3**	51 000 **C2I/32,5**			
	31,5	135 **ICI/32,1**	195 **ICI/33**	230 **ICI/33**	435 **ICI/31,4**	475 **ICI/31,4**	910 **ICI/32,8**	1 850 **ICI/32,4**	–	3 900 **ICI/31,4**	–	8 020 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	180 **CI/31,3**	210 **CI/31,3**	375 **CI/32,5**	460 **CI/32,5**	710 **CI/30,1**	1 420 **CI/31,3**	–	2 810 **CI/30,8**	–	4 850 **CI/30,8**	–	10 010 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 130 **C2I/28,6**	4 900 **C2I/28,9**	6 630 **C2I/28,8**	9 430 **C2I/29,5**	13 260 **C2I/30,3**	19 560 **C2I/29,9**	26 150 **C2I/30,1**	33 150 **C2I/28**	41 250 **C2I/28**	52 300 **C2I/28,8**			

For n_1 lower than 560 min^{-1} see page 195.

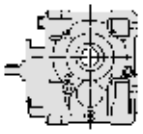
9 - Bevel helical gear reducer selection tables

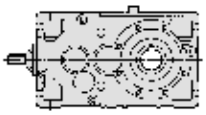




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
4 500 000	25	–	–	–	–	–	–	–	3 020 C2I/24,5	4 770 C2I/25,1	6 280 C2I/26	9 700 C2I/27	13 410 C2I/26,3	19 470 C2I/27,2	26 890 C2I/26,4	34 090 C2I/25,1	42 420 C2I/25,1	53 790 C2I/26			
	25	110 CI/24,1	220 CI/25	275 CI/25	435 CI/26	515 CI/26	825 CI/24,1	1 800 CI/25	–	3 560 CI/24,6	–	7 130 CI/24,6	–	14 590 CI/25,4	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 290 C2I/23,8	4 880 C2I/23,8	6 970 C2I/23,7	9 900 C2I/22,4	13 800 C2I/23	19 920 C2I/23,6	27 500 C2I/23,8	34 870 C2I/23	43 410 C2I/23	55 010 C2I/23,7			
	20	–	–	–	–	–	–	–	2 950 C2I/20,4	5 020 C2I/20,6	6 590 C2I/21,4	10 180 C2I/20,5	12 280 C2I/19,9	20 470 C2I/21,5	25 300 C2I/20,8	35 830 C2I/20,6	44 470 C2I/20,6	51 890 C2I/21,4			
	20	115 CI/19,3	215 CI/20	265 CI/20	465 CI/20,8	550 CI/20,8	945 CI/19,3	1 890 CI/20	2 720 CI/20	4 120 CI/19,7	5 430 CI/20,3	8 460 CI/19,7	10 860 CI/20,3	16 920 CI/20,3	21 460 CI/20	27 740 CI/19,7	33 130 CI/19,7	42 330 CI/20,3			
	18	–	–	–	–	–	–	–	2 820 CI/18	4 440 CI/18	5 850 CI/18,7	8 840 CI/18	11 580 CI/18,7	17 580 CI/17,9	22 370 CI/18	27 050 CI/18	34 150 CI/18	45 370 CI/18,4			
	16	120 CI/15,2	225 CI/15,8	275 CI/15,8	490 CI/16,4	575 CI/16,4	985 CI/15,2	1 970 CI/15,8	2 860 CI/15,8	4 290 CI/15,5	6 060 CI/16	8 810 CI/15,5	12 040 CI/16	17 620 CI/16	24 120 CI/15,8	28 710 CI/16,3	35 800 CI/16,3	45 950 CI/16			
	14	–	–	–	–	–	–	–	3 030 CI/14,2	4 740 CI/14,2	6 290 CI/14,7	9 680 CI/14,2	12 370 CI/14,7	19 370 CI/14,1	23 870 CI/14,2	31 050 CI/14,2	36 840 CI/14,2	48 400 CI/14,5			
	12,5	140 CI/12,4	255 CI/12,6	325 CI/12,6	570 CI/13,1	655 CI/13,1	1 120 CI/12,4	2 320 CI/12,6	2 780 CI/12,9	4 930 CI/13	5 670 CI/13,1	9 870 CI/13	10 930 CI/12,8	19 100 CI/12,6	21 900 CI/12,9	29 620 CI/12,8	36 260 CI/12,8	42 620 CI/12,6			
	11,2	–	–	–	–	–	–	–	3 210 CI/11,3	4 380 CI/11,4	6 810 CI/11,7	8 650 CI/11,3	13 520 CI/11,7	17 500 CI/11,4	26 070 CI/11,3	30 260 CI/11	37 820 CI/11	49 410 CI/11,5			
	10	135 CI/10,3	275 CI/10	335 CI/10	580 CI/10,4	670 CI/10,4	1 180 CI/9,81	2 360 CI/10	3 040 CI/10,2	4 740 CI/10,3	6 190 CI/10,4	9 460 CI/10,3	11 960 CI/10,2	18 880 CI/10	23 950 CI/10,2	33 620 CI/10,2	41 170 CI/10,2	46 300 CI/10			
	9	–	–	–	–	–	–	–	3 200 CI/9	4 820 CI/9,04	6 640 CI/9,33	9 530 CI/8,93	13 080 CI/9,33	19 300 CI/9,04	25 220 CI/9	33 000 CI/8,75	41 100 CI/8,75	49 840 CI/9,2			
		5,45	9,92	12,6	20,8	24,1	44,3	87,8	106	170	212	–	–	–	–	–	–	–	8	2800	**355**
	8	145 CI/7,85	270 CI/8	345 CI/8	590 CI/8,33	685 CI/8,33	1 190 CI/7,85	2 390 CI/8	2 940 CI/8,15	4 780 CI/8,27▲	6 000 CI/8,31▲	9 550 CI/8,27	11 570 CI/8,14	17 790 CI/8,21	23 170 CI/8,15	29 960 CI/7,83	37 310 CI/7,83	45 110 CI/8			
		4,62	8,15	10,3	18,5	20,6	36,4	77,1		152		304		–		–	–		6,3	2240	
	6,3	130 CI/6,53	230 CI/6,57	290 CI/6,57	495 CI/6,27	550 CI/6,27	1 010 CI/6,53	2 160 CI/6,57	–	4 060 CI/6,27	–	8 470 CI/6,53▲	–	17 050 CI/6,57	–	29 030 CI/6,27	36 290 CI/6,27	–			
								63,6		125		251		502		–	–		5	1800	
	5	–	–	–	–	–	–	1 710 CI/5,06	–	3 250 CI/4,89	–	6 810 CI/5,11	–	13 470 CI/5,06▲	–	23 250 CI/4,89	29 060 CI/4,89	–			
												201		402		718	898		4	1400	
	4	–	–	–	–	–	–	–	–	–	–	5 620 CI/4,1	–	10 980 CI/4	–	19 130 CI/3,9▲	23 920 CI/3,9▲	–			
4 000 000	45	–	–	–	–	–	–	–	2 890 C2I/45,1	4 290 C2I/45,6	6 130 C2I/45,4	8 720 C2I/46,6	12 260 C2I/47,8	17 500 C2I/47,1	24 180 C2I/47,5	30 650 C2I/44,2	38 140 C2I/44,2	48 360 C2I/45,4			
	40	–	–	–	–	–	–	–	2 860 C2I/38,7	4 400 C2I/39,5	5 940 C2I/41	8 950 C2I/42,6	12 580 C2I/41,4	17 970 C2I/42,8	24 820 C2I/41,6	31 460 C2I/39,5	39 150 C2I/39,5	49 640 C2I/41			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

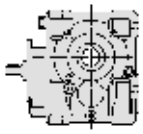


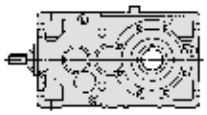


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
4 000 000	40	140 **ICI/38,6**	220 **ICI/40,1**	275 **ICI/40,1**	470 **ICI/41,8**	540 **ICI/41,8**	990 **ICI/39,4**	1 960 **ICI/39,4**	2 270 **ICI/40,2**	4 300 **ICI/41,4**	5 030 **ICI/41,6**	8 740 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 050 **C2I/37,5**	4 530 **C2I/37,5**	6 460 **C2I/37,3**	9 190 **C2I/35,3**	12 680 **C2I/36,2**	18 460 **C2I/37,2**	25 500 **C2I/37,5**	32 320 **C2I/36,3**	40 230 **C2I/36,3**	51 000 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 030 **C2I/32**	5 600 **C2I/33,1**	6 450 **C2I/33,2**	10 270 **C2I/34,2**	12 890 **C2I/33,7**	21 650 **C2I/33,1**	25 410 **C2I/33,7**	33 150 **C2I/31,3**	41 250 **C2I/31,3**	52 300 **C2I/32,5**			
	31,5	135 **ICI/32,1**	200 **ICI/33**	240 **ICI/33**	445 **ICI/31,4**	490 **ICI/31,4**	935 **ICI/32,8**	1 890 **ICI/32,4**	–	4 000 **ICI/31,4**	–	8 220 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	185 **CI/31,3**	220 **CI/31,3**	385 **CI/32,5**	475 **CI/32,5**	735 **CI/30,1**	1 470 **CI/31,3**	–	2 910 **CI/30,8**	–	4 980 **CI/30,8**	–	10 260 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 220 **C2I/28,6**	5 050 **C2I/28,9**	6 820 **C2I/28,8**	9 700 **C2I/29,5**	13 640 **C2I/30,3**	20 190 **C2I/29,9**	26 890 **C2I/30,1**	34 090 **C2I/28**	42 420 **C2I/28**	53 790 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 120 **C2I/24,5**	4 930 **C2I/25,1**	6 480 **C2I/26**	10 010 **C2I/27**	13 840 **C2I/26,3**	20 100 **C2I/27,2**	27 760 **C2I/26,4**	35 190 **C2I/25,1**	43 800 **C2I/25,1**	55 530 **C2I/26**			
	25	115 **CI/24,1**	225 **CI/25**	280 **CI/25**	450 **CI/26**	530 **CI/26**	850 **CI/24,1**	1 860 **CI/25**	–	3 680 **CI/24,6**	–	7 360 **CI/24,6**	–	15 060 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 380 **C2I/23,8**	5 020 **C2I/23,8**	7 170 **C2I/23,7**	10 180 **C2I/22,4**	14 180 **C2I/23**	20 470 **C2I/23,6**	28 250 **C2I/23,8**	35 830 **C2I/23**	44 600 **C2I/23**	56 520 **C2I/23,7**			
	20	–	–	–	–	–	–	–	3 030 **C2I/20,4**	5 150 **C2I/20,6**	6 760 **C2I/21,4**	10 450 **C2I/20,5**	12 610 **C2I/19,9**	21 010 **C2I/21,5**	25 970 **C2I/20,8**	36 780 **C2I/20,6**	45 650 **C2I/20,6**	53 270 **C2I/21,4**			
	20	115 **CI/19,3**	220 **CI/20**	275 **CI/20**	485 **CI/20,8**	570 **CI/20,8**	970 **CI/19,3**	1 940 **CI/20**	2 790 **CI/20**	4 220 **CI/19,7**	5 580 **CI/20,3**	8 680 **CI/19,7**	11 150 **CI/20,3**	17 370 **CI/20,3**	22 030 **CI/20**	28 470 **CI/19,7**	34 010 **CI/19,7**	43 450 **CI/20,3**			
	18	–	–	–	–	–	–	–	2 900 **CI/18**	4 560 **CI/18**	6 010 **CI/18,7**	9 080 **CI/18**	11 900 **CI/18,7**	18 070 **CI/17,9**	22 980 **CI/18**	27 790 **CI/18**	35 080 **CI/18**	46 610 **CI/18,4**			
	16	120 **CI/15,2**	230 **CI/15,8**	280 **CI/15,8**	500 **CI/16,4**	590 **CI/16,4**	1000 **CI/15,2**	1 990 **CI/15,8**	2 900 **CI/15,8**	4 340 **CI/15,5**	6 140 **CI/16**	8 930 **CI/15,5**	12 200 **CI/16**	17 860 **CI/16**	24 450 **CI/15,8**	29 100 **CI/16,3**	36 290 **CI/16,3**	46 580 **CI/16**			
	14	–	–	–	–	–	–	–	3 070 **CI/14,2**	4 800 **CI/14,2**	6 370 **CI/14,7**	9 810 **CI/14,2**	12 530 **CI/14,7**	19 610 **CI/14,1**	24 170 **CI/14,2**	31 440 **CI/14,2**	37 300 **CI/14,2**	49 020 **CI/14,5**			
	12,5	140 **CI/12,4**	260 **CI/12,6**	330 **CI/12,6**	575 **CI/13,1**	665 **CI/13,1**	1 140 **CI/12,4**	2 350 **CI/12,6**	2 820 **CI/12,9**	5 000 **CI/13**	5 750 **CI/13,1**	10 010 **CI/13**	11 090 **CI/12,8**	19 370 **CI/12,6**	22 210 **CI/12,9**	30 040 **CI/12,8**	36 770 **CI/12,8**	43 230 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	3 260 **CI/11,3**	4 440 **CI/11,4**	6 910 **CI/11,7**	8 770 **CI/11,3**	13 710 **CI/11,7**	17 760 **CI/11,4**	26 440 **CI/11,3**	30 690 **CI/11**	38 370 **CI/11**	50 120 **CI/11,5**			
	10	140 **CI/10,3**	280 **CI/10**	340 **CI/10**	590 **CI/10,4**	680 **CI/10,4**	1 200 **CI/9,81**	2 390 **CI/10**	3 080 **CI/10,2**	4 810 **CI/10,3**	6 280 **CI/10,4**	9 590 **CI/10,3**	12 130 **CI/10,2**	19 160 **CI/10**	24 300 **CI/10,2**	34 100 **CI/10,2**	41 760 **CI/10,2**	46 970 **CI/10**			
									106	159	212	317	–	–	–	–	–	–	9	2800	**315**
	9	–	–	–	–	–	–	–	3 250 **CI/9**	4 890 **CI/9,04**	6 740 **CI/9,33▲**	9 670 **CI/8,93▲**	13 260 **CI/9,33**	19 570 **CI/9,04**	25 580 **CI/9**	33 470 **CI/8,75**	41 680 **CI/8,75**	50 550 **CI/9,2**			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

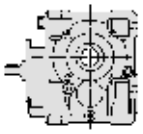
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
4 000 000		4,93	8,98	11,4	18,9	21,8	40,1	79,4	95,8	153	192	–	–	–	–	–	–	–	8	2500	**315**
	8	150 **CI/7,85**	275 **CI/8**	345 **CI/8**	600 **CI/8,33**	695 **CI/8,33**	1 200 **CI/7,85**	2 430 **CI/8**	2 980 **CI/8,15**	4 850 **CI/8,27**	6 080 **CI/8,31**	9 680 **CI/8,27**	11 730 **CI/8,14**	18 030 **CI/8,21**	23 490 **CI/8,15**	30 370 **CI/7,83**	37 820 **CI/7,83**	45 720 **CI/8**			
		4,18	7,38	9,34	16,7	18,7	32,9	69,8		138		275		–		–	–		6,3	2000	
	6,3	130 **CI/6,53**	230 **CI/6,57**	295 **CI/6,57**	500 **CI/6,27**	560 **CI/6,27**	1 030 **CI/6,53**	2 190 **CI/6,57**	–	4 120 **CI/6,27**	–	8 590 **CI/6,53**	–	17 280 **CI/6,57**	–	29 430 **CI/6,27**	36 780 **CI/6,27**	–			
								57,4		113		226		452		–	–		5	1600	
	5	–	–	–	–	–	–	1 730 **CI/5,06**	–	3 300 **CI/4,89**	–	6 900 **CI/5,11**	–	13 660 **CI/5,06**	–	23 580 **CI/4,89**	29 470 **CI/4,89**	–			
												181		363		648	810		4	1250	
	4	–	–	–	–	–	–	–	–	–	–	5 680 **CI/4,1**	–	11 090 **CI/4**	–	19 320 **CI/3,9**	24 150 **CI/3,9**	–			
3 550 000	50	–	–	–	–	–	–	–	2 810 **C2I/50,4**	4 830 **C2I/52,1**	5 960 **C2I/52,4**	10 060 **C2I/53,9**	11 920 **C2I/53,1**	18 020 **C2I/52,1**	23 500 **C2I/53,1**	29 760 **C2I/51,3**	36 100 **C2I/51,3**	46 990 **C2I/50,5**			
	50	135 **ICI/49**	225 **ICI/50,9**	280 **ICI/50,9**	425 **ICI/53**	480 **ICI/53**	945 **ICI/49,9**	1 910 **ICI/50**	2 420 **ICI/49,3**	4 190 **ICI/52,5**	5 110 **ICI/50,8**	8 460 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	2 970 **C2I/45,1**	4 400 **C2I/45,6**	6 290 **C2I/45,4**	8 990 **C2I/46,6**	12 580 **C2I/47,8**	17 970 **C2I/47,1**	24 820 **C2I/47,5**	31 460 **C2I/44,2**	39 150 **C2I/44,2**	49 640 **C2I/45,4**			
	40	–	–	–	–	–	–	–	2 930 **C2I/38,7**	4 530 **C2I/39,5**	6 100 **C2I/41**	9 190 **C2I/42,6**	12 930 **C2I/41,4**	18 460 **C2I/42,8**	25 500 **C2I/41,6**	32 320 **C2I/39,5**	40 230 **C2I/39,5**	51 000 **C2I/41**			
	40	145 **ICI/38,6**	225 **ICI/40,1**	280 **ICI/40,1**	480 **ICI/41,8**	555 **ICI/41,8**	1 020 **ICI/39,4**	2 010 **ICI/39,4**	2 330 **ICI/40,2**	4 420 **ICI/41,4**	5 170 **ICI/41,6**	8 980 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 130 **C2I/37,5**	4 640 **C2I/37,5**	6 630 **C2I/37,3**	9 430 **C2I/35,3**	13 000 **C2I/36,2**	18 930 **C2I/37,2**	26 150 **C2I/37,5**	33 150 **C2I/36,3**	41 250 **C2I/36,3**	52 300 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 120 **C2I/32**	5 780 **C2I/33,1**	6 630 **C2I/33,2**	10 600 **C2I/34,2**	13 260 **C2I/33,7**	22 340 **C2I/33,1**	26 140 **C2I/33,7**	34 090 **C2I/31,3**	42 420 **C2I/31,3**	53 790 **C2I/32,5**			
	31,5	140 **ICI/32,1**	205 **ICI/33**	245 **ICI/33**	460 **ICI/31,4**	505 **ICI/31,4**	960 **ICI/32,8**	1 950 **ICI/32,4**	–	4 110 **ICI/31,4**	–	8 460 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	190 **CI/31,3**	225 **CI/31,3**	400 **CI/32,5**	485 **CI/32,5**	760 **CI/30,1**	1 520 **CI/31,3**	–	3 000 **CI/30,8**	–	5 120 **CI/30,8**	–	10 550 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 320 **C2I/28,6**	5 240 **C2I/28,9**	7 040 **C2I/28,8**	10 010 **C2I/29,5**	14 080 **C2I/30,3**	20 920 **C2I/29,9**	27 760 **C2I/30,1**	35 190 **C2I/28**	43 800 **C2I/28**	55 530 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 200 **C2I/24,5**	5 060 **C2I/25,1**	6 660 **C2I/26**	10 290 **C2I/27**	14 220 **C2I/26,3**	20 650 **C2I/27,2**	28 530 **C2I/26,4**	36 160 **C2I/25,1**	45 000 **C2I/25,1**	57 050 **C2I/26**			
	25	120 **CI/24,1**	225 **CI/25**	285 **CI/25**	470 **CI/26**	550 **CI/26**	875 **CI/24,1**	1 910 **CI/25**	–	3 780 **CI/24,6**	–	7 560 **CI/24,6**	–	15 470 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 470 **C2I/23,8**	5 150 **C2I/23,8**	7 360 **C2I/23,7**	10 450 **C2I/22,4**	14 560 **C2I/23**	21 010 **C2I/23,6**	29 000 **C2I/23,8**	36 780 **C2I/23**	45 790 **C2I/23**	58 020 **C2I/23,7**			
	20	–	–	–	–	–	–	–	3 110 **C2I/20,4**	5 290 **C2I/20,6**	6 950 **C2I/21,4**	10 730 **C2I/20,5**	12 960 **C2I/19,9**	21 590 **C2I/21,5**	26 680 **C2I/20,8**	37 790 **C2I/20,6**	46 900 **C2I/20,6**	54 730 **C2I/21,4**			

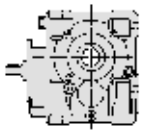
For n_1 lower than 560 min^{-1} see page 195.

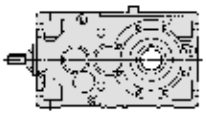


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
3 550 000	20	120 **CI/19,3**	225 **CI/20**	285 **CI/20**	500 **CI/20,8**	590 **CI/20,8**	1000 **CI/19,3**	1 990 **CI/20**	2 870 **CI/20**	4 340 **CI/19,7**	5 730 **CI/20,3**	8 920 **CI/19,7**	11 460 **CI/20,3**	17 840 **CI/20,3**	22 630 **CI/20**	29 250 **CI/19,7**	34 940 **CI/19,7**	44 650 **CI/20,3**			
	18	–	–	–	–	–	–	–	2 940 **CI/18**	4 620 **CI/18**	6 090 **CI/18,7**	9 210 **CI/18**	12 060 **CI/18,7**	18 310 **CI/17,9**	23 300 **CI/18**	28 170 **CI/18**	35 560 **CI/18**	47 240 **CI/18,4**			
	16	125 **CI/15,2**	230 **CI/15,8**	285 **CI/15,8**	500 **CI/16,4**	590 **CI/16,4**	1 010 **CI/15,2**	2 020 **CI/15,8**	2 930 **CI/15,8**	4 400 **CI/15,5**	6 220 **CI/16**	9 040 **CI/15,5**	12 360 **CI/16**	18 080 **CI/16**	24 760 **CI/15,8**	29 470 **CI/16,3**	36 750 **CI/16,3**	47 170 **CI/16**			
	14	–	–	–	–	–	–	–	3 110 **CI/14,2**	4 860 **CI/14,2**	6 460 **CI/14,7**	9 940 **CI/14,2**	12 710 **CI/14,7**	19 890 **CI/14,1**	24 510 **CI/14,2**	31 880 **CI/14,2**	37 830 **CI/14,2**	49 710 **CI/14,5**			
	12,5	145 **CI/12,4**	265 **CI/12,6**	335 **CI/12,6**	585 **CI/13,1**	675 **CI/13,1**	1 150 **CI/12,4**	2 390 **CI/12,6**	2 860 **CI/12,9**	5 070 **CI/13**	5 830 **CI/13,1**	10 150 **CI/13**	11 250 **CI/12,8**	19 640 **CI/12,6**	22 520 **CI/12,9**	30 470 **CI/12,8**	37 300 **CI/12,8**	43 850 **CI/12,6**			
	11,2	–	–	–	–	–	–	–	3 300 **CI/11,3**	4 500 **CI/11,4**	7 010 **CI/11,7**	8 900 **CI/11,3**	13 910 **CI/11,7**	18 010 **CI/11,4**	26 820 **CI/11,3**	31 130 **CI/11**	38 920 **CI/11**	50 840 **CI/11,5**			
		3,98	8,28	10,1	16,8	19,4	36,2	71,1	89,9	138	180	276	354	–	–	–	–	–	10	2800	**280**
	10	140 **CI/10,3**	280 **CI/10**	345 **CI/10**	595 **CI/10,4**	690 **CI/10,4**	1 210 **CI/9,81**	2 420 **CI/10**	3 130 **CI/10,2**	4 880 **CI/10,3**	6 370 **CI/10,4**	9 730 **CI/10,3▲**	12 300 **CI/10,2▲**	19 430 **CI/10**	24 640 **CI/10,2**	34 590 **CI/10,2**	42 350 **CI/10,2**	47 630 **CI/10**			
									95,8	144	192	287	–	–	–	–	–	–	9	2500	
	9	–	–	–	–	–	–	–	3 290 **CI/9**	4 960 **CI/9,04**	6 830 **CI/9,33**	9 800 **CI/8,93**	13 440 **CI/9,33**	19 840 **CI/9,04**	25 920 **CI/9**	33 930 **CI/8,75**	42 250 **CI/8,75**	51 240 **CI/9,2**			
		4,48	8,15	10,3	17,1	19,8	36,4	72,1	86,9	139	174	278	342	522	–	–	–	–	8	2240	
	8	150 **CI/7,85**	280 **CI/8**	350 **CI/8**	610 **CI/8,33**	705 **CI/8,33**	1 220 **CI/7,85**	2 460 **CI/8**	3 020 **CI/8,15**	4 910 **CI/8,27**	6 160 **CI/8,31**	9 800 **CI/8,27▲**	11 880 **CI/8,14▲**	18 270 **CI/8,21▲**	23 800 **CI/8,15**	30 770 **CI/7,83**	38 320 **CI/7,83**	46 330 **CI/8**			
		3,81	6,72	8,51	15,2	17	30	63,6		125		251		502		–	–		6,3	1800	
	6,3	130 **CI/6,53**	235 **CI/6,57**	295 **CI/6,57**	505 **CI/6,27**	565 **CI/6,27**	1 040 **CI/6,53**	2 220 **CI/6,57**	–	4 170 **CI/6,27**	–	8 700 **CI/6,53**	–	17 500 **CI/6,57▲**	–	29 800 **CI/6,27**	37 250 **CI/6,27**	–			
								51		101		201		402		718	898		5	1400	
	5	–	–	–	–	–	–	1 760 **CI/5,06**	–	3 350 **CI/4,89**	–	7 010 **CI/5,11**	–	13 880 **CI/5,06**	–	23 960 **CI/4,89▲**	29 940 **CI/4,89▲**	–			
												164		328		586	732		4	1120	
	4	–	–	–	–	–	–	–	–	–	–	5 730 **CI/4,1**	–	11 200 **CI/4**	–	19 510 **CI/3,9**	24 380 **CI/3,9**	–			
3 150 000	56	–	–	–	–	–	–	–	2 890 **C2I/55,4**	5 280 **C2I/57**	5 840 **C2I/56,8**	10 340 **C2I/55,5**	12 260 **C2I/56,9**	19 400 **C2I/56,1**	24 180 **C2I/56,6**	30 650 **C2I/56**	38 140 **C2I/56**	48 360 **C2I/57,6**			
	50	–	–	–	–	–	–	–	2 880 **C2I/50,4**	4 990 **C2I/52,1**	6 120 **C2I/52,4**	10 400 **C2I/53,9**	12 240 **C2I/53,1**	18 640 **C2I/52,1**	24 120 **C2I/53,1**	30 550 **C2I/51,3**	37 050 **C2I/51,3**	48 240 **C2I/50,5**			
	50	140 **ICI/49**	230 **ICI/50,9**	290 **ICI/50,9**	440 **ICI/53**	495 **ICI/53**	980 **ICI/49,9**	1 960 **ICI/50**	2 480 **ICI/49,3**	4 300 **ICI/52,5**	5 240 **ICI/50,8**	8 750 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 050 **C2I/45,1**	4 530 **C2I/45,6**	6 460 **C2I/45,4**	9 290 **C2I/46,6**	12 930 **C2I/47,8**	18 460 **C2I/47,1**	25 500 **C2I/47,5**	32 320 **C2I/44,2**	40 230 **C2I/44,2**	51 000 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 010 **C2I/38,7**	4 640 **C2I/39,5**	6 260 **C2I/41**	9 430 **C2I/42,6**	13 260 **C2I/41,4**	18 930 **C2I/42,8**	26 150 **C2I/41,6**	33 150 **C2I/39,5**	41 250 **C2I/39,5**	52 300 **C2I/41**			
	40	150 **ICI/38,6**	235 **ICI/40,1**	290 **ICI/40,1**	495 **ICI/41,8**	570 **ICI/41,8**	1 060 **ICI/39,4**	2 060 **ICI/39,4**	2 390 **ICI/40,2**	4 530 **ICI/41,4**	5 300 **ICI/41,6**	9 210 **ICI/41,4**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

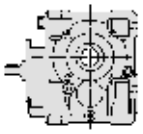


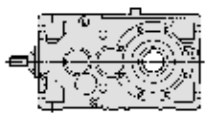


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
3 150 000	35,5	–	–	–	–	–	–	–	3 220 **C2I/37,5**	4 770 **C2I/37,5**	6 820 **C2I/37,3**	9 700 **C2I/35,3**	13 370 **C2I/36,2**	19 470 **C2I/37,2**	26 890 **C2I/37,5**	34 090 **C2I/36,3**	42 420 **C2I/36,3**	53 790 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 220 **C2I/32**	5 990 **C2I/33,1**	6 840 **C2I/33,2**	10 980 **C2I/34,2**	13 690 **C2I/33,7**	23 150 **C2I/33,1**	26 980 **C2I/33,7**	35 190 **C2I/31,3**	43 800 **C2I/31,3**	55 530 **C2I/32,5**			
	31,5	145 **CI/32,1**	210 **CI/33**	255 **CI/33**	475 **CI/31,4**	520 **CI/31,4**	990 **CI/32,8**	2 010 **CI/32,4**	–	4 250 **CI/31,4**	–	8 730 **CI/32,7**	–	–	–	–	–	–			
	31,5	–	200 **CI/31,3**	235 **CI/31,3**	410 **CI/32,5**	500 **CI/32,5**	785 **CI/30,1**	1 570 **CI/31,3**	–	3 110 **CI/30,8**	–	5 280 **CI/30,8**	–	10 900 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 410 **C2I/28,6**	5 430 **C2I/28,9**	7 230 **C2I/28,8**	10 290 **C2I/29,5**	14 460 **C2I/30,3**	21 680 **C2I/29,9**	28 530 **C2I/30,1**	36 160 **C2I/28**	45 000 **C2I/28**	57 050 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 290 **C2I/24,5**	5 200 **C2I/25,1**	6 830 **C2I/26**	10 560 **C2I/27**	14 600 **C2I/26,3**	21 200 **C2I/27,2**	29 280 **C2I/26,4**	37 120 **C2I/25,1**	46 190 **C2I/25,1**	58 560 **C2I/26**			
	25	120 **CI/24,1**	225 **CI/25**	285 **CI/25**	485 **CI/26**	570 **CI/26**	895 **CI/24,1**	1 960 **CI/25**	–	3 880 **CI/24,6**	–	7 760 **CI/24,6**	–	15 880 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 570 **C2I/23,8**	5 290 **C2I/23,8**	7 560 **C2I/23,7**	10 730 **C2I/22,4**	14 960 **C2I/23**	21 590 **C2I/23,6**	29 800 **C2I/23,8**	37 790 **C2I/23**	47 040 **C2I/23**	59 610 **C2I/23,7**			
	20	–	–	–	–	–	–	–	3 160 **C2I/20,4**	5 360 **C2I/20,6**	7 040 **C2I/21,4**	10 880 **C2I/20,5**	13 130 **C2I/19,9**	21 880 **C2I/21,5**	27 050 **C2I/20,8**	38 300 **C2I/20,6**	47 540 **C2I/20,6**	55 480 **C2I/21,4**			
	20	125 **CI/19,3**	230 **CI/20**	285 **CI/20**	505 **CI/20,8**	590 **CI/20,8**	1 010 **CI/19,3**	2 020 **CI/20**	2 900 **CI/20**	4 400 **CI/19,7**	5 810 **CI/20,3**	9 040 **CI/19,7**	11 610 **CI/20,3**	18 090 **CI/20,3**	22 940 **CI/20**	29 650 **CI/19,7**	35 410 **CI/19,7**	45 250 **CI/20,3**			
	18	–	–	–	–	–	–	–	2 970 **CI/18**	4 680 **CI/18**	6 170 **CI/18,7**	9 320 **CI/18**	12 210 **CI/18,7**	18 540 **CI/17,9**	23 590 **CI/18**	28 520 **CI/18**	36 010 **CI/18**	47 840 **CI/18,4**			
	16	125 **CI/15,2**	235 **CI/15,8**	290 **CI/15,8**	505 **CI/16,4**	590 **CI/16,4**	1 030 **CI/15,2**	2 050 **CI/15,8**	2 980 **CI/15,8**	4 460 **CI/15,5**	6 310 **CI/16**	9 170 **CI/15,5**	12 530 **CI/16**	18 340 **CI/16**	25 110 **CI/15,8**	29 880 **CI/16,3**	37 270 **CI/16,3**	47 830 **CI/16**			
	14	–	–	–	–	–	–	–	3 160 **CI/14,2**	4 930 **CI/14,2**	6 550 **CI/14,7**	10 090 **CI/14,2**	12 890 **CI/14,7**	20 170 **CI/14,1**	24 860 **CI/14,2**	32 340 **CI/14,2**	38 380 **CI/14,2**	50 430 **CI/14,5**			
	12,5	145 **CI/12,4**	265 **CI/12,6**	340 **CI/12,6**	590 **CI/13,1**	685 **CI/13,1**	1 170 **CI/12,4**	2 420 **CI/12,6**	2 900 **CI/12,9**	5 150 **CI/13**	5 910 **CI/13,1**	10 300 **CI/13**	11 410 **CI/12,8**	19 930 **CI/12,6**	22 850 **CI/12,9**	30 910 **CI/12,8**	37 840 **CI/12,8**	44 480 **CI/12,6**			
									87,3	117	179	235	354	–	–	–	–	–	11,2	2800	**250**
	11,2	–	–	–	–	–	–	–	3 350 **CI/11,3**	4 570 **CI/11,4**	7 110 **CI/11,7**	9 020 **CI/11,3**	14 100 **CI/11,7▲**	18 270 **CI/11,4**	27 200 **CI/11,3**	31 580 **CI/11**	39 470 **CI/11**	51 560 **CI/11,5**			
	10	3,61 140 **CI/10,3**	7,49 285 **CI/10**	9,16 350 **CI/10**	15,2 605 **CI/10,4**	17,6 700 **CI/10,4**	32,8 1 230 **CI/9,81**	64,3 2 460 **CI/10**	81,4 3 170 **CI/10,2**	125 4 940 **CI/10,3**	163 6 460 **CI/10,4**	250 9 860 **CI/10,3**	321 12 470 **CI/10,2**	– 19 690 **CI/10**	– 24 980 **CI/10,2**	– 35 060 **CI/10,2**	– 42 930 **CI/10,2**	– 48 280 **CI/10**	10	2500	
									86,9	130	174	261	342	522	–	–	–	–	9	2240	
	9	–	–	–	–	–	–	–	3 340 **CI/9**	5 020 **CI/9,04**	6 920 **CI/9,33**	9 930 **CI/8,93**	13 620 **CI/9,33▲**	20 100 **CI/9,04▲**	26 270 **CI/9**	34 370 **CI/8,75**	42 810 **CI/8,75**	51 910 **CI/9,2**			
	8	4,05 150 **CI/7,85**	7,38 280 **CI/8**	9,34 355 **CI/8**	15,5 615 **CI/8,33**	17,9 715 **CI/8,33**	32,9 1 230 **CI/7,85**	65,3 2 490 **CI/8**	78,7 3 060 **CI/8,15**	126 4 980 **CI/8,27**	157 6 240 **CI/8,31**	252 9 940 **CI/8,27**	310 12 040 **CI/8,14**	472 18 510 **CI/8,21**	– 24 120 **CI/8,15**	– 31 190 **CI/7,83**	– 38 840 **CI/7,83**	– 46 960 **CI/8**	8	2000	

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

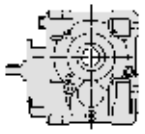


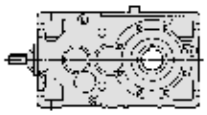


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
3 150 000		3,43	6,06	7,68	13,7	15,4	27,1	57,4		113		226		452		–	–		6,3	1600	**250**
	6,3	135 **CI/6,53**	240 **CI/6,57**	300 **CI/6,57**	515 **CI/6,27**	575 **CI/6,27**	1 060 **CI/6,53**	2 250 **CI/6,57**	–	4 230 **CI/6,27**	–	8 820 **CI/6,53**	–	17 750 **CI/6,57**	–	30 220 **CI/6,27**	37 780 **CI/6,27**	–			
								46		90,9		181		363		648	810		5	1250	
	5	–	–	–	–	–	–	1 780 **CI/5,06**	–	3 390 **CI/4,89**	–	7 080 **CI/5,11**	–	14 020 **CI/5,06**	–	24 190 **CI/4,89**	30 240 **CI/4,89**	–			
												148		296		528	660		4	1000	
	4	–	–	–	–	–	–	–	–	–	–	5 790 **CI/4,1**	–	11 310 **CI/4**	–	19 700 **CI/3,9**	24 620 **CI/3,9**	–			
2 800 000	63	–	–	–	–	–	–	–	2 810 **C2I/62**	5 150 **C2I/65,2**	6 740 **C2I/65,5**	10 300 **C2I/64,2**	11 920 **C2I/63,2**	20 600 **C2I/62,1**	23 500 **C2I/63,3**	32 540 **C2I/65,1**	40 680 **C2I/65,1**	46 990 **C2I/64**			
	63	120 **ICI/60,1**	230 **ICI/63,6**	280 **ICI/63,6**	475 **ICI/66,2**	560 **ICI/66,2**	1000 **ICI/61,3**	1 850 **ICI/62,5**	2 420 **ICI/62,5**	4 370 **ICI/62,5**	5 110 **ICI/64,4**	9 000 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	2 970 **C2I/55,4**	5 460 **C2I/57**	6 040 **C2I/56,8**	10 700 **C2I/55,5**	12 580 **C2I/56,9**	20 070 **C2I/56,1**	24 820 **C2I/56,6**	31 460 **C2I/56**	39 150 **C2I/56**	49 640 **C2I/57,6**			
	50	–	–	–	–	–	–	–	2 960 **C2I/50,4**	5 160 **C2I/52,1**	6 290 **C2I/52,4**	10 750 **C2I/53,9**	12 570 **C2I/53,1**	19 270 **C2I/52,1**	24 780 **C2I/53,1**	31 390 **C2I/51,3**	38 070 **C2I/51,3**	49 560 **C2I/50,5**			
	50	145 **ICI/49**	240 **ICI/50,9**	300 **ICI/50,9**	450 **ICI/53**	510 **ICI/53**	1 010 **ICI/49,9**	2 010 **ICI/50**	2 550 **ICI/49,3**	4 420 **ICI/52,5**	5 390 **ICI/50,8**	9 040 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 130 **C2I/45,1**	4 670 **C2I/45,6**	6 630 **C2I/45,4**	9 610 **C2I/46,6**	13 260 **C2I/47,8**	18 930 **C2I/47,1**	26 150 **C2I/47,5**	33 150 **C2I/44,2**	41 250 **C2I/44,2**	52 300 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 090 **C2I/38,7**	4 770 **C2I/39,5**	6 440 **C2I/41**	9 700 **C2I/42,6**	13 640 **C2I/41,4**	19 470 **C2I/42,8**	26 890 **C2I/41,6**	34 090 **C2I/39,5**	42 420 **C2I/39,5**	53 790 **C2I/41**			
	40	155 **ICI/38,6**	240 **ICI/40,1**	300 **ICI/40,1**	510 **ICI/41,8**	585 **ICI/41,8**	1 090 **ICI/39,4**	2 120 **ICI/39,4**	2 460 **ICI/40,2**	4 660 **ICI/41,4**	5 450 **ICI/41,6**	9 470 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 320 **C2I/37,5**	4 930 **C2I/37,5**	7 040 **C2I/37,3**	10 010 **C2I/35,3**	13 800 **C2I/36,2**	20 100 **C2I/37,2**	27 760 **C2I/37,5**	35 190 **C2I/36,3**	43 800 **C2I/36,3**	55 530 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 310 **C2I/32**	6 000 **C2I/33,1**	7 030 **C2I/33,2**	11 380 **C2I/34,2**	14 060 **C2I/33,7**	23 990 **C2I/33,1**	27 720 **C2I/33,7**	36 160 **C2I/31,3**	45 000 **C2I/31,3**	57 050 **C2I/32,5**			
	31,5	150 **ICI/32,1**	220 **ICI/33**	265 **ICI/33**	485 **ICI/31,4**	535 **ICI/31,4**	1 020 **ICI/32,8**	2 070 **ICI/32,4**	–	4 360 **ICI/31,4**	–	8 970 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	205 **CI/31,3**	245 **CI/31,3**	425 **CI/32,5**	515 **CI/32,5**	815 **CI/30,1**	1 630 **CI/31,3**	–	3 230 **CI/30,8**	–	5 460 **CI/30,8**	–	11 190 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 510 **C2I/28,6**	5 620 **C2I/28,9**	7 420 **C2I/28,8**	10 560 **C2I/29,5**	14 850 **C2I/30,3**	22 470 **C2I/29,9**	29 280 **C2I/30,1**	37 120 **C2I/28**	46 190 **C2I/28**	58 560 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 380 **C2I/24,5**	5 340 **C2I/25,1**	7 020 **C2I/26**	10 850 **C2I/27**	15 000 **C2I/26,3**	21 780 **C2I/27,2**	30 080 **C2I/26,4**	38 140 **C2I/25,1**	47 460 **C2I/25,1**	60 170 **C2I/26**			
	25	125 **CI/24,1**	230 **CI/25**	285 **CI/25**	505 **CI/26**	590 **CI/26**	920 **CI/24,1**	2 010 **CI/25**	–	3 990 **CI/24,6**	–	7 970 **CI/24,6**	–	16 320 **CI/25,4**	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

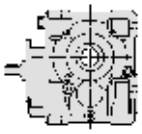
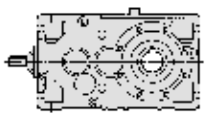
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
2 800 000	22,4	–	–	–	–	–	–	–	3 610 **C2I/23,8**	5 360 **C2I/23,8**	7 660 **C2I/23,7**	10 880 **C2I/22,4**	15 160 **C2I/23**	21 880 **C2I/23,6**	30 200 **C2I/23,8**	38 300 **C2I/23**	47 680 **C2I/23**	60 420 **C2I/23,7**			
	20	–	–	–	–	–	–	–	3 200 **C2I/20,4**	5 430 **C2I/20,6**	7 130 **C2I/21,4**	11 020 **C2I/20,5**	13 300 **C2I/19,9**	22 160 **C2I/21,5**	27 390 **C2I/20,8**	38 790 **C2I/20,6**	48 150 **C2I/20,6**	56 180 **C2I/21,4**			
	20	125 **CI/19,3**	230 **CI/20**	285 **CI/20**	505 **CI/20,8**	595 **CI/20,8**	1 020 **CI/19,3**	2 040 **CI/20**	2 940 **CI/20**	4 460 **CI/19,7**	5 880 **CI/20,3**	9 160 **CI/19,7**	11 760 **CI/20,3**	18 310 **CI/20,3**	23 230 **CI/20**	30 030 **CI/19,7**	35 860 **CI/19,7**	45 830 **CI/20,3**			
	18	–	–	–	–	–	–	–	3 020 **CI/18**	4 750 **CI/18**	6 250 **CI/18,7**	9 450 **CI/18**	12 390 **CI/18,7**	18 810 **CI/17,9**	23 930 **CI/18**	28 930 **CI/18**	36 520 **CI/18**	48 520 **CI/18,4**			
	16	130 **CI/15,2**	235 **CI/15,8**	290 **CI/15,8**	505 **CI/16,4**	595 **CI/16,4**	1 040 **CI/15,2**	2 080 **CI/15,8**	3 020 **CI/15,8**	4 530 **CI/15,5**	6 400 **CI/16**	9 300 **CI/15,5**	12 710 **CI/16**	18 600 **CI/16**	25 470 **CI/15,8**	30 310 **CI/16,3**	37 800 **CI/16,3**	48 520 **CI/16**			
	14	–	–	–	–	–	–	–	3 200 **CI/14,2**	5 010 **CI/14,2**	6 640 **CI/14,7**	10 230 **CI/14,2**	13 080 **CI/14,7**	20 460 **CI/14,1**	25 220 **CI/14,2**	32 810 **CI/14,2**	38 930 **CI/14,2**	51 150 **CI/14,5**			
	12,5	3,5 150 **CI/12,4**	6,29 270 **CI/12,6**	7,97 345 **CI/12,6**	13,4 600 **CI/13,1**	15,5 695 **CI/13,1**	28,1 1 190 **CI/12,4**	57,1 2 460 **CI/12,6**	67,1 2 940 **CI/12,9**	117 5 220 **CI/13**	134 6 000 **CI/13,1**	235 10 440 **CI/13**	264 11 570 **CI/12,8**	– 20 210 **CI/12,6**	– 23 170 **CI/12,9**	– 31 340 **CI/12,8**	– 38 370 **CI/12,8**	– 45 110 **CI/12,6**	12,5	2800	**224**
	11,2	–	–	–	–	–	–	–	79 3 390 **CI/11,3**	106 4 630 **CI/11,4**	162 7 210 **CI/11,7**	213 9 140 **CI/11,3**	321 14 300 **CI/11,7**	– 18 510 **CI/11,4**	– 27 570 **CI/11,3**	– 32 010 **CI/11**	– 40 010 **CI/11**	– 52 260 **CI/11,5**	11,2	2500	
	10	3,27 145 **CI/10,3**	6,8 290 **CI/10**	8,31 355 **CI/10**	13,8 615 **CI/10,4**	16 710 **CI/10,4**	29,8 1 250 **CI/9,81**	58,4 2 490 **CI/10**	73,9 3 210 **CI/10,2**	114 5 010 **CI/10,3**	148 6 540 **CI/10,4**	227 9 990 **CI/10,3**	291 12 640 **CI/10,2**	468 19 950 **CI/10▲**	582 25 310 **CI/10,2▲**	– 35 520 **CI/10,2**	– 43 500 **CI/10,2**	– 48 920 **CI/10**	10	2240	
	9	–	–	–	–	–	–	–	78,7 3 380 **CI/9**	118 5 090 **CI/9,04**	157 7 010 **CI/9,33**	236 10 060 **CI/8,93**	310 13 810 **CI/9,33**	472 20 370 **CI/9,04**	– 26 620 **CI/9**	– 34 840 **CI/8,75**	– 43 390 **CI/8,75**	– 52 620 **CI/9,2**	9	2000	
	8	3,69 155 **CI/7,85**	6,72 285 **CI/8**	8,51 360 **CI/8**	14,1 625 **CI/8,33**	16,4 725 **CI/8,33**	30 1 250 **CI/7,85**	59,5 2 520 **CI/8**	71,7 3 100 **CI/8,15**	115 5 040 **CI/8,27**	143 6 320 **CI/8,31**	229 10 060 **CI/8,27**	282 12 200 **CI/8,14**	430 18 750 **CI/8,21**	565 24 430 **CI/8,15▲**	760 31 590 **CI/7,83▲**	946 39 330 **CI/7,83▲**	– 47 550 **CI/8**	8	1800	
	6,3	3,05 135 **CI/6,53**	5,39 240 **CI/6,57**	6,82 305 **CI/6,57**	12,2 520 **CI/6,27**	13,6 585 **CI/6,27**	24,1 1 070 **CI/6,53**	51 2 290 **CI/6,57**	– –	101 4 300 **CI/6,27**	– –	201 8 960 **CI/6,53**	– –	402 18 030 **CI/6,57**	– –	718 30 710 **CI/6,27▲**	898 38 380 **CI/6,27▲**	– –	6,3	1400	
	5	–	–	–	–	–	–	41,6 1 800 **CI/5,06**	– –	82,3 3 430 **CI/4,89**	– –	164 7 150 **CI/5,11**	– –	328 14 160 **CI/5,06**	– –	586 24 420 **CI/4,89**	732 30 530 **CI/4,89**	– –	5	1120	
	4	–	–	–	–	–	–	–	–	–	–	135 5 840 **CI/4,1**	– –	269 11 420 **CI/4**	– –	480 19 870 **CI/3,9**	600 24 840 **CI/3,9**	– –	4	900	
2 500 000	71	–	–	–	–	–	–	–	2 890 **C2I/70,2**	4 290 **C2I/72,3**	5 640 **C2I/72**	8 720 **C2I/70,3**	12 260 **C2I/72,2**	17 500 **C2I/71,2**	24 180 **C2I/71,7**	30 650 **C2I/71,1**	38 140 **C2I/71,1**	48 360 **C2I/73,1**			
	63	–	–	–	–	–	–	–	2 880 **C2I/62**	5 300 **C2I/65,2**	6 970 **C2I/65,5**	10 600 **C2I/64,2**	12 240 **C2I/63,2**	21 200 **C2I/62,1**	24 120 **C2I/63,3**	33 670 **C2I/65,1**	42 080 **C2I/65,1**	48 240 **C2I/64**			
	63	125 **ICI/60,1**	230 **ICI/63,6**	285 **ICI/63,6**	495 **ICI/66,2**	580 **ICI/66,2**	1 030 **ICI/61,3**	1 910 **ICI/62,5**	2 480 **ICI/62,5**	4 500 **ICI/62,5**	5 240 **ICI/64,4**	9 250 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 050 **C2I/55,4**	5 640 **C2I/57**	6 240 **C2I/56,8**	11 060 **C2I/55,5**	12 930 **C2I/56,9**	20 740 **C2I/56,1**	25 500 **C2I/56,6**	32 320 **C2I/56**	40 230 **C2I/56**	51 000 **C2I/57,6**			

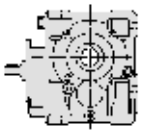
For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

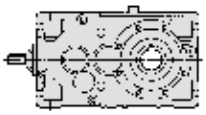



$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i** 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
2 500 000	50	–	–	–	–	–	–	–	3 030 **C2I/50,4**	5 340 **C2I/52,1**	6 450 **C2I/52,4**	11 120 **C2I/53,9**	12 890 **C2I/53,1**	19 930 **C2I/52,1**	25 410 **C2I/53,1**	32 190 **C2I/51,3**	39 270 **C2I/51,3**	50 820 **C2I/50,5**			
	50	150 **ICI/49**	245 **ICI/50,9**	310 **ICI/50,9**	460 **ICI/53**	520 **ICI/53**	1 050 **ICI/49,9**	2 060 **ICI/50**	2 610 **ICI/49,3**	4 530 **ICI/52,5**	5 520 **ICI/50,8**	9 360 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 220 **C2I/45,1**	4 820 **C2I/45,6**	6 820 **C2I/45,4**	9 920 **C2I/46,6**	13 640 **C2I/47,8**	19 470 **C2I/47,1**	26 890 **C2I/47,5**	34 090 **C2I/44,2**	42 420 **C2I/44,2**	53 790 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 200 **C2I/38,7**	4 930 **C2I/39,5**	6 650 **C2I/41**	10 010 **C2I/42,6**	14 080 **C2I/41,4**	20 100 **C2I/42,8**	27 760 **C2I/41,6**	35 190 **C2I/39,5**	43 800 **C2I/39,5**	55 530 **C2I/41**			
	40	155 **ICI/38,6**	250 **ICI/40,1**	310 **ICI/40,1**	525 **ICI/41,8**	605 **ICI/41,8**	1 130 **ICI/39,4**	2 190 **ICI/39,4**	2 540 **ICI/40,2**	4 810 **ICI/41,4**	5 630 **ICI/41,6**	9 780 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 410 **C2I/37,5**	5 060 **C2I/37,5**	7 230 **C2I/37,3**	10 290 **C2I/35,3**	14 180 **C2I/36,2**	20 650 **C2I/37,2**	28 530 **C2I/37,5**	36 160 **C2I/36,3**	45 000 **C2I/36,3**	57 050 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 400 **C2I/32**	6 150 **C2I/33,1**	7 220 **C2I/33,2**	11 790 **C2I/34,2**	14 430 **C2I/33,7**	24 860 **C2I/33,1**	28 460 **C2I/33,7**	37 120 **C2I/31,3**	46 190 **C2I/31,3**	58 560 **C2I/32,5**			
	31,5	160 **ICI/32,1**	225 **ICI/33**	275 **ICI/33**	500 **ICI/31,4**	545 **ICI/31,4**	1 050 **ICI/32,8**	2 120 **ICI/32,4**	–	4 480 **ICI/31,4**	–	9 210 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	210 **CI/31,3**	245 **CI/31,3**	445 **CI/32,5**	530 **CI/32,5**	845 **CI/30,1**	1 690 **CI/31,3**	–	3 340 **CI/30,8**	–	5 660 **CI/30,8**	–	11 490 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 600 **C2I/28,6**	5 830 **C2I/28,9**	7 630 **C2I/28,8**	10 850 **C2I/29,5**	15 250 **C2I/30,3**	23 280 **C2I/29,9**	30 080 **C2I/30,1**	38 140 **C2I/28**	47 460 **C2I/28**	60 170 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 420 **C2I/24,5**	5 410 **C2I/25,1**	7 120 **C2I/26**	11 000 **C2I/27**	15 210 **C2I/26,3**	22 080 **C2I/27,2**	30 490 **C2I/26,4**	38 660 **C2I/25,1**	48 100 **C2I/25,1**	60 990 **C2I/26**			
	25	130 **CI/24,1**	230 **CI/25**	285 **CI/25**	505 **CI/26**	595 **CI/26**	935 **CI/24,1**	2 040 **CI/25**	–	4 040 **CI/24,6**	–	8 080 **CI/24,6**	–	16 540 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 660 **C2I/23,8**	5 430 **C2I/23,8**	7 760 **C2I/23,7**	11 020 **C2I/22,4**	15 350 **C2I/23**	22 160 **C2I/23,6**	30 580 **C2I/23,8**	38 790 **C2I/23**	48 280 **C2I/23**	61 190 **C2I/23,7**			
	20	–	–	–	–	–	–	–	3 240 **C2I/20,4**	5 510 **C2I/20,6**	7 240 **C2I/21,4**	11 170 **C2I/20,5**	13 490 **C2I/19,9**	22 470 **C2I/21,5**	27 780 **C2I/20,8**	39 340 **C2I/20,6**	48 830 **C2I/20,6**	56 980 **C2I/21,4**			
	20	130 **CI/19,3**	235 **CI/20**	290 **CI/20**	505 **CI/20,8**	595 **CI/20,8**	1 040 **CI/19,3**	2 070 **CI/20**	2 980 **CI/20**	4 520 **CI/19,7**	5 960 **CI/20,3**	9 290 **CI/19,7**	11 930 **CI/20,3**	18 570 **CI/20,3**	23 560 **CI/20**	30 450 **CI/19,7**	36 370 **CI/19,7**	46 480 **CI/20,3**			
	18	–	–	–	–	–	–	–	3 060 **CI/18**	4 810 **CI/18**	6 340 **CI/18,7**	9 590 **CI/18**	12 560 **CI/18,7**	19 080 **CI/17,9**	24 270 **CI/18**	29 340 **CI/18**	37 050 **CI/18**	49 210 **CI/18,4**			
	16	135 **CI/15,2**	240 **CI/15,8**	295 **CI/15,8**	510 **CI/16,4**	595 **CI/16,4**	1 060 **CI/15,2**	2 110 **CI/15,8**	3 060 **CI/15,8**	4 590 **CI/15,5**	6 490 **CI/16**	9 430 **CI/15,5**	12 900 **CI/16**	18 870 **CI/16**	25 830 **CI/15,8**	30 750 **CI/16,3**	38 350 **CI/16,3**	49 220 **CI/16**			
									67,1	105	134	214	264	–	–	–	–	–	14	2800	**200**
	14	–	–	–	–	–	–	–	3 250 **CI/14,2**	5 080 **CI/14,2**	6 740 **CI/14,7**	10 380 **CI/14,2**	13 260 **CI/14,7**	20 750 **CI/14,1**	25 580 **CI/14,2**	33 270 **CI/14,2**	39 480 **CI/14,2**	51 870 **CI/14,5**			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

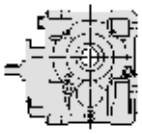
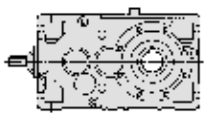
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
2 500 000		3,17	5,69	7,21	12,1	14	25,4	51,7	60,7	106	121	213	239	–	–	–	–	–	12,5	2500	**200**
	12,5	150	275	345	610	705	1 200	2 490	2 980	5 290	6 080	10 580	11 730	20 480	23 490	31 770	38 900	45 720			
		CI/12,4	**CI/12,6**	**CI/12,6**	**CI/13,1**	**CI/13,1**	**CI/12,4**	**CI/12,6**	**CI/12,9**	**CI/13**	**CI/13,1**	**CI/13**	**CI/12,8**	**CI/12,6**	**CI/12,9**	**CI/12,8**	**CI/12,8**	**CI/12,6**			
									71,7	96,5	147	193	291	386	582	–	–	–	11,2	2240	
	11,2	–	–	–	–	–	–	–	3 440	4 690	7 300	9 270	14 480	18 760	27 930	32 430	40 540	52 950			
									CI/11,3	**CI/11,4**	**CI/11,7**	**CI/11,3**	**CI/11,7**	**CI/11,4**	**CI/11,3▲**	**CI/11**	**CI/11**	**CI/11,5**			
		2,96	6,16	7,52	12,5	14,5	26,9	52,9	66,9	103	134	205	264	424	527	–	–	–	10	2000	
	10	145	295	360	620	720	1 260	2 520	3 250	5 080	6 630	10 130	12 810	20 220	25 650	36 010	44 090	49 590			
		CI/10,3	**CI/10**	**CI/10**	**CI/10,4**	**CI/10,4**	**CI/9,81**	**CI/10**	**CI/10,2**	**CI/10,3**	**CI/10,4**	**CI/10,3**	**CI/10,2**	**CI/10**	**CI/10,2**	**CI/10,2**	**CI/10,2**	**CI/10**			
									71,7	108	143	215	282	430	565	760	946	–	9	1800	
	9	–	–	–	–	–	–	–	3 420	5 160	7 100	10 190	13 980	20 630	26 960	35 280	43 940	53 290			
									CI/9	**CI/9,04**	**CI/9,33**	**CI/8,93**	**CI/9,33**	**CI/9,04**	**CI/9▲**	**CI/8,75▲**	**CI/8,75▲**	**CI/9,2**			
		3,33	6,06	7,68	12,7	14,7	27,1	53,6	64,6	104	129	207	255	388	509	685	853	–	8	1600	
	8	155	290	365	635	735	1 270	2 560	3 150	5 110	6 410	10 200	12 370	19 010	24 770	32 030	39 890	48 220			
		CI/7,85	**CI/8**	**CI/8**	**CI/8,33**	**CI/8,33**	**CI/7,85**	**CI/8**	**CI/8,15**	**CI/8,27**	**CI/8,31**	**CI/8,27**	**CI/8,14**	**CI/8,21**	**CI/8,15**	**CI/7,83**	**CI/7,83**	**CI/8**			
		2,77	4,84	6,12	11	12,5	21,6	46		90,9		181		363		648	810		6,3	1250	
	6,3	140	245	305	525	595	1 080	2 310	–	4 350	–	9 060	–	18 220	–	31 010	38 760	–			
		CI/6,53	**CI/6,57**	**CI/6,57**	**CI/6,27**	**CI/6,27**	**CI/6,53**	**CI/6,57**		**CI/6,27**		**CI/6,53**		**CI/6,57**		**CI/6,27**	**CI/6,27**				
								37,6		74,3		148		296		528	660		5	1000	
	5	–	–	–	–	–	–	1 810	–	3 470	–	7 230	–	14 310	–	24 660	30 830	–			
								CI/5,06		**CI/4,89**		**CI/5,11**		**CI/5,06**		**CI/4,89**	**CI/4,89**				
												121		242		431	538		4	800	
	4	–	–	–	–	–	–	–	–	–	–	5 910	–	11 540	–	20 070	25 090	–			
												CI/4,1		**CI/4**		**CI/3,9**	**CI/3,9**				
2 240 000	80	–	–	–	–	–	–	–	2 810	4 740	5 960	9 420	11 920	17 030	23 500	29 760	36 100	46 990			
									C2I/78,6	**C2I/82,7**	**C2I/83,1**	**C2I/81,4**	**C2I/80,2**	**C2I/78,8**	**C2I/80,3**	**C2I/82,6**	**C2I/82,6**	**C2I/81,2**			
	80	120	230	280	435	515	995	1 650	2 050	3 610	4 130	7 420	–	–	–	–	–	–			
		ICI/75,2	**ICI/79,5**	**ICI/79,5**	**ICI/82,7**	**ICI/82,7**	**ICI/76,7**	**ICI/78,1**	**ICI/78,1**	**ICI/78,1**	**ICI/80,5**	**ICI/78,1**									
	71	–	–	–	–	–	–	–	2 970	4 400	5 790	8 950	12 580	17 970	24 820	31 460	39 150	49 640			
									C2I/70,2	**C2I/72,3**	**C2I/72**	**C2I/70,3**	**C2I/72,2**	**C2I/71,2**	**C2I/71,7**	**C2I/71,1**	**C2I/71,1**	**C2I/73,1**			
	63	–	–	–	–	–	–	–	2 960	5 450	7 200	10 900	12 610	21 800	24 870	34 800	43 490	49 560			
									C2I/62	**C2I/65,2**	**C2I/65,5**	**C2I/64,2**	**C2I/63,2**	**C2I/62,1**	**C2I/63,3**	**C2I/65,1**	**C2I/65,1**	**C2I/64**			
	63	130	230	285	510	600	1 060	1 980	2 550	4 620	5 390	9 500	–	–	–	–	–	–			
		ICI/60,1	**ICI/63,6**	**ICI/63,6**	**ICI/66,2**	**ICI/66,2**	**ICI/61,3**	**ICI/62,5**	**ICI/62,5**	**ICI/62,5**	**ICI/64,4**	**ICI/62,5**									
	56	–	–	–	–	–	–	–	3 130	5 600	6 460	11 440	13 260	21 460	26 150	33 150	41 250	52 300			
									C2I/55,4	**C2I/57**	**C2I/56,8**	**C2I/55,5**	**C2I/56,9**	**C2I/56,1**	**C2I/56,6**	**C2I/56**	**C2I/56**	**C2I/57,6**			
	50	–	–	–	–	–	–	–	3 120	5 510	6 630	11 480	13 260	20 570	26 140	33 110	40 530	52 270			
									C2I/50,4	**C2I/52,1**	**C2I/52,4**	**C2I/53,9**	**C2I/53,1**	**C2I/52,1**	**C2I/53,1**	**C2I/51,3**	**C2I/51,3**	**C2I/50,5**			
	50	155	255	320	475	535	1 080	2 120	2 690	4 660	5 680	9 660	–	–	–	–	–	–			
		ICI/49	**ICI/50,9**	**ICI/50,9**	**ICI/53**	**ICI/53**	**ICI/49,9**	**ICI/50**	**ICI/49,3**	**ICI/52,5**	**ICI/50,8**	**ICI/52,5**									
	45	–	–	–	–	–	–	–	3 320	4 990	7 040	10 280	14 080	20 100	27 760	35 190	43 800	55 530			
									C2I/45,1	**C2I/45,6**	**C2I/45,4**	**C2I/46,6**	**C2I/47,8**	**C2I/47,1**	**C2I/47,5**	**C2I/44,2**	**C2I/44,2**	**C2I/45,4**			
	40	–	–	–	–	–	–	–	3 280	5 060	6 830	10 290	14 460	20 650	28 530	36 160	45 000	57 050			
									C2I/38,7	**C2I/39,5**	**C2I/41**	**C2I/42,6**	**C2I/41,4**	**C2I/42,8**	**C2I/41,6**	**C2I/39,5**	**C2I/39,5**	**C2I/41**			

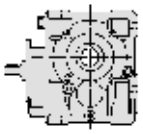
For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

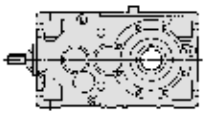



$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
2 240 000	40	160 **ICI/38,6**	260 **ICI/40,1**	325 **ICI/40,1**	540 **ICI/41,8**	625 **ICI/41,8**	1 170 **ICI/39,4**	2 250 **ICI/39,4**	2 610 **ICI/40,2**	4 940 **ICI/41,4**	5 780 **ICI/41,6**	10 040 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 510 **C2I/37,5**	5 200 **C2I/37,5**	7 420 **C2I/37,3**	10 560 **C2I/35,3**	14 560 **C2I/36,2**	21 200 **C2I/37,2**	29 280 **C2I/37,5**	37 120 **C2I/36,3**	46 190 **C2I/36,3**	58 560 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 490 **C2I/32**	6 480 **C2I/33,1**	7 440 **C2I/33,2**	12 220 **C2I/34,2**	14 830 **C2I/33,7**	25 760 **C2I/33,1**	29 240 **C2I/33,7**	38 140 **C2I/31,3**	47 460 **C2I/31,3**	60 170 **C2I/32,5**			
	31,5	165 **ICI/32,1**	230 **ICI/33**	285 **ICI/33**	510 **ICI/31,4**	560 **ICI/31,4**	1 070 **ICI/32,8**	2 180 **ICI/32,4**	–	4 600 **ICI/31,4**	–	9 460 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	220 **CI/31,3**	245 **CI/31,3**	445 **CI/32,5**	555 **CI/32,5**	875 **CI/30,1**	1 750 **CI/31,3**	–	3 460 **CI/30,8**	–	5 870 **CI/30,8**	–	11 810 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 650 **C2I/28,6**	6 030 **C2I/28,9**	7 730 **C2I/28,8**	11 000 **C2I/29,5**	15 460 **C2I/30,3**	24 090 **C2I/29,9**	30 490 **C2I/30,1**	38 660 **C2I/28**	48 100 **C2I/28**	60 990 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 470 **C2I/24,5**	5 480 **C2I/25,1**	7 210 **C2I/26**	11 130 **C2I/27**	15 400 **C2I/26,3**	22 590 **C2I/27,2**	30 880 **C2I/26,4**	39 140 **C2I/25,1**	48 710 **C2I/25,1**	61 760 **C2I/26**			
	25	135 **CI/24,1**	230 **CI/25**	285 **CI/25**	510 **CI/26**	600 **CI/26**	945 **CI/24,1**	2 070 **CI/25**	–	4 090 **CI/24,6**	–	8 180 **CI/24,6**	–	16 750 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 710 **C2I/23,8**	5 510 **C2I/23,8**	7 870 **C2I/23,7**	11 170 **C2I/22,4**	15 570 **C2I/23**	22 470 **C2I/23,6**	31 020 **C2I/23,8**	39 340 **C2I/23**	48 970 **C2I/23**	62 060 **C2I/23,7**			
	20	–	–	–	–	–	–	–	3 290 **C2I/20,4**	5 590 **C2I/20,6**	7 340 **C2I/21,4**	11 330 **C2I/20,5**	13 680 **C2I/19,9**	22 790 **C2I/21,5**	28 180 **C2I/20,8**	39 900 **C2I/20,6**	49 530 **C2I/20,6**	57 790 **C2I/21,4**			
	20	135 **CI/19,3**	240 **CI/20**	295 **CI/20**	510 **CI/20,8**	600 **CI/20,8**	1 050 **CI/19,3**	2 100 **CI/20**	3 030 **CI/20**	4 580 **CI/19,7**	6 050 **CI/20,3**	9 420 **CI/19,7**	12 100 **CI/20,3**	18 840 **CI/20,3**	23 900 **CI/20**	30 890 **CI/19,7**	36 890 **CI/19,7**	47 140 **CI/20,3**			
	18	–	–	–	–	–	–	–	3 100 **CI/18**	4 880 **CI/18**	6 430 **CI/18,7**	9 730 **CI/18**	12 740 **CI/18,7**	19 350 **CI/17,9**	24 620 **CI/18**	29 760 **CI/18**	37 580 **CI/18**	49 920 **CI/18,4**			
		2,68	4,54	5,58	9,29	10,7	20,7	40,3	57,7	87,9	121	181	240	–	–	–	–	–	16	2800	**180**
	16	140 **CI/15,2**	245 **CI/15,8**	300 **CI/15,8**	520 **CI/16,4**	600 **CI/16,4**	1 070 **CI/15,2**	2 170 **CI/15,8**	3 110 **CI/15,8**	4 660 **CI/15,5**	6 580 **CI/16**	9 570 **CI/15,5**	13 080 **CI/16**	19 140 **CI/16**	26 200 **CI/15,8**	31 180 **CI/16,3**	38 890 **CI/16,3**	49 910 **CI/16**			
									60,7	94,9	121	194	239	–	–	–	–	–	14	2500	
	14	–	–	–	–	–	–	–	3 290 **CI/14,2**	5 150 **CI/14,2**	6 830 **CI/14,7**	10 520 **CI/14,2**	13 440 **CI/14,7**	21 040 **CI/14,1**	25 920 **CI/14,2**	33 720 **CI/14,2**	40 020 **CI/14,2**	52 580 **CI/14,5**			
		2,88	5,17	6,55	11	12,7	23,1	46,9	55,1	96,5	110	193	217	386	434	–	–	–	12,5	2240	
	12,5	150 **CI/12,4**	280 **CI/12,6**	350 **CI/12,6**	615 **CI/13,1**	715 **CI/13,1**	1 220 **CI/12,4**	2 520 **CI/12,6**	3 020 **CI/12,9**	5 360 **CI/13**	6 160 **CI/13,1**	10 720 **CI/13**	11 880 **CI/12,8**	20 750 **CI/12,6**	23 800 **CI/12,9**	32 190 **CI/12,8**	39 410 **CI/12,8**	46 330 **CI/12,6**			
									64,9	87,3	133	175	264	349	527	624	780	–	11,2	2000	
	11,2	–	–	–	–	–	–	–	3 490 **CI/11,3**	4 750 **CI/11,4**	7 400 **CI/11,7**	9 390 **CI/11,3**	14 680 **CI/11,7**	19 010 **CI/11,4**	28 320 **CI/11,3**	32 870 **CI/11**	41 090 **CI/11**	53 670 **CI/11,5**			
		2,7	5,61	6,86	11,4	13,2	24,6	48,2	60,9	93,8	122	187	240	386	480	676	828	946	10	1800	
	10	150 **CI/10,3**	300 **CI/10**	365 **CI/10**	630 **CI/10,4**	730 **CI/10,4**	1 280 **CI/9,81**	2 560 **CI/10**	3 300 **CI/10,2**	5 140 **CI/10,3**	6 720 **CI/10,4**	10 260 **CI/10,3**	12 970 **CI/10,2**	20 480 **CI/10**	25 980 **CI/10,2**	36 460 **CI/10,2▲**	44 650 **CI/10,2▲**	50 210 **CI/10▲**			
									64,6	97	129	194	255	388	509	685	853	–	9	1600	
	9	–	–	–	–	–	–	–	3 470 **CI/9**	5 230 **CI/9,04**	7 200 **CI/9,33**	10 330 **CI/8,93**	14 180 **CI/9,33**	20 920 **CI/9,04**	27 340 **CI/9**	35 780 **CI/8,75**	44 560 **CI/8,75**	54 040 **CI/9,2**			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

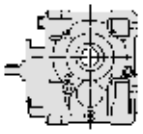


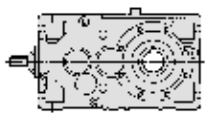


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i** **50**	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**	i_N	n_1 min^{-1}	n_{N2}
2 240 000		2,96	5,39	6,82	11,3	13,1	24,1	47,7	57,5	92,1	115	184	226	345	453	609	759	898	8	1400	**180**
	8	160 **CI/7,85**	295 **CI/8**	370 **CI/8**	645 **CI/8,33**	745 **CI/8,33**	1 290 **CI/7,85**	2 600 **CI/8**	3 200 **CI/8,15**	5 190 **CI/8,27**	6 510 **CI/8,31**	10 370 **CI/8,27**	12 570 **CI/8,14**	19 320 **CI/8,21**	25 170 **CI/8,15**	32 550 **CI/7,83**	40 530 **CI/7,83**	49 000 **CI/8▲**			
		2,57	4,36	5,51	9,86	11,5	19,4	41,6		82,3		164		328		586	732		6,3	1120	
	6,3	145 **CI/6,53**	245 **CI/6,57**	310 **CI/6,57**	525 **CI/6,27**	615 **CI/6,27**	1 080 **CI/6,53**	2 330 **CI/6,57**	–	4 400 **CI/6,27**	–	9 150 **CI/6,53**	–	18 400 **CI/6,57**	–	31 310 **CI/6,27**	39 130 **CI/6,27**	–			
								34,1		67,6		135		269		480	600		5	900	
	5	–	–	–	–	–	–	1 830 **CI/5,06**	–	3 510 **CI/4,89**	–	7 290 **CI/5,11**	–	14 440 **CI/5,06**	–	24 880 **CI/4,89**	31 100 **CI/4,89**	–			
												108		217		386	482		4	710	
	4	–	–	–	–	–	–	–	–	–	–	5 970 **CI/4,1**	–	11 650 **CI/4**	–	20 270 **CI/3,9**	25 340 **CI/3,9**	–			
2 000 000																					
	90	–	–	–	–	–	–	–	2 890 **C2I/87,8**	4 680 **C2I/90,4**	5 710 **C2I/90**	9 140 **C2I/87,9**	12 260 **C2I/90,3**	17 500 **C2I/89**	24 180 **C2I/89,7**	30 650 **C2I/88,8**	38 140 **C2I/88,8**	48 360 **C2I/91,4**			
	80	–	–	–	–	–	–	–	2 880 **C2I/78,6**	4 910 **C2I/82,7**	6 120 **C2I/83,1**	9 750 **C2I/81,4**	12 240 **C2I/80,2**	17 480 **C2I/78,8**	24 120 **C2I/80,3**	30 550 **C2I/82,6**	37 050 **C2I/82,6**	48 240 **C2I/81,2**			
	80	125 **ICI/75,2**	230 **ICI/79,5**	290 **ICI/79,5**	450 **ICI/82,7**	530 **ICI/82,7**	1 030 **ICI/76,7**	1 700 **ICI/78,1**	2 110 **ICI/78,1**	3 710 **ICI/78,1**	4 270 **ICI/80,5**	7 620 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 050 **C2I/70,2**	4 530 **C2I/72,3**	5 950 **C2I/72**	9 190 **C2I/70,3**	12 930 **C2I/72,2**	18 460 **C2I/71,2**	25 500 **C2I/71,7**	32 320 **C2I/71,1**	40 230 **C2I/71,1**	51 000 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 030 **C2I/62**	5 600 **C2I/65,2**	7 450 **C2I/65,5**	11 200 **C2I/64,2**	13 050 **C2I/63,2**	22 400 **C2I/62,1**	25 730 **C2I/63,3**	36 000 **C2I/65,1**	45 000 **C2I/65,1**	50 820 **C2I/64**			
	63	130 **ICI/60,1**	230 **ICI/63,6**	290 **ICI/63,6**	510 **ICI/66,2**	600 **ICI/66,2**	1 090 **ICI/61,3**	2 050 **ICI/62,5**	2 610 **ICI/62,5**	4 750 **ICI/62,5**	5 520 **ICI/64,4**	9 750 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 220 **C2I/55,4**	5 800 **C2I/57**	6 660 **C2I/56,8**	11 810 **C2I/55,5**	13 640 **C2I/56,9**	22 150 **C2I/56,1**	26 890 **C2I/56,6**	34 090 **C2I/56**	42 420 **C2I/56**	53 790 **C2I/57,6**			
	50	–	–	–	–	–	–	–	3 220 **C2I/50,4**	5 710 **C2I/52,1**	6 840 **C2I/52,4**	11 890 **C2I/53,9**	13 690 **C2I/53,1**	21 310 **C2I/52,1**	26 980 **C2I/53,1**	34 180 **C2I/51,3**	41 990 **C2I/51,3**	53 960 **C2I/50,5**			
	50	155 **ICI/49**	265 **ICI/50,9**	330 **ICI/50,9**	490 **ICI/53**	555 **ICI/53**	1 120 **ICI/49,9**	2 190 **ICI/50**	2 780 **ICI/49,3**	4 810 **ICI/52,5**	5 870 **ICI/50,8**	10 000 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 410 **C2I/45,1**	5 170 **C2I/45,6**	7 230 **C2I/45,4**	10 650 **C2I/46,6**	14 460 **C2I/47,8**	20 650 **C2I/47,1**	28 530 **C2I/47,5**	36 160 **C2I/44,2**	45 000 **C2I/44,2**	57 050 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 370 **C2I/38,7**	5 200 **C2I/39,5**	7 010 **C2I/41**	10 560 **C2I/42,6**	14 850 **C2I/41,4**	21 200 **C2I/42,8**	29 280 **C2I/41,6**	37 120 **C2I/39,5**	46 190 **C2I/39,5**	58 560 **C2I/41**			
	40	165 **ICI/38,6**	270 **ICI/40,1**	335 **ICI/40,1**	555 **ICI/41,8**	640 **ICI/41,8**	1 220 **ICI/39,4**	2 310 **ICI/39,4**	2 680 **ICI/40,2**	5 070 **ICI/41,4**	5 940 **ICI/41,6**	10 310 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 600 **C2I/37,5**	5 340 **C2I/37,5**	7 630 **C2I/37,3**	10 850 **C2I/35,3**	14 960 **C2I/36,2**	21 780 **C2I/37,2**	30 080 **C2I/37,5**	38 140 **C2I/36,3**	47 460 **C2I/36,3**	60 170 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 540 **C2I/32**	6 500 **C2I/33,1**	7 700 **C2I/33,2**	12 640 **C2I/34,2**	15 030 **C2I/33,7**	25 900 **C2I/33,1**	29 640 **C2I/33,7**	38 660 **C2I/31,3**	48 100 **C2I/31,3**	60 990 **C2I/32,5**			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

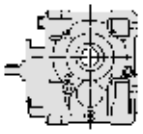


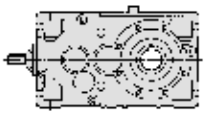


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i** **50**	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**	i_N	n_1 min^{-1}	n_{N2}
2 000 000	31,5	170 **CI/32,1**	235 **CI/33**	295 **CI/33**	520 **CI/31,4**	570 **CI/31,4**	1 090 **CI/32,8**	2 210 **CI/32,4**	–	4 660 **CI/31,4**	–	9 590 **CI/32,7**	–	–	–	–	–	–			
	31,5	–	220 **CI/31,3**	245 **CI/31,3**	450 **CI/32,5**	560 **CI/32,5**	905 **CI/30,1**	1 810 **CI/31,3**	–	3 580 **CI/30,8**	–	6 070 **CI/30,8**	–	11 970 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 700 **C2I/28,6**	6 220 **C2I/28,9**	7 830 **C2I/28,8**	11 270 **C2I/29,5**	15 660 **C2I/30,3**	24 860 **C2I/29,9**	30 880 **C2I/30,1**	39 140 **C2I/28**	48 710 **C2I/28**	61 760 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 510 **C2I/24,5**	5 590 **C2I/25,1**	7 310 **C2I/26**	11 290 **C2I/27**	15 620 **C2I/26,3**	23 410 **C2I/27,2**	31 320 **C2I/26,4**	39 700 **C2I/25,1**	49 400 **C2I/25,1**	62 640 **C2I/26**			
	25	140 **CI/24,1**	230 **CI/25**	290 **CI/25**	510 **CI/26**	600 **CI/26**	960 **CI/24,1**	2 100 **CI/25**	–	4 150 **CI/24,6**	–	8 300 **CI/24,6**	–	16 990 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 770 **C2I/23,8**	5 590 **C2I/23,8**	7 980 **C2I/23,7**	11 330 **C2I/22,4**	15 790 **C2I/23**	22 790 **C2I/23,6**	31 460 **C2I/23,8**	39 900 **C2I/23**	49 670 **C2I/23**	62 950 **C2I/23,7**			
	20	–	–	–	–	–	–	–	3 340 **C2I/20,4**	5 670 **C2I/20,6**	7 440 **C2I/21,4**	11 490 **C2I/20,5**	13 880 **C2I/19,9**	23 120 **C2I/21,5**	28 580 **C2I/20,8**	40 470 **C2I/20,6**	50 240 **C2I/20,6**	58 620 **C2I/21,4**			
	20	140 **CI/19,3**	240 **CI/20**	300 **CI/20**	515 **CI/20,8**	600 **CI/20,8**	1 070 **CI/19,3**	2 130 **CI/20**	3 070 **CI/20**	4 650 **CI/19,7**	6 140 **CI/20,3**	9 560 **CI/19,7**	12 270 **CI/20,3**	19 110 **CI/20,3**	24 240 **CI/20**	31 330 **CI/19,7**	37 790 **CI/19,7**	47 820 **CI/20,3**			
									51,2	80,7	102	161	203	–	–	–	–	–	18	2800	**160**
	18	–	–	–	–	–	–	–	3 150 **CI/18**	4 950 **CI/18**	6 530 **CI/18,7**	9 870 **CI/18**	12 920 **CI/18,7**	19 620 **CI/17,9**	24 970 **CI/18**	30 180 **CI/18**	38 110 **CI/18**	50 630 **CI/18,4**			
		2,48	4,11	5,05	8,41	9,72	18,7	37,2	52,3	79,6	109	164	217	–	–	–	–	–	16	2500	
	16	145 **CI/15,2**	250 **CI/15,8**	305 **CI/15,8**	525 **CI/16,4**	610 **CI/16,4**	1 090 **CI/15,2**	2 240 **CI/15,8**	3 150 **CI/15,8**	4 720 **CI/15,5**	6 670 **CI/16**	9 700 **CI/15,5**	13 260 **CI/16**	19 400 **CI/16**	26 560 **CI/15,8**	31 610 **CI/16,3**	39 420 **CI/16,3**	50 590 **CI/16**			
									55,1	86,2	110	176	217	355	434	–	–	–	14	2240	
	14	–	–	–	–	–	–	–	3 340 **CI/14,2**	5 210 **CI/14,2**	6 920 **CI/14,7**	10 660 **CI/14,2**	13 620 **CI/14,7**	21 310 **CI/14,1**	26 270 **CI/14,2**	34 170 **CI/14,2**	40 550 **CI/14,2**	53 270 **CI/14,5**			
		2,61	4,68	5,92	9,96	11,5	20,9	42,4	49,9	87,3	99,8	175	196	349	393	533	652	780	12,5	2000	
	12,5	155 **CI/12,4**	280 **CI/12,6**	355 **CI/12,6**	625 **CI/13,1**	725 **CI/13,1**	1 230 **CI/12,4**	2 560 **CI/12,6**	3 060 **CI/12,9**	5 430 **CI/13**	6 240 **CI/13,1**	10 870 **CI/13**	12 040 **CI/12,8**	21 040 **CI/12,6**	24 120 **CI/12,9**	32 630 **CI/12,8**	39 950 **CI/12,8**	46 960 **CI/12,6**			
									59,1	79,6	121	159	240	318	480	568	710	891	11,2	1800	
	11,2	–	–	–	–	–	–	–	3 530 **CI/11,3**	4 810 **CI/11,4**	7 500 **CI/11,7**	9 510 **CI/11,3**	14 870 **CI/11,7**	19 250 **CI/11,4**	28 670 **CI/11,3**	33 290 **CI/11**	41 610 **CI/11**	54 350 **CI/11,5▲**			
		2,43	5,06	6,18	10,3	11,9	22,1	43,4	54,9	84,5	110	169	217	348	433	609	746	853	10	1600	
	10	150 **CI/10,3**	300 **CI/10**	370 **CI/10**	640 **CI/10,4**	740 **CI/10,4**	1 300 **CI/9,81**	2 590 **CI/10**	3 340 **CI/10,2**	5 210 **CI/10,3**	6 810 **CI/10,4**	10 400 **CI/10,3**	13 160 **CI/10,2**	20 770 **CI/10**	26 350 **CI/10,2**	36 980 **CI/10,2**	45 280 **CI/10,2**	50 930 **CI/10**			
									57,5	86,2	115	172	226	345	453	609	759	875	9	1400	
	9	–	–	–	–	–	–	–	3 530 **CI/9**	5 310 **CI/9,04**	7 320 **CI/9,33**	10 500 **CI/8,93**	14 410 **CI/9,33**	21 260 **CI/9,04**	27 780 **CI/9**	36 360 **CI/8,75**	45 280 **CI/8,75**	54 910 **CI/9,2▲**			
		2,65	4,84	6,11	10,1	11,7	21,6	42,8	51,8	83,1	104	166	204	311	408	549	685	810	8	1250	
	8	160 **CI/7,85**	295 **CI/8**	375 **CI/8**	645 **CI/8,33**	750 **CI/8,33**	1 290 **CI/7,85**	2 620 **CI/8**	3 230 **CI/8,15**	5 250 **CI/8,27**	6 580 **CI/8,31**	10 470 **CI/8,27**	12 700 **CI/8,14**	19 510 **CI/8,21**	25 430 **CI/8,15**	32 850 **CI/7,83**	40 990 **CI/7,83**	49 490 **CI/8**			
		2,37	3,91	4,94	8,85	10,7	17,4	37,6		74,3		148		296		528	660		6,3	1000	
	6,3	150 **CI/6,53**	245 **CI/6,57**	310 **CI/6,57**	530 **CI/6,27**	640 **CI/6,27**	1 090 **CI/6,53**	2 360 **CI/6,57**	–	4 450 **CI/6,27**	–	9 240 **CI/6,53**	–	18 580 **CI/6,57**	–	31 610 **CI/6,27**	39 510 **CI/6,27**	–			
								30,9		60,8		121		242		431	538		5	800	
	5	–	–	–	–	–	–	1 860 **CI/5,06**	–	3 550 **CI/4,89**	–	7 370 **CI/5,11**	–	14 590 **CI/5,06**	–	25 130 **CI/4,89**	31 410 **CI/4,89**	–			

For n_1 lower than 560 min^{-1} see page 195.

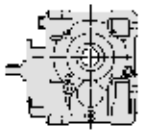
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ...	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
		/ i																				
2 000 000													97,1		194		346	432		4	630	**160**
	4		–	–	–	–	–	–	–	–	–	–	6 030 CI/4,1	–	11 770 CI/4	–	20 470 CI/3,9	25 590 CI/3,9	–			
1 800 000	100		–	–	–	–	–	–	–	2 810 C2I/98,2	5 150 C2I/103	5 970 C2I/104	10 580 C2I/102	11 920 C2I/100	17 330 C2I/98,5	23 500 C2I/100	31 150 C2I/103	38 930 C2I/103	46 990 C2I/102			
	100		–	190 ICI/99,4	235 ICI/99,4	410 ICI/103	460 ICI/103	1 110 ICI/100	1 940 ICI/102	2 420 ICI/100	4 930 ICI/106	5 800 ICI/102	10 300 ICI/106	–	–	–	–	–	–			
	90		–	–	–	–	–	–	–	2 970 C2I/87,8	4 840 C2I/90,4	5 860 C2I/90	9 460 C2I/87,9	12 580 C2I/90,3	17 970 C2I/89	24 820 C2I/89,7	31 460 C2I/88,8	39 150 C2I/88,8	49 640 C2I/91,4			
	80		–	–	–	–	–	–	–	2 960 C2I/78,6	5 070 C2I/82,7	6 290 C2I/83,1	10 080 C2I/81,4	12 570 C2I/80,2	17 960 C2I/78,8	24 780 C2I/80,3	31 390 C2I/82,6	38 070 C2I/82,6	49 560 C2I/81,2			
	80		130 ICI/75,2	230 ICI/79,5	290 ICI/79,5	465 ICI/82,7	550 ICI/82,7	1 060 ICI/76,7	1 750 ICI/78,1	2 160 ICI/78,1	3 810 ICI/78,1	4 410 ICI/80,5	7 830 ICI/78,1	–	–	–	–	–	–			
	71		–	–	–	–	–	–	–	3 130 C2I/70,2	4 640 C2I/72,3	6 100 C2I/72	9 430 C2I/70,3	13 260 C2I/72,2	18 930 C2I/71,2	26 150 C2I/71,7	33 150 C2I/71,1	41 250 C2I/71,1	52 300 C2I/73,1			
	63		–	–	–	–	–	–	–	3 120 C2I/62	5 600 C2I/65,2	7 690 C2I/65,5	11 500 C2I/64,2	13 460 C2I/63,2	23 000 C2I/62,1	26 550 C2I/63,3	37 150 C2I/65,1	46 440 C2I/65,1	52 270 C2I/64			
	63		135 ICI/60,1	230 ICI/63,6	290 ICI/63,6	510 ICI/66,2	605 ICI/66,2	1 120 ICI/61,3	2 110 ICI/62,5	2 690 ICI/62,5	4 870 ICI/62,5	5 680 ICI/64,4	10 000 ICI/62,5	–	–	–	–	–	–			
	56		–	–	–	–	–	–	–	3 320 C2I/55,4	6 000 C2I/57	6 900 C2I/56,8	12 240 C2I/55,5	14 080 C2I/56,9	22 940 C2I/56,1	27 760 C2I/56,6	35 190 C2I/56	43 800 C2I/56	55 530 C2I/57,6			
	50		–	–	–	–	–	–	–	3 310 C2I/50,4	5 920 C2I/52,1	7 030 C2I/52,4	12 330 C2I/53,9	14 060 C2I/53,1	22 090 C2I/52,1	27 720 C2I/53,1	35 110 C2I/51,3	43 520 C2I/51,3	55 440 C2I/50,5			
	50		155 ICI/49	275 ICI/50,9	330 ICI/50,9	505 ICI/53	570 ICI/53	1 160 ICI/49,9	2 250 ICI/50	2 850 ICI/49,3	4 940 ICI/52,5	6 030 ICI/50,8	10 370 ICI/52,5	–	–	–	–	–	–			
	45		–	–	–	–	–	–	–	3 510 C2I/45,1	5 360 C2I/45,6	7 420 C2I/45,4	11 040 C2I/46,6	14 850 C2I/47,8	21 200 C2I/47,1	29 280 C2I/47,5	37 120 C2I/44,2	46 190 C2I/44,2	58 560 C2I/45,4			
	40		–	–	–	–	–	–	–	3 460 C2I/38,7	5 340 C2I/39,5	7 200 C2I/41	10 850 C2I/42,6	15 250 C2I/41,4	21 780 C2I/42,8	30 080 C2I/41,6	38 140 C2I/39,5	47 460 C2I/39,5	60 170 C2I/41			
	40		170 ICI/38,6	280 ICI/40,1	345 ICI/40,1	570 ICI/41,8	655 ICI/41,8	1 260 ICI/39,4	2 370 ICI/39,4	2 750 ICI/40,2	5 210 ICI/41,4	6 100 ICI/41,6	10 590 ICI/41,4	–	–	–	–	–	–			
	35,5		–	–	–	–	–	–	–	3 650 C2I/37,5	5 410 C2I/37,5	7 730 C2I/37,3	11 000 C2I/35,3	15 160 C2I/36,2	22 080 C2I/37,2	30 490 C2I/37,5	38 660 C2I/36,3	48 100 C2I/36,3	60 990 C2I/37,3			
	31,5		–	–	–	–	–	–	–	3 580 C2I/32	6 520 C2I/33,1	7 940 C2I/33,2	12 950 C2I/34,2	15 220 C2I/33,7	25 990 C2I/33,1	30 010 C2I/33,7	39 140 C2I/31,3	48 710 C2I/31,3	61 760 C2I/32,5			
	31,5		170 ICI/32,1	245 ICI/33	305 ICI/33	525 ICI/31,4	575 ICI/31,4	1 120 ICI/32,8	2 240 ICI/32,4	–	4 720 ICI/31,4	–	9 710 ICI/32,7	–	–	–	–	–	–			

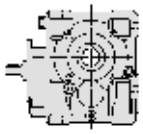
For n_1 lower than 560 min^{-1} see page 195.

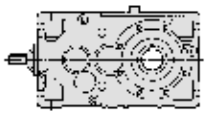


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 800 000	31,5	–	220 **CI/31,3**	245 **CI/31,3**	450 **CI/32,5**	560 **CI/32,5**	935 **CI/30,1**	1 870 **CI/31,3**	–	3 700 **CI/30,8**	–	6 260 **CI/30,8**	–	12 180 **CI/31,7**	–	–	–	–			
	28	–	–	–	–	–	–	–	3 750 **C2I/28,6**	6 450 **C2I/28,9**	7 940 **C2I/28,8**	11 680 **C2I/29,5**	15 880 **C2I/30,3**	25 750 **C2I/29,9**	31 320 **C2I/30,1**	39 700 **C2I/28**	49 400 **C2I/28**	62 640 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 560 **C2I/24,5**	5 790 **C2I/25,1**	7 410 **C2I/26**	11 450 **C2I/27**	15 840 **C2I/26,3**	24 260 **C2I/27,2**	31 770 **C2I/26,4**	40 270 **C2I/25,1**	50 110 **C2I/25,1**	63 530 **C2I/26**			
	25	145 **CI/24,1**	230 **CI/25**	290 **CI/25**	510 **CI/26**	605 **CI/26**	995 **CI/24,1**	2 130 **CI/25**	–	4 210 **CI/24,6**	–	8 420 **CI/24,6**	–	17 230 **CI/25,4**	–	–	–	–			
	22,4	–	–	–	–	–	–	–	3 820 **C2I/23,8**	5 690 **C2I/23,8**	8 090 **C2I/23,7**	11 490 **C2I/22,4**	16 020 **C2I/23**	23 120 **C2I/23,6**	31 920 **C2I/23,8**	40 470 **C2I/23**	50 380 **C2I/23**	63 850 **C2I/23,7**			
									48,6	81,8	104	167	207	–	–	–	–	–	20	2800	**140**
	20	–	–	–	–	–	–	–	3 380 **C2I/20,4**	5 750 **C2I/20,6**	7 550 **C2I/21,4**	11 660 **C2I/20,5▲**	14 070 **C2I/19,9▲**	23 450 **C2I/21,5**	28 990 **C2I/20,8**	41 050 **C2I/20,6**	50 950 **C2I/20,6**	59 450 **C2I/21,4**			
	20	2,22 145 **CI/19,3**	3,61 245 **CI/20**	4,43 300 **CI/20**	7,38 525 **CI/20,8**	8,53 605 **CI/20,8**	16,5 1 080 **CI/19,3**	31,7 2 160 **CI/20**	45,6 3 110 **CI/20**	70,2 4 710 **CI/19,7**	89,9 6 220 **CI/20,3**	144 9 690 **CI/19,7**	180 12 440 **CI/20,3**	– 19 380 **CI/20,3**	– 24 580 **CI/20**	– 31 780 **CI/19,7**	– 39 150 **CI/19,7**	– 48 500 **CI/20,3**	20	2800	
									46,4	73	92,8	145	184	–	–	–	–	–	18	2500	
	18	–	–	–	–	–	–	–	3 190 **CI/18**	5 020 **CI/18**	6 610 **CI/18,7**	10 000 **CI/18**	13 100 **CI/18,7**	19 890 **CI/17,9**	25 310 **CI/18**	30 600 **CI/18**	38 630 **CI/18**	51 320 **CI/18,4**			
	16	2,25 145 **CI/15,2**	3,73 250 **CI/15,8**	4,59 310 **CI/15,8**	7,63 535 **CI/16,4**	8,82 615 **CI/16,4**	17 1 100 **CI/15,2**	34,5 2 320 **CI/15,8**	47,4 3 190 **CI/15,8**	72,2 4 780 **CI/15,5**	99,1 6 760 **CI/16**	148 9 830 **CI/15,5**	197 13 430 **CI/16**	288 19 650 **CI/16**	400 26 910 **CI/15,8**	– 32 030 **CI/16,3**	– 39 940 **CI/16,3**	– 51 260 **CI/16**	16	2240	
									49,9	78	99,8	159	196	321	393	511	606	780	14	2000	
	14	–	–	–	–	–	–	–	3 380 **CI/14,2**	5 280 **CI/14,2**	7 010 **CI/14,7**	10 800 **CI/14,2**	13 810 **CI/14,7**	21 600 **CI/14,1**	26 620 **CI/14,2**	34 630 **CI/14,2**	41 100 **CI/14,2**	54 000 **CI/14,5**			
	12,5	2,37 155 **CI/12,4**	4,26 285 **CI/12,6**	5,4 360 **CI/12,6**	9,08 635 **CI/13,1**	10,5 735 **CI/13,1**	19 1 250 **CI/12,4**	38,7 2 590 **CI/12,6**	45,5 3 100 **CI/12,9**	79,6 5 500 **CI/13**	90,9 6 320 **CI/13,1**	159 11 010 **CI/13**	180 12 290 **CI/12,8**	318 21 300 **CI/12,6**	358 24 430 **CI/12,9**	486 33 040 **CI/12,8**	594 40 450 **CI/12,8**	710 47 550 **CI/12,6**	12,5	1800	
									53,3	71,7	109	143	217	287	433	512	640	803	11,2	1600	
	11,2	–	–	–	–	–	–	–	3 580 **CI/11,3**	4 880 **CI/11,4**	7 600 **CI/11,7**	9 640 **CI/11,3**	15 080 **CI/11,7**	19 530 **CI/11,4**	29 080 **CI/11,3**	33 760 **CI/11**	42 200 **CI/11**	55 120 **CI/11,5**			
	10	2,16 150 **CI/10,3**	4,5 305 **CI/10**	5,49 375 **CI/10**	9,12 650 **CI/10,4**	10,6 750 **CI/10,4**	19,7 1 320 **CI/9,81**	38,6 2 630 **CI/10**	48,8 3 400 **CI/10,2**	75,2 5 300 **CI/10,3**	97,7 6 920 **CI/10,4**	150 10 570 **CI/10,3**	193 13 370 **CI/10,2**	309 21 100 **CI/10**	385 26 770 **CI/10,2**	542 37 570 **CI/10,2**	663 46 010 **CI/10,2**	759 51 740 **CI/10**	10	1400	
									51,8	77,8	104	155	204	311	408	549	685	789	9	1250	
	9	–	–	–	–	–	–	–	3 560 **CI/9**	5 370 **CI/9,04**	7 390 **CI/9,33**	10 600 **CI/8,93**	14 560 **CI/9,33**	21 460 **CI/9,04**	28 070 **CI/9**	36 700 **CI/8,75**	45 790 **CI/8,75**	55 470 **CI/9,2**			
	8	2,38 160 **CI/7,85**	4,36 295 **CI/8**	5,49 375 **CI/8**	9,12 650 **CI/8,33**	10,6 750 **CI/8,33**	19,4 1 300 **CI/7,85**	38,6 2 630 **CI/8**	46,9 3 260 **CI/8,15**	75,2 5 300 **CI/8,27**	93,8 6 650 **CI/8,31**	152 10 690 **CI/8,27**	185 12 830 **CI/8,14**	281 19 690 **CI/8,21**	370 25 690 **CI/8,15**	496 33 150 **CI/7,83**	620 41 430 **CI/7,83**	732 49 960 **CI/8**	8	1120	
		2,2	3,61	4,52	8	9,9	15,8	34,1		67,6		135		269		480	600		6,3	900	
	6,3	155 **CI/6,53**	250 **CI/6,57**	315 **CI/6,57**	530 **CI/6,27**	660 **CI/6,27**	1 090 **CI/6,53**	2 380 **CI/6,57**	–	4 500 **CI/6,27**	–	9 320 **CI/6,53**	–	18 760 **CI/6,57**	–	31 890 **CI/6,27**	39 870 **CI/6,27**	–			
								28,4		54,6		110		217		386	482		5	710	
	5	–	–	–	–	–	–	1 930 **CI/5,06**	–	3 590 **CI/4,89**	–	7 580 **CI/5,11**	–	14 740 **CI/5,06**	–	25 380 **CI/4,89**	31 720 **CI/4,89**	–			
												87,2		174		309	386		4	560	
	4	–	–	–	–	–	–	–	–	–	–	6 090 **CI/4,1**	–	11 890 **CI/4**	–	20 600 **CI/3,9**	25 700 **CI/3,9**	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

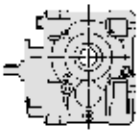


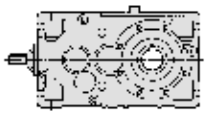


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
1 600 000	100	–	–	–	–	–	–	–	2 880 C2I/98,2	5 300 C2I/103	6 180 C2I/104	10 600 C2I/102	12 240 C2I/100	17 930 C2I/98,5	24 120 C2I/100	32 220 C2I/103	40 280 C2I/103	48 240 C2I/102			
	100	–	195 ICI/99,4	245 ICI/99,4	425 ICI/103	475 ICI/103	1 140 ICI/100	2 010 ICI/102	2 480 ICI/100	5 100 ICI/106	5 800 ICI/102	10 600 ICI/106	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 050 C2I/87,8	5 000 C2I/90,4	6 020 C2I/90	9 770 C2I/87,9	12 930 C2I/90,3	18 460 C2I/89	25 500 C2I/89,7	32 320 C2I/88,8	40 230 C2I/88,8	51 000 C2I/91,4			
	80	–	–	–	–	–	–	–	3 030 C2I/78,6	5 250 C2I/82,7	6 450 C2I/83,1	10 430 C2I/81,4	12 890 C2I/80,2	18 410 C2I/78,8	25 410 C2I/80,3	32 190 C2I/82,6	39 040 C2I/82,6	50 820 C2I/81,2			
	80	130 ICI/75,2	230 ICI/79,5	290 ICI/79,5	480 ICI/82,7	565 ICI/82,7	1 100 ICI/76,7	1 800 ICI/78,1	2 220 ICI/78,1	3 900 ICI/78,1	4 560 ICI/80,5	8 030 ICI/78,1	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 220 C2I/70,2	4 770 C2I/72,3	6 280 C2I/72	9 700 C2I/70,3	13 640 C2I/72,2	19 470 C2I/71,2	26 890 C2I/71,7	34 090 C2I/71,1	42 420 C2I/71,1	53 790 C2I/73,1			
	63	–	–	–	–	–	–	–	3 220 C2I/62	5 800 C2I/65,2	7 970 C2I/65,5	11 800 C2I/64,2	13 950 C2I/63,2	23 600 C2I/62,1	27 510 C2I/63,3	38 490 C2I/65,1	48 110 C2I/65,1	53 960 C2I/64			
	63	140 ICI/60,1	230 ICI/63,6	290 ICI/63,6	515 ICI/66,2	605 ICI/66,2	1 150 ICI/61,3	2 190 ICI/62,5	2 780 ICI/62,5	5 000 ICI/62,5	5 870 ICI/64,4	10 300 ICI/62,5	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 410 C2I/55,4	6 150 C2I/57	7 160 C2I/56,8	12 680 C2I/55,5	14 460 C2I/56,9	23 780 C2I/56,1	28 530 C2I/56,6	36 160 C2I/56	45 000 C2I/56	57 050 C2I/57,6			
	50	–	–	–	–	–	–	–	3 400 C2I/50,4	6 130 C2I/52,1	7 220 C2I/52,4	12 780 C2I/53,9	14 430 C2I/53,1	22 890 C2I/52,1	28 460 C2I/53,1	36 090 C2I/51,3	45 110 C2I/51,3	56 910 C2I/50,5			
	50	160 ICI/49	280 ICI/50,9	330 ICI/50,9	515 ICI/53	585 ICI/53	1 200 ICI/49,9	2 310 ICI/50	2 930 ICI/49,3	5 070 ICI/52,5	6 190 ICI/50,8	10 750 ICI/52,5	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 600 C2I/45,1	5 560 C2I/45,6	7 630 C2I/45,4	11 440 C2I/46,6	15 250 C2I/47,8	21 780 C2I/47,1	30 080 C2I/47,5	38 140 C2I/44,2	47 460 C2I/44,2	60 170 C2I/45,4			
	40	–	–	–	–	–	–	–	3 510 C2I/38,7	5 410 C2I/39,5	7 300 C2I/41	11 000 C2I/42,6	15 460 C2I/41,4	22 080 C2I/42,8	30 490 C2I/41,6	38 660 C2I/39,5	48 100 C2I/39,5	60 990 C2I/41			
	40	175 ICI/38,6	285 ICI/40,1	360 ICI/40,1	575 ICI/41,8	665 ICI/41,8	1 300 ICI/39,4	2 410 ICI/39,4	2 790 ICI/40,2	5 400 ICI/41,4	6 180 ICI/41,6	10 950 ICI/41,4	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 700 C2I/37,5	5 480 C2I/37,5	7 830 C2I/37,3	11 130 C2I/35,3	15 350 C2I/36,2	22 360 C2I/37,2	30 880 C2I/37,5	39 140 C2I/36,3	48 710 C2I/36,3	61 760 C2I/37,3			
	31,5	–	–	–	–	–	–	–	3 630 C2I/32	6 540 C2I/33,1	8 230 C2I/33,2	13 000 C2I/34,2	15 440 C2I/33,7	26 080 C2I/33,1	30 440 C2I/33,7	39 700 C2I/31,3	49 400 C2I/31,3	62 640 C2I/32,5			
	31,5	170 ICI/32,1	255 ICI/33	315 ICI/33	535 ICI/31,4	585 ICI/31,4	1 160 ICI/32,8	2 270 ICI/32,4	–	4 790 ICI/31,4	–	9 850 ICI/32,7	–	–	–	–	–	–			
	31,5	–	220 CI/31,3	245 CI/31,3	450 CI/32,5	560 CI/32,5	970 CI/30,1	1 850 CI/31,3	–	3 650 CI/30,8	–	6 490 CI/30,8	–	12 620 CI/31,7	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

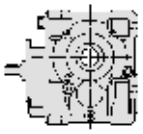


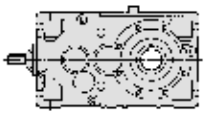


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 600 000	28	–	–	–	–	–	–	–	3 800 **C2I/28,6**	6 680 **C2I/28,9**	8 050 **C2I/28,8**	12 100 **C2I/29,5**	16 110 **C2I/30,3**	26 680 **C2I/29,9**	31 770 **C2I/30,1**	40 270 **C2I/28**	50 110 **C2I/28**	63 530 **C2I/28,8**			
	25	–	–	–	–	–	–	–	3 620 **C2I/24,5**	6 000 **C2I/25,1**	7 520 **C2I/26**	11 620 **C2I/27**	16 070 **C2I/26,3**	25 150 **C2I/27,2**	32 220 **C2I/26,4**	40 850 **C2I/25,1**	50 830 **C2I/25,1**	64 450 **C2I/26**			
	25	145 **CI/24,1**	230 **CI/25**	290 **CI/25**	520 **CI/26**	605 **CI/26**	1 030 **CI/24,1**	2 160 **CI/25**	–	4 270 **CI/24,6**	–	8 540 **CI/24,6**	–	17 480 **CI/25,4**	–	–	–	–			
									47,7	72,7	102	153	207	–	–	–	–	–	22,4	2800	**125**
	22,4	–	–	–	–	–	–	–	3 870 **C2I/23,8**	5 890 **C2I/23,8**	8 210 **C2I/23,7**	11 660 **C2I/22,4▲**	16 250 **C2I/23▲**	23 450 **C2I/23,6**	32 370 **C2I/23,8**	41 050 **C2I/23**	51 100 **C2I/23**	64 760 **C2I/23,7**			
									44	74,1	93,8	151	188	–	–	–	–	–	20	2500	
	20	–	–	–	–	–	–	–	3 430 **C2I/20,4**	5 820 **C2I/20,6**	7 650 **C2I/21,4**	11 820 **C2I/20,5**	14 270 **C2I/19,9**	23 770 **C2I/21,5**	29 380 **C2I/20,8**	41 610 **C2I/20,6**	51 650 **C2I/20,6**	60 260 **C2I/21,4**			
		1,99	3,26	4,01	6,68	7,72	14,9	28,7	41,3	63,5	81,4	131	163	–	–	–	–	–	20	2500	
	20	145 **CI/19,3**	250 **CI/20**	305 **CI/20**	530 **CI/20,8**	615 **CI/20,8**	1 100 **CI/19,3**	2 190 **CI/20**	3 150 **CI/20**	4 780 **CI/19,7**	6 310 **CI/20,3**	9 820 **CI/19,7**	12 610 **CI/20,3**	19 650 **CI/20,3**	24 920 **CI/20**	32 210 **CI/19,7**	40 510 **CI/19,7**	49 160 **CI/20,3**			
									42,1	66,3	84,2	132	167	265	334	–	–	–	18	2240	
	18	–	–	–	–	–	–	–	3 230 **CI/18**	5 090 **CI/18**	6 700 **CI/18,7**	10 130 **CI/18**	13 270 **CI/18,7**	20 150 **CI/17,9**	25 640 **CI/18**	31 000 **CI/18**	39 140 **CI/18**	52 000 **CI/18,4**			
		2,02	3,38	4,15	6,91	7,98	15,4	31,8	42,9	65,4	89,7	134	178	261	362	418	521	680	16	2000	
	16	145 **CI/15,2**	255 **CI/15,8**	315 **CI/15,8**	540 **CI/16,4**	625 **CI/16,4**	1 110 **CI/15,2**	2 400 **CI/15,8**	3 230 **CI/15,8**	4 850 **CI/15,5**	6 850 **CI/16**	9 960 **CI/15,5**	13 620 **CI/16**	19 920 **CI/16**	27 270 **CI/15,8**	32 460 **CI/16,3**	40 480 **CI/16,3**	51 960 **CI/16**			
									45,5	71,1	90,9	145	179	293	358	466	553	710	14	1800	
	14	–	–	–	–	–	–	–	3 420 **CI/14,2**	5 350 **CI/14,2**	7 100 **CI/14,7**	10 940 **CI/14,2**	13 980 **CI/14,7**	21 880 **CI/14,1**	26 960 **CI/14,2**	35 070 **CI/14,2**	41 620 **CI/14,2**	54 680 **CI/14,5**			
		2,14	3,84	4,87	8,19	9,48	17,2	34,9	41	71,7	82	143	166	287	323	438	536	640	12,5	1600	
	12,5	160 **CI/12,4**	290 **CI/12,6**	365 **CI/12,6**	640 **CI/13,1**	745 **CI/13,1**	1 270 **CI/12,4**	2 630 **CI/12,6**	3 150 **CI/12,9**	5 580 **CI/13**	6 410 **CI/13,1**	11 160 **CI/13**	12 730 **CI/12,8**	21 600 **CI/12,6**	24 770 **CI/12,9**	33 510 **CI/12,8**	41 030 **CI/12,8**	48 220 **CI/12,6**			
									47,4	63,8	97,1	128	193	255	385	456	569	714	11,2	1400	
	11,2	–	–	–	–	–	–	–	3 640 **CI/11,3**	4 960 **CI/11,4**	7 720 **CI/11,7**	9 800 **CI/11,3**	15 320 **CI/11,7**	19 840 **CI/11,4**	29 550 **CI/11,3**	34 300 **CI/11**	42 880 **CI/11**	56 010 **CI/11,5**			
		1,94	4,03	4,92	8,17	9,46	17,7	34,7	44	67,8	88,1	138	174	279	347	489	598	685	10	1250	
	10	155 **CI/10,3**	310 **CI/10**	375 **CI/10**	650 **CI/10,4**	755 **CI/10,4**	1 330 **CI/9,81**	2 650 **CI/10**	3 430 **CI/10,2**	5 350 **CI/10,3**	6 990 **CI/10,4**	10 880 **CI/10,3**	13 500 **CI/10,2**	21 300 **CI/10**	27 030 **CI/10,2**	37 950 **CI/10,2**	46 440 **CI/10,2**	52 330 **CI/10**			
									46,9	70,5	93,8	141	185	281	370	496	620	714	9	1120	
	9	–	–	–	–	–	–	–	3 600 **CI/9**	5 430 **CI/9,04**	7 470 **CI/9,33**	10 700 **CI/8,93**	14 700 **CI/9,33**	21 660 **CI/9,04**	28 360 **CI/9**	37 030 **CI/8,75**	46 280 **CI/8,75**	56 010 **CI/9,2**			
		2,14	3,91	4,92	8,17	9,46	17,4	34,7	42,3	67,8	84,6	140	167	253	333	447	560	660	8	1000	
	8	160 **CI/7,85**	300 **CI/8**	375 **CI/8**	650 **CI/8,33**	755 **CI/8,33**	1 310 **CI/7,85**	2 650 **CI/8**	3 290 **CI/8,15**	5 350 **CI/8,27**	6 710 **CI/8,31**	11 060 **CI/8,27**	12 960 **CI/8,14**	19 870 **CI/8,21**	25 950 **CI/8,15**	33 450 **CI/7,83**	41 890 **CI/7,83**	50 440 **CI/8**			
		2,03	3,33	4,16	7,15	9,12	14,1	30,9		60,8		121		242		431	538		6,3	800	
	6,3	160 **CI/6,53**	260 **CI/6,57**	325 **CI/6,57**	535 **CI/6,27**	680 **CI/6,27**	1 100 **CI/6,53**	2 420 **CI/6,57**	–	4 550 **CI/6,27**	–	9 420 **CI/6,53**	–	18 950 **CI/6,57**	–	32 210 **CI/6,27**	40 260 **CI/6,27**	–			
								26,1		49		101		195		346	432		5	630	
	5	–	–	–	–	–	–	2 000 **CI/5,06**	–	3 630 **CI/4,89**	–	7 850 **CI/5,11**	–	14 950 **CI/5,06**	–	25 630 **CI/4,89**	32 040 **CI/4,89**	–			
1 400 000	125	–	–	–	–	–	–	–	2 660 **C2I/123**	5 150 **C2I/129**	6 020 **C2I/130**	10 300 **C2I/127**	11 670 **C2I/125**	17 470 **C2I/123**	21 000 **C2I/125**	30 700 **C2I/129**	38 370 **C2I/129**	41 820 **C2I/127**			
	125	–	–	–	–	–	1000 **CI/123**	2 000 **CI/127**	2 430 **CI/127**	4 370 **CI/126**	6 050 **CI/130**	9 000 **CI/126**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

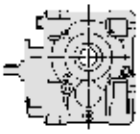


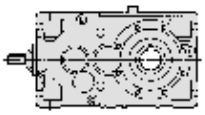


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 400 000	100	–	–	–	–	–	–	–	2 960 **C2I/98,2**	5 450 **C2I/103**	6 390 **C2I/104**	10 900 **C2I/102**	12 570 **C2I/100**	18 530 **C2I/98,5**	24 780 **C2I/100**	33 300 **C2I/103**	41 630 **C2I/103**	49 560 **C2I/102**			
	100	–	200 **ICI/99,4**	250 **ICI/99,4**	435 **ICI/103**	485 **ICI/103**	1 180 **ICI/100**	2 080 **ICI/102**	2 550 **ICI/100**	5 270 **ICI/106**	6 000 **ICI/102**	11 070 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 130 **C2I/87,8**	5 170 **C2I/90,4**	6 170 **C2I/90**	10 110 **C2I/87,9**	13 260 **C2I/90,3**	18 930 **C2I/89**	26 150 **C2I/89,7**	33 150 **C2I/88,8**	41 250 **C2I/88,8**	52 300 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 120 **C2I/78,6**	5 420 **C2I/82,7**	6 630 **C2I/83,1**	10 760 **C2I/81,4**	13 260 **C2I/80,2**	18 940 **C2I/78,8**	26 140 **C2I/80,3**	33 110 **C2I/82,6**	40 150 **C2I/82,6**	52 270 **C2I/81,2**			
	80	135 **ICI/75,2**	235 **ICI/79,5**	290 **ICI/79,5**	500 **ICI/82,7**	585 **ICI/82,7**	1 130 **ICI/76,7**	1 850 **ICI/78,1**	2 280 **ICI/78,1**	4 020 **ICI/78,1**	4 710 **ICI/80,5**	8 260 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 320 **C2I/70,2**	4 930 **C2I/72,3**	6 480 **C2I/72**	10 010 **C2I/70,3**	14 080 **C2I/72,2**	20 100 **C2I/71,2**	27 760 **C2I/71,7**	35 190 **C2I/71,1**	43 800 **C2I/71,1**	55 530 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 310 **C2I/62**	6 000 **C2I/65,2**	8 260 **C2I/65,5**	12 200 **C2I/64,2**	14 460 **C2I/63,2**	24 300 **C2I/62,1**	28 510 **C2I/63,3**	39 890 **C2I/65,1**	49 870 **C2I/65,1**	55 440 **C2I/64**			
	63	140 **ICI/60,1**	235 **ICI/63,6**	290 **ICI/63,6**	515 **ICI/66,2**	605 **ICI/66,2**	1 180 **ICI/61,3**	2 270 **ICI/62,5**	2 850 **ICI/62,5**	5 150 **ICI/62,5**	6 030 **ICI/64,4**	10 600 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 510 **C2I/55,4**	6 300 **C2I/57**	7 420 **C2I/56,8**	13 140 **C2I/55,5**	14 850 **C2I/56,9**	24 650 **C2I/56,1**	29 280 **C2I/56,6**	37 120 **C2I/56**	46 190 **C2I/56**	58 560 **C2I/57,6**			
	50	–	–	–	–	–	–	–	3 490 **C2I/50,4**	6 350 **C2I/52,1**	7 420 **C2I/52,4**	13 050 **C2I/53,9**	14 830 **C2I/53,1**	23 720 **C2I/52,1**	29 240 **C2I/53,1**	37 380 **C2I/51,3**	46 730 **C2I/51,3**	58 470 **C2I/50,5**			
	50	160 **ICI/49**	280 **ICI/50,9**	330 **ICI/50,9**	530 **ICI/53**	600 **ICI/53**	1 240 **ICI/49,9**	2 370 **ICI/50**	3 010 **ICI/49,3**	5 250 **ICI/52,5**	6 400 **ICI/50,8**	11 070 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 650 **C2I/45,1**	5 750 **C2I/45,6**	7 730 **C2I/45,4**	11 830 **C2I/46,6**	15 460 **C2I/47,8**	22 180 **C2I/47,1**	30 490 **C2I/47,5**	38 660 **C2I/44,2**	48 100 **C2I/44,2**	60 990 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 550 **C2I/38,7**	5 480 **C2I/39,5**	7 390 **C2I/41**	11 170 **C2I/42,6**	15 660 **C2I/41,4**	22 360 **C2I/42,8**	30 880 **C2I/41,6**	39 140 **C2I/39,5**	48 710 **C2I/39,5**	61 760 **C2I/41**			
	40	175 **ICI/38,6**	285 **ICI/40,1**	360 **ICI/40,1**	585 **ICI/41,8**	675 **ICI/41,8**	1 350 **ICI/39,4**	2 440 **ICI/39,4**	2 830 **ICI/40,2**	5 570 **ICI/41,4**	6 260 **ICI/41,6**	11 300 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 750 **C2I/37,5**	5 560 **C2I/37,5**	7 940 **C2I/37,3**	11 290 **C2I/35,3**	15 570 **C2I/36,2**	22 670 **C2I/37,2**	31 320 **C2I/37,5**	39 700 **C2I/36,3**	49 400 **C2I/36,3**	62 640 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 690 **C2I/32**	6 570 **C2I/33,1**	8 530 **C2I/33,2**	13 050 **C2I/34,2**	15 660 **C2I/33,7**	26 180 **C2I/33,1**	30 870 **C2I/33,7**	40 270 **C2I/31,3**	50 110 **C2I/31,3**	63 530 **C2I/32,5**			
	31,5	175 **ICI/32,1**	260 **ICI/33**	325 **ICI/33**	540 **ICI/31,4**	595 **ICI/31,4**	1 200 **ICI/32,8**	2 300 **ICI/32,4**	–	4 860 **ICI/31,4**	–	9 990 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	225 **CI/31,3**	250 **CI/31,3**	455 **CI/32,5**	565 **CI/32,5**	975 **CI/30,1**	1 900 **CI/31,3**	–	3 810 **CI/30,8**	–	6 730 **CI/30,8**	–	13 080 **CI/31,7**	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

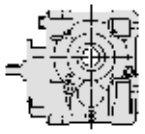


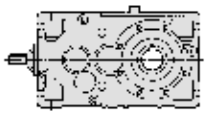


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 400 000	28	–	–	–	–	–	–	–	3 860 **C2I/28,6**	6 920 **C2I/28,9**	8 170 **C2I/28,8**	12 550 **C2I/29,5**	16 340 **C2I/30,3**	26 790 **C2I/29,9**	32 220 **C2I/30,1**	40 850 **C2I/28**	50 830 **C2I/28**	64 450 **C2I/28,8**			
									43,8	72,7	86	129	182	–	–	–	–	–	25	2800	**112**
	25	–	–	–	–	–	–	–	3 670 **C2I/24,5**	6 220 **C2I/25,1**	7 630 **C2I/26**	11 890 **C2I/27▲**	16 300 **C2I/26,3▲**	26 050 **C2I/27,2**	32 680 **C2I/26,4**	41 430 **C2I/25,1**	51 550 **C2I/25,1**	65 360 **C2I/26**			
		1,79	2,74	3,44	5,94	6,85	12,8	25,7		51,6		103		–					25	2800	
	25	145 **CI/24,1**	235 **CI/25**	295 **CI/25**	525 **CI/26**	605 **CI/26**	1 050 **CI/24,1**	2 190 **CI/25**	–	4 330 **CI/24,6**	–	8 660 **CI/24,6**	–	17 730 **CI/25,4**	–	–	–	–			
									43,2	67,2	92,1	139	188	–	–	–	–	–	22,4	2500	
	22,4	–	–	–	–	–	–	–	3 930 **C2I/23,8**	6 100 **C2I/23,8**	8 320 **C2I/23,7**	11 900 **C2I/22,4**	16 470 **C2I/23**	23 770 **C2I/23,6**	32 810 **C2I/23,8**	41 610 **C2I/23**	51 790 **C2I/23**	65 640 **C2I/23,7**			
									39,9	67,2	85,2	137	170	263	335	–	–	–	20	2240	
	20	–	–	–	–	–	–	–	3 470 **C2I/20,4**	5 900 **C2I/20,6**	7 750 **C2I/21,4**	11 970 **C2I/20,5**	14 450 **C2I/19,9**	24 080 **C2I/21,5▲**	29 770 **C2I/20,8▲**	42 160 **C2I/20,6**	52 330 **C2I/20,6**	61 060 **C2I/21,4**			
		1,79	2,96	3,64	6,06	7	13,7	26	37,5	57,7	73,9	119	148	230	296	–	–	–	20	2240	
	20	145 **CI/19,3**	255 **CI/20**	310 **CI/20**	540 **CI/20,8**	620 **CI/20,8**	1 130 **CI/19,3**	2 220 **CI/20**	3 200 **CI/20**	4 840 **CI/19,7**	6 390 **CI/20,3**	9 950 **CI/19,7**	12 780 **CI/20,3**	19 910 **CI/20,3**	25 250 **CI/20**	32 640 **CI/19,7**	41 860 **CI/19,7**	49 810 **CI/20,3**			
									38,1	60	76,2	119	151	239	302	366	462	600	18	2000	
	18	–	–	–	–	–	–	–	3 280 **CI/18**	5 160 **CI/18**	6 790 **CI/18,7**	10 270 **CI/18**	13 450 **CI/18,7**	20 430 **CI/17,9**	25 990 **CI/18**	31 420 **CI/18**	39 670 **CI/18**	52 700 **CI/18,4**			
		1,82	3,08	3,78	6,3	7,28	14	29,6	39,1	59,7	81,7	123	162	237	330	381	475	620	16	1800	
	16	145 **CI/15,2**	260 **CI/15,8**	315 **CI/15,8**	550 **CI/16,4**	635 **CI/16,4**	1 130 **CI/15,2**	2 470 **CI/15,8**	3 270 **CI/15,8**	4 910 **CI/15,5**	6 940 **CI/16**	10 130 **CI/15,5**	13 790 **CI/16**	20 170 **CI/16**	27 620 **CI/15,8**	32 870 **CI/16,3**	41 000 **CI/16,3**	52 620 **CI/16**			
									41	64,1	82	131	161	264	323	420	498	640	14	1600	
	14	–	–	–	–	–	–	–	3 470 **CI/14,2**	5 430 **CI/14,2**	7 200 **CI/14,7**	11 090 **CI/14,2**	14 180 **CI/14,7**	22 190 **CI/14,1**	27 340 **CI/14,2**	35 570 **CI/14,2**	42 210 **CI/14,2**	55 460 **CI/14,5**			
		1,9	3,42	4,33	7,28	8,42	15,3	31	36,4	63,8	72,9	128	151	255	287	389	476	569	12,5	1400	
	12,5	160 **CI/12,4**	295 **CI/12,6**	370 **CI/12,6**	650 **CI/13,1**	755 **CI/13,1**	1 290 **CI/12,4**	2 670 **CI/12,6**	3 200 **CI/12,9**	5 670 **CI/13**	6 510 **CI/13,1**	11 340 **CI/13**	13 250 **CI/12,8**	21 950 **CI/12,6**	25 170 **CI/12,9**	34 050 **CI/12,8**	41 690 **CI/12,8**	49 000 **CI/12,6**			
									42,6	57,6	87,2	115	174	230	347	411	513	644	11,2	1250	
	11,2	–	–	–	–	–	–	–	3 660 **CI/11,3**	5 020 **CI/11,4**	7 780 **CI/11,7**	9 900 **CI/11,3**	15 470 **CI/11,7**	20 050 **CI/11,4**	29 840 **CI/11,3**	34 640 **CI/11**	43 300 **CI/11**	56 560 **CI/11,5**			
		1,79	3,62	4,42	7,34	8,5	15,9	31,3	39,7	61,3	79,6	128	159	252	314	442	541	620	10	1120	
	10	155 **CI/10,3**	310 **CI/10**	375 **CI/10**	650 **CI/10,4**	755 **CI/10,4**	1 330 **CI/9,81**	2 670 **CI/10**	3 450 **CI/10,2**	5 400 **CI/10,3**	7 050 **CI/10,4**	11 250 **CI/10,3**	13 790 **CI/10,2**	21 490 **CI/10**	27 290 **CI/10,2**	38 320 **CI/10,2**	46 860 **CI/10,2**	52 890 **CI/10**			
									42,3	63,6	84,6	127	167	253	333	447	560	644	9	1000	
	9	–	–	–	–	–	–	–	3 640 **CI/9**	5 490 **CI/9,04**	7 540 **CI/9,33**	10 860 **CI/8,93**	14 850 **CI/9,33**	21 870 **CI/9,04**	28 650 **CI/9**	37 370 **CI/8,75**	46 790 **CI/8,75**	56 560 **CI/9,2**			
		1,97	3,54	4,44	7,37	8,54	15,8	31,4	38,4	61,6	76,9	130	151	230	303	406	509	600	8	900	
	8	165 **CI/7,85**	300 **CI/8**	375 **CI/8**	650 **CI/8,33**	755 **CI/8,33**	1 310 **CI/7,85**	2 670 **CI/8**	3 320 **CI/8,15**	5 400 **CI/8,27**	6 780 **CI/8,31**	11 410 **CI/8,27**	13 080 **CI/8,14**	20 050 **CI/8,21**	26 200 **CI/8,15**	33 740 **CI/7,83**	42 310 **CI/7,83**	50 890 **CI/8**			
		1,85	3,06	3,82	6,37	8,27	12,6	28,4		54,6		110		217		386	482		6,3	710	
	6,3	160 **CI/6,53**	270 **CI/6,57**	340 **CI/6,57**	535 **CI/6,27**	695 **CI/6,27**	1 100 **CI/6,53**	2 510 **CI/6,57**	–	4 600 **CI/6,27**	–	9 680 **CI/6,53**	–	19 150 **CI/6,57**	–	32 530 **CI/6,27**	40 660 **CI/6,27**	–			
								24,1		44,1		93,3		180		310	388		5	560	
	5	–	–	–	–	–	–	2 070 **CI/5,06**	–	3 670 **CI/4,89**	–	8 130 **CI/5,11**	–	15 490 **CI/5,06**	–	25 880 **CI/4,89**	32 340 **CI/4,89**	–			
1 250 000	125	–	–	–	–	–	–	–	2 750 **C2I/123**	5 300 **C2I/129**	6 230 **C2I/130**	10 600 **C2I/127**	12 070 **C2I/125**	18 070 **C2I/123**	21 550 **C2I/125**	31 760 **C2I/129**	39 700 **C2I/129**	42 930 **C2I/127**			
	125	–	–	–	–	–	1 030 **ICI/123**	2 060 **ICI/127**	2 510 **ICI/127**	4 500 **ICI/126**	6 260 **ICI/130**	9 250 **ICI/126**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

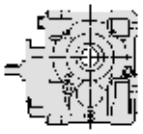


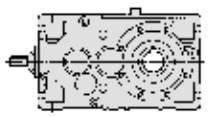


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1	n_{N2} min^{-1}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 250 000	100	–	–	–	–	–	–	–	3 030 **C2I/98,2**	5 600 **C2I/103**	6 610 **C2I/104**	11 200 **C2I/102**	12 890 **C2I/100**	19 170 **C2I/98,5**	25 410 **C2I/100**	34 450 **C2I/103**	43 070 **C2I/103**	50 820 **C2I/102**			
	100	–	205 **ICI/99,4**	250 **ICI/99,4**	450 **ICI/103**	500 **ICI/103**	1 180 **ICI/100**	2 150 **ICI/102**	2 610 **ICI/100**	5 460 **ICI/106**	6 150 **ICI/102**	11 110 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 220 **C2I/87,8**	5 340 **C2I/90,4**	6 350 **C2I/90**	10 430 **C2I/87,9**	13 640 **C2I/90,3**	19 470 **C2I/89**	26 890 **C2I/89,7**	34 090 **C2I/88,8**	42 420 **C2I/88,8**	53 790 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 220 **C2I/78,6**	5 610 **C2I/82,7**	6 840 **C2I/83,1**	11 150 **C2I/81,4**	13 690 **C2I/80,2**	19 550 **C2I/78,8**	26 980 **C2I/80,3**	34 180 **C2I/82,6**	41 460 **C2I/82,6**	53 960 **C2I/81,2**			
	80	140 **ICI/75,2**	235 **ICI/79,5**	295 **ICI/79,5**	515 **ICI/82,7**	605 **ICI/82,7**	1 180 **ICI/76,7**	1 920 **ICI/78,1**	2 360 **ICI/78,1**	4 150 **ICI/78,1**	4 790 **ICI/80,5**	8 520 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 410 **C2I/70,2**	5 090 **C2I/72,3**	6 660 **C2I/72**	10 290 **C2I/70,3**	14 460 **C2I/72,2**	20 650 **C2I/71,2**	28 530 **C2I/71,7**	36 160 **C2I/71,1**	45 000 **C2I/71,1**	57 050 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 400 **C2I/62**	6 150 **C2I/65,2**	8 560 **C2I/65,5**	12 500 **C2I/64,2**	14 980 **C2I/63,2**	25 000 **C2I/62,1**	29 550 **C2I/63,3**	41 350 **C2I/65,1**	51 690 **C2I/65,1**	56 910 **C2I/64**			
	63	145 **ICI/60,1**	235 **ICI/63,6**	295 **ICI/63,6**	520 **ICI/66,2**	610 **ICI/66,2**	1 220 **ICI/61,3**	2 350 **ICI/62,5**	2 930 **ICI/62,5**	5 300 **ICI/62,5**	6 220 **ICI/64,4**	11 150 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 600 **C2I/55,4**	6 500 **C2I/57**	7 680 **C2I/56,8**	13 200 **C2I/55,5**	15 250 **C2I/56,9**	25 530 **C2I/56,1**	30 080 **C2I/56,6**	38 140 **C2I/56**	47 460 **C2I/56**	60 170 **C2I/57,6**			
	50	–	–	–	–	–	–	–	3 540 **C2I/50,4**	6 570 **C2I/52,1**	7 520 **C2I/52,4**	13 100 **C2I/53,9**	15 030 **C2I/53,1**	24 540 **C2I/52,1**	29 730 **C2I/53,1**	38 680 **C2I/51,3**	48 350 **C2I/51,3**	59 270 **C2I/50,5**			
	50	160 **ICI/49**	285 **ICI/50,9**	335 **ICI/50,9**	540 **ICI/53**	610 **ICI/53**	1 240 **ICI/49,9**	2 410 **ICI/50**	3 050 **ICI/49,3**	5 430 **ICI/52,5**	6 620 **ICI/50,8**	11 110 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 700 **C2I/45,1**	5 930 **C2I/45,6**	7 830 **C2I/45,4**	12 210 **C2I/46,6**	15 660 **C2I/47,8**	22 890 **C2I/47,1**	30 880 **C2I/47,5**	39 140 **C2I/44,2**	48 710 **C2I/44,2**	61 760 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 600 **C2I/38,7**	5 560 **C2I/39,5**	7 500 **C2I/41**	11 570 **C2I/42,6**	15 880 **C2I/41,4**	22 670 **C2I/42,8**	31 320 **C2I/41,6**	39 700 **C2I/39,5**	49 400 **C2I/39,5**	62 640 **C2I/41**			
	40	175 **ICI/38,6**	290 **ICI/40,1**	360 **ICI/40,1**	590 **ICI/41,8**	685 **ICI/41,8**	1 390 **ICI/39,4**	2 470 **ICI/39,4**	2 870 **ICI/40,2**	5 770 **ICI/41,4**	6 350 **ICI/41,6**	11 710 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 800 **C2I/37,5**	5 640 **C2I/37,5**	8 050 **C2I/37,3**	11 450 **C2I/35,3**	15 790 **C2I/36,2**	23 000 **C2I/37,2**	31 770 **C2I/37,5**	40 270 **C2I/36,3**	50 110 **C2I/36,3**	63 530 **C2I/37,3**			
	31,5	–	–	–	–	–	–	–	3 740 **C2I/32**	6 590 **C2I/33,1**	8 840 **C2I/33,2**	13 100 **C2I/34,2**	15 890 **C2I/33,7**	26 280 **C2I/33,1**	31 320 **C2I/33,7**	40 850 **C2I/31,3**	50 830 **C2I/31,3**	64 450 **C2I/32,5**			
	31,5	175 **ICI/32,1**	270 **ICI/33**	340 **ICI/33**	550 **ICI/31,4**	600 **ICI/31,4**	1 250 **ICI/32,8**	2 330 **ICI/32,4**	–	4 930 **ICI/31,4**	–	10 130 **ICI/32,7**	–	–	–	–	–	–			
	31,5	–	225 **CI/31,3**	250 **CI/31,3**	455 **CI/32,5**	565 **CI/32,5**	1000 **CI/30,1**	1 950 **CI/31,3**	–	3 830 **CI/30,8**	–	6 970 **CI/30,8**	–	13 560 **CI/31,7**	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

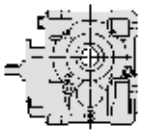


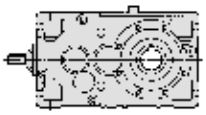


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 250 000	28	–	–	–	–	–	–	–	40,1 3 910 **C2I/28,6**	72,7 7 170 **C2I/28,9**	84,3 8 290 **C2I/28,8**	129 13 000 **C2I/29,5▲**	160 16 570 **C2I/30,3▲**	– 26 880 **C2I/29,9**	– 32 680 **C2I/30,1**	– 41 430 **C2I/28**	– 51 550 **C2I/28**	– 65 360 **C2I/28,8**	28	2800	**100**
	25	–	–	–	–	–	–	–	39,7 3 720 **C2I/24,5**	67,2 6 430 **C2I/25,1**	77,8 7 730 **C2I/26**	119 12 300 **C2I/27**	165 16 520 **C2I/26,3**	– 26 950 **C2I/27,2**	– 33 130 **C2I/26,4**	– 41 990 **C2I/25,1**	– 52 250 **C2I/25,1**	– 66 250 **C2I/26**	25	2500	
	25	1,6 145 **CI/24,1**	2,47 235 **CI/25**	3,11 295 **CI/25**	5,38 535 **CI/26**	6,13 610 **CI/26**	11,5 1 050 **CI/24,1**	23,2 2 220 **CI/25**	– –	46,7 4 390 **CI/24,6**	– –	93,4 8 780 **CI/24,6**	– –	– 17 970 **CI/25,4**	– –	– –	– –	– –	25	2500	
	22,4	–	–	–	–	–	–	–	39,2 3 980 **C2I/23,8**	62,2 6 300 **C2I/23,8**	83,6 8 430 **C2I/23,7**	129 12 300 **C2I/22,4**	170 16 680 **C2I/23**	241 24 300 **C2I/23,6▲**	328 33 240 **C2I/23,8▲**	– 42 160 **C2I/23**	– 52 480 **C2I/23**	– 66 500 **C2I/23,7**	22,4	2240	
	20	–	–	–	–	–	–	–	36,1 3 520 **C2I/20,4**	60,8 5 980 **C2I/20,6**	77,1 7 860 **C2I/21,4**	124 12 140 **C2I/20,5**	154 14 650 **C2I/19,9**	238 24 410 **C2I/21,5**	303 30 170 **C2I/20,8**	– 42 730 **C2I/20,6**	– 53 040 **C2I/20,6**	– 61 890 **C2I/21,4**	20	2000	
	20	1,6 145 **CI/19,3**	2,68 255 **CI/20**	3,3 315 **CI/20**	5,49 545 **CI/20,8**	6,34 630 **CI/20,8**	12,7 1 170 **CI/19,3**	23,6 2 250 **CI/20**	33,9 3 240 **CI/20**	52,2 4 910 **CI/19,7**	66,9 6 480 **CI/20,3**	107 10 090 **CI/19,7**	134 12 950 **CI/20,3**	208 20 180 **CI/20,3**	268 25 590 **CI/20**	352 33 080 **CI/19,7**	461 43 310 **CI/19,7**	521 50 490 **CI/20,3**	20	2000	
	18	–	–	–	–	–	–	–	34,7 3 320 **CI/18**	54,7 5 220 **CI/18**	69,5 6 880 **CI/18,7**	109 10 400 **CI/18**	138 13 630 **CI/18,7**	218 20 690 **CI/17,9**	276 26 320 **CI/18**	333 31 820 **CI/18**	428 40 860 **CI/18**	547 53 370 **CI/18,4**	18	1800	
	16	1,62 145 **CI/15,2**	2,78 260 **CI/15,8**	3,41 320 **CI/15,8**	5,68 555 **CI/16,4**	6,56 640 **CI/16,4**	12,7 1 150 **CI/15,2**	26,7 2 510 **CI/15,8**	35,3 3 320 **CI/15,8**	54,9 5 090 **CI/15,5**	73,7 7 030 **CI/16**	113 10 490 **CI/15,5**	148 14 130 **CI/16**	214 20 460 **CI/16**	298 28 010 **CI/15,8**	343 33 340 **CI/16,3**	428 41 580 **CI/16,3**	559 53 360 **CI/16**	16	1600	
	14	–	–	–	–	–	–	–	36,4 3 530 **CI/14,2**	57 5 510 **CI/14,2**	72,9 7 320 **CI/14,7**	116 11 270 **CI/14,2**	143 14 410 **CI/14,7**	235 22 540 **CI/14,1**	287 27 780 **CI/14,2**	373 36 140 **CI/14,2**	443 42 890 **CI/14,2**	569 56 350 **CI/14,5**	14	1400	
	12,5	1,73 165 **CI/12,4**	3,07 295 **CI/12,6**	3,88 375 **CI/12,6**	6,52 655 **CI/13,1**	7,55 760 **CI/13,1**	13,7 1 290 **CI/12,4**	27,9 2 680 **CI/12,6**	32,9 3 230 **CI/12,9**	57,6 5 740 **CI/13**	65,7 6 580 **CI/13,1**	115 11 460 **CI/13**	139 13 660 **CI/12,8**	230 22 180 **CI/12,6**	259 25 430 **CI/12,9**	351 34 380 **CI/12,8**	430 42 100 **CI/12,8**	513 49 490 **CI/12,6**	12,5	1250	
	11,2	–	–	–	–	–	–	–	38,4 3 680 **CI/11,3**	52,2 5 080 **CI/11,4**	78,7 7 830 **CI/11,7**	104 10 000 **CI/11,3**	157 15 610 **CI/11,7**	208 20 240 **CI/11,4**	314 30 120 **CI/11,3**	372 34 970 **CI/11**	464 43 710 **CI/11**	582 57 100 **CI/11,5**	11,2	1120	
	10	1,65 160 **CI/10,3**	3,24 310 **CI/10**	3,96 380 **CI/10**	6,58 655 **CI/10,4**	7,61 755 **CI/10,4**	14,3 1 340 **CI/9,81**	28,1 2 680 **CI/10**	35,4 3 450 **CI/10,2**	55,3 5 450 **CI/10,3**	71,8 7 120 **CI/10,4**	118 11 640 **CI/10,3**	147 14 270 **CI/10,2**	227 21 690 **CI/10**	283 27 550 **CI/10,2**	399 38 700 **CI/10,2**	487 47 290 **CI/10,2**	560 53 470 **CI/10**	10	1000	
	9	–	–	–	–	–	–	–	38,4 3 670 **CI/9**	57,8 5 540 **CI/9,04**	76,9 7 610 **CI/9,33**	118 11 200 **CI/8,93**	151 15 000 **CI/9,33**	230 22 060 **CI/9,04**	303 28 920 **CI/9**	406 37 680 **CI/8,75**	509 47 260 **CI/8,75**	585 57 080 **CI/9,2**	9	900	
	8	1,82 170 **CI/7,85**	3,16 300 **CI/8**	3,96 380 **CI/8**	6,58 655 **CI/8,33**	7,61 755 **CI/8,33**	14,1 1 320 **CI/7,85**	28,1 2 680 **CI/8**	34,5 3 360 **CI/8,15**	55,3 5 450 **CI/8,27**	69 6 850 **CI/8,31**	120 11 820 **CI/8,27**	136 13 220 **CI/8,14**	206 20 240 **CI/8,21**	272 26 470 **CI/8,15**	364 34 050 **CI/7,83**	458 42 790 **CI/7,83**	538 51 400 **CI/8**	8	800	
	6,3	1,65 165 **CI/6,53**	2,81 280 **CI/6,57**	3,52 350 **CI/6,57**	5,68 540 **CI/6,27**	7,37 700 **CI/6,27**	11,2 1 110 **CI/6,53**	26,1 2 600 **CI/6,57**	– –	49 4 660 **CI/6,27**	– –	101 10 040 **CI/6,53**	– –	194 19 340 **CI/6,57**	– –	346 32 850 **CI/6,27**	432 41 060 **CI/6,27**	– –	6,3	630	
1 120 000	160	–	–	–	–	–	–	–	2 900 **C2I/151**	4 370 **C2I/154**	6 300 **C2I/158**	9 000 **C2I/151**	12 500 **C2I/156**	18 000 **C2I/156**	24 260 **C2I/154**	31 500 **C2I/156**	37 500 **C2I/156**	47 850 **C2I/161**			
	160	–	–	–	–	–	1000 **ICI/154**	2 000 **ICI/159**	2 120 **ICI/159**	4 370 **ICI/157**	5 100 **ICI/162**	7 420 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	2 840 **C2I/123**	5 450 **C2I/129**	6 440 **C2I/130**	10 900 **C2I/127**	12 470 **C2I/125**	18 680 **C2I/123**	22 140 **C2I/125**	32 820 **C2I/129**	41 030 **C2I/129**	44 110 **C2I/127**			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

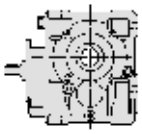


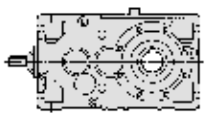


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 120 000	125	–	–	–	–	–	1 060 **ICI/123**	2 120 **ICI/127**	2 600 **ICI/127**	4 620 **ICI/126**	6 470 **ICI/130**	9 500 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 120 **C2I/98,2**	5 600 **C2I/103**	6 820 **C2I/104**	11 500 **C2I/102**	13 260 **C2I/100**	19 790 **C2I/98,5**	26 140 **C2I/100**	35 560 **C2I/103**	44 450 **C2I/103**	52 270 **C2I/102**			
	100	–	210 **ICI/99,4**	255 **ICI/99,4**	460 **ICI/103**	515 **ICI/103**	1 250 **ICI/100**	2 220 **ICI/102**	2 690 **ICI/100**	5 630 **ICI/106**	6 300 **ICI/102**	11 150 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 320 **C2I/87,8**	5 530 **C2I/90,4**	6 560 **C2I/90**	10 810 **C2I/87,9**	14 080 **C2I/90,3**	20 100 **C2I/89**	27 760 **C2I/89,7**	35 190 **C2I/88,8**	43 800 **C2I/88,8**	55 530 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 310 **C2I/78,6**	5 810 **C2I/82,7**	7 030 **C2I/83,1**	11 550 **C2I/81,4**	14 060 **C2I/80,2**	20 090 **C2I/78,8**	27 720 **C2I/80,3**	35 110 **C2I/82,6**	42 970 **C2I/82,6**	55 440 **C2I/81,2**			
	80	140 **ICI/75,2**	235 **ICI/79,5**	295 **ICI/79,5**	520 **ICI/82,7**	610 **ICI/82,7**	1 190 **ICI/76,7**	1 990 **ICI/78,1**	2 420 **ICI/78,1**	4 260 **ICI/78,1**	4 870 **ICI/80,5**	8 760 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 510 **C2I/70,2**	5 270 **C2I/72,3**	6 840 **C2I/72**	10 560 **C2I/70,3**	14 850 **C2I/72,2**	21 200 **C2I/71,2**	29 280 **C2I/71,7**	37 120 **C2I/71,1**	46 190 **C2I/71,1**	58 560 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 490 **C2I/62**	6 300 **C2I/65,2**	8 870 **C2I/65,5**	13 120 **C2I/64,2**	15 520 **C2I/63,2**	26 330 **C2I/62,1**	30 610 **C2I/63,3**	42 840 **C2I/65,1**	53 550 **C2I/65,1**	58 470 **C2I/64**			
	63	150 **ICI/60,1**	235 **ICI/63,6**	295 **ICI/63,6**	520 **ICI/66,2**	610 **ICI/66,2**	1 250 **ICI/61,3**	2 430 **ICI/62,5**	3 010 **ICI/62,5**	5 540 **ICI/62,5**	6 440 **ICI/64,4**	11 190 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 650 **C2I/55,4**	6 700 **C2I/57**	7 890 **C2I/56,8**	13 600 **C2I/55,5**	15 460 **C2I/56,9**	26 420 **C2I/56,1**	30 490 **C2I/56,6**	38 660 **C2I/56**	48 100 **C2I/56**	60 990 **C2I/57,6**			
	50	–	–	–	–	–	–	–	3 580 **C2I/50,4**	6 610 **C2I/52,1**	7 610 **C2I/52,4**	13 140 **C2I/53,9**	15 300 **C2I/53,1**	25 330 **C2I/52,1**	30 690 **C2I/53,1**	39 920 **C2I/51,3**	49 900 **C2I/51,3**	60 020 **C2I/50,5**			
	50	160 **ICI/49**	285 **ICI/50,9**	335 **ICI/50,9**	545 **ICI/53**	630 **ICI/53**	1 250 **ICI/49,9**	2 440 **ICI/50**	3 090 **ICI/49,3**	5 610 **ICI/52,5**	6 830 **ICI/50,8**	11 150 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 750 **C2I/45,1**	6 150 **C2I/45,6**	7 940 **C2I/45,4**	12 650 **C2I/46,6**	15 880 **C2I/47,8**	23 710 **C2I/47,1**	31 320 **C2I/47,5**	39 700 **C2I/44,2**	49 400 **C2I/44,2**	62 640 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 660 **C2I/38,7**	5 640 **C2I/39,5**	7 600 **C2I/41**	11 990 **C2I/42,6**	16 110 **C2I/41,4**	23 000 **C2I/42,8**	31 770 **C2I/41,6**	40 270 **C2I/39,5**	50 110 **C2I/39,5**	63 530 **C2I/41**			
	40	175 **ICI/38,6**	290 **ICI/40,1**	360 **ICI/40,1**	600 **ICI/41,8**	695 **ICI/41,8**	1 450 **ICI/39,4**	2 510 **ICI/39,4**	2 910 **ICI/40,2**	5 980 **ICI/41,4**	6 440 **ICI/41,6**	12 140 **ICI/41,4**	–	–	–	–	–	–			
	35,5	–	–	–	–	–	–	–	3 860 **C2I/37,5**	5 720 **C2I/37,5**	8 170 **C2I/37,3**	11 620 **C2I/35,3**	16 020 **C2I/36,2**	23 330 **C2I/37,2**	32 220 **C2I/37,5**	40 850 **C2I/36,3**	50 830 **C2I/36,3**	64 450 **C2I/37,3**			
									34,8	58,7	78,7	113	140	–	–	–	–	–	31,5	2800	**90**
	31,5	–	–	–	–	–	–	–	3 790 **C2I/32**	6 620 **C2I/33,1**	8 920 **C2I/33,2**	13 150 **C2I/34,2▲**	16 110 **C2I/33,7▲**	26 380 **C2I/33,1**	32 320 **C2I/33,7**	41 430 **C2I/31,3**	51 550 **C2I/31,3**	65 360 **C2I/32,5**			
		1,64	2,5	3,12	5,19	5,7	11,6	21,4		46,7		92,4							31,5	2800	
	31,5	180 **ICI/32,1**	280 **ICI/33**	350 **ICI/33**	555 **ICI/31,4**	610 **ICI/31,4**	1 290 **ICI/32,8**	2 370 **ICI/32,4**	–	5 000 **ICI/31,4**	–	10 300 **ICI/32,7**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

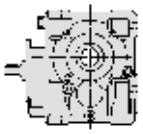


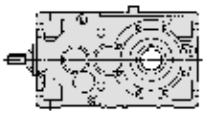


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	50	63	64	80	81	100	125	P_{N2} kW / M_{N2} N m / ... / **/ i** 140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2} min^{-1}
1 120 000			2,11	2,34	4,12	5,13	10	18,7		36,6		68,8		–					31,5	2800	**90**
	31,5	–	225 **CI/31,3**	250 **CI/31,3**	455 **CI/32,5**	570 **CI/32,5**	1 030 **CI/30,1**	2 000 **CI/31,3**	–	3 840 **CI/30,8**	–	7 220 **CI/30,8**	–	14 040 **CI/31,7**	–	–	–	–			
									36,3	65,2	76,3	119	145	–	–	–	–	–	28	2500	
	28	–	–	–	–	–	–	–	3 970 **C2I/28,6**	7 200 **C2I/28,9**	8 400 **C2I/28,8**	13 450 **C2I/29,5**	16 800 **C2I/30,3**	26 980 **C2I/29,9**	33 130 **C2I/30,1**	41 990 **C2I/28**	52 250 **C2I/28**	66 250 **C2I/28,8**			
									36	62,2	70,7	110	149	241	299	–	–	–	25	2240	
	25	–	–	–	–	–	–	–	3 770 **C2I/24,5**	6 650 **C2I/25,1**	7 830 **C2I/26**	12 710 **C2I/27**	16 740 **C2I/26,3**	27 850 **C2I/27,2▲**	33 560 **C2I/26,4▲**	42 540 **C2I/25,1**	52 940 **C2I/25,1**	67 130 **C2I/26**			
		1,44	2,24	2,83	4,88	5,56	10,3	21,5		43,1		84,8		168					25	2240	
	25	150 **CI/24,1**	240 **CI/25**	300 **CI/25**	540 **CI/26**	615 **CI/26**	1 060 **CI/24,1**	2 290 **CI/25**	–	4 530 **CI/24,6**	–	8 890 **CI/24,6**	–	18 200 **CI/25,4**	–	–	–	–			
									35,5	57,5	75,7	119	154	223	296	–	–	–	22,4	2000	
	22,4	–	–	–	–	–	–	–	4 030 **C2I/23,8**	6 520 **C2I/23,8**	8 550 **C2I/23,7**	12 720 **C2I/22,4**	16 910 **C2I/23**	25 150 **C2I/23,6**	33 690 **C2I/23,8**	42 730 **C2I/23**	53 190 **C2I/23**	67 410 **C2I/23,7**			
									32,9	55,5	70,2	113	140	217	277	396	492	553	20	1800	
	20	–	–	–	–	–	–	–	3 570 **C2I/20,4**	6 060 **C2I/20,6**	7 960 **C2I/21,4**	12 290 **C2I/20,5**	14 840 **C2I/19,9**	24 720 **C2I/21,5**	30 560 **C2I/20,8**	43 270 **C2I/20,6▲**	53 710 **C2I/20,6▲**	62 670 **C2I/21,4▲**			
		1,45	2,44	3	5	5,78	11,8	21,5	30,9	47,6	60,9	97,8	122	190	244	321	428	475	20	1800	
	20	150 **CI/19,3**	260 **CI/20**	320 **CI/20**	550 **CI/20,8**	640 **CI/20,8**	1 200 **CI/19,3**	2 280 **CI/20**	3 280 **CI/20**	4 970 **CI/19,7**	6 560 **CI/20,3**	10 220 **CI/19,7**	13 120 **CI/20,3**	20 430 **CI/20,3**	25 920 **CI/20**	33 500 **CI/19,7**	44 700 **CI/19,7**	51 120 **CI/20,3**			
									31,3	49,3	62,6	98,2	124	197	248	300	394	493	18	1600	
	18	–	–	–	–	–	–	–	3 360 **CI/18**	5 300 **CI/18**	6 980 **CI/18,7**	10 550 **CI/18**	13 820 **CI/18,7**	20 980 **CI/17,9**	26 690 **CI/18**	32 270 **CI/18**	42 330 **CI/18**	54 130 **CI/18,4**			
		1,43	2,47	3,03	5,05	5,83	11,5	23,5	31,4	50	65,5	103	135	190	265	305	381	497	16	1400	
	16	150 **CI/15,2**	265 **CI/15,8**	325 **CI/15,8**	565 **CI/16,4**	650 **CI/16,4**	1 200 **CI/15,2**	2 520 **CI/15,8**	3 370 **CI/15,8**	5 300 **CI/15,5**	7 150 **CI/16**	10 920 **CI/15,5**	14 710 **CI/16**	20 790 **CI/16**	28 460 **CI/15,8**	33 880 **CI/16,3**	42 240 **CI/16,3**	54 220 **CI/16**			
									32,9	51,2	65,7	105	131	211	259	337	399	513	14	1250	
	14	–	–	–	–	–	–	–	3 560 **CI/14,2**	5 550 **CI/14,2**	7 390 **CI/14,7**	11 340 **CI/14,2**	14 770 **CI/14,7**	22 680 **CI/14,1**	28 070 **CI/14,2**	36 500 **CI/14,2**	43 300 **CI/14,2**	56 910 **CI/14,5**			
		1,61	2,76	3,49	5,86	6,78	12,3	25,1	29,7	52,2	59,5	104	125	208	234	317	389	464	12,5	1120	
	12,5	170 **CI/12,4**	295 **CI/12,6**	375 **CI/12,6**	655 **CI/13,1**	760 **CI/13,1**	1 300 **CI/12,4**	2 700 **CI/12,6**	3 260 **CI/12,9**	5 800 **CI/13**	6 650 **CI/13,1**	11 570 **CI/13**	13 710 **CI/12,8**	22 400 **CI/12,6**	25 690 **CI/12,9**	34 700 **CI/12,8**	42 500 **CI/12,8**	49 960 **CI/12,6**			
									34,5	47,1	70,7	93,9	141	188	283	335	419	525	11,2	1000	
	11,2	–	–	–	–	–	–	–	3 710 **CI/11,3**	5 130 **CI/11,4**	7 880 **CI/11,7**	10 100 **CI/11,3**	15 720 **CI/11,7**	20 450 **CI/11,4**	30 410 **CI/11,3**	35 310 **CI/11**	44 140 **CI/11**	57 660 **CI/11,5**			
		1,53	2,92	3,58	5,94	6,87	13	25,4	31,9	50,2	65,2	110	132	206	257	362	442	509	10	900	
	10	170 **CI/10,3**	310 **CI/10**	380 **CI/10**	655 **CI/10,4**	760 **CI/10,4**	1 350 **CI/9,81**	2 700 **CI/10**	3 450 **CI/10,2**	5 500 **CI/10,3**	7 180 **CI/10,4**	12 010 **CI/10,3**	14 270 **CI/10,2**	21 880 **CI/10**	27 800 **CI/10,2**	39 050 **CI/10,2**	47 700 **CI/10,2**	54 020 **CI/10**			
									34,5	51,9	69	109	136	206	272	364	458	525	9	800	
	9	–	–	–	–	–	–	–	3 710 **CI/9**	5 600 **CI/9,04**	7 690 **CI/9,33**	11 610 **CI/8,93**	15 150 **CI/9,33**	22 270 **CI/9,04**	29 220 **CI/9**	38 040 **CI/8,75**	47 790 **CI/8,75**	57 660 **CI/9,2**			
		1,66	2,82	3,53	5,86	6,78	12,6	25,3	31,6	49,6	61,9	110	122	185	244	326	411	482	8	710	
	8	175 **CI/7,85**	305 **CI/8**	380 **CI/8**	655 **CI/8,33**	760 **CI/8,33**	1 330 **CI/7,85**	2 720 **CI/8**	3 460 **CI/8,15**	5 510 **CI/8,27**	6 920 **CI/8,31**	12 250 **CI/8,27**	13 410 **CI/8,14**	20 440 **CI/8,21**	26 750 **CI/8,15**	34 370 **CI/7,83**	43 270 **CI/7,83**	51 910 **CI/8**			
		1,47	2,59	3,24	5,08	6,58	10	24,1		44,8		93,3		174		310	386		6,3	560	
	6,3	165 **CI/6,53**	290 **CI/6,57**	365 **CI/6,57**	545 **CI/6,27**	705 **CI/6,27**	1 120 **CI/6,53**	2 700 **CI/6,57**	–	4 780 **CI/6,27**	–	10 400 **CI/6,53**	–	19 500 **CI/6,57**	–	33 170 **CI/6,27**	41 200 **CI/6,27**	–			
1 000 000	160	–	–	–	–	–	–	–	3 000 **C2I/151**	4 500 **C2I/154**	6 300 **C2I/158**	9 250 **C2I/151**	12 800 **C2I/156**	18 500 **C2I/156**	25 100 **C2I/154**	31 500 **C2I/156**	38 700 **C2I/156**	49 510 **C2I/161**			
	160	–	–	–	–	–	1 030 **CI/154**	2 060 **CI/159**	2 200 **CI/159**	4 500 **CI/157**	5 270 **CI/162**	7 620 **CI/157**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

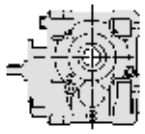




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **i**																i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 000 000	125	–	–	–	–	–	–	–	2 940 **C2I/123**	5 600 **C2I/129**	6 660 **C2I/130**	11 200 **C2I/127**	12 910 **C2I/125**	19 320 **C2I/123**	22 710 **C2I/125**	33 960 **C2I/129**	42 450 **C2I/129**	45 230 **C2I/127**			
	125	–	–	–	–	–	1 090 **ICI/123**	2 180 **ICI/127**	2 690 **ICI/127**	4 750 **ICI/126**	6 700 **ICI/130**	9 750 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 220 **C2I/98,2**	5 800 **C2I/103**	7 060 **C2I/104**	11 800 **C2I/102**	13 690 **C2I/100**	20 500 **C2I/98,5**	26 980 **C2I/100**	36 840 **C2I/103**	46 050 **C2I/103**	53 960 **C2I/102**			
	100	–	220 **ICI/99,4**	270 **ICI/99,4**	485 **ICI/103**	530 **ICI/103**	1 250 **ICI/100**	2 300 **ICI/102**	2 780 **ICI/100**	5 690 **ICI/106**	6 500 **ICI/102**	11 190 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 410 **C2I/87,8**	5 730 **C2I/90,4**	6 740 **C2I/90**	11 200 **C2I/87,9**	14 460 **C2I/90,3**	20 650 **C2I/89**	28 530 **C2I/89,7**	36 160 **C2I/88,8**	45 000 **C2I/88,8**	57 050 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 400 **C2I/78,6**	6 030 **C2I/82,7**	7 220 **C2I/83,1**	11 980 **C2I/81,4**	14 430 **C2I/80,2**	20 620 **C2I/78,8**	28 460 **C2I/80,3**	36 050 **C2I/82,6**	44 540 **C2I/82,6**	56 910 **C2I/81,2**			
	80	150 **ICI/75,2**	235 **ICI/79,5**	295 **ICI/79,5**	520 **ICI/82,7**	615 **ICI/82,7**	1 190 **ICI/76,7**	2 060 **ICI/78,1**	2 490 **ICI/78,1**	4 370 **ICI/78,1**	5 000 **ICI/80,5**	8 990 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 600 **C2I/70,2**	5 460 **C2I/72,3**	7 020 **C2I/72**	10 850 **C2I/70,3**	15 250 **C2I/72,2**	21 780 **C2I/71,2**	30 080 **C2I/71,7**	38 140 **C2I/71,1**	47 460 **C2I/71,1**	60 170 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 540 **C2I/62**	6 500 **C2I/65,2**	8 950 **C2I/65,5**	13 170 **C2I/64,2**	16 060 **C2I/63,2**	26 420 **C2I/62,1**	31 670 **C2I/63,3**	44 320 **C2I/65,1**	55 400 **C2I/65,1**	59 270 **C2I/64**			
	63	150 **ICI/60,1**	235 **ICI/63,6**	295 **ICI/63,6**	520 **ICI/66,2**	615 **ICI/66,2**	1 280 **ICI/61,3**	2 520 **ICI/62,5**	3 050 **ICI/62,5**	5 560 **ICI/62,5**	6 670 **ICI/64,4**	11 230 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 700 **C2I/55,4**	6 700 **C2I/57**	7 920 **C2I/56,8**	13 600 **C2I/55,5**	15 660 **C2I/56,9**	27 020 **C2I/56,1**	30 880 **C2I/56,6**	39 370 **C2I/56**	49 210 **C2I/56**	61 760 **C2I/57,6**			
	50	–	–	–	–	–	–	–	3 630 **C2I/50,4**	6 640 **C2I/52,1**	7 850 **C2I/52,4**	13 190 **C2I/53,9**	15 850 **C2I/53,1**	26 240 **C2I/52,1**	31 790 **C2I/53,1**	41 360 **C2I/51,3**	51 690 **C2I/51,3**	60 870 **C2I/50,5**			
	50	160 **ICI/49**	285 **ICI/50,9**	335 **ICI/50,9**	555 **ICI/53**	655 **ICI/53**	1 250 **ICI/49,9**	2 470 **ICI/50**	3 130 **ICI/49,3**	5 690 **ICI/52,5**	7 080 **ICI/50,8**	11 190 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 800 **C2I/45,1**	6 370 **C2I/45,6**	8 050 **C2I/45,4**	13 110 **C2I/46,6**	16 110 **C2I/47,8**	24 580 **C2I/47,1**	31 770 **C2I/47,5**	40 270 **C2I/44,2**	50 110 **C2I/44,2**	63 530 **C2I/45,4**			
	40	–	–	–	–	–	–	–	3 710 **C2I/38,7**	5 720 **C2I/39,5**	7 710 **C2I/41**	12 430 **C2I/42,6**	16 340 **C2I/41,4**	23 330 **C2I/42,8**	32 220 **C2I/41,6**	40 850 **C2I/39,5**	50 830 **C2I/39,5**	64 450 **C2I/41**			
	40	175 **ICI/38,6**	290 **ICI/40,1**	365 **ICI/40,1**	610 **ICI/41,8**	705 **ICI/41,8**	1 500 **ICI/39,4**	2 540 **ICI/39,4**	2 950 **ICI/40,2**	6 200 **ICI/41,4**	6 530 **ICI/41,6**	12 470 **ICI/41,4**	–	–	–	–	–	–			
									30,6	45,4	65,1	97,9	131	186	255	–	–	–	35,5	2800	**80**
	35,5	–	–	–	–	–	–	–	3 910 **C2I/37,5**	5 800 **C2I/37,5**	8 290 **C2I/37,3**	11 780 **C2I/35,3**	16 250 **C2I/36,2**	23 660 **C2I/37,2**	32 680 **C2I/37,5**	41 430 **C2I/36,3**	51 550 **C2I/36,3**	65 360 **C2I/37,3**			
									31,5	52,6	70,5	101	127	–	–	–	–	–	31,5	2500	
	31,5	–	–	–	–	–	–	–	3 840 **C2I/32**	6 640 **C2I/33,1**	8 950 **C2I/33,2**	13 200 **C2I/34,2**	16 330 **C2I/33,7**	26 470 **C2I/33,1**	33 440 **C2I/33,7**	41 990 **C2I/31,3**	52 250 **C2I/31,3**	66 250 **C2I/32,5**			

For n_1 lower than 560 min^{-1} see page 195.

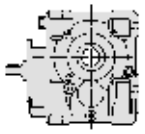
9 - Bevel helical gear reducer selection tables

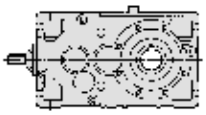


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
1 000 000	31,5	1,5 185 **ICI/32,1**	2,31 290 **ICI/33**	2,89 365 **ICI/33**	4,7 565 **ICI/31,4**	5,16 620 **ICI/31,4**	10,7 1 340 **ICI/32,8**	19,4 2 400 **ICI/32,4**	– –	42,3 5 070 **ICI/31,4**	– –	85,3 10 660 **ICI/32,7**	– –	– –	– –	– –	– –	– –	31,5	2500	**80**
	31,5	– –	1,89 225 **CI/31,3**	2,1 250 **CI/31,3**	3,69 460 **CI/32,5**	4,59 570 **CI/32,5**	8,97 1 030 **CI/30,1**	16,8 2 010 **CI/31,3**	– –	32,8 3 860 **CI/30,8**	– –	63,6 7 470 **CI/30,8**	– –	– 14 530 **CI/31,7**	– –	– –	– –	– –	31,5	2500	
	28	33 4 020 **C2I/28,6**	58,6 7 230 **C2I/28,9**	69,3 8 510 **C2I/28,8**	110 13 900 **C2I/29,5**	132 17 020 **C2I/30,3**	212 27 070 **C2I/29,9▲**	261 33 560 **C2I/30,1▲**	– 42 540 **C2I/28**	– 52 940 **C2I/28**	– 67 130 **C2I/28,8**								28	2240	
	25	32,6 3 820 **C2I/24,5**	57,5 6 880 **C2I/25,1**	64 7 940 **C2I/26**	102 13 150 **C2I/27**	135 16 960 **C2I/26,3**	219 28 350 **C2I/27,2**	270 34 020 **C2I/26,4**	– 43 120 **C2I/25,1**	– 53 670 **C2I/25,1**	– 68 040 **C2I/26**								25	2000	
	25	1,29 150 **CI/24,1**	2,03 240 **CI/25**	2,56 305 **CI/25**	4,42 550 **CI/26**	5,03 625 **CI/26**	9,23 1 060 **CI/24,1**	19,8 2 370 **CI/25**	– –	39,8 4 680 **CI/24,6**	– –	76,7 9 020 **CI/24,6**	– –	152 18 450 **CI/25,4**	– –	– –	– –	– –	25	2000	
	22,4	32,3 4 080 **C2I/23,8**	53,4 6 730 **C2I/23,8**	69 8 650 **C2I/23,7**	111 13 130 **C2I/22,4**	140 17 130 **C2I/23**	207 25 950 **C2I/23,6**	270 34 120 **C2I/23,8**	355 43 270 **C2I/23▲**	441 53 870 **C2I/23▲**	544 68 260 **C2I/23,7▲**								22,4	1800	
	20	29,7 3 620 **C2I/20,4**	50 6 140 **C2I/20,6**	63,3 8 070 **C2I/21,4**	102 12 460 **C2I/20,5**	127 15 050 **C2I/19,9**	196 25 070 **C2I/21,5**	249 30 990 **C2I/20,8**	357 43 880 **C2I/20,6**	443 54 470 **C2I/20,6**	499 63 560 **C2I/21,4**								20	1600	
	20	1,29 150 **CI/19,3**	2,2 265 **CI/20**	2,71 325 **CI/20**	4,51 560 **CI/20,8**	5,21 645 **CI/20,8**	10,8 1 250 **CI/19,3**	19,4 2 310 **CI/20**	27,9 3 330 **CI/20**	42,9 5 040 **CI/19,7**	54,9 6 650 **CI/20,3**	88,1 10 360 **CI/19,7**	110 13 300 **CI/20,3**	171 20 720 **CI/20,3**	220 26 280 **CI/20**	289 33 970 **CI/19,7**	394 46 310 **CI/19,7**	428 51 850 **CI/20,3**	20	1600	
	18	27,8 3 420 **CI/18**	43,8 5 380 **CI/18**	55,7 7 090 **CI/18,7**	87,3 10 720 **CI/18**	110 14 000 **CI/18,7**	175 21 320 **CI/17,9**	221 27 120 **CI/18**	267 32 790 **CI/18**	359 44 060 **CI/18**	434 54 500 **CI/18,4**								18	1400	
	16	1,28 150 **CI/15,2**	2,21 265 **CI/15,8**	2,72 325 **CI/15,8**	4,52 565 **CI/16,4**	5,22 655 **CI/16,4**	10,7 1 240 **CI/15,2**	21 2 530 **CI/15,8**	28,3 3 420 **CI/15,8**	46,2 5 480 **CI/15,5**	58,9 7 190 **CI/16**	94,6 11 230 **CI/15,5**	125 15 220 **CI/16**	172 21 000 **CI/16**	238 28 650 **CI/15,8**	275 34 200 **CI/16,3**	343 42 640 **CI/16,3**	446 54 490 **CI/16**	16	1250	
	14	29,7 3 600 **CI/14,2**	46,1 5 580 **CI/14,2**	59,5 7 470 **CI/14,7**	94,2 11 400 **CI/14,2**	122 15 270 **CI/14,7**	190 22 800 **CI/14,1**	234 28 360 **CI/14,2**	304 36 850 **CI/14,2**	361 43 700 **CI/14,2**	464 57 450 **CI/14,5**								14	1120	
	12,5	1,48 175 **CI/12,4**	2,48 300 **CI/12,6**	3,13 375 **CI/12,6**	5,25 660 **CI/13,1**	6,08 765 **CI/13,1**	11,1 1 310 **CI/12,4**	22,6 2 720 **CI/12,6**	26,8 3 290 **CI/12,9**	47,1 5 870 **CI/13**	53,7 6 710 **CI/13,1**	93,9 11 690 **CI/13**	112 13 750 **CI/12,8**	188 22 620 **CI/12,6**	211 25 950 **CI/12,9**	286 35 030 **CI/12,8**	350 42 910 **CI/12,8**	419 50 440 **CI/12,6**	12,5	1000	
	11,2	31,2 3 730 **CI/11,3**	42,9 5 190 **CI/11,4**	64 7 930 **CI/11,7**	85,3 10 190 **CI/11,3**	128 15 820 **CI/11,7**	171 20 640 **CI/11,4**	257 30 680 **CI/11,3**	304 35 630 **CI/11**	380 44 530 **CI/11**	477 58 180 **CI/11,5**								11,2	900	
	10	1,41 175 **CI/10,3**	2,6 310 **CI/10**	3,19 380 **CI/10**	5,3 660 **CI/10,4**	6,13 760 **CI/10,4**	11,6 1 360 **CI/9,81**	23,2 2 770 **CI/10**	28,4 3 450 **CI/10,2**	45,1 5 560 **CI/10,3**	58,5 7 250 **CI/10,4**	101 12 440 **CI/10,3**	117 14 270 **CI/10,2**	185 22 080 **CI/10**	231 28 070 **CI/10,2**	325 39 450 **CI/10,2**	397 48 150 **CI/10,2**	458 54 620 **CI/10**	10	800	
	9	31,6 3 820 **CI/9**	46,6 5 670 **CI/9,04**	61,9 7 770 **CI/9,33**	100 12 030 **CI/8,93**	122 15 370 **CI/9,33**	185 22 490 **CI/9,04**	244 29 530 **CI/9**	326 38 390 **CI/8,75**	411 48 330 **CI/8,75**	471 58 250 **CI/9,2**								9	710	
	8	1,47 175 **CI/7,85**	2,52 305 **CI/8**	3,14 380 **CI/8**	5,22 660 **CI/8,33**	6,04 765 **CI/8,33**	11,2 1 330 **CI/7,85**	23,3 2 820 **CI/8**	29 3 590 **CI/8,15**	44,4 5 570 **CI/8,27**	55,5 6 990 **CI/8,31**	101 12 700 **CI/8,27**	113 13 900 **CI/8,14**	166 20 630 **CI/8,21**	219 27 030 **CI/8,15**	292 34 690 **CI/7,83**	368 43 750 **CI/7,83**	432 52 420 **CI/8**	8	630	
900 000	200	– –	– –	– –	– –	– –	775 **ICI/192**	1 850 **ICI/199**	– –	3 650 **ICI/196**	– –	7 150 **ICI/196**	– –	– –	– –	– –	– –	– –			
	160	– –	– –	– –	– –	– –	– –	– –	3 150 **C2I/151**	4 620 **C2I/154**	6 500 **C2I/158**	9 500 **C2I/151**	13 200 **C2I/156**	19 000 **C2I/156**	25 940 **C2I/154**	32 500 **C2I/156**	40 000 **C2I/156**	51 160 **C2I/161**			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

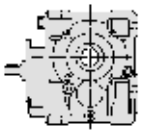
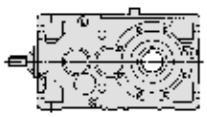
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
900 000	160	–	–	–	–	–	1 060 **ICI/154**	2 120 **ICI/159**	2 270 **ICI/159**	4 700 **ICI/157**	5 420 **ICI/162**	7 830 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 040 **C2I/123**	5 600 **C2I/129**	6 880 **C2I/130**	11 500 **C2I/127**	13 320 **C2I/125**	19 940 **C2I/123**	23 360 **C2I/125**	35 050 **C2I/129**	43 810 **C2I/129**	46 520 **C2I/127**			
	125	–	–	–	–	–	1 120 **ICI/123**	2 240 **ICI/127**	2 770 **ICI/127**	4 870 **ICI/126**	6 910 **ICI/130**	10 000 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 310 **C2I/98,2**	6 000 **C2I/103**	7 320 **C2I/104**	12 200 **C2I/102**	14 190 **C2I/100**	21 250 **C2I/98,5**	27 720 **C2I/100**	38 180 **C2I/103**	47 730 **C2I/103**	55 440 **C2I/102**			
	100	–	225 **ICI/99,4**	280 **ICI/99,4**	485 **ICI/103**	545 **ICI/103**	1 260 **ICI/100**	2 380 **ICI/102**	2 850 **ICI/100**	5 710 **ICI/106**	6 700 **ICI/102**	11 230 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 510 **C2I/87,8**	5 940 **C2I/90,4**	6 910 **C2I/90**	11 610 **C2I/87,9**	14 850 **C2I/90,3**	21 200 **C2I/89**	29 280 **C2I/89,7**	37 120 **C2I/88,8**	46 190 **C2I/88,8**	58 560 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 490 **C2I/78,6**	6 240 **C2I/82,7**	7 420 **C2I/83,1**	12 410 **C2I/81,4**	14 830 **C2I/80,2**	21 190 **C2I/78,8**	29 240 **C2I/80,3**	37 030 **C2I/82,6**	46 140 **C2I/82,6**	58 470 **C2I/81,2**			
	80	150 **ICI/75,2**	235 **ICI/79,5**	295 **ICI/79,5**	525 **ICI/82,7**	615 **ICI/82,7**	1 190 **ICI/76,7**	2 140 **ICI/78,1**	2 550 **ICI/78,1**	4 490 **ICI/78,1**	5 140 **ICI/80,5**	9 240 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 650 **C2I/70,2**	5 650 **C2I/72,3**	7 120 **C2I/72**	11 090 **C2I/70,3**	15 460 **C2I/72,2**	22 080 **C2I/71,2**	30 490 **C2I/71,7**	38 660 **C2I/71,1**	48 100 **C2I/71,1**	60 990 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 580 **C2I/62**	6 660 **C2I/65,2**	8 980 **C2I/65,5**	13 210 **C2I/64,2**	16 580 **C2I/63,2**	26 510 **C2I/62,1**	32 690 **C2I/63,3**	45 720 **C2I/65,1**	57 150 **C2I/65,1**	60 020 **C2I/64**			
	63	150 **ICI/60,1**	235 **ICI/63,6**	295 **ICI/63,6**	525 **ICI/66,2**	615 **ICI/66,2**	1 280 **ICI/61,3**	2 540 **ICI/62,5**	3 090 **ICI/62,5**	5 580 **ICI/62,5**	6 880 **ICI/64,4**	11 270 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 750 **C2I/55,4**	6 700 **C2I/57**	7 950 **C2I/56,8**	14 050 **C2I/55,5**	15 880 **C2I/56,9**	27 120 **C2I/56,1**	31 320 **C2I/56,6**	40 780 **C2I/56**	50 980 **C2I/56**	62 640 **C2I/57,6**			
	50	–	–	–	–	–	–	–	3 690 **C2I/50,4**	6 660 **C2I/52,1**	8 130 **C2I/52,4**	13 240 **C2I/53,9**	16 430 **C2I/53,1**	26 560 **C2I/52,1**	32 950 **C2I/53,1**	42 860 **C2I/51,3**	53 580 **C2I/51,3**	61 750 **C2I/50,5**			
	50	160 **ICI/49**	285 **ICI/50,9**	335 **ICI/50,9**	575 **ICI/53**	680 **ICI/53**	1 260 **ICI/49,9**	2 510 **ICI/50**	3 180 **ICI/49,3**	5 710 **ICI/52,5**	7 340 **ICI/50,8**	11 230 **ICI/52,5**	–	–	–	–	–	–			
	45	–	–	–	–	–	–	–	3 860 **C2I/45,1**	6 600 **C2I/45,6**	8 170 **C2I/45,4**	13 590 **C2I/46,6**	16 340 **C2I/47,8**	25 480 **C2I/47,1**	32 220 **C2I/47,5**	40 850 **C2I/44,2**	50 830 **C2I/44,2**	64 450 **C2I/45,4**			
									28,5	44	55,9	88,7	117	164	231	–	–	–	40	2800	**71**
	40	–	–	–	–	–	–	–	3 760 **C2I/38,7**	5 930 **C2I/39,5**	7 820 **C2I/41**	12 880 **C2I/42,6**	16 570 **C2I/41,4**	23 990 **C2I/42,8**	32 680 **C2I/41,6**	41 430 **C2I/39,5**	51 550 **C2I/39,5**	65 360 **C2I/41**			
		1,34	2,13	2,66	4,32	5	11,6	19,2	21,8	45,5	46,7	88,7							40	2800	
	40	175 **ICI/38,6**	290 **ICI/40,1**	365 **ICI/40,1**	615 **ICI/41,8**	715 **ICI/41,8**	1 550 **ICI/39,4**	2 580 **ICI/39,4**	2 990 **ICI/40,2**	6 420 **C2I/41,4**	6 630 **ICI/41,6**	12 520 **ICI/41,4**	–	–	–	–	–	–			
									27,7	41,1	58,9	88,6	119	169	231	–	–	–	35,5	2500	
	35,5	–	–	–	–	–	–	–	3 970 **C2I/37,5**	5 880 **C2I/37,5**	8 400 **C2I/37,3**	11 940 **C2I/35,3**	16 470 **C2I/36,2**	23 980 **C2I/37,2**	33 130 **C2I/37,5**	41 990 **C2I/36,3**	52 250 **C2I/36,3**	66 250 **C2I/37,3**			

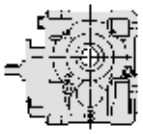
For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

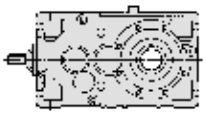



$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
900 000									28,6	47,3	63,4	90,9	115	188	240	318	396	484	31,5	2240	**71**
	31,5	–	–	–	–	–	–	–	3 900 **C2I/32**	6 660 **C2I/33,1**	8 980 **C2I/33,2**	13 240 **C2I/34,2**	16 550 **C2I/33,7**	26 560 **C2I/33,1▲**	34 430 **C2I/33,7▲**	42 540 **C2I/31,3▲**	52 940 **C2I/31,3▲**	67 130 **C2I/32,5▲**			
		1,35	2,14	2,67	4,26	4,68	9,89	17,6		38,4		79							31,5	2240	
	31,5	185 **ICI/32,1**	300 **ICI/33**	375 **ICI/33**	570 **ICI/31,4**	625 **ICI/31,4**	1 380 **ICI/32,8**	2 430 **ICI/32,4**	–	5 130 **ICI/31,4**	–	11 010 **ICI/32,7**	–	–	–	–	–	–			
			1,7	1,89	3,32	4,13	8,07	15,1		29,5		58,9		111					31,5	2240	
	31,5	–	225 **CI/31,3**	250 **CI/31,3**	460 **CI/32,5**	570 **CI/32,5**	1 040 **CI/30,1**	2 010 **CI/31,3**	–	3 870 **CI/30,8**	–	7 720 **CI/30,8**	–	15 020 **CI/31,7**	–	–	–	–			
									29,8	52,5	63,8	99,9	119	190	237	–	–	–	28	2000	
	28	–	–	–	–	–	–	–	4 070 **C2I/28,6**	7 250 **C2I/28,9**	8 780 **C2I/28,8**	14 080 **C2I/29,5**	17 250 **C2I/30,3**	27 170 **C2I/29,9**	34 020 **C2I/30,1**	43 120 **C2I/28**	53 670 **C2I/28**	68 040 **C2I/28,8**			
									29,7	53,4	59,3	94,7	123	197	246	328	409	499	25	1800	
	25	–	–	–	–	–	–	–	3 870 **C2I/24,5**	7 100 **C2I/25,1**	8 180 **C2I/26**	13 570 **C2I/27**	17 180 **C2I/26,3**	28 440 **C2I/27,2**	34 450 **C2I/26,4**	43 670 **C2I/25,1▲**	54 340 **C2I/25,1▲**	68 900 **C2I/26▲**			
		1,16	1,85	2,33	4,03	4,59	8,34	18,4		36		69,9		139					25	1800	
	25	150 **CI/24,1**	245 **CI/25**	310 **CI/25**	555 **CI/26**	635 **CI/26**	1 070 **CI/24,1**	2 440 **CI/25**	–	4 700 **CI/24,6**	–	9 130 **CI/24,6**	–	18 690 **CI/25,4**	–	–	–	–			
									29,2	49,2	62,2	102	127	191	244	320	398	490	22,4	1600	
	22,4	–	–	–	–	–	–	–	4 140 **C2I/23,8**	6 970 **C2I/23,8**	8 780 **C2I/23,7**	13 600 **C2I/22,4**	17 370 **C2I/23**	26 890 **C2I/23,6**	34 600 **C2I/23,8**	43 880 **C2I/23**	54 630 **C2I/23**	69 230 **C2I/23,7**			
									26,4	44,8	56,3	92,7	113	174	222	317	394	443	20	1400	
	20	–	–	–	–	–	–	–	3 680 **C2I/20,4**	6 290 **C2I/20,6**	8 200 **C2I/21,4**	12 950 **C2I/20,5**	15 290 **C2I/19,9**	25 470 **C2I/21,5**	31 490 **C2I/20,8**	44 590 **C2I/20,6**	55 350 **C2I/20,6**	64 580 **C2I/21,4**			
		1,13	1,96	2,41	4,01	4,63	9,86	17,2	24,8	38,6	48,8	78,4	97,7	152	196	257	356	388	20	1400	
	20	150 **CI/19,3**	265 **CI/20**	330 **CI/20**	570 **CI/20,8**	655 **CI/20,8**	1 300 **CI/19,3**	2 350 **CI/20**	3 380 **CI/20**	5 190 **CI/19,7**	6 760 **CI/20,3**	10 530 **CI/19,7**	13 520 **CI/20,3**	21 050 **CI/20,3**	26 710 **CI/20**	34 520 **CI/19,7**	47 790 **CI/19,7**	53 640 **CI/20,3**			
									24,9	39,5	49,7	78,7	98,2	158	197	241	331	388	18	1250	
	18	–	–	–	–	–	–	–	3 420 **CI/18**	5 430 **CI/18**	7 090 **CI/18,7**	10 820 **CI/18**	14 000 **CI/18,7**	21 530 **CI/17,9**	27 120 **CI/18**	33 100 **CI/18**	45 580 **CI/18**	54 500 **CI/18,4**			
		1,15	1,99	2,44	4,06	4,7	9,86	18,9	26,3	42,2	53	85,1	115	159	214	249	310	401	16	1120	
	16	150 **CI/15,2**	265 **CI/15,8**	330 **CI/15,8**	570 **CI/16,4**	655 **CI/16,4**	1 280 **CI/15,2**	2 540 **CI/15,8**	3 530 **CI/15,8**	5 580 **CI/15,5**	7 230 **CI/16**	11 260 **CI/15,5**	15 730 **CI/16**	21 710 **CI/16**	28 840 **CI/15,8**	34 520 **CI/16,3**	43 020 **CI/16,3**	54 750 **CI/16**			
									26,8	41,5	53,7	84,6	112	170	211	275	325	419	14	1000	
	14	–	–	–	–	–	–	–	3 640 **CI/14,2**	5 630 **CI/14,2**	7 540 **CI/14,7**	11 470 **CI/14,2**	15 770 **CI/14,7**	22 940 **CI/14,1**	28 650 **CI/14,2**	37 210 **CI/14,2**	44 110 **CI/14,2**	58 010 **CI/14,5**			
		1,34	2,24	2,83	4,74	5,49	10	20,4	24,4	42,9	48,7	85,3	101	171	192	260	318	383	12,5	900	
	12,5	175 **CI/12,4**	300 **CI/12,6**	380 **CI/12,6**	660 **CI/13,1**	765 **CI/13,1**	1 310 **CI/12,4**	2 730 **CI/12,6**	3 320 **CI/12,9**	5 930 **CI/13**	6 780 **CI/13,1**	11 800 **CI/13**	13 800 **CI/12,8**	22 840 **CI/12,6**	26 200 **CI/12,9**	35 340 **CI/12,8**	43 300 **CI/12,8**	51 310 **CI/12,6**			
									27,9	38,6	57,3	76,6	116	153	231	273	341	428	11,2	800	
	11,2	–	–	–	–	–	–	–	3 750 **CI/11,3**	5 250 **CI/11,4**	7 980 **CI/11,7**	10 300 **CI/11,3**	16 200 **CI/11,7**	20 850 **CI/11,4**	30 990 **CI/11,3**	35 980 **CI/11**	44 970 **CI/11**	58 760 **CI/11,5**			
		1,3	2,32	2,84	4,72	5,46	10,4	21,4	25,2	40,4	52,4	92,8	104	166	207	291	355	411	10	710	
	10	180 **CI/10,3**	310 **CI/10**	380 **CI/10**	660 **CI/10,4**	765 **CI/10,4**	1 370 **CI/9,81**	2 870 **CI/10**	3 450 **CI/10,2**	5 610 **CI/10,3**	7 320 **CI/10,4**	12 900 **CI/10,3**	14 270 **CI/10,2**	22 290 **CI/10**	28 350 **CI/10,2**	39 850 **CI/10,2**	48 600 **CI/10,2**	55 240 **CI/10**			
									29	41,8	55,5	92,1	113	166	219	292	368	422	9	630	
	9	–	–	–	–	–	–	–	3 960 **CI/9**	5 730 **CI/9,04**	7 850 **CI/9,33**	12 470 **CI/8,93**	15 930 **CI/9,33**	22 700 **CI/9,04**	29 840 **CI/9**	38 750 **CI/8,75**	48 870 **CI/8,75**	58 840 **CI/9,2**			
		1,31	2,25	2,8	4,65	5,39	10	21,4	26,7	39,7	49,8	93,3	104	149	196	262	331	388	8	560	
	8	175 **CI/7,85**	305 **CI/8**	380 **CI/8**	660 **CI/8,33**	765 **CI/8,33**	1 340 **CI/7,85**	2 920 **CI/8**	3 720 **CI/8,15**	5 600 **CI/8,27**	7 060 **CI/8,31**	13 160 **CI/8,27**	14 400 **CI/8,14**	20 830 **CI/8,21**	27 200 **CI/8,15**	35 010 **CI/7,83**	44 220 **CI/7,83**	52 930 **CI/8**			
800 000	200	–	–	–	–	–	800 **ICI/192**	1 900 **ICI/199**	–	3 750 **ICI/196**	–	7 400 **ICI/196**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

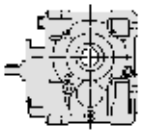
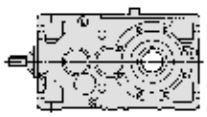
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
800 000	160	–	–	–	–	–	–	–	3 150 **C2I/151**	4 750 **C2I/154**	6 700 **C2I/158**	9 750 **C2I/151**	13 600 **C2I/156**	19 500 **C2I/156**	26 840 **C2I/154**	33 500 **C2I/156**	40 000 **C2I/156**	52 930 **C2I/161**			
	160	–	–	–	–	–	1 090 **ICI/154**	2 180 **ICI/159**	2 350 **ICI/159**	4 720 **ICI/157**	5 440 **ICI/162**	8 030 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 150 **C2I/123**	5 800 **C2I/129**	7 120 **C2I/130**	11 800 **C2I/127**	13 800 **C2I/125**	20 660 **C2I/123**	24 110 **C2I/125**	36 310 **C2I/129**	45 380 **C2I/129**	48 030 **C2I/127**			
	125	–	–	–	–	–	1 150 **ICI/123**	2 300 **ICI/127**	2 870 **ICI/127**	5 000 **ICI/126**	6 990 **ICI/130**	10 300 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 400 **C2I/98,2**	6 150 **C2I/103**	7 590 **C2I/104**	12 500 **C2I/102**	14 710 **C2I/100**	22 030 **C2I/98,5**	28 460 **C2I/100**	39 580 **C2I/103**	49 470 **C2I/103**	56 910 **C2I/102**			
	100	–	235 **ICI/99,4**	285 **ICI/99,4**	490 **ICI/103**	560 **ICI/103**	1 260 **ICI/100**	2 470 **ICI/102**	2 950 **ICI/100**	5 740 **ICI/106**	6 900 **ICI/102**	11 280 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 600 **C2I/87,8**	6 160 **C2I/90,4**	7 100 **C2I/90**	12 030 **C2I/87,9**	15 250 **C2I/90,3**	21 780 **C2I/89**	30 080 **C2I/89,7**	38 140 **C2I/88,8**	47 460 **C2I/88,8**	60 170 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 540 **C2I/78,6**	6 460 **C2I/82,7**	7 520 **C2I/83,1**	12 830 **C2I/81,4**	15 030 **C2I/80,2**	21 480 **C2I/78,8**	29 640 **C2I/80,3**	38 190 **C2I/82,6**	47 740 **C2I/82,6**	59 270 **C2I/81,2**			
	80	150 **ICI/75,2**	240 **ICI/79,5**	295 **ICI/79,5**	525 **ICI/82,7**	620 **ICI/82,7**	1 200 **ICI/76,7**	2 210 **ICI/78,1**	2 590 **ICI/78,1**	4 550 **ICI/78,1**	5 210 **ICI/80,5**	9 360 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 700 **C2I/70,2**	5 830 **C2I/72,3**	7 210 **C2I/72**	11 450 **C2I/70,3**	15 660 **C2I/72,2**	22 360 **C2I/71,2**	30 880 **C2I/71,7**	39 140 **C2I/71,1**	48 710 **C2I/71,1**	61 760 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 630 **C2I/62**	6 690 **C2I/65,2**	9 010 **C2I/65,5**	13 260 **C2I/64,2**	17 170 **C2I/63,2**	26 610 **C2I/62,1**	33 870 **C2I/63,3**	45 890 **C2I/65,1**	57 360 **C2I/65,1**	60 870 **C2I/64**			
	63	150 **ICI/60,1**	240 **ICI/63,6**	295 **ICI/63,6**	525 **ICI/66,2**	620 **ICI/66,2**	1 340 **ICI/61,3**	2 550 **ICI/62,5**	3 130 **ICI/62,5**	5 600 **ICI/62,5**	6 980 **ICI/64,4**	11 310 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 800 **C2I/55,4**	6 900 **C2I/57**	7 980 **C2I/56,8**	14 100 **C2I/55,5**	16 110 **C2I/56,9**	27 220 **C2I/56,1**	31 770 **C2I/56,6**	42 270 **C2I/56**	52 840 **C2I/56**	63 530 **C2I/57,6**			
	50	–	–	–	–	–	–	–	3 740 **C2I/50,4**	6 690 **C2I/52,1**	8 430 **C2I/52,4**	13 290 **C2I/53,9**	17 030 **C2I/53,1**	26 660 **C2I/52,1**	34 150 **C2I/53,1**	44 430 **C2I/51,3**	55 540 **C2I/51,3**	62 630 **C2I/50,5**			
	50	160 **ICI/49**	285 **ICI/50,9**	335 **ICI/50,9**	595 **ICI/53**	685 **ICI/53**	1 260 **ICI/49,9**	2 540 **ICI/50**	3 220 **ICI/49,3**	5 740 **ICI/52,5**	7 600 **ICI/50,8**	11 280 **ICI/52,5**	–	–	–	–	–	–			
									25,5	44	53,5	88,7	102	164	202	–	–	–	45	2800	**63**
	45	–	–	–	–	–	–	–	3 910 **C2I/45,1**	6 840 **C2I/45,6**	8 290 **C2I/45,4**	14 080 **C2I/46,6**	16 570 **C2I/47,8**	26 390 **C2I/47,1**	32 680 **C2I/47,5**	41 430 **C2I/44,2**	51 550 **C2I/44,2**	65 360 **C2I/45,4**			
									25,8	40,6	50,6	81,9	106	152	209	–	–	–	40	2500	
	40	–	–	–	–	–	–	–	3 810 **C2I/38,7**	6 130 **C2I/39,5**	7 930 **C2I/41**	13 320 **C2I/42,6**	16 800 **C2I/41,4**	24 820 **C2I/42,8**	33 130 **C2I/41,6**	41 990 **C2I/39,5**	52 250 **C2I/39,5**	66 250 **C2I/41**			
		1,2	1,92	2,39	3,91	4,53	10,4	17,3	19,8	42	42,3	79,5							40	2500	
	40	175 **ICI/38,6**	295 **ICI/40,1**	365 **ICI/40,1**	625 **ICI/41,8**	725 **ICI/41,8**	1 560 **ICI/39,4**	2 610 **ICI/39,4**	3 030 **ICI/40,2**	6 640 **ICI/41,4**	6 720 **ICI/41,6**	12 560 **ICI/41,4**	–	–	–	–	–	–			

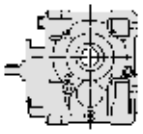
For n_1 lower than 560 min^{-1} see page 195.

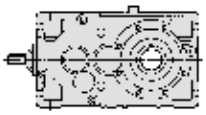



$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
800 000	35,5	–	–	–	–	–	–	–	25,1 4 020 **C2I/37,5**	37,6 6 010 **C2I/37,5**	53,5 8 510 **C2I/37,3**	80,4 12 100 **C2I/35,3**	108 16 680 **C2I/36,2**	153 24 300 **C2I/37,2**	210 33 560 **C2I/37,5**	275 42 540 **C2I/36,3**	342 52 940 **C2I/36,3**	422 67 130 **C2I/37,3**	35,5	2240	**63**
	31,5	–	–	–	–	–	–	–	25,8 3 950 **C2I/32**	42,4 6 690 **C2I/33,1**	56,8 9 010 **C2I/33,2**	81,4 13 290 **C2I/34,2**	104 16 770 **C2I/33,7**	169 26 660 **C2I/33,1**	215 34 550 **C2I/33,7**	288 43 120 **C2I/31,3**	359 53 670 **C2I/31,3**	438 68 040 **C2I/32,5**	31,5	2000	
	31,5	1,21 185 **ICI/32,1**	1,97 310 **ICI/33**	2,43 380 **ICI/33**	3,86 580 **ICI/31,4**	4,24 635 **ICI/31,4**	9,13 1 430 **ICI/32,8**	15,9 2 460 **ICI/32,4**	–	34,7 5 200 **ICI/31,4**	–	71,7 11 200 **ICI/32,7**	–	–	–	–	–	–	31,5	2000	
	31,5	–	1,52 225 **CI/31,3**	1,69 250 **CI/31,3**	2,97 460 **CI/32,5**	3,7 575 **CI/32,5**	7,23 1 040 **CI/30,1**	13,5 2 020 **CI/31,3**	–	26,4 3 880 **CI/30,8**	–	54 7 930 **CI/30,8**	–	103 15 530 **CI/31,7**	–	–	–	–	31,5	2000	
	28	–	–	–	–	–	–	–	27,2 4 120 **C2I/28,6**	47,4 7 280 **C2I/28,9**	59,3 9 060 **C2I/28,8**	90,2 14 120 **C2I/29,5**	109 17 470 **C2I/30,3**	172 27 260 **C2I/29,9**	216 34 450 **C2I/30,1**	294 43 670 **C2I/28▲**	366 54 340 **C2I/28▲**	451 68 900 **C2I/28,8▲**	28	1800	
	25	–	–	–	–	–	–	–	26,8 3 920 **C2I/24,5**	49,2 7 350 **C2I/25,1**	54,6 8 480 **C2I/26**	87,2 14 060 **C2I/27**	111 17 420 **C2I/26,3**	176 28 550 **C2I/27,2**	222 34 940 **C2I/26,4**	296 44 290 **C2I/25,1**	368 55 110 **C2I/25,1**	450 69 880 **C2I/26**	25	1600	
	25	1,04 150 **CI/24,1**	1,66 250 **CI/25**	2,1 315 **CI/25**	3,63 565 **CI/26**	4,14 640 **CI/26**	7,44 1 070 **CI/24,1**	16,4 2 450 **CI/25**	–	32,1 4 710 **CI/24,6**	–	63 9 260 **CI/24,6**	–	125 18 950 **CI/25,4**	–	–	–	–	25	1600	
	22,4	–	–	–	–	–	–	–	25,9 4 210 **C2I/23,8**	44,8 7 250 **C2I/23,8**	55,3 8 920 **C2I/23,7**	92,4 14 110 **C2I/22,4**	113 17 650 **C2I/23**	169 27 280 **C2I/23,6**	217 35 160 **C2I/23,8**	284 44 590 **C2I/23**	354 55 510 **C2I/23**	436 70 340 **C2I/23,7**	22,4	1400	
	20	–	–	–	–	–	–	–	23,7 3 700 **C2I/20,4**	41,4 6 500 **C2I/20,6**	50,8 8 290 **C2I/21,4**	85,7 13 400 **C2I/20,5**	102 15 450 **C2I/19,9**	160 26 310 **C2I/21,5**	200 31 820 **C2I/20,8**	285 44 870 **C2I/20,6**	355 55 840 **C2I/20,6**	400 65 260 **C2I/21,4**	20	1250	
	20	1,02 150 **CI/19,3**	1,75 270 **CI/20**	2,16 330 **CI/20**	3,59 570 **CI/20,8**	4,15 660 **CI/20,8**	9,1 1 340 **CI/19,3**	15,8 2 420 **CI/20**	22,4 3 420 **CI/20**	35,7 5 370 **CI/19,7**	44,1 6 840 **CI/20,3**	70,4 10 590 **CI/19,7**	88,2 13 660 **CI/20,3**	137 21 180 **CI/20,3**	177 26 990 **CI/20**	231 34 690 **CI/19,7**	319 47 960 **CI/19,7**	358 55 500 **CI/20,3**	20	1250	
	18	–	–	–	–	–	–	–	22,3 3 420 **CI/18**	35,7 5 480 **CI/18**	44,5 7 090 **CI/18,7**	71,2 10 920 **CI/18**	88 14 000 **CI/18,7**	143 21 730 **CI/17,9**	177 27 120 **CI/18**	218 33 400 **CI/18**	307 47 110 **CI/18**	347 54 500 **CI/18,4**	18	1120	
	16	1,03 150 **CI/15,2**	1,78 270 **CI/15,8**	2,19 330 **CI/15,8**	3,64 570 **CI/16,4**	4,21 660 **CI/16,4**	9,11 1 320 **CI/15,2**	16,9 2 550 **CI/15,8**	23,8 3 580 **CI/15,8**	37,8 5 600 **CI/15,5**	47,7 7 280 **CI/16**	76,2 11 300 **CI/15,5**	107 16 270 **CI/16**	147 22 460 **CI/16**	193 29 030 **CI/15,8**	224 34 850 **CI/16,3**	284 44 040 **CI/16,3**	368 56 270 **CI/16**	16	1000	
	14	–	–	–	–	–	–	–	24,4 3 670 **CI/14,2**	38,6 5 810 **CI/14,2**	48,7 7 610 **CI/14,7**	76,6 11 530 **CI/14,2**	101 15 820 **CI/14,7**	154 23 060 **CI/14,1**	192 28 920 **CI/14,2**	249 37 540 **CI/14,2**	297 44 680 **CI/14,2**	380 58 530 **CI/14,5**	14	900	
	12,5	1,2 175 **CI/12,4**	2,01 300 **CI/12,6**	2,53 380 **CI/12,6**	4,23 665 **CI/13,1**	4,89 765 **CI/13,1**	8,93 1 320 **CI/12,4**	18,7 2 810 **CI/12,6**	21,9 3 360 **CI/12,9**	38,6 6 000 **CI/13**	43,8 6 850 **CI/13,1**	76,6 11 920 **CI/13**	90,4 13 850 **CI/12,8**	153 23 070 **CI/12,6**	172 26 470 **CI/12,9**	233 35 680 **CI/12,8**	286 43 720 **CI/12,8**	353 53 160 **CI/12,6**	12,5	800	
	11,2	–	–	–	–	–	–	–	25 3 780 **CI/11,3**	34,6 5 310 **CI/11,4**	51,2 8 040 **CI/11,7**	68,7 10 410 **CI/11,3**	104 16 360 **CI/11,7**	137 21 070 **CI/11,4**	207 31 290 **CI/11,3**	245 36 340 **CI/11**	306 45 420 **CI/11**	384 59 350 **CI/11,5**	11,2	710	
	10	1,18 185 **CI/10,3**	2,06 315 **CI/10**	2,53 385 **CI/10**	4,2 665 **CI/10,4**	4,86 770 **CI/10,4**	9,25 1 380 **CI/9,81**	19,6 2 970 **CI/10**	22,3 3 450 **CI/10,2**	36,7 5 750 **CI/10,3**	47 7 390 **CI/10,4**	84,3 13 200 **CI/10,3**	92,6 14 300 **CI/10,2**	148 22 500 **CI/10**	185 28 630 **CI/10,2**	261 40 250 **CI/10,2**	318 49 060 **CI/10,2**	368 55 850 **CI/10**	10	630	
	9	–	–	–	–	–	–	–	26,1 4 000 **CI/9**	37,5 5 790 **CI/9,04**	49,8 7 930 **CI/9,33**	82,1 12 500 **CI/8,93**	104 16 500 **CI/9,33**	149 22 910 **CI/9,04**	196 30 140 **CI/9**	262 39 110 **CI/8,75**	331 49 400 **CI/8,75**	379 59 420 **CI/9,2**	9	560	
710 000	200	–	–	–	–	–	825 **ICI/192**	1 950 **ICI/199**	–	3 750 **ICI/196**	–	7 650 **ICI/196**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.
▲ Possible forced lubrication with heat exchanger: consult us.

9 - Bevel helical gear reducer selection tables

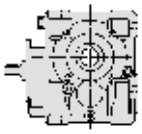


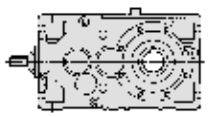


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i** **50**	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**	i_N	n_1 min^{-1}	n_{N2} min^{-1}
710 000	160	–	–	–	–	–	–	–	3 250 **C2I/151**	4 870 **C2I/154**	6 900 **C2I/158**	10 000 **C2I/151**	14 000 **C2I/156**	20 000 **C2I/156**	27 700 **C2I/154**	34 500 **C2I/156**	41 200 **C2I/156**	54 630 **C2I/161**			
	160	–	–	–	–	–	1 120 **ICI/154**	2 240 **ICI/159**	2 420 **ICI/159**	4 730 **ICI/157**	5 460 **ICI/162**	8 260 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 260 **C2I/123**	6 000 **C2I/129**	7 380 **C2I/130**	12 200 **C2I/127**	14 300 **C2I/125**	21 410 **C2I/123**	24 770 **C2I/125**	37 630 **C2I/129**	47 040 **C2I/129**	49 340 **C2I/127**			
	125	–	–	–	–	–	1 180 **ICI/123**	2 360 **ICI/127**	2 980 **ICI/127**	5 150 **ICI/126**	7 010 **ICI/130**	10 600 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 490 **C2I/98,2**	6 300 **C2I/103**	7 860 **C2I/104**	12 800 **C2I/102**	15 240 **C2I/100**	22 820 **C2I/98,5**	29 240 **C2I/100**	41 000 **C2I/103**	51 250 **C2I/103**	58 470 **C2I/102**			
	100	–	240 **ICI/99,4**	285 **ICI/99,4**	490 **ICI/103**	575 **ICI/103**	1 270 **ICI/100**	2 560 **ICI/102**	3 060 **ICI/100**	5 760 **ICI/106**	7 100 **ICI/102**	11 320 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 650 **C2I/87,8**	6 370 **C2I/90,4**	7 200 **C2I/90**	12 450 **C2I/87,9**	15 460 **C2I/90,3**	22 080 **C2I/89**	30 490 **C2I/89,7**	38 660 **C2I/88,8**	48 100 **C2I/88,8**	60 990 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 580 **C2I/78,6**	6 670 **C2I/82,7**	7 610 **C2I/83,1**	13 250 **C2I/81,4**	15 220 **C2I/80,2**	22 010 **C2I/78,8**	30 010 **C2I/80,3**	39 420 **C2I/82,6**	49 270 **C2I/82,6**	60 020 **C2I/81,2**			
	80	150 **ICI/75,2**	240 **ICI/79,5**	300 **ICI/79,5**	525 **ICI/82,7**	620 **ICI/82,7**	1 200 **ICI/76,7**	2 280 **ICI/78,1**	2 620 **ICI/78,1**	4 610 **ICI/78,1**	5 270 **ICI/80,5**	9 480 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 750 **C2I/70,2**	6 040 **C2I/72,3**	7 310 **C2I/72**	11 860 **C2I/70,3**	15 880 **C2I/72,2**	22 670 **C2I/71,2**	31 320 **C2I/71,7**	39 700 **C2I/71,1**	49 400 **C2I/71,1**	62 640 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 690 **C2I/62**	6 710 **C2I/65,2**	9 040 **C2I/65,5**	13 310 **C2I/64,2**	17 800 **C2I/63,2**	26 710 **C2I/62,1**	34 610 **C2I/63,3**	46 060 **C2I/65,1**	57 580 **C2I/65,1**	61 750 **C2I/64**			
	63	150 **ICI/60,1**	245 **ICI/63,6**	300 **ICI/63,6**	530 **ICI/66,2**	620 **ICI/66,2**	1 340 **ICI/61,3**	2 560 **ICI/62,5**	3 180 **ICI/62,5**	5 620 **ICI/62,5**	7 010 **ICI/64,4**	11 350 **ICI/62,5**	–	–	–	–	–	–			
	56	–	–	–	–	–	–	–	3 860 **C2I/55,4**	6 900 **C2I/57**	8 010 **C2I/56,8**	14 160 **C2I/55,5**	16 610 **C2I/56,9**	27 320 **C2I/56,1**	32 510 **C2I/56,6**	43 470 **C2I/56**	54 340 **C2I/56**	64 450 **C2I/57,6**			
									22	37,7	48,9	72,6	97,5	150	191	–	–	–	50	2800	**56**
	50	–	–	–	–	–	–	–	3 790 **C2I/50,4**	6 710 **C2I/52,1**	8 730 **C2I/52,4**	13 340 **C2I/53,9**	17 640 **C2I/53,1**	26 760 **C2I/52,1**	34 680 **C2I/53,1**	46 030 **C2I/51,3**	57 530 **C2I/51,3**	63 520 **C2I/50,5**			
		0,97	1,66	1,95	3,4	3,81	7,44	15,1	19,4	32,2	45,5	63,2							50	2800	
	50	160 **ICI/49**	290 **ICI/50,9**	340 **ICI/50,9**	615 **ICI/53**	690 **ICI/53**	1 270 **ICI/49,9**	2 580 **ICI/50**	3 270 **ICI/49,3**	5 760 **ICI/52,5**	7 880 **ICI/50,8**	11 320 **ICI/52,5**	–	–	–	–	–	–			
									23	40,6	48,4	79,7	92	152	183	–	–	–	45	2500	
	45	–	–	–	–	–	–	–	3 970 **C2I/45,1**	7 080 **C2I/45,6**	8 400 **C2I/45,4**	14 180 **C2I/46,6**	16 800 **C2I/47,8**	27 310 **C2I/47,1**	33 130 **C2I/47,5**	41 990 **C2I/44,2**	52 250 **C2I/44,2**	66 250 **C2I/45,4**			
									23,4	37,6	46	75,8	96,4	140	189	252	314	384	40	2240	
	40	–	–	–	–	–	–	–	3 860 **C2I/38,7**	6 340 **C2I/39,5**	8 030 **C2I/41**	13 770 **C2I/42,6**	17 020 **C2I/41,4**	25 650 **C2I/42,8**	33 560 **C2I/41,6**	42 540 **C2I/39,5**	52 940 **C2I/39,5**	67 130 **C2I/41**			
		1,08	1,74	2,14	3,55	4,11	9,31	15,8	17,9	38	38,9	71,5							40	2240	
	40	175 **ICI/38,6**	300 **ICI/40,1**	365 **ICI/40,1**	635 **ICI/41,8**	735 **ICI/41,8**	1 560 **ICI/39,4**	2 650 **ICI/39,4**	3 070 **ICI/40,2**	6 710 **ICI/41,4**	6 900 **ICI/41,6**	12 610 **ICI/41,4**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

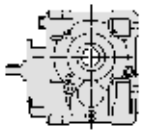


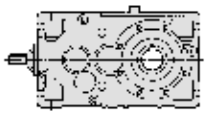


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
710 000									22,7	34,7	48,4	72,8	97,7	138	190	249	310	382	35,5	2000	**56**
	35,5	–	–	–	–	–	–	–	4 070 **C2I/37,5**	6 220 **C2I/37,5**	8 620 **C2I/37,3**	12 270 **C2I/35,3**	16 910 **C2I/36,2**	24 630 **C2I/37,2**	34 020 **C2I/37,5**	43 120 **C2I/36,3**	53 670 **C2I/36,3**	68 040 **C2I/37,3**			
									23,6	38,3	51,3	73,5	95,1	152	194	263	327	400	31,5	1800	
	31,5	–	–	–	–	–	–	–	4 000 **C2I/32**	6 710 **C2I/33,1**	9 040 **C2I/33,2**	13 330 **C2I/34,2**	16 980 **C2I/33,7**	26 750 **C2I/33,1**	34 670 **C2I/33,7**	43 670 **C2I/31,3**	54 340 **C2I/31,3**	68 900 **C2I/32,5**			
		1,09	1,83	2,19	3,52	3,86	8,36	14,5		31,7		64,8							31,5	1800	
	31,5	185 **ICI/32,1**	320 **ICI/33**	385 **ICI/33**	585 **ICI/31,4**	645 **ICI/31,4**	1 450 **ICI/32,8**	2 490 **ICI/32,4**	–	5 270 **ICI/31,4**	–	11 230 **ICI/32,7**	–	–	–	–	–	–			
			1,37	1,53	2,69	3,34	6,53	12,2		23,9		48,7		95,2					31,5	1800	
	31,5	–	230 **CI/31,3**	255 **CI/31,3**	465 **CI/32,5**	575 **CI/32,5**	1 040 **CI/30,1**	2 030 **CI/31,3**	–	3 900 **CI/30,8**	–	7 960 **CI/30,8**	–	16 030 **CI/31,7**	–	–	–	–			
									24,5	42,3	54,6	80,5	97,9	153	194	265	330	406	28	1600	
	28	–	–	–	–	–	–	–	4 180 **C2I/28,6**	7 300 **C2I/28,9**	9 390 **C2I/28,8**	14 180 **C2I/29,5**	17 720 **C2I/30,3**	27 360 **C2I/29,9**	34 940 **C2I/30,1**	44 290 **C2I/28**	55 110 **C2I/28**	69 880 **C2I/28,8**			
									23,8	43,6	49,7	79,5	98,8	155	198	263	328	400	25	1400	
	25	–	–	–	–	–	–	–	3 980 **C2I/24,5**	7 460 **C2I/25,1**	8 820 **C2I/26**	14 640 **C2I/27**	17 700 **C2I/26,3**	28 670 **C2I/27,2**	35 500 **C2I/26,4**	45 000 **C2I/25,1**	56 000 **C2I/25,1**	71 000 **C2I/26**			
		0,91	1,48	1,87	3,23	3,68	6,61	14,4		28,2		56		111					25	1400	
	25	150 **CI/24,1**	250 **CI/25**	320 **CI/25**	570 **CI/26**	650 **CI/26**	1 090 **CI/24,1**	2 460 **CI/25**	–	4 730 **CI/24,6**	–	9 410 **CI/24,6**	–	19 250 **CI/25,4**	–	–	–	–			
									23,3	40,3	49,6	82,8	102	152	195	255	318	392	22,4	1250	
	22,4	–	–	–	–	–	–	–	4 240 **C2I/23,8**	7 310 **C2I/23,8**	8 970 **C2I/23,7**	14 160 **C2I/22,4**	17 830 **C2I/23**	27 370 **C2I/23,6**	35 380 **C2I/23,8**	44 870 **C2I/23**	55 840 **C2I/23**	70 780 **C2I/23,7**			
									21,3	38,3	46	79,3	91,9	149	181	256	319	362	20	1120	
	20	–	–	–	–	–	–	–	3 710 **C2I/20,4**	6 720 **C2I/20,6**	8 370 **C2I/21,4**	13 850 **C2I/20,5**	15 600 **C2I/19,9**	27 190 **C2I/21,5**	32 140 **C2I/20,8**	45 000 **C2I/20,6**	56 000 **C2I/20,6**	65 920 **C2I/21,4**			
		0,91	1,58	1,94	3,23	3,73	8,18	14,6	20,2	33,1	40	63,4	79,8	123	160	208	287	326	20	1120	
	20	150 **CI/19,3**	270 **CI/20**	330 **CI/20**	570 **CI/20,8**	660 **CI/20,8**	1 340 **CI/19,3**	2 500 **CI/20**	3 450 **CI/20**	5 550 **CI/19,7**	6 910 **CI/20,3**	10 650 **CI/19,7**	13 800 **CI/20,3**	21 300 **CI/20,3**	27 260 **CI/20**	34 850 **CI/19,7**	48 120 **CI/19,7**	56 330 **CI/20,3**			
									19,9	32,2	39,8	64,2	78,5	129	158	196	283	310	18	1000	
	18	–	–	–	–	–	–	–	3 420 **CI/18**	5 530 **CI/18**	7 090 **CI/18,7**	11 030 **CI/18**	14 000 **CI/18,7**	21 940 **CI/17,9**	27 120 **CI/18**	33 710 **CI/18**	48 700 **CI/18**	54 500 **CI/18,4**			
		0,93	1,61	1,98	3,29	3,8	8,33	15,3	21,5	34,1	43,1	68,8	96,3	136	175	204	263	342	16	900	
	16	150 **CI/15,2**	270 **CI/15,8**	330 **CI/15,8**	570 **CI/16,4**	660 **CI/16,4**	1 340 **CI/15,2**	2 560 **CI/15,8**	3 590 **CI/15,8**	5 620 **CI/15,5**	7 320 **CI/16**	11 340 **CI/15,5**	16 350 **CI/16**	23 180 **CI/16**	29 210 **CI/15,8**	35 160 **CI/16,3**	45 460 **CI/16,3**	58 080 **CI/16**			
									21,9	35,5	43,8	69,7	90,4	138	172	224	273	341	14	800	
	14	–	–	–	–	–	–	–	3 710 **CI/14,2**	6 020 **CI/14,2**	7 690 **CI/14,7**	11 810 **CI/14,2**	15 880 **CI/14,7**	23 200 **CI/14,1**	29 220 **CI/14,2**	37 920 **CI/14,2**	46 290 **CI/14,2**	59 110 **CI/14,5**			
		1,07	1,79	2,25	3,77	4,36	8,04	17,2	19,6	34,6	39,2	68,7	80,5	137	155	209	256	325	12,5	710	
	12,5	175 **CI/12,4**	305 **CI/12,6**	380 **CI/12,6**	665 **CI/13,1**	770 **CI/13,1**	1 340 **CI/12,4**	2 910 **CI/12,6**	3 390 **CI/12,9**	6 070 **CI/13**	6 920 **CI/13,1**	12 040 **CI/13**	13 900 **CI/12,8**	23 310 **CI/12,6**	26 750 **CI/12,9**	36 030 **CI/12,8**	44 160 **CI/12,8**	55 100 **CI/12,6**			
									22,3	31,8	45,8	61,6	92,5	123	185	219	274	344	11,2	630	
	11,2	–	–	–	–	–	–	–	3 800 **CI/11,3**	5 500 **CI/11,4**	8 090 **CI/11,7**	10 510 **CI/11,3**	16 360 **CI/11,7**	21 280 **CI/11,4**	31 600 **CI/11,3**	36 700 **CI/11**	45 870 **CI/11**	59 940 **CI/11,5**			
		1,05	1,84	2,26	3,75	4,34	8,27	17,4	19,8	33,8	42,1	74,9	83,1	133	166	234	286	331	10	560	
	10	185 **CI/10,3**	315 **CI/10**	385 **CI/10**	665 **CI/10,4**	770 **CI/10,4**	1 380 **CI/9,81**	2 970 **CI/10**	3 450 **CI/10,2**	5 960 **CI/10,3**	7 460 **CI/10,4**	13 200 **CI/10,3**	14 430 **CI/10,2**	22 710 **CI/10**	28 900 **CI/10,2**	40 640 **CI/10,2**	49 510 **CI/10,2**	56 460 **CI/10**			
630 000	200	–	–	–	–	–	850 **ICI/192**	2 000 **ICI/199**	–	3 870 **ICI/196**	–	7 910 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 350 **C2I/151**	5 000 **C2I/154**	7 100 **C2I/158**	10 300 **C2I/151**	14 500 **C2I/156**	20 600 **C2I/156**	28 690 **C2I/154**	35 500 **C2I/156**	42 500 **C2I/156**	56 600 **C2I/161**			

For n_1 lower than 560 min^{-1} see page 195.

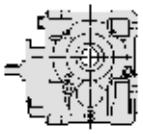
9 - Bevel helical gear reducer selection tables

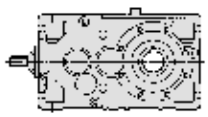




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
630 000	160	–	–	–	–	–	1 150 **ICI/154**	2 300 **ICI/159**	2 510 **ICI/159**	4 750 **ICI/157**	5 480 **ICI/162**	8 520 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 380 **C2I/123**	6 150 **C2I/129**	7 650 **C2I/130**	12 500 **C2I/127**	14 820 **C2I/125**	22 200 **C2I/123**	25 430 **C2I/125**	39 010 **C2I/129**	48 760 **C2I/129**	50 650 **C2I/127**			
	125	–	–	–	–	–	1 220 **ICI/123**	2 430 **ICI/127**	3 090 **ICI/127**	5 300 **ICI/126**	7 040 **ICI/130**	10 900 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 590 **C2I/98,2**	6 500 **C2I/103**	8 130 **C2I/104**	13 360 **C2I/102**	15 770 **C2I/100**	23 610 **C2I/98,5**	29 640 **C2I/100**	42 420 **C2I/103**	53 020 **C2I/103**	59 270 **C2I/102**			
	100	–	240 **ICI/99,4**	285 **ICI/99,4**	495 **ICI/103**	580 **ICI/103**	1 270 **ICI/100**	2 650 **ICI/102**	3 160 **ICI/100**	5 780 **ICI/106**	7 300 **ICI/102**	11 360 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 700 **C2I/87,8**	6 580 **C2I/90,4**	7 290 **C2I/90**	12 850 **C2I/87,9**	15 660 **C2I/90,3**	22 360 **C2I/89**	30 880 **C2I/89,7**	39 140 **C2I/88,8**	48 710 **C2I/88,8**	61 760 **C2I/91,4**			
	80	–	–	–	–	–	–	–	3 630 **C2I/78,6**	6 740 **C2I/82,7**	7 720 **C2I/83,1**	13 360 **C2I/81,4**	15 440 **C2I/80,2**	22 800 **C2I/78,8**	30 440 **C2I/80,3**	40 840 **C2I/82,6**	51 050 **C2I/82,6**	60 870 **C2I/81,2**			
	80	150 **ICI/75,2**	240 **ICI/79,5**	300 **ICI/79,5**	530 **ICI/82,7**	625 **ICI/82,7**	1 210 **ICI/76,7**	2 370 **ICI/78,1**	2 660 **ICI/78,1**	4 680 **ICI/78,1**	5 350 **ICI/80,5**	9 620 **ICI/78,1**	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 800 **C2I/70,2**	6 260 **C2I/72,3**	7 420 **C2I/72**	12 290 **C2I/70,3**	16 110 **C2I/72,2**	23 000 **C2I/71,2**	31 770 **C2I/71,7**	40 270 **C2I/71,1**	50 110 **C2I/71,1**	63 530 **C2I/73,1**			
	63	–	–	–	–	–	–	–	3 740 **C2I/62**	6 740 **C2I/65,2**	9 080 **C2I/65,5**	13 360 **C2I/64,2**	18 450 **C2I/63,2**	26 810 **C2I/62,1**	34 750 **C2I/63,3**	46 230 **C2I/65,1**	57 790 **C2I/65,1**	62 630 **C2I/64**			
	63	150 **ICI/60,1**	245 **ICI/63,6**	305 **ICI/63,6**	530 **ICI/66,2**	625 **ICI/66,2**	1 350 **ICI/61,3**	2 570 **ICI/62,5**	3 220 **ICI/62,5**	5 650 **ICI/62,5**	7 040 **ICI/64,4**	11 390 **ICI/62,5**	–	–	–	–	–	–			
									20,7	36,5	41,5	75,1	88,6	143	175	–	–	–	56	2800	**50**
	56	–	–	–	–	–	–	–	3 910 **C2I/55,4**	7 100 **C2I/57**	8 040 **C2I/56,8**	14 210 **C2I/55,5**	17 210 **C2I/56,9**	27 420 **C2I/56,1**	33 680 **C2I/56,6**	43 630 **C2I/56**	54 540 **C2I/56**	65 360 **C2I/57,6**			
									20	33,8	45,1	65	90	135	171	–	–	–	50	2500	
	50	–	–	–	–	–	–	–	3 840 **C2I/50,4**	6 740 **C2I/52,1**	9 030 **C2I/52,4**	13 390 **C2I/53,9**	18 250 **C2I/53,1**	26 850 **C2I/52,1**	34 810 **C2I/53,1**	46 220 **C2I/51,3**	57 780 **C2I/51,3**	64 380 **C2I/50,5**			
		0,87	1,49	1,75	3,05	3,41	6,67	13,7	17,6	28,8	42	56,8							50	2500	
	50	165 **ICI/49**	290 **ICI/50,9**	340 **ICI/50,9**	620 **ICI/53**	690 **ICI/53**	1 270 **ICI/49,9**	2 610 **ICI/50**	3 310 **ICI/49,3**	5 780 **ICI/52,5**	8 150 **ICI/50,8**	11 390 **ICI/52,5**	–	–	–	–	–	–			
									20,9	37,6	43,9	71,7	83,5	137	167	226	281	347	45	2240	
	45	–	–	–	–	–	–	–	4 020 **C2I/45,1**	7 310 **C2I/45,6**	8 510 **C2I/45,4**	14 230 **C2I/46,6**	17 020 **C2I/47,8**	27 470 **C2I/47,1**	33 800 **C2I/47,5**	42 540 **C2I/44,2**	52 940 **C2I/44,2**	67 130 **C2I/45,4**			
									21,2	34,7	41,6	70,1	87,2	130	171	228	284	348	40	2000	
	40	–	–	–	–	–	–	–	3 920 **C2I/38,7**	6 560 **C2I/39,5**	8 140 **C2I/41**	14 250 **C2I/42,6**	17 250 **C2I/41,4**	26 530 **C2I/42,8**	34 020 **C2I/41,6**	43 120 **C2I/39,5**	53 670 **C2I/39,5**	68 040 **C2I/41**			
		0,96	1,57	1,93	3,22	3,72	8,34	14,3	16,2	34,1	35,9	64							40	2000	
	40	180 **ICI/38,6**	300 **ICI/40,1**	370 **ICI/40,1**	640 **ICI/41,8**	745 **ICI/41,8**	1 570 **ICI/39,4**	2 680 **ICI/39,4**	3 110 **ICI/40,2**	6 740 **ICI/41,4**	7 140 **ICI/41,6**	12 650 **ICI/41,4**	–	–	–	–	–	–			
									20,7	32,3	44,1	66,3	89,1	126	173	227	282	348	35,5	1800	
	35,5	–	–	–	–	–	–	–	4 120 **C2I/37,5**	6 420 **C2I/37,5**	8 730 **C2I/37,3**	12 420 **C2I/35,3**	17 130 **C2I/36,2**	24 940 **C2I/37,2**	34 450 **C2I/37,5**	43 670 **C2I/36,3**	54 340 **C2I/36,3**	68 900 **C2I/37,3**			

For n_1 lower than 560 min^{-1} see page 195.

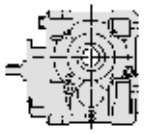


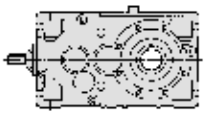


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
630 000									21,2	34,1	45,8	65,6	87,2	136	173	237	295	360	31,5	1600	**50**
	31,5	–	–	–	–	–	–	–	4 050 **C2I/32**	6 740 **C2I/33,1**	9 080 **C2I/33,2**	13 380 **C2I/34,2**	17 530 **C2I/33,7**	26 850 **C2I/33,1**	34 800 **C2I/33,7**	44 290 **C2I/31,3**	55 110 **C2I/31,3**	69 880 **C2I/32,5**			
		0,97	1,67	1,95	3,17	3,48	7,46	13,1		28,5		57,8							31,5	1600	
	31,5	185 **ICI/32,1**	330 **ICI/33**	385 **ICI/33**	595 **ICI/31,4**	655 **ICI/31,4**	1 460 **ICI/32,8**	2 530 **ICI/32,4**	–	5 340 **ICI/31,4**	–	11 280 **ICI/32,7**	–	–	–	–	–	–			
			1,23	1,36	2,4	2,98	5,82	10,9		21,3		43,5		87,2					31,5	1600	
	31,5	–	230 **CI/31,3**	255 **CI/31,3**	465 **CI/32,5**	580 **CI/32,5**	1 050 **CI/30,1**	2 030 **CI/31,3**	–	3 910 **CI/30,8**	–	7 980 **CI/30,8**	–	16 520 **CI/31,7**	–	–	–	–			
									21,8	37,2	49,7	70,7	87,1	135	173	236	293	361	28	1400	
	28	–	–	–	–	–	–	–	4 250 **C2I/28,6**	7 330 **C2I/28,9**	9 770 **C2I/28,8**	14 240 **C2I/29,5**	18 000 **C2I/30,3**	27 480 **C2I/29,9**	35 560 **C2I/30,1**	45 000 **C2I/28**	56 000 **C2I/28**	71 000 **C2I/28,8**			
									21,4	39,1	45	72,1	88,8	139	176	235	292	357	25	1250	
	25	–	–	–	–	–	–	–	4 010 **C2I/24,5**	7 480 **C2I/25,1**	8 940 **C2I/26**	14 880 **C2I/27**	17 820 **C2I/26,3**	28 770 **C2I/27,2**	35 500 **C2I/26,4**	45 000 **C2I/25,1**	56 000 **C2I/25,1**	71 000 **C2I/26**			
		0,82	1,33	1,68	2,89	3,3	5,93	12,9		25,3		50,5		100					25	1250	
	25	150 **CI/24,1**	255 **CI/25**	320 **CI/25**	575 **CI/26**	655 **CI/26**	1 090 **CI/24,1**	2 470 **CI/25**	–	4 750 **CI/24,6**	–	9 500 **CI/24,6**	–	19 460 **CI/25,4**	–	–	–	–			
									20,9	36,2	44,6	74,5	91,9	136	175	229	286	352	22,4	1120	
	22,4	–	–	–	–	–	–	–	4 250 **C2I/23,8**	7 340 **C2I/23,8**	9 000 **C2I/23,7**	14 210 **C2I/22,4**	18 000 **C2I/23**	27 470 **C2I/23,6**	35 500 **C2I/23,8**	45 000 **C2I/23**	56 000 **C2I/23**	71 000 **C2I/23,7**			
									19,2	35,4	41,4	73,3	82,9	137	163	229	285	327	20	1000	
	20	–	–	–	–	–	–	–	3 740 **C2I/20,4**	6 960 **C2I/20,6**	8 440 **C2I/21,4**	14 330 **C2I/20,5**	15 760 **C2I/19,9**	28 130 **C2I/21,5**	32 470 **C2I/20,8**	45 000 **C2I/20,6**	56 000 **C2I/20,6**	66 600 **C2I/21,4**			
		0,82	1,41	1,74	2,89	3,34	7,33	13,5	18,2	30	36,1	57	72	111	144	186	257	292	20	1000	
	20	150 **CI/19,3**	270 **CI/20**	330 **CI/20**	575 **CI/20,8**	665 **CI/20,8**	1 350 **CI/19,3**	2 570 **CI/20**	3 480 **CI/20**	5 640 **CI/19,7**	6 990 **CI/20,3**	10 720 **CI/19,7**	13 940 **CI/20,3**	21 430 **CI/20,3**	27 550 **CI/20**	35 010 **CI/19,7**	48 290 **CI/19,7**	56 530 **CI/20,3**			
									17,9	29,2	35,8	58,3	70,7	117	142	178	255	279	18	900	
	18	–	–	–	–	–	–	–	3 420 **CI/18**	5 580 **CI/18**	7 090 **CI/18,7**	11 130 **CI/18**	14 000 **CI/18,7**	22 140 **CI/17,9**	27 120 **CI/18**	34 000 **CI/18**	48 700 **CI/18**	54 500 **CI/18,4**			
		0,83	1,43	1,76	2,93	3,39	7,43	13,7	19,1	30,4	39,7	61,4	86	123	156	183	235	315	16	800	
	16	150 **CI/15,2**	270 **CI/15,8**	330 **CI/15,8**	575 **CI/16,4**	665 **CI/16,4**	1 350 **CI/15,2**	2 570 **CI/15,8**	3 600 **CI/15,8**	5 640 **CI/15,5**	7 580 **CI/16**	11 380 **CI/15,5**	16 410 **CI/16**	23 450 **CI/16**	29 410 **CI/15,8**	35 500 **CI/16,3**	45 650 **CI/16,3**	60 170 **CI/16**			
									19,6	32,7	39,2	64,1	80,5	123	155	201	251	307	14	710	
	14	–	–	–	–	–	–	–	3 750 **CI/14,2**	6 240 **CI/14,2**	7 770 **CI/14,7**	12 240 **CI/14,2**	15 940 **CI/14,7**	23 340 **CI/14,1**	29 530 **CI/14,2**	38 290 **CI/14,2**	47 980 **CI/14,2**	59 810 **CI/14,5**			
		0,95	1,6	2,01	3,35	3,88	7,39	15,8	17,6	31,5	35,4	61,6	71,7	123	139	187	231	291	12,5	630	
	12,5	180 **CI/12,4**	305 **CI/12,6**	385 **CI/12,6**	670 **CI/13,1**	775 **CI/13,1**	1 390 **CI/12,4**	3 020 **CI/12,6**	3 430 **CI/12,9**	6 210 **CI/13**	7 030 **CI/13,1**	12 170 **CI/13**	13 960 **CI/12,8**	23 550 **CI/12,6**	27 030 **CI/12,9**	36 380 **CI/12,8**	44 940 **CI/12,8**	55 730 **CI/12,6**			
									19,9	29,3	41	55,3	82,2	111	166	197	245	309	11,2	560	
	11,2	–	–	–	–	–	–	–	3 830 **CI/11,3**	5 700 **CI/11,4**	8 150 **CI/11,7**	10 620 **CI/11,3**	16 360 **CI/11,7**	21 500 **CI/11,4**	31 900 **CI/11,3**	37 050 **CI/11**	46 200 **CI/11**	60 510 **CI/11,5**			
560 000	200	–	–	–	–	–	875 **ICI/192**	2 060 **ICI/199**	–	4 000 **ICI/196**	–	8 160 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 450 **C2I/151**	5 150 **C2I/154**	7 300 **C2I/158**	10 600 **C2I/151**	14 500 **C2I/156**	21 200 **C2I/156**	29 740 **C2I/154**	36 500 **C2I/156**	43 700 **C2I/156**	58 660 **C2I/161**			
	160	–	–	–	–	–	1 210 **ICI/154**	2 360 **ICI/159**	2 600 **ICI/159**	4 770 **ICI/157**	5 500 **ICI/162**	8 760 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 500 **C2I/123**	6 300 **C2I/129**	7 930 **C2I/130**	12 800 **C2I/127**	15 360 **C2I/125**	22 990 **C2I/123**	26 130 **C2I/125**	40 410 **C2I/129**	50 510 **C2I/129**	52 040 **C2I/127**			

For n_1 lower than 560 min^{-1} see page 195.

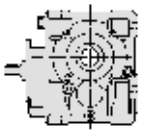
9 - Bevel helical gear reducer selection tables





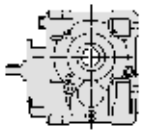
$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
560 000	125	–	–	–	–	–	1 250 ICI/123	2 500 ICI/127	3 200 ICI/127	5 450 ICI/126	7 060 ICI/130	11 440 ICI/126	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 700 C2I/98,2	6 500 C2I/103	8 390 C2I/104	13 410 C2I/102	16 270 C2I/100	24 370 C2I/98,5	30 010 C2I/100	43 780 C2I/103	54 730 C2I/103	60 020 C2I/102			
	100	–	240 ICI/99,4	285 ICI/99,4	495 ICI/103	580 ICI/103	1 280 ICI/100	2 730 ICI/102	3 270 ICI/100	5 800 ICI/106	7 300 ICI/102	11 400 ICI/106	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 750 C2I/87,8	6 810 C2I/90,4	7 540 C2I/90	13 310 C2I/87,9	15 880 C2I/90,3	22 810 C2I/89	31 320 C2I/89,7	39 700 C2I/88,8	49 400 C2I/88,8	62 640 C2I/91,4			
	80	–	–	–	–	–	–	–	3 690 C2I/78,6	6 760 C2I/82,7	7 990 C2I/83,1	13 410 C2I/81,4	15 660 C2I/80,2	23 630 C2I/78,8	30 870 C2I/80,3	42 320 C2I/82,6	52 910 C2I/82,6	61 750 C2I/81,2			
	80	150 ICI/75,2	245 ICI/79,5	300 ICI/79,5	530 ICI/82,7	625 ICI/82,7	1 210 ICI/76,7	2 450 ICI/78,1	2 700 ICI/78,1	4 740 ICI/78,1	5 430 ICI/80,5	9 750 ICI/78,1	–	–	–	–	–	–			
	71	–	–	–	–	–	–	–	3 860 C2I/70,2	6 490 C2I/72,3	7 520 C2I/72	12 740 C2I/70,3	16 340 C2I/72,2	23 330 C2I/71,2	32 220 C2I/71,7	40 850 C2I/71,1	50 830 C2I/71,1	64 450 C2I/73,1			
									17,9	30,4	40,8	61,3	88,6	127	162	–	–	–	63	2800	45
	63	–	–	–	–	–	–	–	3 790 C2I/62	6 760 C2I/65,2	9 110 C2I/65,5	13 410 C2I/64,2	19 110 C2I/63,2	26 910 C2I/62,1	34 870 C2I/63,3	46 410 C2I/65,1	58 010 C2I/65,1	64 840 C2I/64			
	63	0,74 150 ICI/60,1	1,15 250 ICI/63,6	1,42 310 ICI/63,6	2,37 535 ICI/66,2	2,77 625 ICI/66,2	6,48 1 350 ICI/61,3	12,1 2 580 ICI/62,5	15,3 3 270 ICI/62,5	26,6 5 670 ICI/62,5	32,2 7 060 ICI/64,4	53,6 11 430 ICI/62,5	–	–	–	–	–	–	63	2800	
									18,8	32,6	37,2	67,3	81,9	128	161	–	–	–	56	2500	
	56	–	–	–	–	–	–	–	3 970 C2I/55,4	7 100 C2I/57	8 070 C2I/56,8	14 260 C2I/55,5	17 810 C2I/56,9	27 520 C2I/56,1	34 840 C2I/56,6	43 790 C2I/56	54 730 C2I/56	66 250 C2I/57,6			
									18,1	30,4	40,8	58,5	83,4	121	154	212	265	303	50	2240	
	50	–	–	–	–	–	–	–	3 900 C2I/50,4	6 760 C2I/52,1	9 110 C2I/52,4	13 430 C2I/53,9	18 860 C2I/53,1	26 950 C2I/52,1	34 930 C2I/53,1	46 380 C2I/51,3	57 980 C2I/51,3	65 230 C2I/50,5			
	50	0,78 165 ICI/49	1,34 290 ICI/50,9	1,57 340 ICI/50,9	2,74 620 ICI/53	3,07 695 ICI/53	6 1 280 ICI/49,9	12,4 2 650 ICI/50	16 3 360 ICI/49,3	26 5 810 ICI/52,5	38 8 220 ICI/50,8	51,6 11 540 ICI/52,5	–	–	–	–	–	–	50	2240	
									18,9	33,8	39,8	64,2	77	122	154	208	259	314	45	2000	
	45	–	–	–	–	–	–	–	4 070 C2I/45,1	7 360 C2I/45,6	8 620 C2I/45,4	14 280 C2I/46,6	17 580 C2I/47,8	27 560 C2I/47,1	34 970 C2I/47,5	43 770 C2I/44,2	54 710 C2I/44,2	68 040 C2I/45,4			
									19,3	32,3	37,9	65,1	79,5	121	156	208	259	317	40	1800	
	40	–	–	–	–	–	–	–	3 960 C2I/38,7	6 770 C2I/39,5	8 250 C2I/41	14 700 C2I/42,6	17 470 C2I/41,4	27 390 C2I/42,8	34 450 C2I/41,6	43 670 C2I/39,5	54 340 C2I/39,5	68 900 C2I/41			
	40	0,87 180 ICI/38,6	1,44 305 ICI/40,1	1,76 375 ICI/40,1	2,93 650 ICI/41,8	3,39 750 ICI/41,8	7,53 1 570 ICI/39,4	13 2 720 ICI/39,4	14,8 3 150 ICI/40,2	30,8 6 760 ICI/41,4	33,4 7 370 ICI/41,6	57,8 12 690 ICI/41,4	–	–	–	–	–	–	40	1800	
									18,7	29,7	39,8	59,9	80,3	114	156	205	255	314	35,5	1600	
	35,5	–	–	–	–	–	–	–	4 180 C2I/37,5	6 650 C2I/37,5	8 860 C2I/37,3	12 630 C2I/35,3	17 370 C2I/36,2	25 290 C2I/37,2	34 940 C2I/37,5	44 290 C2I/36,3	55 110 C2I/36,3	69 880 C2I/37,3			
									18,9	30	40,2	57,7	79,5	120	152	211	262	320	31,5	1400	
	31,5	–	–	–	–	–	–	–	4 120 C2I/32	6 760 C2I/33,1	9 120 C2I/33,2	13 440 C2I/34,2	18 240 C2I/33,7	26 960 C2I/33,1	34 940 C2I/33,7	45 000 C2I/31,3	56 000 C2I/31,3	71 000 C2I/32,5			
	31,5	0,85 185 ICI/32,1	1,46 330 ICI/33	1,72 385 ICI/33	2,82 605 ICI/31,4	3,09 665 ICI/31,4	6,55 1 470 ICI/32,8	11,6 2 570 ICI/32,4	–	25,4 5 430 ICI/31,4	–	50,8 11 320 ICI/32,7	–	–	–	–	–	–	31,5	1400	

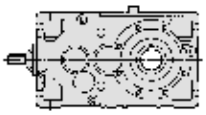
For n_1 lower than 560 min^{-1} see page 195.



$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
560 000			1,08	1,2	2,1	2,62	5,12	9,58		18,7		38,2		76,6					31,5	1400	**45**
	31,5	–	230 **CI/31,3**	255 **CI/31,3**	465 **CI/32,5**	580 **CI/32,5**	1 050 **CI/30,1**	2 040 **CI/31,3**	–	3 930 **CI/30,8**	–	8 020 **CI/30,8**	–	16 590 **CI/31,7**	–	–	–	–			
									19,5	33,3	45	63,3	77,7	121	160	210	262	323	28	1250	
	28	–	–	–	–	–	–	–	4 250 **C2I/28,6**	7 360 **C2I/28,9**	9 900 **C2I/28,8**	14 290 **C2I/29,5**	18 000 **C2I/30,3**	27 580 **C2I/29,9**	36 790 **C2I/30,1**	45 000 **C2I/28**	56 000 **C2I/28**	71 000 **C2I/28,8**			
									19,3	35,1	40,5	64,8	80,1	125	158	211	262	320	25	1120	
	25	–	–	–	–	–	–	–	4 030 **C2I/24,5**	7 510 **C2I/25,1**	8 970 **C2I/26**	14 930 **C2I/27**	17 940 **C2I/26,3**	28 870 **C2I/27,2**	35 500 **C2I/26,4**	45 000 **C2I/25,1**	56 000 **C2I/25,1**	71 000 **C2I/26**			
		0,74	1,2	1,51	2,6	2,97	5,34	11,6		22,8		45,7		90,8					25	1120	
	25	150 **CI/24,1**	255 **CI/25**	320 **CI/25**	575 **CI/26**	660 **CI/26**	1 100 **CI/24,1**	2 480 **CI/25**	–	4 790 **CI/24,6**	–	9 590 **CI/24,6**	–	19 660 **CI/25,4**	–	–	–	–			
									18,7	32,5	39,8	66,7	82	122	156	205	255	314	22,4	1000	
	22,4	–	–	–	–	–	–	–	4 250 **C2I/23,8**	7 370 **C2I/23,8**	9 000 **C2I/23,7**	14 260 **C2I/22,4**	18 000 **C2I/23**	27 570 **C2I/23,6**	35 500 **C2I/23,8**	45 000 **C2I/23**	56 000 **C2I/23**	71 000 **C2I/23,7**			
									17,3	32,9	37,5	68,1	75,3	127	148	206	256	297	20	900	
	20	–	–	–	–	–	–	–	3 750 **C2I/20,4**	7 180 **C2I/20,6**	8 490 **C2I/21,4**	14 790 **C2I/20,5**	15 900 **C2I/19,9**	28 860 **C2I/21,5**	32 770 **C2I/20,8**	45 000 **C2I/20,6**	56 000 **C2I/20,6**	67 220 **C2I/21,4**			
		0,74	1,27	1,57	2,61	3,02	6,62	12,2	16,5	27,1	32,8	51,6	65,4	100	131	168	232	264	20	900	
	20	150 **CI/19,3**	270 **CI/20**	335 **CI/20**	575 **CI/20,8**	665 **CI/20,8**	1 350 **CI/19,3**	2 580 **CI/20**	3 510 **CI/20**	5 660 **CI/19,7**	7 060 **CI/20,3**	10 770 **CI/19,7**	14 080 **CI/20,3**	21 550 **CI/20,3**	27 810 **CI/20**	35 160 **CI/19,7**	48 450 **CI/19,7**	56 720 **CI/20,3**			
									15,9	26,2	31,8	52,3	62,8	105	126	160	227	248	18	800	
	18	–	–	–	–	–	–	–	3 420 **CI/18**	5 630 **CI/18**	7 090 **CI/18,7**	11 240 **CI/18**	14 000 **CI/18,7**	22 350 **CI/17,9**	27 120 **CI/18**	34 320 **CI/18**	48 700 **CI/18**	54 500 **CI/18,4**			
		0,74	1,27	1,57	2,61	3,02	6,62	12,1	17,1	27,1	36,5	54,7	76,6	109	140	164	209	290	16	710	
	16	150 **CI/15,2**	270 **CI/15,8**	335 **CI/15,8**	575 **CI/16,4**	665 **CI/16,4**	1 350 **CI/15,2**	2 570 **CI/15,8**	3 620 **CI/15,8**	5 660 **CI/15,5**	7 860 **CI/16**	11 430 **CI/15,5**	16 470 **CI/16**	23 530 **CI/16**	29 620 **CI/15,8**	35 850 **CI/16,3**	45 830 **CI/16,3**	62 360 **CI/16**			
									17,6	30	35,4	57,3	71,7	110	139	180	231	282	14	630	
	14	–	–	–	–	–	–	–	3 780 **CI/14,2**	6 460 **CI/14,2**	7 900 **CI/14,7**	12 330 **CI/14,2**	16 000 **CI/14,7**	23 480 **CI/14,1**	29 840 **CI/14,2**	38 670 **CI/14,2**	49 730 **CI/14,2**	62 000 **CI/14,5**			
		0,85	1,43	1,79	2,99	3,46	6,81	14,3	16,2	29	32,6	55,3	63,9	111	124	168	206	259	12,5	560	
	12,5	180 **CI/12,4**	305 **CI/12,6**	385 **CI/12,6**	670 **CI/13,1**	775 **CI/13,1**	1 440 **CI/12,4**	3 070 **CI/12,6**	3 540 **CI/12,9**	6 440 **CI/13**	7 280 **CI/13,1**	12 290 **CI/13**	14 000 **CI/12,8**	23 780 **CI/12,6**	27 200 **CI/12,9**	36 720 **CI/12,8**	45 000 **CI/12,8**	55 730 **CI/12,6**			
500 000	200	–	–	–	–	–	900 **ICI/192**	2 120 **ICI/199**	–	4 120 **ICI/196**	–	8 460 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 630 **C2I/151**	5 300 **C2I/154**	7 500 **C2I/158**	10 900 **C2I/151**	15 000 **C2I/156**	21 800 **C2I/156**	30 830 **C2I/154**	37 500 **C2I/156**	45 000 **C2I/156**	60 800 **C2I/161**			
	160	–	–	–	–	–	1 220 **ICI/154**	2 490 **ICI/159**	2 700 **ICI/159**	4 780 **ICI/157**	5 520 **ICI/162**	8 990 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 620 **C2I/123**	6 500 **C2I/129**	8 200 **C2I/130**	13 200 **C2I/127**	15 890 **C2I/125**	23 790 **C2I/123**	26 940 **C2I/125**	41 810 **C2I/129**	52 260 **C2I/129**	52 750 **C2I/127**			
	125	–	–	–	–	–	1 280 **ICI/123**	2 590 **ICI/127**	3 310 **ICI/127**	5 690 **ICI/126**	7 090 **ICI/130**	11 480 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 840 **C2I/98,2**	6 700 **C2I/103**	8 700 **C2I/104**	13 460 **C2I/102**	16 860 **C2I/100**	25 240 **C2I/98,5**	30 440 **C2I/100**	45 360 **C2I/103**	56 690 **C2I/103**	60 870 **C2I/102**			
	100	–	240 **ICI/99,4**	285 **ICI/99,4**	495 **ICI/103**	585 **ICI/103**	1 280 **ICI/100**	2 830 **ICI/102**	3 380 **ICI/100**	5 820 **ICI/106**	7 500 **ICI/102**	11 440 **ICI/106**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

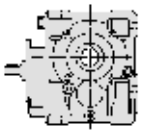


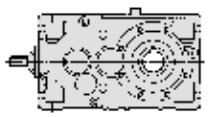


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
500 000	90	–	–	–	–	–	–	–	3 800 C2I/87,8	6 900 C2I/90,4	7 810 C2I/90	13 790 C2I/87,9	16 110 C2I/90,3	23 650 C2I/89	31 770 C2I/89,7	40 460 C2I/88,8	50 570 C2I/88,8	63 530 C2I/91,4			
	80	–	–	–	–	–	–	–	3 740 C2I/78,6	6 790 C2I/82,7	8 290 C2I/83,1	13 460 C2I/81,4	16 140 C2I/80,2	24 490 C2I/78,8	31 320 C2I/80,3	43 870 C2I/82,6	54 840 C2I/82,6	62 630 C2I/81,2			
	80	150 ICI/75,2	245 ICI/79,5	305 ICI/79,5	535 ICI/82,7	625 ICI/82,7	1 220 ICI/76,7	2 490 ICI/78,1	2 740 ICI/78,1	4 810 ICI/78,1	5 500 ICI/80,5	9 890 ICI/78,1	–	–	–	–	–	–			
									16,3	27,3	31,1	55	67,3	97,4	134	–	–	–	71	2800	40
	71	–	–	–	–	–	–	–	3 910 C2I/70,2	6 720 C2I/72,3	7 630 C2I/72	13 200 C2I/70,3	16 570 C2I/72,2	23 660 C2I/71,2	32 680 C2I/71,7	41 430 C2I/71,1	51 550 C2I/71,1	65 360 C2I/73,1			
									16,2	27,3	36,5	54,9	79,6	114	145	–	–	–	63	2500	
	63	–	–	–	–	–	–	–	3 840 C2I/62	6 790 C2I/65,2	9 140 C2I/65,5	13 460 C2I/64,2	19 210 C2I/63,2	27 000 C2I/62,1	35 000 C2I/63,3	46 570 C2I/65,1	58 220 C2I/65,1	67 090 C2I/64			
		0,66	1,04	1,29	2,14	2,48	5,8	10,8	13,9	23,8	28,8	48,1							63	2500	
	63	150 ICI/60,1	255 ICI/63,6	315 ICI/63,6	540 ICI/66,2	625 ICI/66,2	1 360 ICI/61,3	2 590 ICI/62,5	3 310 ICI/62,5	5 690 ICI/62,5	7 090 ICI/64,4	11 480 ICI/62,5	–	–	–	–	–	–			
									17	30,4	33,4	60,5	75,8	115	149	184	230	273	56	2240	
	56	–	–	–	–	–	–	–	4 020 C2I/55,4	7 380 C2I/57	8 100 C2I/56,8	14 310 C2I/55,5	18 400 C2I/56,9	27 620 C2I/56,1	36 010 C2I/56,6	43 940 C2I/56	54 920 C2I/56	67 130 C2I/57,6			
									16,4	27,3	36,5	52,4	75,9	109	138	190	238	274	50	2000	
	50	–	–	–	–	–	–	–	3 950 C2I/50,4	6 790 C2I/52,1	9 140 C2I/52,4	13 480 C2I/53,9	19 240 C2I/53,1	27 040 C2I/52,1	35 050 C2I/53,1	46 550 C2I/51,3	58 190 C2I/51,3	66 120 C2I/50,5			
		0,7	1,2	1,41	2,46	2,75	5,37	11,2	14,5	23,5	34	46,7							50	2000	
	50	165 ICI/49	290 ICI/50,9	340 ICI/50,9	620 ICI/53	695 ICI/53	1 280 ICI/49,9	2 680 ICI/50	3 400 ICI/49,3	5 890 ICI/52,5	8 250 ICI/50,8	11 700 ICI/52,5	–	–	–	–	–	–			
									17,2	30,5	36,2	58	71,5	111	143	187	234	286	45	1800	
	45	–	–	–	–	–	–	–	4 120 C2I/45,1	7 380 C2I/45,6	8 730 C2I/45,4	14 330 C2I/46,6	18 140 C2I/47,8	27 660 C2I/47,1	36 090 C2I/47,5	43 910 C2I/44,2	54 890 C2I/44,2	68 900 C2I/45,4			
									17,4	29,7	34,2	58,9	71,7	111	141	188	234	286	40	1600	
	40	–	–	–	–	–	–	–	4 020 C2I/38,7	7 010 C2I/39,5	8 360 C2I/41	14 980 C2I/42,6	17 720 C2I/41,4	28 370 C2I/42,8	34 940 C2I/41,6	44 290 C2I/39,5	55 110 C2I/39,5	69 880 C2I/41			
		0,78	1,29	1,59	2,64	3,06	6,72	11,7	13,3	27,5	30,8	51,6							40	1600	
	40	180 ICI/38,6	310 ICI/40,1	380 ICI/40,1	660 ICI/41,8	765 ICI/41,8	1 580 ICI/39,4	2 760 ICI/39,4	3 200 ICI/40,2	6 780 ICI/41,4	7 630 ICI/41,6	12 740 ICI/41,4	–	–	–	–	–	–			
									16,6	27,1	35,4	54,6	71,4	101	139	182	226	279	35,5	1400	
	35,5	–	–	–	–	–	–	–	4 250 C2I/37,5	6 920 C2I/37,5	9 000 C2I/37,3	13 140 C2I/35,3	17 650 C2I/36,2	25 700 C2I/37,2	35 500 C2I/37,5	45 000 C2I/36,3	56 000 C2I/36,3	71 000 C2I/37,3			
									16,9	26,9	36	51,7	73,4	107	136	188	234	286	31,5	1250	
	31,5	–	–	–	–	–	–	–	4 120 C2I/32	6 790 C2I/33,1	9 150 C2I/33,2	13 490 C2I/34,2	18 870 C2I/33,7	27 060 C2I/33,1	35 070 C2I/33,7	45 000 C2I/31,3	56 000 C2I/31,3	71 000 C2I/32,5			
		0,77	1,31	1,54	2,54	2,78	5,87	10,4		22,9		45,5							31,5	1250	
	31,5	190 ICI/32,1	330 ICI/33	385 ICI/33	610 ICI/31,4	665 ICI/31,4	1 470 ICI/32,8	2 570 ICI/32,4	–	5 480 ICI/31,4	–	11 360 ICI/32,7	–	–	–	–	–	–			
			0,97	1,07	1,89	2,35	4,58	8,58		16,8		34,2		68,7					31,5	1250	
	31,5	–	230 CI/31,3	255 CI/31,3	470 CI/32,5	585 CI/32,5	1 050 CI/30,1	2 050 CI/31,3	–	3 940 CI/30,8	–	8 050 CI/30,8	–	16 650 CI/31,7	–	–	–	–			
									17,4	29,9	40,5	57	69,6	109	148	188	235	289	28	1120	
	28	–	–	–	–	–	–	–	4 250 C2I/28,6	7 390 C2I/28,9	9 930 C2I/28,8	14 340 C2I/29,5	18 000 C2I/30,3	27 670 C2I/29,9	38 020 C2I/30,1	45 000 C2I/28	56 000 C2I/28	71 000 C2I/28,8			
									17,3	31,5	36,3	58,1	71,8	112	141	188	234	286	25	1000	
	25	–	–	–	–	–	–	–	4 060 C2I/24,5	7 540 C2I/25,1	9 000 C2I/26	14 990 C2I/27	18 000 C2I/26,3	28 980 C2I/27,2	35 500 C2I/26,4	45 000 C2I/25,1	56 000 C2I/25,1	71 000 C2I/26			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

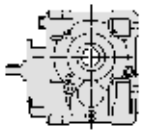


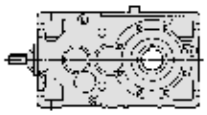


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
500 000		0,66	1,07	1,35	2,33	2,67	4,79	10,4		20,6		41,4		81,9					25	1000	**40**
	25	150 **CI/24,1**	255 **CI/25**	325 **CI/25**	580 **CI/26**	660 **CI/26**	1 100 **CI/24,1**	2 490 **CI/25**	–	4 840 **CI/24,6**	–	9 730 **CI/24,6**	–	19 860 **CI/25,4**	–	–	–	–			
									16,8	29,3	36,5	60,3	73,8	110	142	184	229	283	22,4	900	
	22,4	–	–	–	–	–	–	–	4 250 **C2I/23,8**	7 390 **C2I/23,8**	9 160 **C2I/23,7**	14 310 **C2I/22,4**	18 000 **C2I/23**	27 660 **C2I/23,6**	35 770 **C2I/23,8**	45 000 **C2I/23**	56 000 **C2I/23**	71 000 **C2I/23,7**			
									15,5	30,3	33,6	61,2	67,6	113	133	183	228	266	20	800	
	20	–	–	–	–	–	–	–	3 770 **C2I/20,4**	7 440 **C2I/20,6**	8 570 **C2I/21,4**	14 960 **C2I/20,5**	16 070 **C2I/19,9**	28 960 **C2I/21,5**	33 120 **C2I/20,8**	45 000 **C2I/20,6**	56 000 **C2I/20,6**	67 930 **C2I/21,4**			
		0,66	1,14	1,4	2,33	2,69	5,9	10,8	14,8	24,2	29,5	46,1	58,8	89,4	118	150	207	235	20	800	
	20	150 **CI/19,3**	270 **CI/20**	335 **CI/20**	580 **CI/20,8**	670 **CI/20,8**	1 360 **CI/19,3**	2 590 **CI/20**	3 530 **CI/20**	5 680 **CI/19,7**	7 140 **CI/20,3**	10 840 **CI/19,7**	14 230 **CI/20,3**	21 680 **CI/20,3**	28 100 **CI/20**	35 340 **CI/19,7**	48 630 **CI/19,7**	56 930 **CI/20,3**			
									14,1	23,5	28,2	46,9	55,8	93,9	112	143	201	220	18	710	
	18	–	–	–	–	–	–	–	3 420 **CI/18**	5 690 **CI/18**	7 090 **CI/18,7**	11 350 **CI/18**	14 000 **CI/18,7**	22 570 **CI/17,9**	27 120 **CI/18**	34 640 **CI/18**	48 700 **CI/18**	54 500 **CI/18,4**			
		0,66	1,13	1,4	2,33	2,69	5,9	10,8	15,2	24,1	33,6	48,7	68,1	97,2	126	147	187	267	16	630	
	16	150 **CI/15,2**	270 **CI/15,8**	335 **CI/15,8**	580 **CI/16,4**	670 **CI/16,4**	1 360 **CI/15,2**	2 570 **CI/15,8**	3 630 **CI/15,8**	5 680 **CI/15,5**	8 150 **CI/16**	11 470 **CI/15,5**	16 500 **CI/16**	23 600 **CI/16**	30 020 **CI/15,8**	36 190 **CI/16,3**	46 000 **CI/16,3**	64 640 **CI/16**			
									16,2	26,8	32,6	51,1	63,7	98,2	125	161	207	259	14	560	
	14	–	–	–	–	–	–	–	3 910 **CI/14,2**	6 480 **CI/14,2**	8 180 **CI/14,7**	12 370 **CI/14,2**	16 000 **CI/14,7**	23 600 **CI/14,1**	30 140 **CI/14,2**	39 050 **CI/14,2**	50 000 **CI/14,2**	64 090 **CI/14,5**			
450 000	200	–	–	–	–	–	925 **ICI/192**	2 180 **ICI/199**	–	4 250 **ICI/196**	–	8 500 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 640 **C2I/151**	5 450 **C2I/154**	7 750 **C2I/158**	11 500 **C2I/151**	15 500 **C2I/156**	22 400 **C2I/156**	30 700 **C2I/154**	38 700 **C2I/156**	46 200 **C2I/156**	62 990 **C2I/161**			
	160	–	–	–	–	–	1 220 **ICI/154**	2 500 **ICI/159**	2 790 **ICI/159**	4 800 **ICI/157**	5 540 **ICI/162**	9 240 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 740 **C2I/123**	6 500 **C2I/129**	8 460 **C2I/130**	13 500 **C2I/127**	16 400 **C2I/125**	24 550 **C2I/123**	27 810 **C2I/125**	43 150 **C2I/129**	53 930 **C2I/129**	53 420 **C2I/127**			
	125	–	–	–	–	–	1 280 **ICI/123**	2 600 **ICI/127**	3 420 **ICI/127**	5 710 **ICI/126**	7 110 **ICI/130**	11 520 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	3 980 **C2I/98,2**	6 810 **C2I/103**	9 010 **C2I/104**	13 510 **C2I/102**	17 470 **C2I/100**	26 160 **C2I/98,5**	30 870 **C2I/100**	46 730 **C2I/103**	58 420 **C2I/103**	61 750 **C2I/102**			
	100	–	240 **ICI/99,4**	290 **ICI/99,4**	500 **ICI/103**	585 **ICI/103**	1 290 **ICI/100**	2 890 **ICI/102**	3 510 **ICI/100**	5 840 **ICI/106**	7 500 **ICI/102**	11 480 **ICI/106**	–	–	–	–	–	–			
	90	–	–	–	–	–	–	–	3 860 **C2I/87,8**	6 900 **C2I/90,4**	8 100 **C2I/90**	14 300 **C2I/87,9**	16 340 **C2I/90,3**	24 510 **C2I/89**	32 220 **C2I/89,7**	41 940 **C2I/88,8**	52 420 **C2I/88,8**	64 450 **C2I/91,4**			
									14,2	24,2	30,3	48,7	61,1	94,4	116	–	–	–	80	2800	**35,5**
	80	–	–	–	–	–	–	–	3 790 **C2I/78,6**	6 810 **C2I/82,7**	8 580 **C2I/83,1**	13 510 **C2I/81,4**	16 720 **C2I/80,2**	25 370 **C2I/78,8**	31 760 **C2I/80,3**	45 450 **C2I/82,6**	56 810 **C2I/82,6**	63 520 **C2I/81,2**			
		0,59	0,92	1,14	1,9	2,23	4,67	9,37	10,4	18,3	20,3	37,7							80	2800	
	80	150 **ICI/75,2**	250 **ICI/79,5**	310 **ICI/79,5**	535 **ICI/82,7**	630 **ICI/82,7**	1 220 **ICI/76,7**	2 500 **ICI/78,1**	2 770 **ICI/78,1**	4 880 **ICI/78,1**	5 580 **ICI/80,5**	10 030 **ICI/78,1**	–	–	–	–	–	–			
									14,8	25,2	28,1	50,8	60,9	88,2	121	–	–	–	71	2500	
	71	–	–	–	–	–	–	–	3 970 **C2I/70,2**	6 960 **C2I/72,3**	7 730 **C2I/72**	13 650 **C2I/70,3**	16 800 **C2I/72,2**	23 980 **C2I/71,2**	33 130 **C2I/71,7**	41 990 **C2I/71,1**	52 250 **C2I/71,1**	66 250 **C2I/73,1**			

For n_1 lower than 560 min^{-1} see page 195.

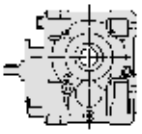
9 - Bevel helical gear reducer selection tables

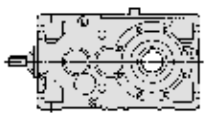




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
450 000									14,9	24,5	32,9	49,4	71,5	102	130	168	210	254	63	2240	**35,5**
	63	–	–	–	–	–	–	–	3 920 **C2I/62**	6 810 **C2I/65,2**	9 180 **C2I/65,5**	13 510 **C2I/64,2**	19 280 **C2I/63,2**	27 100 **C2I/62,1**	35 120 **C2I/63,3**	46 730 **C2I/65,1**	58 420 **C2I/65,1**	69 330 **C2I/64**			
		0,59	0,95	1,17	1,94	2,24	5,22	9,75	12,6	21,4	25,9	43,2							63	2240	
	63	150 **ICI/60,1**	255 **ICI/63,6**	315 **ICI/63,6**	550 **ICI/66,2**	635 **ICI/66,2**	1 360 **ICI/61,3**	2 600 **ICI/62,5**	3 360 **ICI/62,5**	5 710 **ICI/62,5**	7 110 **ICI/64,4**	11 520 **ICI/62,5**	–	–	–	–	–	–			
									15,4	27,2	30	54,2	70	103	138	165	206	247	56	2000	
	56	–	–	–	–	–	–	–	4 070 **C2I/55,4**	7 410 **C2I/57**	8 120 **C2I/56,8**	14 360 **C2I/55,5**	19 040 **C2I/56,9**	27 720 **C2I/56,1**	37 250 **C2I/56,6**	44 090 **C2I/56**	55 120 **C2I/56**	68 040 **C2I/57,6**			
									14,9	24,6	33	47,3	68,6	98,1	125	172	214	251	50	1800	
	50	–	–	–	–	–	–	–	4 000 **C2I/50,4**	6 810 **C2I/52,1**	9 170 **C2I/52,4**	13 520 **C2I/53,9**	19 310 **C2I/53,1**	27 130 **C2I/52,1**	35 170 **C2I/53,1**	46 700 **C2I/51,3**	58 380 **C2I/51,3**	67 100 **C2I/50,5**			
		0,63	1,08	1,27	2,22	2,48	4,85	10,3	13,2	21,4	30,7	42,6							50	1800	
	50	165 **ICI/49**	295 **ICI/50,9**	345 **ICI/50,9**	625 **ICI/53**	700 **ICI/53**	1 290 **ICI/49,9**	2 740 **ICI/50**	3 450 **ICI/49,3**	5 970 **ICI/52,5**	8 280 **ICI/50,8**	11 850 **ICI/52,5**	–	–	–	–	–	–			
									15,5	27,2	33	51,8	65,9	98,7	132	168	209	258	45	1600	
	45	–	–	–	–	–	–	–	4 180 **C2I/45,1**	7 410 **C2I/45,6**	8 950 **C2I/45,4**	14 380 **C2I/46,6**	18 790 **C2I/47,8**	27 760 **C2I/47,1**	37 390 **C2I/47,5**	44 290 **C2I/44,2**	55 110 **C2I/44,2**	69 880 **C2I/45,4**			
									15,5	27,1	30,4	51,8	63,7	99,5	125	167	208	254	40	1400	
	40	–	–	–	–	–	–	–	4 090 **C2I/38,7**	7 300 **C2I/39,5**	8 500 **C2I/41**	15 040 **C2I/42,6**	18 000 **C2I/41,4**	29 080 **C2I/42,8**	35 500 **C2I/41,6**	45 000 **C2I/39,5**	56 000 **C2I/39,5**	71 000 **C2I/41**			
		0,68	1,15	1,41	2,35	2,72	5,9	10,4	11,9	24,1	28	45,3							40	1400	
	40	180 **ICI/38,6**	315 **ICI/40,1**	385 **ICI/40,1**	670 **ICI/41,8**	775 **ICI/41,8**	1 590 **ICI/39,4**	2 800 **ICI/39,4**	3 250 **ICI/40,2**	6 810 **ICI/41,4**	7 940 **ICI/41,6**	12 790 **ICI/41,4**	–	–	–	–	–	–			
									14,8	25	31,6	50,4	64,4	93,4	126	162	202	249	35,5	1250	
	35,5	–	–	–	–	–	–	–	4 250 **C2I/37,5**	7 160 **C2I/37,5**	9 000 **C2I/37,3**	13 600 **C2I/35,3**	17 830 **C2I/36,2**	26 570 **C2I/37,2**	36 080 **C2I/37,5**	45 000 **C2I/36,3**	56 000 **C2I/36,3**	71 000 **C2I/37,3**			
									15,1	24,2	32,4	46,4	67,3	96,3	122	168	210	256	31,5	1120	
	31,5	–	–	–	–	–	–	–	4 120 **C2I/32**	6 810 **C2I/33,1**	9 180 **C2I/33,2**	13 530 **C2I/34,2**	19 320 **C2I/33,7**	27 150 **C2I/33,1**	35 190 **C2I/33,7**	45 000 **C2I/31,3**	56 080 **C2I/31,3**	71 000 **C2I/32,5**			
		0,69	1,18	1,38	2,29	2,52	5,28	9,31		20,7		40,9							31,5	1120	
	31,5	190 **ICI/32,1**	330 **ICI/33**	385 **ICI/33**	615 **ICI/31,4**	675 **ICI/31,4**	1 480 **ICI/32,8**	2 570 **ICI/32,4**	–	5 530 **ICI/31,4**	–	11 400 **ICI/32,7**	–	–	–	–	–	–			
			0,87	0,96	1,7	2,11	4,12	7,72		15,1		30,8		61,7					31,5	1120	
	31,5	–	230 **CI/31,3**	255 **CI/31,3**	470 **CI/32,5**	585 **CI/32,5**	1 060 **CI/30,1**	2 060 **CI/31,3**	–	3 950 **CI/30,8**	–	8 070 **CI/30,8**	–	16 710 **CI/31,7**	–	–	–	–			
									15,6	26,8	36,3	51	62,8	97,3	137	168	209	258	28	1000	
	28	–	–	–	–	–	–	–	4 250 **C2I/28,6**	7 410 **C2I/28,9**	9 970 **C2I/28,8**	14 390 **C2I/29,5**	18 170 **C2I/30,3**	27 770 **C2I/29,9**	39 330 **C2I/30,1**	45 000 **C2I/28**	56 000 **C2I/28**	71 000 **C2I/28,8**			
									15,7	28,4	32,7	52,5	64,6	101	127	169	211	257	25	900	
	25	–	–	–	–	–	–	–	4 080 **C2I/24,5**	7 560 **C2I/25,1**	9 030 **C2I/26**	15 040 **C2I/27**	18 000 **C2I/26,3**	29 070 **C2I/27,2**	35 520 **C2I/26,4**	45 000 **C2I/25,1**	56 000 **C2I/25,1**	71 000 **C2I/26**			
		0,6	0,97	1,22	2,1	2,41	4,33	9,41		18,7		37,4		74,5					25	900	
	25	150 **CI/24,1**	255 **CI/25**	325 **CI/25**	580 **CI/26**	665 **CI/26**	1 110 **CI/24,1**	2 500 **CI/25**	–	4 880 **CI/24,6**	–	9 770 **CI/24,6**	–	20 060 **CI/25,4**	–	–	–	–			
									15	26,2	33,6	53,8	65,6	98,4	130	164	204	251	22,4	800	
	22,4	–	–	–	–	–	–	–	4 250 **C2I/23,8**	7 420 **C2I/23,8**	9 490 **C2I/23,7**	14 360 **C2I/22,4**	18 000 **C2I/23**	27 760 **C2I/23,6**	37 060 **C2I/23,8**	45 000 **C2I/23**	56 000 **C2I/23**	71 000 **C2I/23,7**			
									13,8	27,3	30,9	54,5	60,6	100	120	162	202	239	20	710	
	20	–	–	–	–	–	–	–	3 800 **C2I/20,4**	7 570 **C2I/20,6**	8 880 **C2I/21,4**	15 000 **C2I/20,5**	16 230 **C2I/19,9**	29 000 **C2I/21,5**	33 610 **C2I/20,8**	45 000 **C2I/20,6**	56 000 **C2I/20,6**	68 640 **C2I/21,4**			
		0,59	1,01	1,25	2,07	2,39	5,25	9,66	13,2	21,5	26,5	41,8	52,7	80,4	106	134	184	209	20	710	
	20	150 **CI/19,3**	270 **CI/20**	335 **CI/20**	580 **CI/20,8**	670 **CI/20,8**	1 360 **CI/19,3**	2 600 **CI/20**	3 550 **CI/20**	5 700 **CI/19,7**	7 230 **CI/20,3**	11 060 **CI/19,7**	14 380 **CI/20,3**	21 960 **CI/20,3**	28 400 **CI/20**	35 510 **CI/19,7**	48 820 **CI/19,7**	57 150 **CI/20,3**			

For n_1 lower than 560 min^{-1} see page 195.

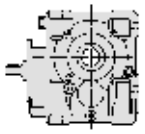


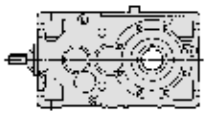


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
450 000									12,5	21	25,1	42	49,5	84,2	99,4	128	178	195	18	630	**35,5**
	18	–	–	–	–	–	–	–	3 420 **CI/18**	5 740 **CI/18**	7 090 **CI/18,7**	11 460 **CI/18**	14 000 **CI/18,7**	22 800 **CI/17,9**	27 120 **CI/18**	34 970 **CI/18**	48 700 **CI/18**	54 500 **CI/18,4**			
		0,59	1,01	1,25	2,07	2,4	5,25	9,56	13,6	21,5	30,2	43,4	60,5	86,4	116	132	166	245	16	560	
	16	150 **CI/15,2**	270 **CI/15,8**	335 **CI/15,8**	580 **CI/16,4**	670 **CI/16,4**	1 360 **CI/15,2**	2 570 **CI/15,8**	3 640 **CI/15,8**	5 700 **CI/15,5**	8 250 **CI/16**	11 500 **CI/15,5**	16 500 **CI/16**	23 600 **CI/16**	31 100 **CI/15,8**	36 500 **CI/16,3**	46 170 **CI/16,3**	66 960 **CI/16**			
400 000	200	–	–	–	–	–	950 **ICI/192**	2 240 **ICI/199**	–	4 450 **ICI/196**	–	8 750 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 650 **C2I/151**	5 600 **C2I/154**	7 750 **C2I/158**	11 550 **C2I/151**	15 500 **C2I/156**	23 000 **C2I/156**	31 950 **C2I/154**	38 700 **C2I/156**	47 500 **C2I/156**	63 000 **C2I/161**			
	160	–	–	–	–	–	1 230 **ICI/154**	2 510 **ICI/159**	2 810 **ICI/159**	4 820 **ICI/157**	5 560 **ICI/162**	9 450 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 870 **C2I/123**	6 700 **C2I/129**	8 770 **C2I/130**	13 550 **C2I/127**	16 500 **C2I/125**	25 440 **C2I/123**	28 810 **C2I/125**	44 700 **C2I/129**	55 870 **C2I/129**	54 960 **C2I/127**			
	125	–	–	–	–	–	1 320 **ICI/123**	2 610 **ICI/127**	3 540 **ICI/127**	5 730 **ICI/126**	7 140 **ICI/130**	11 560 **ICI/126**	–	–	–	–	–	–			
	100	–	–	–	–	–	–	–	4 120 **C2I/98,2**	6 830 **C2I/103**	9 210 **C2I/104**	13 560 **C2I/102**	18 110 **C2I/100**	27 120 **C2I/98,5**	31 320 **C2I/100**	46 910 **C2I/103**	58 640 **C2I/103**	62 630 **C2I/102**			
	100	–	245 **ICI/99,4**	290 **ICI/99,4**	500 **ICI/103**	585 **ICI/103**	1 290 **ICI/100**	2 900 **ICI/102**	3 630 **ICI/100**	5 860 **ICI/106**	7 750 **ICI/102**	11 530 **ICI/106**	–	–	–	–	–	–			
									13,1	23	26,6	48,1	54,9	83,7	107	–	–	–	90	2800	**31,5**
	90	–	–	–	–	–	–	–	3 910 **C2I/87,8**	7 100 **C2I/90,4**	8 160 **C2I/90**	14 420 **C2I/87,9**	16 900 **C2I/90,3**	25 390 **C2I/89**	32 680 **C2I/89,7**	43 440 **C2I/88,8**	54 300 **C2I/88,8**	65 360 **C2I/91,4**			
									12,9	21,6	28	43,6	56,5	87,2	105	–	–	–	80	2500	
	80	–	–	–	–	–	–	–	3 860 **C2I/78,6**	6 840 **C2I/82,7**	8 880 **C2I/83,1**	13 560 **C2I/81,4**	17 290 **C2I/80,2**	26 250 **C2I/78,8**	32 190 **C2I/80,3**	46 920 **C2I/82,6**	58 650 **C2I/82,6**	64 380 **C2I/81,2**			
		0,53	0,84	1,03	1,71	2	4,18	8,39	9,42	16,6	18,4	34,1							80	2500	
	80	155 **ICI/75,2**	255 **ICI/79,5**	315 **ICI/79,5**	540 **ICI/82,7**	630 **ICI/82,7**	1 230 **ICI/76,7**	2 500 **ICI/78,1**	2 810 **ICI/78,1**	4 950 **ICI/78,1**	5 660 **ICI/80,5**	10 170 **ICI/78,1**	–	–	–	–	–	–			
									13,4	23,3	25,9	47,1	55,3	80,8	110	140	175	215	71	2240	
	71	–	–	–	–	–	–	–	4 020 **C2I/70,2**	7 190 **C2I/72,3**	7 950 **C2I/72**	14 110 **C2I/70,3**	17 020 **C2I/72,2**	24 520 **C2I/71,2**	33 560 **C2I/71,7**	42 540 **C2I/71,1**	52 940 **C2I/71,1**	67 130 **C2I/73,1**			
									13,7	22	29,4	44,2	64,1	91,7	117	151	189	235	63	2000	
	63	–	–	–	–	–	–	–	4 060 **C2I/62**	6 830 **C2I/65,2**	9 210 **C2I/65,5**	13 550 **C2I/64,2**	19 350 **C2I/63,2**	27 190 **C2I/62,1**	35 250 **C2I/63,3**	46 900 **C2I/65,1**	58 630 **C2I/65,1**	71 730 **C2I/64**			
		0,53	0,86	1,06	1,76	2,03	4,67	8,74	11,4	19,2	23,4	38,7							63	2000	
	63	155 **ICI/60,1**	260 **ICI/63,6**	320 **ICI/63,6**	555 **ICI/66,2**	640 **ICI/66,2**	1 370 **ICI/61,3**	2 610 **ICI/62,5**	3 400 **ICI/62,5**	5 730 **ICI/62,5**	7 190 **ICI/64,4**	11 560 **ICI/62,5**	–	–	–	–	–	–			
									14	24,6	27,1	49	65,1	93,4	128	149	186	225	56	1800	
	56	–	–	–	–	–	–	–	4 120 **C2I/55,4**	7 430 **C2I/57**	8 150 **C2I/56,8**	14 410 **C2I/55,5**	19 650 **C2I/56,9**	27 810 **C2I/56,1**	38 450 **C2I/56,6**	44 240 **C2I/56**	55 300 **C2I/56**	68 900 **C2I/57,6**			
									13,5	22	29,4	42,2	61,2	87,5	111	153	191	231	50	1600	
	50	–	–	–	–	–	–	–	4 050 **C2I/50,4**	6 830 **C2I/52,1**	9 210 **C2I/52,4**	13 580 **C2I/53,9**	19 380 **C2I/53,1**	27 230 **C2I/52,1**	35 300 **C2I/53,1**	46 880 **C2I/51,3**	58 600 **C2I/51,3**	69 510 **C2I/50,5**			
		0,56	0,97	1,13	1,98	2,22	4,34	9,5	11,9	19,3	27,4	38,4							50	1600	
	50	165 **ICI/49**	295 **ICI/50,9**	345 **ICI/50,9**	625 **ICI/53**	700 **ICI/53**	1 290 **ICI/49,9**	2 840 **ICI/50**	3 490 **ICI/49,3**	6 050 **ICI/52,5**	8 310 **ICI/50,8**	12 020 **ICI/52,5**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

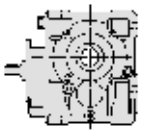
9 - Bevel helical gear reducer selection tables

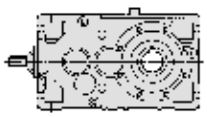




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
									P_{N2} kW												
									M_{N2} N m												
									...		/ *i*										
400 000									13,8	23,9	30,1	45,5	60	86,7	120	149	186	229	45	1400	**31,5**
	45	–	–	–	–	–	–	–	4 250 **C2I/45,1**	7 440 **C2I/45,6**	9 320 **C2I/45,4**	14 440 **C2I/46,6**	19 560 **C2I/47,8**	27 870 **C2I/47,1**	38 920 **C2I/47,5**	45 000 **C2I/44,2**	56 000 **C2I/44,2**	71 000 **C2I/45,4**			
									13,9	25	27,8	46,4	56,9	89,2	112	150	187	227	40	1250	
	40	–	–	–	–	–	–	–	4 110 **C2I/38,7**	7 550 **C2I/39,5**	8 700 **C2I/41**	15 100 **C2I/42,6**	18 000 **C2I/41,4**	29 190 **C2I/42,8**	35 500 **C2I/41,6**	45 170 **C2I/39,5**	56 460 **C2I/39,5**	71 000 **C2I/41**			
		0,61	1,03	1,26	2,1	2,43	5,29	9,58	10,6	21,6	25,4	40,6							40	1250	
	40	180 **ICI/38,6**	315 **ICI/40,1**	385 **ICI/40,1**	670 **ICI/41,8**	775 **ICI/41,8**	1 590 **ICI/39,4**	2 880 **ICI/39,4**	3 250 **ICI/40,2**	6 840 **ICI/41,4**	8 060 **ICI/41,6**	12 840 **ICI/41,4**	–	–	–	–	–	–			
									13,3	23,2	28,3	46,7	58,3	86,5	117	146	181	223	35,5	1120	
	35,5	–	–	–	–	–	–	–	4 250 **C2I/37,5**	7 400 **C2I/37,5**	9 000 **C2I/37,3**	14 050 **C2I/35,3**	18 000 **C2I/36,2**	27 460 **C2I/37,2**	37 290 **C2I/37,5**	45 000 **C2I/36,3**	56 000 **C2I/36,3**	71 000 **C2I/37,3**			
									13,5	21,6	29	41,6	60,3	86,3	110	155	194	229	31,5	1000	
	31,5	–	–	–	–	–	–	–	4 120 **C2I/32**	6 840 **C2I/33,1**	9 210 **C2I/33,2**	13 580 **C2I/34,2**	19 390 **C2I/33,7**	27 250 **C2I/33,1**	35 320 **C2I/33,7**	46 410 **C2I/31,3**	58 020 **C2I/31,3**	71 000 **C2I/32,5**			
		0,62	1,06	1,23	2,05	2,33	4,73	8,31		18,5		36,6							31,5	1000	
	31,5	190 **ICI/32,1**	335 **ICI/33**	385 **ICI/33**	615 **ICI/31,4**	700 **ICI/31,4**	1 480 **ICI/32,8**	2 570 **ICI/32,4**	–	5 530 **ICI/31,4**	–	11 440 **ICI/32,7**	–	–	–	–	–	–			
			0,78	0,86	1,52	1,89	3,69	6,92		13,5		27,6		55,3					31,5	1000	
	31,5	–	230 **CI/31,3**	260 **CI/31,3**	470 **CI/32,5**	585 **CI/32,5**	1 060 **CI/30,1**	2 060 **CI/31,3**	–	3 970 **CI/30,8**	–	8 100 **CI/30,8**	–	16 770 **CI/31,7**	–	–	–	–			
									14	24,2	32,7	46,1	58,3	87,9	125	151	188	232	28	900	
	28	–	–	–	–	–	–	–	4 250 **C2I/28,6**	7 440 **C2I/28,9**	10 000 **C2I/28,8**	14 440 **C2I/29,5**	18 760 **C2I/30,3**	27 860 **C2I/29,9**	39 810 **C2I/30,1**	45 000 **C2I/28**	56 000 **C2I/28**	71 000 **C2I/28,8**			
									14	25,4	29,2	46,8	57,4	90	117	150	187	229	25	800	
	25	–	–	–	–	–	–	–	4 110 **C2I/24,5**	7 590 **C2I/25,1**	9 060 **C2I/26**	15 090 **C2I/27**	18 000 **C2I/26,3**	29 180 **C2I/27,2**	36 800 **C2I/26,4**	45 000 **C2I/25,1**	56 000 **C2I/25,1**	71 000 **C2I/26**			
		0,53	0,87	1,09	1,87	2,16	3,86	8,39		16,8		33,6		67,1					25	800	
	25	155 **CI/24,1**	260 **CI/25**	325 **CI/25**	580 **CI/26**	670 **CI/26**	1 110 **CI/24,1**	2 500 **CI/25**	–	4 930 **CI/24,6**	–	9 860 **CI/24,6**	–	20 340 **CI/25,4**	–	–	–	–			
									13,3	23,3	30,9	47,9	58,2	87,7	120	145	181	223	22,4	710	
	22,4	–	–	–	–	–	–	–	4 250 **C2I/23,8**	7 450 **C2I/23,8**	9 840 **C2I/23,7**	14 420 **C2I/22,4**	18 000 **C2I/23**	27 860 **C2I/23,6**	38 410 **C2I/23,8**	45 000 **C2I/23**	56 000 **C2I/23**	71 000 **C2I/23,7**			
									12,3	24,4	28,4	48,3	54,3	89,1	110	144	179	214	20	630	
	20	–	–	–	–	–	–	–	3 820 **C2I/20,4**	7 600 **C2I/20,6**	9 210 **C2I/21,4**	15 000 **C2I/20,5**	16 400 **C2I/19,9**	29 000 **C2I/21,5**	34 840 **C2I/20,8**	45 000 **C2I/20,6**	56 000 **C2I/20,6**	69 360 **C2I/21,4**			
		0,52	0,9	1,1	1,84	2,12	4,66	8,6	11,7	19,2	23,8	38,4	47,3	73,9	94,7	120	164	187	20	630	
	20	155 **CI/19,3**	270 **CI/20**	335 **CI/20**	580 **CI/20,8**	670 **CI/20,8**	1 360 **CI/19,3**	2 610 **CI/20**	3 550 **CI/20**	5 730 **CI/19,7**	7 310 **CI/20,3**	11 460 **CI/19,7**	14 530 **CI/20,3**	22 760 **CI/20,3**	28 700 **CI/20**	35 680 **CI/19,7**	49 000 **CI/19,7**	57 360 **CI/20,3**			
									11,1	18,9	22,3	37,7	44	75,5	88,4	115	159	174	18	560	
	18	–	–	–	–	–	–	–	3 420 **CI/18**	5 790 **CI/18**	7 090 **CI/18,7**	11 570 **CI/18**	14 000 **CI/18,7**	23 000 **CI/17,9**	27 120 **CI/18**	35 290 **CI/18**	48 700 **CI/18**	54 500 **CI/18,4**			
355 000	200	–	–	–	–	–	975 **ICI/192**	2 320 **ICI/199**	–	4 460 **ICI/196**	–	9 110 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 660 **C2I/151**	5 740 **C2I/154**	8 000 **C2I/158**	11 580 **C2I/151**	16 000 **C2I/156**	23 000 **C2I/156**	32 050 **C2I/154**	40 000 **C2I/156**	47 500 **C2I/156**	63 000 **C2I/161**			
	160	–	–	–	–	–	1 230 **ICI/154**	2 510 **ICI/159**	2 820 **ICI/159**	4 840 **ICI/157**	5 580 **ICI/162**	9 750 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	3 870 **C2I/123**	6 860 **C2I/129**	8 750 **C2I/130**	13 600 **C2I/127**	17 040 **C2I/125**	26 360 **C2I/123**	29 860 **C2I/125**	46 330 **C2I/129**	57 910 **C2I/129**	56 960 **C2I/127**			

For n_1 lower than 560 min^{-1} see page 195.

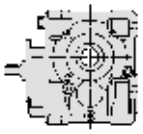


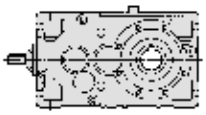


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
355 000	125	–	–	–	–	–	1 320 **ICI/123**	2 620 **ICI/127**	3 620 **ICI/127**	5 750 **ICI/126**	7 170 **ICI/130**	11 600 **ICI/126**	–	–	–	–	–	–			
									12,5	19,5	26,1	39,2	54	81,3	92,9	–	–	–	100	2800	**28**
	100	–	–	–	–	–	–	–	4 200 **C2I/98,2**	6 860 **C2I/103**	9 240 **C2I/104**	13 610 **C2I/102**	18 470 **C2I/100**	27 300 **C2I/98,5**	31 810 **C2I/100**	47 080 **C2I/103**	58 860 **C2I/103**	63 520 **C2I/102**			
			0,72	0,86	1,42	1,67	3,79	8,4	10,7	16,3	22,3	32,1							100	2800	
	100	–	245 **ICI/99,4**	290 **ICI/99,4**	500 **ICI/103**	590 **ICI/103**	1 300 **ICI/100**	2 920 **ICI/102**	3 670 **ICI/100**	5 880 **ICI/106**	7 750 **ICI/102**	11 570 **ICI/106**	–	–	–	–	–	–			
									11,8	20,6	23,8	43,1	50,7	77,3	96,7	–	–	–	90	2500	
	90	–	–	–	–	–	–	–	3 970 **C2I/87,8**	7 100 **C2I/90,4**	8 180 **C2I/90**	14 470 **C2I/87,9**	17 480 **C2I/90,3**	26 270 **C2I/89**	33 130 **C2I/89,7**	44 430 **C2I/88,8**	55 530 **C2I/88,8**	66 250 **C2I/91,4**			
									11,9	19,5	25,9	39,2	52,3	80,8	95,3	134	167	188	80	2240	
	80	–	–	–	–	–	–	–	3 990 **C2I/78,6**	6 860 **C2I/82,7**	9 180 **C2I/83,1**	13 610 **C2I/81,4**	17 870 **C2I/80,2**	27 130 **C2I/78,8**	32 620 **C2I/80,3**	47 080 **C2I/82,6**	58 860 **C2I/82,6**	65 230 **C2I/81,2**			
		0,48	0,76	0,93	1,55	1,8	3,76	7,55	8,55	15	16,7	30,9							80	2240	
	80	155 **ICI/75,2**	255 **ICI/79,5**	315 **ICI/79,5**	550 **ICI/82,7**	635 **ICI/82,7**	1 230 **ICI/76,7**	2 510 **ICI/78,1**	2 850 **ICI/78,1**	5 010 **ICI/78,1**	5 730 **ICI/80,5**	10 310 **ICI/78,1**	–	–	–	–	–	–			
									12,1	21,5	23,8	43,1	50	74,6	99,3	127	159	195	71	2000	
	71	–	–	–	–	–	–	–	4 070 **C2I/70,2**	7 440 **C2I/72,3**	8 180 **C2I/72**	14 470 **C2I/70,3**	17 250 **C2I/72,2**	25 370 **C2I/71,2**	34 020 **C2I/71,7**	43 270 **C2I/71,1**	54 090 **C2I/71,1**	68 040 **C2I/73,1**			
									12,7	19,8	26,6	39,9	57,9	82,8	105	136	170	218	63	1800	
	63	–	–	–	–	–	–	–	4 190 **C2I/62**	6 860 **C2I/65,2**	9 240 **C2I/65,5**	13 600 **C2I/64,2**	19 410 **C2I/63,2**	27 280 **C2I/62,1**	35 360 **C2I/63,3**	47 060 **C2I/65,1**	58 820 **C2I/65,1**	74 040 **C2I/64**			
		0,48	0,78	0,96	1,6	1,85	4,22	7,89	10,4	17,3	21,3	35							63	1800	
	63	155 **ICI/60,1**	265 **ICI/63,6**	325 **ICI/63,6**	565 **ICI/66,2**	650 **ICI/66,2**	1 370 **ICI/61,3**	2 620 **ICI/62,5**	3 450 **ICI/62,5**	5 750 **ICI/62,5**	7 280 **ICI/64,4**	11 600 **ICI/62,5**	–	–	–	–	–	–			
									12,7	21,9	24,1	43,7	58,4	83,3	118	133	166	203	56	1600	
	56	–	–	–	–	–	–	–	4 180 **C2I/55,4**	7 460 **C2I/57**	8 180 **C2I/56,8**	14 460 **C2I/55,5**	19 830 **C2I/56,9**	27 910 **C2I/56,1**	39 730 **C2I/56,6**	44 410 **C2I/56**	55 510 **C2I/56**	69 880 **C2I/57,6**			
									12	19,3	25,9	37,1	53,7	76,9	97,8	135	168	210	50	1400	
	50	–	–	–	–	–	–	–	4 120 **C2I/50,4**	6 860 **C2I/52,1**	9 250 **C2I/52,4**	13 630 **C2I/53,9**	19 460 **C2I/53,1**	27 350 **C2I/52,1**	35 450 **C2I/53,1**	47 080 **C2I/51,3**	58 840 **C2I/51,3**	72 350 **C2I/50,5**			
		0,5	0,85	1	1,74	1,96	3,86	8,54	10,6	17,2	24,1	34,1							50	1400	
	50	165 **ICI/49**	295 **ICI/50,9**	345 **ICI/50,9**	630 **ICI/53**	710 **ICI/53**	1 310 **ICI/49,9**	2 910 **ICI/50**	3 550 **ICI/49,3**	6 150 **ICI/52,5**	8 350 **ICI/50,8**	12 210 **ICI/52,5**	–	–	–	–	–	–			
									12,3	21,4	27,8	40,7	55,4	77,7	110	133	166	205	45	1250	
	45	–	–	–	–	–	–	–	4 250 **C2I/45,1**	7 470 **C2I/45,6**	9 640 **C2I/45,4**	14 490 **C2I/46,6**	20 240 **C2I/47,8**	27 970 **C2I/47,1**	39 970 **C2I/47,5**	45 000 **C2I/44,2**	56 000 **C2I/44,2**	71 000 **C2I/45,4**			
									12,5	22,6	25,7	41,7	51,3	80,2	103	139	173	203	40	1120	
	40	–	–	–	–	–	–	–	4 140 **C2I/38,7**	7 620 **C2I/39,5**	8 990 **C2I/41**	15 150 **C2I/42,6**	18 120 **C2I/41,4**	29 290 **C2I/42,8**	36 410 **C2I/41,6**	46 680 **C2I/39,5**	58 350 **C2I/39,5**	71 000 **C2I/41**			
		0,55	0,92	1,13	1,88	2,17	4,76	8,87	9,49	19,4	22,8	36,5							40	1120	
	40	180 **ICI/38,6**	315 **ICI/40,1**	385 **ICI/40,1**	670 **ICI/41,8**	775 **ICI/41,8**	1 600 **ICI/39,4**	2 980 **ICI/39,4**	3 250 **ICI/40,2**	6 860 **ICI/41,4**	8 090 **ICI/41,6**	12 880 **ICI/41,4**	–	–	–	–	–	–			
									11,9	20,9	25,3	42,9	52	78,6	108	130	162	199	35,5	1000	
	35,5	–	–	–	–	–	–	–	4 250 **C2I/37,5**	7 470 **C2I/37,5**	9 000 **C2I/37,3**	14 470 **C2I/35,3**	18 000 **C2I/36,2**	27 960 **C2I/37,2**	38 580 **C2I/37,5**	45 000 **C2I/36,3**	56 000 **C2I/36,3**	71 000 **C2I/37,3**			
									12,1	19,5	26,2	37,6	54,5	77,9	99,1	144	180	206	31,5	900	
	31,5	–	–	–	–	–	–	–	4 120 **C2I/32**	6 860 **C2I/33,1**	9 240 **C2I/33,2**	13 630 **C2I/34,2**	19 450 **C2I/33,7**	27 340 **C2I/33,1**	35 430 **C2I/33,7**	47 900 **C2I/31,3**	59 880 **C2I/31,3**	71 000 **C2I/32,5**			
		0,56	0,95	1,11	1,84	2,16	4,27	7,61		16,6		33,1							31,5	900	
	31,5	190 **ICI/32,1**	335 **ICI/33**	385 **ICI/33**	615 **ICI/31,4**	720 **ICI/31,4**	1 490 **ICI/32,8**	2 610 **ICI/32,4**	–	5 530 **ICI/31,4**	–	11 480 **ICI/32,7**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

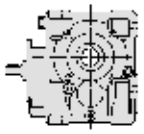
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
355 000			0,7	0,78	1,37	1,71	3,34	6,24		12,2		24,9		50					31,5	900	**28**
	31,5	–	235 **CI/31,3**	260 **CI/31,3**	475 **CI/32,5**	590 **CI/32,5**	1 070 **CI/30,1**	2 070 **CI/31,3**	–	3 980 **CI/30,8**	–	8 130 **CI/30,8**	–	16 820 **CI/31,7**	–	–	–	–			
									12,5	21,6	29,2	41,1	53,7	78,4	111	135	168	207	28	800	
	28	–	–	–	–	–	–	–	4 250 **C2I/28,6**	7 460 **C2I/28,9**	10 040 **C2I/28,8**	14 490 **C2I/29,5**	19 430 **C2I/30,3**	27 970 **C2I/29,9**	39 950 **C2I/30,1**	45 000 **C2I/28**	56 000 **C2I/28**	71 000 **C2I/28,8**			
									12,5	22,6	26	41,7	51	80,2	108	138	172	203	25	710	
	25	–	–	–	–	–	–	–	4 140 **C2I/24,5**	7 620 **C2I/25,1**	9 100 **C2I/26**	15 150 **C2I/27**	18 000 **C2I/26,3**	29 290 **C2I/27,2**	38 140 **C2I/26,4**	46 410 **C2I/25,1**	58 020 **C2I/25,1**	71 000 **C2I/26**			
		0,47	0,77	0,98	1,66	1,92	3,45	7,48		15		30,1		60					25	710	
	25	155 **CI/24,1**	260 **CI/25**	330 **CI/25**	580 **CI/26**	670 **CI/26**	1 120 **CI/24,1**	2 510 **CI/25**	–	4 980 **CI/24,6**	–	9 960 **CI/24,6**	–	20 490 **CI/25,4**	–	–	–	–			
									11,8	20,8	28,4	42,7	53	78,1	110	129	161	198	22,4	630	
	22,4	–	–	–	–	–	–	–	4 250 **C2I/23,8**	7 470 **C2I/23,8**	10 190 **C2I/23,7**	14 470 **C2I/22,4**	18 470 **C2I/23**	27 970 **C2I/23,6**	39 810 **C2I/23,8**	45 000 **C2I/23**	56 000 **C2I/23**	71 000 **C2I/23,7**			
									11	21,7	26,2	43	48,8	79,2	102	128	160	192	20	560	
	20	–	–	–	–	–	–	–	3 840 **C2I/20,4**	7 630 **C2I/20,6**	9 540 **C2I/21,4**	15 000 **C2I/20,5**	16 580 **C2I/19,9**	29 000 **C2I/21,5**	36 090 **C2I/20,8**	45 000 **C2I/20,6**	56 170 **C2I/20,6**	70 060 **C2I/21,4**			
		0,47	0,8	0,98	1,64	1,89	4,14	7,68	10,4	17,1	21,4	34,2	42,4	68,1	85	108	146	166	20	560	
	20	155 **CI/19,3**	270 **CI/20**	335 **CI/20**	580 **CI/20,8**	670 **CI/20,8**	1 360 **CI/19,3**	2 620 **CI/20**	3 550 **CI/20**	5 750 **CI/19,7**	7 390 **CI/20,3**	11 500 **CI/19,7**	14 680 **CI/20,3**	23 580 **CI/20,3**	29 000 **CI/20**	36 410 **CI/19,7**	49 180 **CI/19,7**	57 580 **CI/20,3**			
315 000	200	–	–	–	–	–	1000 **ICI/192**	2 330 **ICI/199**	–	4 480 **ICI/196**	–	9 150 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 680 **C2I/151**	5 760 **C2I/154**	8 000 **C2I/158**	11 630 **C2I/151**	16 000 **C2I/156**	23 940 **C2I/156**	32 170 **C2I/154**	40 000 **C2I/156**	49 350 **C2I/156**	65 000 **C2I/161**			
	160	–	–	–	–	–	1 230 **ICI/154**	2 520 **ICI/159**	2 830 **ICI/159**	4 850 **ICI/157**	5 600 **ICI/162**	10 100 **ICI/157**	–	–	–	–	–	–			
	125	–	–	–	–	–	–	–	4 000 **C2I/123**	6 880 **C2I/129**	8 750 **C2I/130**	13 650 **C2I/127**	17 110 **C2I/125**	27 330 **C2I/123**	30 950 **C2I/125**	47 240 **C2I/129**	59 050 **C2I/129**	59 040 **C2I/127**			
	125	–	–	–	–	–	1 380 **ICI/123**	2 630 **ICI/127**	3 630 **ICI/127**	5 770 **ICI/126**	7 190 **ICI/130**	11 650 **ICI/126**	–	–	–	–	–	–			
									11,2	17,4	23,4	35,1	48,4	72,8	85,9	–	–	–	100	2500	**25**
	100	–	–	–	–	–	–	–	4 210 **C2I/98,2**	6 880 **C2I/103**	9 280 **C2I/104**	13 660 **C2I/102**	18 540 **C2I/100**	27 400 **C2I/98,5**	32 910 **C2I/100**	47 250 **C2I/103**	59 070 **C2I/103**	64 380 **C2I/102**			
			0,64	0,77	1,28	1,5	3,4	7,53	9,62	14,6	19,9	28,8							100	2500	
	100	–	245 **ICI/99,4**	290 **ICI/99,4**	505 **ICI/103**	590 **ICI/103**	1 300 **ICI/100**	2 930 **ICI/102**	3 690 **ICI/100**	5 910 **ICI/106**	7 750 **ICI/102**	11 610 **ICI/106**	–	–	–	–	–	–			
									10,9	18,9	21,4	38,7	47	71,6	87,8	118	147	172	90	2240	
	90	–	–	–	–	–	–	–	4 080 **C2I/87,8**	7 300 **C2I/90,4**	8 210 **C2I/90**	14 520 **C2I/87,9**	18 070 **C2I/90,3**	27 150 **C2I/89**	33 560 **C2I/89,7**	44 580 **C2I/88,8**	55 720 **C2I/88,8**	67 130 **C2I/91,4**			
									11	17,4	23,4	35,1	48,3	72,8	86,2	120	150	170	80	2000	
	80	–	–	–	–	–	–	–	4 130 **C2I/78,6**	6 880 **C2I/82,7**	9 280 **C2I/83,1**	13 660 **C2I/81,4**	18 490 **C2I/80,2**	27 400 **C2I/78,8**	33 060 **C2I/80,3**	47 250 **C2I/82,6**	59 070 **C2I/82,6**	66 120 **C2I/81,2**			
		0,43	0,69	0,85	1,41	1,63	3,37	6,76	7,74	13,6	15,1	28							80	2000	
	80	155 **ICI/75,2**	260 **ICI/79,5**	320 **ICI/79,5**	555 **ICI/82,7**	640 **ICI/82,7**	1 230 **ICI/76,7**	2 520 **ICI/78,1**	2 890 **ICI/78,1**	5 080 **ICI/78,1**	5 810 **ICI/80,5**	10 450 **ICI/78,1**	–	–	–	–	–	–			
									11,1	19,5	21,5	38,9	45,6	69,3	90,5	118	148	178	71	1800	
	71	–	–	–	–	–	–	–	4 120 **C2I/70,2**	7 490 **C2I/72,3**	8 210 **C2I/72**	14 520 **C2I/70,3**	17 470 **C2I/72,2**	26 190 **C2I/71,2**	34 450 **C2I/71,7**	44 570 **C2I/71,1**	55 720 **C2I/71,1**	68 900 **C2I/73,1**			

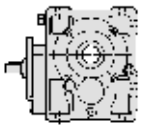
For n_1 lower than 560 min^{-1} see page 195.

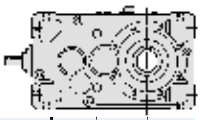


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
									P_{N2} kW												
									M_{N2} N m												
									… / i												
315 000									11,7	17,7	23,7	35,6	51,6	73,9	93,9	122	152	201	63	1600	25
	63	–	–	–	–	–	–	–	4 340 C2I/62	6 880 C2I/65,2	9 270 C2I/65,5	13 650 C2I/64,2	19 480 C2I/63,2	27 380 C2I/62,1	35 490 C2I/63,3	47 230 C2I/65,1	59 040 C2I/65,1	76 700 C2I/64			
		0,43	0,7	0,87	1,45	1,67	3,77	7,04	9,5	15,5	19,2	31,2							63	1600	
	63	155 ICI/60,1	270 ICI/63,6	330 ICI/63,6	570 ICI/66,2	660 ICI/66,2	1 380 ICI/61,3	2 630 ICI/62,5	3 550 ICI/62,5	5 770 ICI/62,5	7 380 ICI/64,4	11 640 ICI/62,5	–	–	–	–	–	–			
									11,3	19,3	21,2	38,4	51,3	73,2	103	118	146	183	56	1400	
	56	–	–	–	–	–	–	–	4 250 C2I/55,4	7 490 C2I/57	8 220 C2I/56,8	14 520 C2I/55,5	19 920 C2I/56,9	28 030 C2I/56,1	39 900 C2I/56,6	45 000 C2I/56	56 000 C2I/56	71 850 C2I/57,6			
									11	17,3	23,2	33,2	48,2	68,9	87,6	121	151	194	50	1250	
	50	–	–	–	–	–	–	–	4 260 C2I/50,4	6 890 C2I/52,1	9 280 C2I/52,4	13 680 C2I/53,9	19 530 C2I/53,1	27 450 C2I/52,1	35 570 C2I/53,1	47 240 C2I/51,3	59 050 C2I/51,3	74 850 C2I/50,5			
		0,44	0,76	0,89	1,56	1,76	3,46	7,66	9,58	15,3	21,6	30,8							50	1250	
	50	165 ICI/49	295 ICI/50,9	345 ICI/50,9	630 ICI/53	710 ICI/53	1 320 ICI/49,9	2 920 ICI/50	3 610 ICI/49,3	6 150 ICI/52,5	8 380 ICI/50,8	12 330 ICI/52,5	–	–	–	–	–	–			
									11,1	19,3	25,7	36,6	50,6	69,9	99	120	149	183	45	1120	
	45	–	–	–	–	–	–	–	4 250 C2I/45,1	7 490 C2I/45,6	9 960 C2I/45,4	14 540 C2I/46,6	20 600 C2I/47,8	28 070 C2I/47,1	40 100 C2I/47,5	45 000 C2I/44,2	56 000 C2I/44,2	71 000 C2I/45,4			
									11,3	20,3	23,3	37,4	47,4	71,9	94,9	128	160	181	40	1000	
	40	–	–	–	–	–	–	–	4 160 C2I/38,7	7 650 C2I/39,5	9 130 C2I/41	15 200 C2I/42,6	18 750 C2I/41,4	29 390 C2I/42,8	37 670 C2I/41,6	48 300 C2I/39,5	60 370 C2I/39,5	71 000 C2I/41			
		0,49	0,82	1,01	1,68	1,94	4,26	8,19	8,47	17,4	20,4	32,7							40	1000	
	40	180 ICI/38,6	315 ICI/40,1	385 ICI/40,1	670 ICI/41,8	775 ICI/41,8	1 600 ICI/39,4	3 080 ICI/39,4	3 250 ICI/40,2	6 880 ICI/41,4	8 120 ICI/41,6	12 930 ICI/41,4	–	–	–	–	–	–			
									10,7	18,9	22,7	38,8	46,8	71	99,3	117	146	179	35,5	900	
	35,5	–	–	–	–	–	–	–	4 250 C2I/37,5	7 500 C2I/37,5	9 000 C2I/37,3	14 520 C2I/35,3	18 000 C2I/36,2	28 060 C2I/37,2	39 530 C2I/37,5	45 000 C2I/36,3	56 000 C2I/36,3	71 000 C2I/37,3			
									10,8	17,4	23,4	33,5	48,6	69,5	88,4	133	166	183	31,5	800	
	31,5	–	–	–	–	–	–	–	4 120 C2I/32	6 880 C2I/33,1	9 280 C2I/33,2	13 680 C2I/34,2	19 520 C2I/33,7	27 440 C2I/33,1	35 560 C2I/33,7	49 630 C2I/31,3	62 030 C2I/31,3	71 000 C2I/32,5			
		0,5	0,85	0,98	1,66	1,95	3,81	7,01		14,8		29,5							31,5	800	
	31,5	190 ICI/32,1	335 ICI/33	385 ICI/33	625 ICI/31,4	730 ICI/31,4	1 490 ICI/32,8	2 710 ICI/32,4	–	5 530 ICI/31,4	–	11 530 ICI/32,7	–	–	–	–	–	–			
			0,63	0,7	1,22	1,52	2,98	5,57		10,9		22,2		44,6					31,5	800	
	31,5	–	235 CI/31,3	260 CI/31,3	475 CI/32,5	590 CI/32,5	1 070 CI/30,1	2 080 CI/31,3	–	4 000 CI/30,8	–	8 160 CI/30,8	–	16 880 CI/31,7	–	–	–	–			
									11,1	19,3	26	36,6	49,4	69,8	99	119	149	183	28	710	
	28	–	–	–	–	–	–	–	4 250 C2I/28,6	7 490 C2I/28,9	10 080 C2I/28,8	14 540 C2I/29,5	20 140 C2I/30,3	28 070 C2I/29,9	40 110 C2I/30,1	45 000 C2I/28	56 000 C2I/28	71 000 C2I/28,8			
									11,2	20,1	23,2	37,1	45,4	71,4	99	127	158	180	25	630	
	25	–	–	–	–	–	–	–	4 160 C2I/24,5	7 650 C2I/25,1	9 130 C2I/26	15 210 C2I/27	18 080 C2I/26,3	29 400 C2I/27,2	39 530 C2I/26,4	48 110 C2I/25,1	60 130 C2I/25,1	71 000 C2I/26			
		0,42	0,69	0,87	1,47	1,7	3,07	6,66		13,5		26,9		53,8					25	630	
	25	155 CI/24,1	260 CI/25	330 CI/25	580 CI/26	670 CI/26	1 120 CI/24,1	2 520 CI/25	–	5 030 CI/24,6	–	10 050 CI/24,6	–	20 700 CI/25,4	–	–	–	–			
									10,5	18,5	25,3	38	48,8	69,5	98,6	115	143	176	22,4	560	
	22,4	–	–	–	–	–	–	–	4 250 C2I/23,8	7 500 C2I/23,8	10 220 C2I/23,7	14 500 C2I/22,4	19 140 C2I/23	28 000 C2I/23,6	40 000 C2I/23,8	45 000 C2I/23	56 000 C2I/23	71 000 C2I/23,7			
280 000	200	–	–	–	–	–	1000 ICI/192	2 340 ICI/199	–	4 490 ICI/196	–	9 180 ICI/196	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 690 C2I/151	5 790 C2I/154	8 250 C2I/158	11 670 C2I/151	16 500 C2I/156	24 030 C2I/156	32 290 C2I/154	41 200 C2I/156	49 530 C2I/156	65 000 C2I/161			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

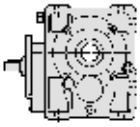


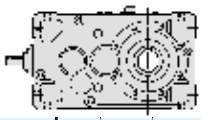


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
280 000	160	–	–	–	–	–	1 240 ICI/154	2 530 ICI/159	2 840 ICI/159	4 870 ICI/157	5 620 ICI/162	10 470 ICI/157	–	–	–	–	–	–			
									9,81	15,7	20,6	31,6	40,2	65,5	74,9	–	–	–	125	2800	**22,4**
	125	–	–	–	–	–	–	–	4 110 C2I/123	6 910 C2I/129	9 110 C2I/130	13 700 C2I/127	17 170 C2I/125	27 490 C2I/123	32 060 C2I/125	47 420 C2I/129	59 270 C2I/129	61 170 C2I/127			
							3,3	6,08	8,4	13,5	16,3	27,3							125	2800	
	125	–	–	–	–	–	1 380 ICI/123	2 640 ICI/127	3 640 ICI/127	5 790 ICI/126	7 220 ICI/130	11 690 ICI/126	–	–	–	–	–	–			
									10,1	15,7	21	31,6	43,5	65,5	79,5	108	135	153	100	2240	
	100	–	–	–	–	–	–	–	4 230 C2I/98,2	6 910 C2I/103	9 310 C2I/104	13 700 C2I/102	18 600 C2I/100	27 490 C2I/98,5	34 020 C2I/100	47 420 C2I/103	59 270 C2I/103	66 360 C2I/102			
			0,58	0,69	1,15	1,35	3,05	6,77	8,65	13,2	18,4	26,1							100	2240	
	100	–	245 ICI/99,4	290 ICI/99,4	505 ICI/103	595 ICI/103	1 300 ICI/100	2 940 ICI/102	3 700 ICI/100	5 930 ICI/106	8 000 ICI/102	11 760 ICI/106	–	–	–	–	–	–			
									10,1	17,4	19,2	34,7	43,4	66,1	79,5	105	132	156	90	2000	
	90	–	–	–	–	–	–	–	4 220 C2I/87,8	7 520 C2I/90,4	8 240 C2I/90	14 570 C2I/87,9	18 690 C2I/90,3	28 090 C2I/89	34 020 C2I/89,7	44 740 C2I/88,8	55 920 C2I/88,8	68 040 C2I/91,4			
									10,2	15,7	21,1	31,7	44,9	65,8	78,6	108	135	155	80	1800	
	80	–	–	–	–	–	–	–	4 260 C2I/78,6	6 910 C2I/82,7	9 310 C2I/83,1	13 700 C2I/81,4	19 090 C2I/80,2	27 490 C2I/78,8	33 480 C2I/80,3	47 410 C2I/82,6	59 260 C2I/82,6	66 960 C2I/81,2			
		0,39	0,63	0,77	1,28	1,48	3,04	6,11	7,06	12,4	13,8	25,5							80	1800	
	80	155 ICI/75,2	265 ICI/79,5	325 ICI/79,5	565 ICI/82,7	650 ICI/82,7	1 240 ICI/76,7	2 530 ICI/78,1	2 920 ICI/78,1	5 140 ICI/78,1	5 880 ICI/80,5	10 580 ICI/78,1	–	–	–	–	–	–			
									9,98	17,4	19,2	34,7	41,3	63,8	81,6	105	132	160	71	1600	
	71	–	–	–	–	–	–	–	4 180 C2I/70,2	7 520 C2I/72,3	8 240 C2I/72	14 570 C2I/70,3	17 810 C2I/72,2	27 130 C2I/71,2	34 940 C2I/71,7	44 740 C2I/71,1	55 920 C2I/71,1	69 880 C2I/73,1			
									10,7	15,5	20,8	31,3	45,4	64,9	82,5	107	133	177	63	1400	
	63	–	–	–	–	–	–	–	4 520 C2I/62	6 910 C2I/65,2	9 310 C2I/65,5	13 710 C2I/64,2	19 570 C2I/63,2	27 500 C2I/62,1	35 640 C2I/63,3	47 430 C2I/65,1	59 290 C2I/65,1	77 470 C2I/64			
		0,38	0,63	0,77	1,28	1,48	3,31	6,18	8,54	13,6	17,1	27,4							63	1400	
	63	155 ICI/60,1	270 ICI/63,6	335 ICI/63,6	580 ICI/66,2	670 ICI/66,2	1 380 ICI/61,3	2 640 ICI/62,5	3 640 ICI/62,5	5 790 ICI/62,5	7 500 ICI/64,4	11 690 ICI/62,5	–	–	–	–	–	–			
									10	17,3	19	34,4	46	65,6	92,7	105	131	169	56	1250	
	56	–	–	–	–	–	–	–	4 250 C2I/55,4	7 520 C2I/57	8 250 C2I/56,8	14 570 C2I/55,5	19 990 C2I/56,9	28 130 C2I/56,1	40 040 C2I/56,6	45 000 C2I/56	56 000 C2I/56	74 330 C2I/57,6			
									10,2	15,5	20,8	29,9	43,3	61,9	78,8	108	135	180	50	1120	
	50	–	–	–	–	–	–	–	4 400 C2I/50,4	6 910 C2I/52,1	9 310 C2I/52,4	13 730 C2I/53,9	19 600 C2I/53,1	27 540 C2I/52,1	35 700 C2I/53,1	47 410 C2I/51,3	59 260 C2I/51,3	77 360 C2I/50,5			
		0,4	0,68	0,8	1,4	1,58	3,1	6,88	8,8	13,7	19,4	27,8							50	1120	
	50	165 ICI/49	295 ICI/50,9	350 ICI/50,9	635 ICI/53	715 ICI/53	1 320 ICI/49,9	2 930 ICI/50	3 700 ICI/49,3	6 150 ICI/52,5	8 400 ICI/50,8	12 440 ICI/52,5	–	–	–	–	–	–			
									9,87	17,3	23,3	32,8	45,3	62,6	88,7	107	133	166	45	1000	
	45	–	–	–	–	–	–	–	4 250 C2I/45,1	7 520 C2I/45,6	10 110 C2I/45,4	14 600 C2I/46,6	20 680 C2I/47,8	28 170 C2I/47,1	40 250 C2I/47,5	45 000 C2I/44,2	56 000 C2I/44,2	72 030 C2I/45,4			
									10,2	18,3	21,1	33,8	44	64,9	88,2	119	149	163	40	900	
	40	–	–	–	–	–	–	–	4 180 C2I/38,7	7 670 C2I/39,5	9 160 C2I/41	15 250 C2I/42,6	19 350 C2I/41,4	29 490 C2I/42,8	38 880 C2I/41,6	49 850 C2I/39,5	62 310 C2I/39,5	71 000 C2I/41			
		0,45	0,74	0,91	1,51	1,75	3,85	7,54	7,62	15,7	18,5	29,5							40	900	
	40	180 ICI/38,6	315 ICI/40,1	385 ICI/40,1	670 ICI/41,8	775 ICI/41,8	1 610 ICI/39,4	3 160 ICI/39,4	3 250 ICI/40,2	6 910 ICI/41,4	8 140 ICI/41,6	12 970 ICI/41,4	–	–	–	–	–	–			
									9,49	16,8	20,3	34,6	41,6	63,3	88,6	104	129	159	35,5	800	
	35,5	–	–	–	–	–	–	–	4 250 C2I/37,5	7 530 C2I/37,5	9 050 C2I/37,3	14 570 C2I/35,3	18 000 C2I/36,2	28 160 C2I/37,2	39 680 C2I/37,5	45 000 C2I/36,3	56 000 C2I/36,3	71 000 C2I/37,3			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

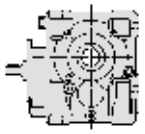


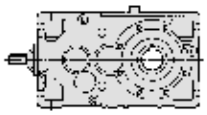


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
280 000									9,87	15,5	20,8	29,9	43,3	61,9	78,7	120	150	162	31,5	710	**22,4**
	31,5	–	–	–	–	–	–	–	4 250 **C2I/32**	6 910 **C2I/33,1**	9 310 **C2I/33,2**	13 730 **C2I/34,2**	19 600 **C2I/33,7**	27 540 **C2I/33,1**	35 700 **C2I/33,7**	50 640 **C2I/31,3**	63 300 **C2I/31,3**	71 000 **C2I/32,5**			
		0,44	0,76	0,87	1,48	1,74	3,39	6,45		13,1		26,3							31,5	710	
	31,5	190 **ICI/32,1**	335 **ICI/33**	385 **ICI/33**	625 **ICI/31,4**	735 **ICI/31,4**	1 500 **ICI/32,8**	2 810 **ICI/32,4**	–	5 530 **ICI/31,4**	–	11 570 **ICI/32,7**	–	–	–	–	–	–			
			0,56	0,62	1,09	1,36	2,65	4,96		9,66		19,8		39,7					31,5	710	
	31,5	–	235 **CI/31,3**	260 **CI/31,3**	475 **CI/32,5**	595 **CI/32,5**	1 070 **CI/30,1**	2 090 **CI/31,3**	–	4 000 **CI/30,8**	–	8 190 **CI/30,8**	–	16 950 **CI/31,7**	–	–	–	–			
									9,81	17,2	23,2	32,6	45	62,2	88,2	106	132	163	28	630	
	28	–	–	–	–	–	–	–	4 250 **C2I/28,6**	7 520 **C2I/28,9**	10 120 **C2I/28,8**	14 600 **C2I/29,5**	20 680 **C2I/30,3**	28 180 **C2I/29,9**	40 260 **C2I/30,1**	45 000 **C2I/28**	56 000 **C2I/28**	71 000 **C2I/28,8**			
									10	18	20,7	33,1	41,8	63,7	89	117	146	160	25	560	
	25	–	–	–	–	–	–	–	4 190 **C2I/24,5**	7 680 **C2I/25,1**	9 170 **C2I/26**	15 260 **C2I/27**	18 730 **C2I/26,3**	29 510 **C2I/27,2**	40 000 **C2I/26,4**	49 840 **C2I/25,1**	62 300 **C2I/25,1**	71 000 **C2I/26**			
		0,38	0,61	0,78	1,31	1,51	2,73	5,94		12,1		24,2		48,3					25	560	
	25	155 **CI/24,1**	260 **CI/25**	330 **CI/25**	580 **CI/26**	670 **CI/26**	1 120 **CI/24,1**	2 530 **CI/25**	–	5 070 **CI/24,6**	–	10 150 **CI/24,6**	–	20 920 **CI/25,4**	–	–	–	–			
250 000																					
	200	–	–	–	–	–	1 030 **ICI/192**	2 350 **ICI/199**	–	4 510 **ICI/196**	–	9 210 **ICI/196**	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	3 710 **C2I/151**	5 810 **C2I/154**	8 430 **C2I/158**	11 710 **C2I/151**	16 890 **C2I/156**	24 120 **C2I/156**	32 410 **C2I/154**	42 260 **C2I/156**	49 720 **C2I/156**	67 000 **C2I/161**			
	160	–	–	–	–	–	1 240 **ICI/154**	2 540 **ICI/159**	2 850 **ICI/159**	4 890 **ICI/157**	5 640 **ICI/162**	10 850 **ICI/157**	–	–	–	–	–	–			
									8,79	14,1	18,4	28,3	36	58,7	69,2	–	–	–	125	2500	**20**
	125	–	–	–	–	–	–	–	4 120 **C2I/123**	6 930 **C2I/129**	9 140 **C2I/130**	13 750 **C2I/127**	17 230 **C2I/125**	27 590 **C2I/123**	33 170 **C2I/125**	47 590 **C2I/129**	59 480 **C2I/129**	63 280 **C2I/127**			
							2,96	5,45	7,53	12,1	14,6	24,4							125	2500	
	125	–	–	–	–	–	1 390 **ICI/123**	2 650 **ICI/127**	3 660 **ICI/127**	5 810 **ICI/126**	7 250 **ICI/130**	11 730 **ICI/126**	–	–	–	–	–	–			
									9,05	14,1	18,8	28,3	39	58,7	73,4	96,5	121	142	100	2000	
	100	–	–	–	–	–	–	–	4 240 **C2I/98,2**	6 930 **C2I/103**	9 340 **C2I/104**	13 750 **C2I/102**	18 670 **C2I/100**	27 590 **C2I/98,5**	35 190 **C2I/100**	47 590 **C2I/103**	59 480 **C2I/103**	68 650 **C2I/102**			
			0,52	0,62	1,03	1,21	2,74	6,07	7,75	11,8	16,4	23,6							100	2000	
	100	–	245 **ICI/99,4**	295 **ICI/99,4**	505 **ICI/103**	595 **ICI/103**	1 310 **ICI/100**	2 950 **ICI/102**	3 710 **ICI/100**	5 950 **ICI/106**	8 000 **ICI/102**	11 920 **ICI/106**	–	–	–	–	–	–			
									9,15	15,7	17,3	31,3	39,5	59,8	72,4	95,2	119	142	90	1800	
	90	–	–	–	–	–	–	–	4 260 **C2I/87,8**	7 540 **C2I/90,4**	8 270 **C2I/90**	14 620 **C2I/87,9**	18 900 **C2I/90,3**	28 210 **C2I/89**	34 450 **C2I/89,7**	44 890 **C2I/88,8**	56 110 **C2I/88,8**	68 900 **C2I/91,4**			
									9,41	14,1	18,8	28,3	41	58,7	70,9	96,5	121	140	80	1600	
	80	–	–	–	–	–	–	–	4 410 **C2I/78,6**	6 930 **C2I/82,7**	9 340 **C2I/83,1**	13 750 **C2I/81,4**	19 630 **C2I/80,2**	27 590 **C2I/78,8**	33 990 **C2I/80,3**	47 590 **C2I/82,6**	59 480 **C2I/82,6**	67 910 **C2I/81,2**			
		0,35	0,56	0,69	1,16	1,34	2,72	5,45	6,36	11,2	12,4	23							80	1600	
	80	155 **ICI/75,2**	270 **ICI/79,5**	330 **ICI/79,5**	570 **ICI/82,7**	660 **ICI/82,7**	1 240 **ICI/76,7**	2 540 **ICI/78,1**	2 970 **ICI/78,1**	5 220 **ICI/78,1**	5 970 **ICI/80,5**	10 730 **ICI/78,1**	–	–	–	–	–	–			
									8,87	15,3	16,9	30,5	37,6	58,1	72,5	92,8	116	142	71	1400	
	71	–	–	–	–	–	–	–	4 250 **C2I/70,2**	7 550 **C2I/72,3**	8 290 **C2I/72**	14 630 **C2I/70,3**	18 530 **C2I/72,2**	28 240 **C2I/71,2**	35 500 **C2I/71,7**	45 000 **C2I/71,1**	56 160 **C2I/71,1**	71 000 **C2I/73,1**			
									9,75	13,9	18,7	28,1	40,7	58,2	74	95,7	120	159	63	1250	
	63	–	–	–	–	–	–	–	4 610 **C2I/62**	6 930 **C2I/65,2**	9 350 **C2I/65,5**	13 760 **C2I/64,2**	19 640 **C2I/63,2**	27 600 **C2I/62,1**	35 770 **C2I/63,3**	47 600 **C2I/65,1**	59 500 **C2I/65,1**	77 740 **C2I/64**			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

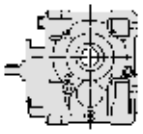


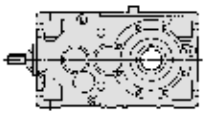


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i																	i_N	n_1 min^{-1}	n_{N2}
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360			
250 000	63	0,34 155 ICI/60,1	0,56 270 ICI/63,6	0,69 335 ICI/63,6	1,15 580 ICI/66,2	1,33 670 ICI/66,2	2,97 1 390 ICI/61,3	5,54 2 650 ICI/62,5	7,66 3 660 ICI/62,5	12,2 5 810 ICI/62,5	15,2 7 500 ICI/64,4	24,6 11 730 ICI/62,5	–	–	–	–	–	–	63	1250	**20**
	56	–	–	–	–	–	–	–	9,14 4 320 C2I/55,4	15,5 7 540 C2I/57	17,1 8 280 C2I/56,8	30,9 14 620 C2I/55,5	41,3 20 060 C2I/56,9	59 28 230 C2I/56,1	83,3 40 180 C2I/56,6	94,2 45 000 C2I/56	117 56 130 C2I/56	156 76 820 C2I/57,6	56	1120	
	50	–	–	–	–	–	–	–	9,45 4 550 C2I/50,4	13,9 6 930 C2I/52,1	18,7 9 350 C2I/52,4	26,8 13 780 C2I/53,9	38,8 19 670 C2I/53,1	55,5 27 640 C2I/52,1	70,6 35 830 C2I/53,1	97,1 47 580 C2I/51,3	121 59 470 C2I/51,3	161 77 700 C2I/50,5	50	1000	
	50	0,36 165 ICI/49	0,61 300 ICI/50,9	0,72 350 ICI/50,9	1,26 635 ICI/53	1,41 715 ICI/53	2,77 1 320 ICI/49,9	6,17 2 940 ICI/50	7,88 3 710 ICI/49,3	12,3 6 150 ICI/52,5	17,4 8 430 ICI/50,8	24,8 12 440 ICI/52,5	–	–	–	–	–	–	50	1000	
	45	–	–	–	–	–	–	–	8,89 4 250 C2I/45,1	15,6 7 540 C2I/45,6	21,1 10 150 C2I/45,4	29,6 14 640 C2I/46,6	40,9 20 750 C2I/47,8	56,5 28 260 C2I/47,1	80,1 40 380 C2I/47,5	96 45 000 C2I/44,2	120 56 100 C2I/44,2	154 74 350 C2I/45,4	45	900	
	40	–	–	–	–	–	–	–	9,12 4 210 C2I/38,7	16,4 7 750 C2I/39,5	18,8 9 200 C2I/41	30,4 15 460 C2I/42,6	40,3 19 920 C2I/41,4	58,5 29 900 C2I/42,8	81,2 40 280 C2I/41,6	108 51 130 C2I/39,5	135 63 910 C2I/39,5	145 71 000 C2I/41	40	800	
	40	0,4 185 ICI/38,6	0,66 315 ICI/40,1	0,81 385 ICI/40,1	1,34 670 ICI/41,8	1,55 775 ICI/41,8	3,43 1 610 ICI/39,4	6,73 3 170 ICI/39,4	7,01 3 360 ICI/40,2	14 6 930 ICI/41,4	16,5 8 170 ICI/41,6	26,4 13 020 ICI/41,4	–	–	–	–	–	–	40	800	
	35,5	–	–	–	–	–	–	–	8,42 4 250 C2I/37,5	15 7 550 C2I/37,5	18,7 9 380 C2I/37,3	30,8 14 630 C2I/35,3	37,7 18 380 C2I/36,2	56,4 28 270 C2I/37,2	78,9 39 820 C2I/37,5	92,2 45 000 C2I/36,3	115 56 170 C2I/36,3	144 72 300 C2I/37,3	35,5	710	
	31,5	–	–	–	–	–	–	–	9,08 4 400 C2I/32	13,8 6 940 C2I/33,1	18,6 9 350 C2I/33,2	26,6 13 780 C2I/34,2	38,6 19 670 C2I/33,7	55,2 27 650 C2I/33,1	70,1 35 830 C2I/33,7	108 51 180 C2I/31,3	135 63 970 C2I/31,3	144 71 000 C2I/32,5	31,5	630	
	31,5	0,39 190 ICI/32,1	0,67 335 ICI/33	0,77 385 ICI/33	1,32 630 ICI/31,4	1,55 740 ICI/31,4	3,02 1 500 ICI/32,8	5,93 2 910 ICI/32,4	–	11,6 5 530 ICI/31,4	–	23,4 11 610 ICI/32,7	–	–	–	–	–	–	31,5	630	
	31,5	–	0,5 235 CI/31,3	0,55 260 CI/31,3	0,97 480 CI/32,5	1,21 595 CI/32,5	2,36 1 080 CI/30,1	4,42 2 090 CI/31,3	–	8,58 4 000 CI/30,8	–	17,6 8 220 CI/30,8	–	35,3 17 000 CI/31,7	–	–	–	–	31,5	630	
	28	–	–	–	–	–	–	–	8,72 4 250 C2I/28,6	15,3 7 550 C2I/28,9	20,7 10 150 C2I/28,8	29,1 14 650 C2I/29,5	40,2 20 760 C2I/30,3	55,5 28 280 C2I/29,9	78,7 40 410 C2I/30,1	94,2 45 000 C2I/28	117 56 000 C2I/28	146 71 580 C2I/28,8	28	560	
224 000	200	–	–	–	–	–	1 030 ICI/192	2 350 ICI/199	–	4 530 ICI/196	–	9 250 ICI/196	–	–	–	–	–	–			
	160	–	–	–	–	–	–	–	7,24 3 720 C2I/151	11,1 5 830 C2I/154	15,7 8 460 C2I/158	22,8 11 760 C2I/151	31,8 16 950 C2I/156	45,4 24 210 C2I/156	62 32 540 C2I/154	– 42 420 C2I/156	– 49 900 C2I/156	– 67 000 C2I/161	160	2800	**18**
	160	–	–	–	–	–	2,38 1 250 ICI/154	4,71 2 550 ICI/159	5,27 2 860 ICI/159	9,16 4 910 ICI/157	10,3 5 660 ICI/162	20,9 11 180 ICI/157	–	–	–	–	–	–	160	2800	
	125	–	–	–	–	–	–	–	7,9 4 140 C2I/123	12,6 6 960 C2I/129	16,6 9 170 C2I/130	25,5 13 800 C2I/127	32,4 17 290 C2I/125	52,8 27 690 C2I/123	64,1 34 280 C2I/125	86,8 47 750 C2I/129	108 59 690 C2I/129	121 65 400 C2I/127	125	2240	
	125	–	–	–	–	–	2,66 1 390 ICI/123	4,9 2 660 ICI/127	6,77 3 670 ICI/127	10,9 5 830 ICI/126	13,2 7 270 ICI/130	22 11 770 ICI/126	–	–	–	–	–	–	125	2240	
	100	–	–	–	–	–	–	–	8,17 4 260 C2I/98,2	12,7 6 960 C2I/103	17 9 370 C2I/104	25,6 13 800 C2I/102	35,2 18 730 C2I/100	53 27 680 C2I/98,5	67,4 35 880 C2I/100	87,2 47 740 C2I/103	109 59 680 C2I/103	132 70 860 C2I/102	100	1800	

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

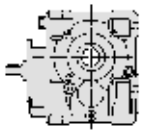


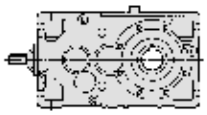


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / i 50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360	i_N	n_1 min^{-1}	n_{N2}
224 000	100	–	0,47 245 ICI/99,4	0,56 295 ICI/99,4	0,93 510 ICI/103	1,09 600 ICI/103	2,47 1 310 ICI/100	5,48 2 960 ICI/102	7 3 720 ICI/100	10,7 5 970 ICI/106	15,2 8 250 ICI/102	21,5 12 070 ICI/106	–	–	–	–	–	–	100	1800	**18**
	90	–	–	–	–	–	–	–	8,17 4 280 C2I/87,8	14,1 7 610 C2I/90,4	15,5 8 300 C2I/90	28 14 720 C2I/87,9	35,2 18 970 C2I/90,3	53,5 28 400 C2I/89	65,3 34 940 C2I/89,7	85,5 45 360 C2I/88,8	107 56 700 C2I/88,8	128 69 880 C2I/91,4	90	1600	
	80	–	–	–	–	–	–	–	8,57 4 590 C2I/78,6	12,3 6 960 C2I/82,7	16,6 9 380 C2I/83,1	24,9 13 810 C2I/81,4	36 19 710 C2I/80,2	51,6 27 710 C2I/78,8	64,6 35 380 C2I/80,3	84,8 47 790 C2I/82,6	106 59 730 C2I/82,6	125 69 000 C2I/81,2	80	1400	
	80	0,3 155 ICI/75,2	0,5 270 ICI/79,5	0,62 335 ICI/79,5	1,03 580 ICI/82,7	1,19 670 ICI/82,7	2,39 1 250 ICI/76,7	4,79 2 550 ICI/78,1	5,63 3 000 ICI/78,1	9,94 5 300 ICI/78,1	10,9 6 000 ICI/80,5	20,8 11 060 ICI/78,1	–	–	–	–	–	–	80	1400	
	71	–	–	–	–	–	–	–	7,92 4 250 C2I/70,2	13,8 7 630 C2I/72,3	15,2 8 340 C2I/72	27,5 14 770 C2I/70,3	34,8 19 180 C2I/72,2	52,4 28 510 C2I/71,2	64,8 35 500 C2I/71,7	83,8 45 520 C2I/71,1	105 56 900 C2I/71,1	127 71 000 C2I/73,1	71	1250	
	63	–	–	–	–	–	–	–	8,77 4 630 C2I/62	12,5 6 960 C2I/65,2	16,8 9 380 C2I/65,5	25,2 13 800 C2I/64,2	36,6 19 700 C2I/63,2	52,3 27 690 C2I/62,1	66,5 35 890 C2I/63,3	86 47 760 C2I/65,1	108 59 710 C2I/65,1	143 78 010 C2I/64	63	1120	
	63	0,3 155 ICI/60,1	0,5 270 ICI/63,6	0,62 335 ICI/63,6	1,03 580 ICI/66,2	1,19 670 ICI/66,2	2,67 1 390 ICI/61,3	4,98 2 660 ICI/62,5	6,88 3 670 ICI/62,5	10,9 5 830 ICI/62,5	13,7 7 500 ICI/64,4	22,1 11 770 ICI/62,5	–	–	–	–	–	–	63	1120	
	56	–	–	–	–	–	–	–	8,41 4 450 C2I/55,4	14 7 620 C2I/57	15,4 8 330 C2I/56,8	27,8 14 740 C2I/55,5	37 20 130 C2I/56,9	53,1 28 440 C2I/56,1	74,6 40 320 C2I/56,6	84,9 45 420 C2I/56	106 56 780 C2I/56	144 79 480 C2I/57,6	56	1000	
	50	–	–	–	–	–	–	–	8,65 4 630 C2I/50,4	12,6 6 960 C2I/52,1	16,9 9 380 C2I/52,4	24,2 13 820 C2I/53,9	35 19 730 C2I/53,1	50,1 27 730 C2I/52,1	63,7 35 940 C2I/53,1	87,7 47 730 C2I/51,3	110 59 670 C2I/51,3	146 77 960 C2I/50,5	50	900	
	50	0,32 170 ICI/49	0,55 300 ICI/50,9	0,65 350 ICI/50,9	1,13 640 ICI/53	1,27 715 ICI/53	2,49 1 320 ICI/49,9	5,57 2 950 ICI/50	7,12 3 720 ICI/49,3	11 6 150 ICI/52,5	15,7 8 460 ICI/50,8	22,3 12 440 ICI/52,5	–	–	–	–	–	–	50	900	
	45	–	–	–	–	–	–	–	8,08 4 350 C2I/45,1	14 7 620 C2I/45,6	18,8 10 190 C2I/45,4	26,7 14 850 C2I/46,6	36,9 21 030 C2I/47,8	50,9 28 650 C2I/47,1	72,2 40 940 C2I/47,5	86 45 320 C2I/44,2	107 56 650 C2I/44,2	142 77 020 C2I/45,4	45	800	
	40	–	–	–	–	–	–	–	8,15 4 240 C2I/38,7	14,6 7 750 C2I/39,5	16,7 9 230 C2I/41	27,1 15 500 C2I/42,6	35,9 19 990 C2I/41,4	52,8 30 440 C2I/42,8	72,4 40 450 C2I/41,6	97,9 52 060 C2I/39,5	122 65 070 C2I/39,5	131 72 070 C2I/41	40	710	
	40	0,35 185 ICI/38,6	0,58 315 ICI/40,1	0,72 385 ICI/40,1	1,19 670 ICI/41,8	1,38 775 ICI/41,8	3,06 1 620 ICI/39,4	6 3 180 ICI/39,4	6,45 3 480 ICI/40,2	12,5 6 960 ICI/41,4	14,7 8 210 ICI/41,6	23,5 13 070 ICI/41,4	–	–	–	–	–	–	40	710	
	35,5	–	–	–	–	–	–	–	7,49 4 260 C2I/37,5	13,5 7 670 C2I/37,5	17,2 9 730 C2I/37,3	27,6 14 760 C2I/35,3	34,7 19 050 C2I/36,2	50,8 28 670 C2I/37,2	70,3 39 970 C2I/37,5	83 45 610 C2I/36,3	104 57 010 C2I/36,3	133 74 940 C2I/37,3	35,5	630	
	31,5	–	–	–	–	–	–	–	8,36 4 560 C2I/32	12,3 6 960 C2I/33,1	16,6 9 380 C2I/33,2	23,7 13 830 C2I/34,2	34,4 19 740 C2I/33,7	49,2 27 750 C2I/33,1	62,6 35 970 C2I/33,7	97,5 52 100 C2I/31,3	122 65 120 C2I/31,3	129 71 610 C2I/32,5	31,5	560	
	31,5	0,35 195 ICI/32,1	0,6 335 ICI/33	0,69 385 ICI/33	1,17 630 ICI/31,4	1,38 740 ICI/31,4	2,68 1 500 ICI/32,8	5,46 3 010 ICI/32,4	–	10,3 5 530 ICI/31,4	–	20,9 11 660 ICI/32,7	–	–	–	–	–	–	31,5	560	
	31,5	–	0,44 235 CI/31,3	0,49 265 CI/31,3	0,87 480 CI/32,5	1,08 600 CI/32,5	2,11 1 080 CI/30,1	3,94 2 100 CI/31,3	–	7,62 4 000 CI/30,8	–	15,7 8 250 CI/30,8	–	31,4 17 000 CI/31,7	–	–	–	–	31,5	560	
200 000	200	–	–	–	–	–	1 060 ICI/192	2 360 ICI/199	–	4 550 ICI/196	–	9 280 ICI/196	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

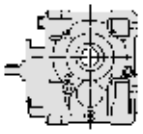


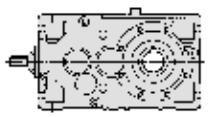


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																		i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
200 000	160	–	–	–	–	–	–	–	6,49 3 730 **C2I/151**	9,95 5 850 **C2I/154**	14 8 490 **C2I/158**	20,4 11 800 **C2I/151**	28,5 17 010 **C2I/156**	40,7 24 300 **C2I/156**	55,6 32 650 **C2I/154**	– 42 570 **C2I/156**	– 50 080 **C2I/156**	– 69 000 **C2I/161**	160	2500	**16**
	160	–	–	–	–	–	2,13 1 250 **ICI/154**	4,22 2 560 **ICI/159**	4,72 2 870 **ICI/159**	8,21 4 930 **ICI/157**	9,19 5 680 **ICI/162**	18,7 11 220 **ICI/157**	–	–	–	–	–	–	160	2500	
	125	–	–	–	–	–	–	–	7,08 4 150 **C2I/123**	11,4 7 020 **C2I/129**	14,9 9 210 **C2I/130**	22,9 13 890 **C2I/127**	29 17 350 **C2I/125**	47,4 27 870 **C2I/123**	59,2 35 460 **C2I/125**	78,3 48 240 **C2I/129**	97,9 60 310 **C2I/129**	112 67 660 **C2I/127**	125	2000	
	125	–	–	–	–	–	2,38 1 400 **ICI/123**	4,39 2 670 **ICI/127**	6,07 3 680 **ICI/127**	9,75 5 850 **ICI/126**	11,8 7 300 **ICI/130**	19,7 11 810 **ICI/126**	–	–	–	–	–	–	125	2000	
	100	–	–	–	–	–	–	–	7,29 4 270 **C2I/98,2**	11,4 7 020 **C2I/103**	15,3 9 450 **C2I/104**	22,9 13 890 **C2I/102**	31,4 18 800 **C2I/100**	47,4 27 870 **C2I/98,5**	60,3 36 120 **C2I/100**	78,3 48 240 **C2I/103**	97,9 60 310 **C2I/103**	121 73 410 **C2I/102**	100	1600	
	100	–	0,42 250 **ICI/99,4**	0,5 295 **ICI/99,4**	0,83 510 **ICI/103**	0,97 600 **ICI/103**	2,2 1 320 **ICI/100**	4,89 2 970 **ICI/102**	6,25 3 740 **ICI/100**	9,61 6 050 **ICI/106**	13,9 8 500 **ICI/102**	19,4 12 240 **ICI/106**	–	–	–	–	–	–	100	1600	
	90	–	–	–	–	–	–	–	7,17 4 300 **C2I/87,8**	12,6 7 750 **C2I/90,4**	13,7 8 380 **C2I/90**	25 15 020 **C2I/87,9**	30,9 19 050 **C2I/90,3**	47,7 28 980 **C2I/89**	58 35 500 **C2I/89,7**	76,4 46 280 **C2I/88,8**	95,5 57 850 **C2I/88,8**	114 71 000 **C2I/91,4**	90	1400	
	80	–	–	–	–	–	–	–	7,77 4 660 **C2I/78,6**	11,1 7 040 **C2I/82,7**	14,9 9 490 **C2I/83,1**	22,4 13 940 **C2I/81,4**	32,5 19 900 **C2I/80,2**	46,5 27 970 **C2I/78,8**	59,1 36 250 **C2I/80,3**	76,7 48 420 **C2I/82,6**	95,9 60 520 **C2I/82,6**	115 71 170 **C2I/81,2**	80	1250	
	80	0,27 155 **ICI/75,2**	0,45 270 **ICI/79,5**	0,55 335 **ICI/79,5**	0,92 580 **ICI/82,7**	1,06 670 **ICI/82,7**	2,14 1 250 **ICI/76,7**	4,29 2 560 **ICI/78,1**	5,03 3 000 **ICI/78,1**	8,88 5 300 **ICI/78,1**	9,76 6 000 **ICI/80,5**	18,8 11 220 **ICI/78,1**	–	–	–	–	–	–	80	1250	
	71	–	–	–	–	–	–	–	7,33 4 390 **C2I/70,2**	12,6 7 750 **C2I/72,3**	13,7 8 380 **C2I/72**	25 15 020 **C2I/70,3**	32,2 19 820 **C2I/72,2**	47,7 28 980 **C2I/71,2**	58 35 500 **C2I/71,7**	76,4 46 280 **C2I/71,1**	95,5 57 850 **C2I/71,1**	114 71 000 **C2I/73,1**	71	1120	
	63	–	–	–	–	–	–	–	7,87 4 650 **C2I/62**	11,3 7 030 **C2I/65,2**	15,1 9 470 **C2I/65,5**	22,7 13 910 **C2I/64,2**	32,9 19 860 **C2I/63,2**	47,1 27 910 **C2I/62,1**	59,8 36 170 **C2I/63,3**	77,7 48 310 **C2I/65,1**	97,1 60 390 **C2I/65,1**	129 78 900 **C2I/64**	63	1000	
	63	0,27 155 **ICI/60,1**	0,45 270 **ICI/63,6**	0,55 335 **ICI/63,6**	0,92 580 **ICI/66,2**	1,06 670 **ICI/66,2**	2,39 1 400 **ICI/61,3**	4,46 2 660 **ICI/62,5**	6,17 3 680 **ICI/62,5**	9,81 5 850 **ICI/62,5**	12,2 7 500 **ICI/64,4**	19,8 11 810 **ICI/62,5**	–	–	–	–	–	–	63	1000	
	56	–	–	–	–	–	–	–	7,59 4 460 **C2I/55,4**	12,8 7 740 **C2I/57**	13,9 8 370 **C2I/56,8**	25,4 14 970 **C2I/55,5**	33,4 20 200 **C2I/56,9**	48,5 28 900 **C2I/56,1**	67,4 40 460 **C2I/56,6**	77,6 46 150 **C2I/56**	97 57 690 **C2I/56**	134 82 030 **C2I/57,6**	56	900	
	50	–	–	–	–	–	–	–	7,75 4 670 **C2I/50,4**	11,3 7 030 **C2I/52,1**	15,1 9 470 **C2I/52,4**	21,8 14 010 **C2I/53,9**	31,6 20 000 **C2I/53,1**	45,2 28 110 **C2I/52,1**	57,4 36 440 **C2I/53,1**	78,7 48 200 **C2I/51,3**	98,4 60 250 **C2I/51,3**	131 78 720 **C2I/50,5**	50	800	
	50	0,29 170 **ICI/49**	0,49 300 **ICI/50,9**	0,58 350 **ICI/50,9**	1,01 640 **ICI/53**	1,13 715 **ICI/53**	2,21 1 320 **ICI/49,9**	4,97 2 970 **ICI/50**	6,35 3 740 **ICI/49,3**	9,82 6 150 **ICI/52,5**	14 8 490 **ICI/50,8**	19,9 12 440 **ICI/52,5**	–	–	–	–	–	–	50	800	
	45	–	–	–	–	–	–	–	7,44 4 510 **C2I/45,1**	12,6 7 750 **C2I/45,6**	16,7 10 220 **C2I/45,4**	24,1 15 120 **C2I/46,6**	33,3 21 410 **C2I/47,8**	46 29 170 **C2I/47,1**	65,3 41 680 **C2I/47,5**	77,7 46 140 **C2I/44,2**	97,1 57 680 **C2I/44,2**	131 79 830 **C2I/45,4**	45	710	
	40	–	–	–	–	–	–	–	7,25 4 250 **C2I/38,7**	12,9 7 750 **C2I/39,5**	14,9 9 250 **C2I/41**	24 15 500 **C2I/42,6**	31,9 20 000 **C2I/41,4**	47,7 31 000 **C2I/42,8**	64,5 40 600 **C2I/41,6**	88,5 53 010 **C2I/39,5**	111 66 260 **C2I/39,5**	120 74 700 **C2I/41**	40	630	
	40	0,32 185 **ICI/38,6**	0,52 315 **ICI/40,1**	0,64 385 **ICI/40,1**	1,06 670 **ICI/41,8**	1,22 775 **ICI/41,8**	2,74 1 640 **ICI/39,4**	5,37 3 210 **ICI/39,4**	5,93 3 610 **ICI/40,2**	11,2 7 030 **ICI/41,4**	13,1 8 240 **ICI/41,6**	20,9 13 120 **ICI/41,4**	–	–	–	–	–	–	40	630	

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

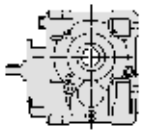


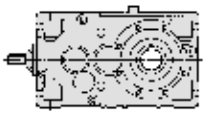


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
200 000									6,9	12,1	15,8	25	31,9	45,9	62,5	75,1	93,8	122	35,5	560	**16**
	35,5	–	–	–	–	–	–	–	4 420 **C2I/37,5**	7 750 **C2I/37,5**	10 070 **C2I/37,3**	15 030 **C2I/35,3**	19 730 **C2I/36,2**	29 180 **C2I/37,2**	40 000 **C2I/37,5**	46 430 **C2I/36,3**	58 030 **C2I/36,3**	77 500 **C2I/37,3**			
180 000							1,62	3,5		6,81		13,9							200	2800	**14**
	200	–	–	–	–	–	1 060 **ICI/192**	2 370 **ICI/199**	–	4 560 **ICI/196**	–	9 310 **ICI/196**	–	–	–	–	–	–			
									5,83	8,95	12,6	18,3	25,7	36,6	50	64,1	75,5	101	160	2240	
	160	–	–	–	–	–	–	–	3 750 **C2I/151**	5 870 **C2I/154**	8 520 **C2I/158**	11 840 **C2I/151**	17 070 **C2I/156**	24 380 **C2I/156**	32 760 **C2I/154**	42 720 **C2I/156**	50 260 **C2I/156**	69 000 **C2I/161**			
							1,92	3,79	4,25	7,42	8,31	16,8							160	2240	
	160	–	–	–	–	–	1 260 **ICI/154**	2 570 **ICI/159**	2 880 **ICI/159**	4 970 **ICI/157**	5 730 **ICI/162**	11 260 **ICI/157**	–	–	–	–	–	–			
									6,4	10,4	13,4	20,9	26,2	43,4	53,5	71,6	89,5	104	125	1800	
	125	–	–	–	–	–	–	–	4 170 **C2I/123**	7 130 **C2I/129**	9 240 **C2I/130**	14 110 **C2I/127**	17 410 **C2I/125**	28 320 **C2I/123**	35 600 **C2I/125**	49 020 **C2I/129**	61 270 **C2I/129**	69 830 **C2I/127**			
							2,15	3,97	5,48	8,8	10,7	17,8							125	1800	
	125	–	–	–	–	–	1 400 **ICI/123**	2 680 **ICI/127**	3 700 **ICI/127**	5 870 **ICI/126**	7 320 **ICI/130**	11 850 **ICI/126**	–	–	–	–	–	–			
									6,41	10,2	13,6	20,4	27,6	42,3	53,8	69,9	87,4	110	100	1400	
	100	–	–	–	–	–	–	–	4 290 **C2I/98,2**	7 160 **C2I/103**	9 620 **C2I/104**	14 170 **C2I/102**	18 880 **C2I/100**	28 440 **C2I/98,5**	36 860 **C2I/100**	49 230 **C2I/103**	61 540 **C2I/103**	76 410 **C2I/102**			
			0,37	0,44	0,73	0,85	1,94	4,29	5,49	8,54	12,2	17,3							100	1400	
	100	–	250 **ICI/99,4**	295 **ICI/99,4**	515 **ICI/103**	600 **ICI/103**	1 330 **ICI/100**	2 980 **ICI/102**	3 750 **ICI/100**	6 150 **ICI/106**	8 530 **ICI/102**	12 440 **ICI/106**	–	–	–	–	–	–			
									6,43	11,2	12,3	22,7	27,7	43,4	52,9	69,4	86,7	102	90	1250	
	90	–	–	–	–	–	–	–	4 310 **C2I/87,8**	7 750 **C2I/90,4**	8 430 **C2I/90**	15 280 **C2I/87,9**	19 110 **C2I/90,3**	29 490 **C2I/89**	36 210 **C2I/89,7**	47 080 **C2I/88,8**	58 850 **C2I/88,8**	71 150 **C2I/91,4**			
									7,08	10,2	13,6	20,4	29,6	42,3	53,8	69,9	87,4	106	80	1120	
	80	–	–	–	–	–	–	–	4 740 **C2I/78,6**	7 160 **C2I/82,7**	9 620 **C2I/83,1**	14 170 **C2I/81,4**	20 230 **C2I/80,2**	28 440 **C2I/78,8**	36 860 **C2I/80,3**	49 230 **C2I/82,6**	61 540 **C2I/82,6**	73 560 **C2I/81,2**			
		0,24	0,4	0,49	0,82	0,95	1,92	3,86	4,5	7,96	8,74	16,9							80	1120	
	80	155 **ICI/75,2**	270 **ICI/79,5**	335 **ICI/79,5**	580 **ICI/82,7**	670 **ICI/82,7**	1 260 **ICI/76,7**	2 570 **ICI/78,1**	3 000 **ICI/78,1**	5 300 **ICI/78,1**	6 000 **ICI/80,5**	11 260 **ICI/78,1**	–	–	–	–	–	–			
									6,68	11,2	12,3	22,7	29,4	43,4	51,8	69,4	86,7	102	71	1000	
	71	–	–	–	–	–	–	–	4 480 **C2I/70,2**	7 750 **C2I/72,3**	8 430 **C2I/72**	15 280 **C2I/70,3**	20 280 **C2I/72,2**	29 490 **C2I/71,2**	35 500 **C2I/71,7**	47 080 **C2I/71,1**	58 850 **C2I/71,1**	71 000 **C2I/73,1**			
									7,19	10,3	13,8	20,8	30,1	43	54,7	71	88,8	118	63	900	
	63	–	–	–	–	–	–	–	4 730 **C2I/62**	7 140 **C2I/65,2**	9 610 **C2I/65,5**	14 130 **C2I/64,2**	20 180 **C2I/63,2**	28 360 **C2I/62,1**	36 750 **C2I/63,3**	49 090 **C2I/65,1**	61 360 **C2I/65,1**	80 170 **C2I/64**			
		0,25	0,4	0,5	0,83	0,95	2,16	4,03	5,57	8,85	11	17,9							63	900	
	63	155 **ICI/60,1**	270 **ICI/63,6**	335 **ICI/63,6**	580 **ICI/66,2**	670 **ICI/66,2**	1 400 **ICI/61,3**	2 670 **ICI/62,5**	3 690 **ICI/62,5**	5 870 **ICI/62,5**	7 500 **ICI/64,4**	11 850 **ICI/62,5**	–	–	–	–	–	–			
									6,78	11,4	12,4	23	29,8	43,9	60,1	70,2	87,8	120	56	800	
	56	–	–	–	–	–	–	–	4 480 **C2I/55,4**	7 750 **C2I/57**	8 430 **C2I/56,8**	15 240 **C2I/55,5**	20 270 **C2I/56,9**	29 420 **C2I/56,1**	40 610 **C2I/56,6**	46 980 **C2I/56**	58 730 **C2I/56**	82 710 **C2I/57,6**			
									7	10,2	13,7	19,7	28,5	40,8	51,9	71,1	88,9	118	50	710	
	50	–	–	–	–	–	–	–	4 750 **C2I/50,4**	7 150 **C2I/52,1**	9 640 **C2I/52,4**	14 270 **C2I/53,9**	20 370 **C2I/53,1**	28 620 **C2I/52,1**	37 100 **C2I/53,1**	49 080 **C2I/51,3**	61 350 **C2I/51,3**	80 160 **C2I/50,5**			
		0,26	0,44	0,52	0,9	1,01	1,97	4,43	5,66	8,71	12,5	17,6							50	710	
	50	170 **ICI/49**	300 **ICI/50,9**	355 **ICI/50,9**	640 **ICI/53**	720 **ICI/53**	1 320 **ICI/49,9**	2 980 **ICI/50**	3 750 **ICI/49,3**	6 150 **ICI/52,5**	8 530 **ICI/50,8**	12 440 **ICI/52,5**	–	–	–	–	–	–			
									6,84	11,2	14,9	21,8	30,1	41,6	59	70,2	87,7	120	45	630	
	45	–	–	–	–	–	–	–	4 670 **C2I/45,1**	7 750 **C2I/45,6**	10 260 **C2I/45,4**	15 390 **C2I/46,6**	21 800 **C2I/47,8**	29 710 **C2I/47,1**	42 440 **C2I/47,5**	46 980 **C2I/44,2**	58 730 **C2I/44,2**	82 740 **C2I/45,4**			

For n_1 lower than 560 min^{-1} see page 195.

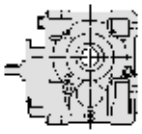
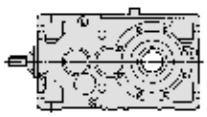
9 - Bevel helical gear reducer selection tables





$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / *i*																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
180 000	40	–	–	–	–	–	–	–	6,45 4 250 **C2I/38,7**	11,5 7 750 **C2I/39,5**	13,2 9 250 **C2I/41**	21,3 15 500 **C2I/42,6**	28,3 20 000 **C2I/41,4**	43,1 31 500 **C2I/42,8**	57,5 40 750 **C2I/41,6**	80 53 960 **C2I/39,5**	100 67 450 **C2I/39,5**	111 77 380 **C2I/41**	40	560	**14**
	40	0,29 190 **ICI/38,6**	0,46 315 **ICI/40,1**	0,57 390 **ICI/40,1**	0,94 670 **ICI/41,8**	1,1 785 **ICI/41,8**	2,48 1 670 **ICI/39,4**	4,86 3 270 **ICI/39,4**	5,46 3 740 **ICI/40,2**	10,1 7 160 **ICI/41,4**	11,6 8 250 **ICI/41,6**	18,7 13 170 **ICI/41,4**	–	–	–	–	–	–	40	560	
160 000	200	–	–	–	–	–	1,49 1 090 **ICI/192**	3,14 2 380 **ICI/199**	–	6,1 4 580 **ICI/196**	–	12,5 9 350 **ICI/196**	–	–	–	–	–	–	200	2500	**12,5**
	160	–	–	–	–	–	–	–	5,23 3 760 **C2I/151**	8,06 5 920 **C2I/154**	11,4 8 600 **C2I/158**	16,5 11 920 **C2I/151**	23,1 17 180 **C2I/156**	32,9 24 550 **C2I/156**	44,9 32 980 **C2I/154**	57,9 43 160 **C2I/156**	68,1 50 770 **C2I/156**	92,4 71 000 **C2I/161**	160	2000	
	160	–	–	–	–	–	1,72 1 260 **ICI/154**	3,4 2 580 **ICI/159**	3,81 2 890 **ICI/159**	6,72 5 040 **ICI/157**	7,52 5 810 **ICI/162**	15,1 11 300 **ICI/157**	–	–	–	–	–	–	160	2000	
	125	–	–	–	–	–	–	–	5,71 4 180 **C2I/123**	9,41 7 260 **C2I/129**	12 9 270 **C2I/130**	18,9 14 370 **C2I/127**	23,4 17 480 **C2I/125**	39,2 28 830 **C2I/123**	47,7 35 730 **C2I/125**	64,8 49 900 **C2I/129**	81 62 380 **C2I/129**	95,5 72 350 **C2I/127**	125	1600	
	125	–	–	–	–	–	1,93 1 420 **ICI/123**	3,56 2 700 **ICI/127**	4,89 3 710 **ICI/127**	7,91 5 940 **ICI/126**	9,55 7 380 **ICI/130**	16 11 990 **ICI/126**	–	–	–	–	–	–	125	1600	
	100	–	–	–	–	–	–	–	5,74 4 310 **C2I/98,2**	9,22 7 280 **C2I/103**	12,2 9 650 **C2I/104**	18,6 14 420 **C2I/102**	24,7 18 950 **C2I/100**	38,5 28 930 **C2I/98,5**	48,9 37 500 **C2I/100**	63,5 50 080 **C2I/103**	79,4 62 600 **C2I/103**	101 78 640 **C2I/102**	100	1250	
	100	–	0,33 250 **ICI/99,4**	0,39 300 **ICI/99,4**	0,65 515 **ICI/103**	0,77 605 **ICI/103**	1,74 1 330 **ICI/100**	3,85 2 990 **ICI/102**	4,96 3 800 **ICI/100**	7,63 6 150 **ICI/106**	11,1 8 630 **ICI/102**	15,4 12 440 **ICI/106**	–	–	–	–	–	–	100	1250	
	90	–	–	–	–	–	–	–	5,78 4 330 **C2I/87,8**	10,1 7 750 **C2I/90,4**	11 8 480 **C2I/90**	20,7 15 500 **C2I/87,9**	24,9 19 180 **C2I/90,3**	39,5 29 980 **C2I/89**	48,9 37 420 **C2I/89,7**	63,2 47 870 **C2I/88,8**	79 59 840 **C2I/88,8**	94,4 73 530 **C2I/91,4**	90	1120	
	80	–	–	–	–	–	–	–	6,43 4 820 **C2I/78,6**	9,22 7 280 **C2I/82,7**	12,2 9 650 **C2I/83,1**	18,6 14 420 **C2I/81,4**	26,9 20 580 **C2I/80,2**	38,5 28 930 **C2I/78,8**	48,9 37 500 **C2I/80,3**	63,5 50 080 **C2I/82,6**	79,4 62 600 **C2I/82,6**	98,1 76 100 **C2I/81,2**	80	1000	
	80	0,22 160 **ICI/75,2**	0,36 270 **ICI/79,5**	0,44 335 **ICI/79,5**	0,73 580 **ICI/82,7**	0,85 670 **ICI/82,7**	1,72 1 260 **ICI/76,7**	3,46 2 580 **ICI/78,1**	4,02 3 000 **ICI/78,1**	7,1 5 300 **ICI/78,1**	7,81 6 000 **ICI/80,5**	15,1 11 300 **ICI/78,1**	–	–	–	–	–	–	80	1000	
	71	–	–	–	–	–	–	–	6,03 4 490 **C2I/70,2**	10,1 7 750 **C2I/72,3**	11,1 8 480 **C2I/72**	20,8 15 500 **C2I/70,3**	26,6 20 350 **C2I/72,2**	39,7 29 960 **C2I/71,2**	47,4 36 090 **C2I/71,7**	63,4 47 840 **C2I/71,1**	79,3 59 800 **C2I/71,1**	91,5 71 000 **C2I/73,1**	71	900	
	63	–	–	–	–	–	–	–	6,51 4 810 **C2I/62**	9,34 7 270 **C2I/65,2**	12,3 9 650 **C2I/65,5**	18,8 14 390 **C2I/64,2**	27,2 20 540 **C2I/63,2**	38,9 28 870 **C2I/62,1**	49,5 37 410 **C2I/63,3**	64,3 49 970 **C2I/65,1**	80,4 62 460 **C2I/65,1**	107 81 610 **C2I/64**	63	800	
	63	0,22 160 **ICI/60,1**	0,36 270 **ICI/63,6**	0,44 335 **ICI/63,6**	0,73 580 **ICI/66,2**	0,85 670 **ICI/66,2**	1,94 1 420 **ICI/61,3**	3,61 2 700 **ICI/62,5**	4,97 3 710 **ICI/62,5**	7,95 5 930 **ICI/62,5**	9,76 7 500 **ICI/64,4**	16,1 11 980 **ICI/62,5**	–	–	–	–	–	–	63	800	
	56	–	–	–	–	–	–	–	6,04 4 490 **C2I/55,4**	10,1 7 750 **C2I/57**	11,1 8 480 **C2I/56,8**	20,8 15 500 **C2I/55,5**	26,6 20 350 **C2I/56,9**	39,7 29 960 **C2I/56,1**	53,6 40 760 **C2I/56,6**	63,5 47 840 **C2I/56**	79,3 59 800 **C2I/56**	107 83 030 **C2I/57,6**	56	710	
	50	–	–	–	–	–	–	–	6,33 4 840 **C2I/50,4**	9,22 7 280 **C2I/52,1**	12,4 9 820 **C2I/52,4**	17,8 14 530 **C2I/53,9**	25,8 20 740 **C2I/53,1**	36,9 29 150 **C2I/52,1**	46,9 37 780 **C2I/53,1**	64,3 49 970 **C2I/51,3**	80,3 62 470 **C2I/51,3**	107 81 620 **C2I/50,5**	50	630	
	50	0,23 170 **ICI/49**	0,39 300 **ICI/50,9**	0,46 355 **ICI/50,9**	0,8 645 **ICI/53**	0,9 720 **ICI/53**	1,74 1 320 **ICI/49,9**	3,94 2 990 **ICI/50**	5,06 3 780 **ICI/49,3**	7,73 6 150 **ICI/52,5**	11,2 8 620 **ICI/50,8**	15,6 12 440 **ICI/52,5**	–	–	–	–	–	–	50	630	

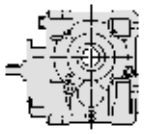
For n_1 lower than 560 min^{-1} see page 195.

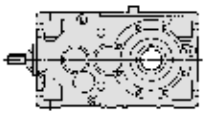



$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
160 000									6,3	9,96	13,3	19,5	26,7	37,6	53,3	63,5	79,4	111	45	560	**12,5**
	45	–	–	–	–	–	–	–	4 840 **C2I/45,1**	7 750 **C2I/45,6**	10 300 **C2I/45,4**	15 500 **C2I/46,6**	21 800 **C2I/47,8**	30 240 **C2I/47,1**	43 200 **C2I/47,5**	47 830 **C2I/44,2**	59 790 **C2I/44,2**	85 720 **C2I/45,4**			
140 000							1,34	2,82		5,49		11,2							200	2240	**11,2**
	200	–	–	–	–	–	1 100 **ICI/192**	2 390 **ICI/199**	–	4 590 **ICI/196**	–	9 380 **ICI/196**	–	–	–	–	–	–			
									4,78	7,37	10,4	15,1	21,1	30,1	41,1	52,9	62,2	83,2	160	1800	
	160	–	–	–	–	–	–	–	3 820 **C2I/151**	6 010 **C2I/154**	8 730 **C2I/158**	12 110 **C2I/151**	17 460 **C2I/156**	24 940 **C2I/156**	33 510 **C2I/154**	43 850 **C2I/156**	51 590 **C2I/156**	71 000 **C2I/161**			
							1,55	3,07	3,47	6,12	6,85	13,6							160	1800	
	160	–	–	–	–	–	1 270 **ICI/154**	2 590 **ICI/159**	2 920 **ICI/159**	5 100 **ICI/157**	5 880 **ICI/162**	11 340 **ICI/157**	–	–	–	–	–	–			
									5,01	8,4	10,5	16,9	20,5	35	41,9	57,8	72,3	84,1	125	1400	
	125	–	–	–	–	–	–	–	4 200 **C2I/123**	7 400 **C2I/129**	9 310 **C2I/130**	14 660 **C2I/127**	17 550 **C2I/125**	29 410 **C2I/123**	35 880 **C2I/125**	50 920 **C2I/129**	63 650 **C2I/129**	72 830 **C2I/127**			
							1,73	3,18	4,29	7,07	8,49	14,3							125	1400	
	125	–	–	–	–	–	1 450 **ICI/123**	2 760 **ICI/127**	3 720 **ICI/127**	6 060 **ICI/126**	7 500 **ICI/130**	12 230 **ICI/126**	–	–	–	–	–	–			
									5,16	8,4	10,9	16,9	22,3	35	44,6	57,8	72,3	91,1	100	1120	
	100	–	–	–	–	–	–	–	4 320 **C2I/98,2**	7 400 **C2I/103**	9 690 **C2I/104**	14 660 **C2I/102**	19 020 **C2I/100**	29 410 **C2I/98,5**	38 120 **C2I/100**	50 920 **C2I/103**	63 650 **C2I/103**	78 910 **C2I/102**			
			0,3	0,35	0,59	0,69	1,56	3,46	4,52	6,83	9,76	13,8							100	1120	
	100	–	255 **ICI/99,4**	300 **ICI/99,4**	515 **ICI/103**	605 **ICI/103**	1 330 **ICI/100**	3 000 **ICI/102**	3 860 **ICI/100**	6 150 **ICI/106**	8 500 **ICI/102**	12 440 **ICI/106**	–	–	–	–	–	–			
									5,18	8,98	9,89	18,5	22,3	35,9	45,2	57,4	71,7	87,2	90	1000	
	90	–	–	–	–	–	–	–	4 340 **C2I/87,8**	7 750 **C2I/90,4**	8 500 **C2I/90**	15 500 **C2I/87,9**	19 250 **C2I/90,3**	30 500 **C2I/89**	38 710 **C2I/89,7**	48 700 **C2I/88,8**	60 870 **C2I/88,8**	76 070 **C2I/91,4**			
									5,88	8,44	11	17	24,6	35,2	44,7	58,1	72,6	91,1	80	900	
	80	–	–	–	–	–	–	–	4 900 **C2I/78,6**	7 400 **C2I/82,7**	9 680 **C2I/83,1**	14 650 **C2I/81,4**	20 910 **C2I/80,2**	29 390 **C2I/78,8**	38 100 **C2I/80,3**	50 880 **C2I/82,6**	63 600 **C2I/82,6**	78 550 **C2I/81,2**			
		0,2	0,32	0,4	0,66	0,76	1,56	3,12	3,62	6,39	7,03	13,7							80	900	
	80	160 **ICI/75,2**	270 **ICI/79,5**	335 **ICI/79,5**	580 **ICI/82,7**	670 **ICI/82,7**	1 270 **ICI/76,7**	2 590 **ICI/78,1**	3 000 **ICI/78,1**	5 300 **ICI/78,1**	6 000 **ICI/80,5**	11 330 **ICI/78,1**	–	–	–	–	–	–			
									5,38	8,98	9,89	18,5	23,7	35,9	43,7	57,4	71,7	83,9	71	800	
	71	–	–	–	–	–	–	–	4 510 **C2I/70,2**	7 750 **C2I/72,3**	8 500 **C2I/72**	15 500 **C2I/70,3**	20 420 **C2I/72,2**	30 500 **C2I/71,2**	37 390 **C2I/71,7**	48 700 **C2I/71,1**	60 870 **C2I/71,1**	73 230 **C2I/73,1**			
									5,88	8,44	11	17	24,6	35,2	44,7	58,1	72,6	96,5	63	710	
	63	–	–	–	–	–	–	–	4 900 **C2I/62**	7 400 **C2I/65,2**	9 680 **C2I/65,5**	14 650 **C2I/64,2**	20 910 **C2I/63,2**	29 390 **C2I/62,1**	38 100 **C2I/63,3**	50 880 **C2I/65,1**	63 600 **C2I/65,1**	83 100 **C2I/64**			
		0,2	0,32	0,39	0,65	0,75	1,75	3,27	4,43	7,19	8,66	14,5							63	710	
	63	160 **ICI/60,1**	270 **ICI/63,6**	335 **ICI/63,6**	580 **ICI/66,2**	670 **ICI/66,2**	1 440 **ICI/61,3**	2 750 **ICI/62,5**	3 720 **ICI/62,5**	6 040 **ICI/62,5**	7 500 **ICI/64,4**	12 190 **ICI/62,5**	–	–	–	–	–	–			
									5,36	8,97	9,88	18,4	23,7	35,8	47,7	57,3	71,7	95,4	56	630	
	56	–	–	–	–	–	–	–	4 500 **C2I/55,4**	7 750 **C2I/57**	8 500 **C2I/56,8**	15 500 **C2I/55,5**	20 420 **C2I/56,9**	30 500 **C2I/56,1**	40 910 **C2I/56,6**	48 710 **C2I/56**	60 890 **C2I/56**	83 340 **C2I/57,6**			
									5,73	8,34	11,2	16,1	23,3	33,4	42,4	58,1	72,7	96,6	50	560	
	50	–	–	–	–	–	–	–	4 930 **C2I/50,4**	7 410 **C2I/52,1**	9 990 **C2I/52,4**	14 790 **C2I/53,9**	21 110 **C2I/53,1**	29 670 **C2I/52,1**	38 460 **C2I/53,1**	50 870 **C2I/51,3**	63 590 **C2I/51,3**	83 090 **C2I/50,5**			
		0,2	0,35	0,41	0,72	0,8	1,55	3,52	4,58	6,87	10,1	13,9							50	560	
	50	170 **ICI/49**	305 **ICI/50,9**	355 **ICI/50,9**	645 **ICI/53**	725 **ICI/53**	1 320 **ICI/49,9**	3 000 **ICI/50**	3 850 **ICI/49,3**	6 150 **ICI/52,5**	8 770 **ICI/50,8**	12 440 **ICI/52,5**	–	–	–	–	–	–			
125 000							1,2	2,53		4,92		10							200	2000	**10**
	200	–	–	–	–	–	1 100 **ICI/192**	2 400 **ICI/199**	–	4 610 **ICI/196**	–	9 410 **ICI/196**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

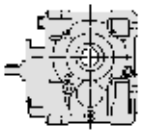


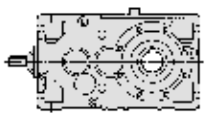


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
125 000									4,33	6,67	9,4	13,6	19,1	27,2	37,2	47,9	56,3	76	160	1600	**10**
	160	–	–	–	–	–	–	–	3 890 **C2I/151**	6 120 **C2I/154**	8 890 **C2I/158**	12 330 **C2I/151**	17 770 **C2I/156**	25 390 **C2I/156**	34 110 **C2I/154**	44 640 **C2I/156**	52 520 **C2I/156**	73 000 **C2I/161**			
							1,38	2,74	3,13	5,52	6,18	12,1							160	1600	
	160	–	–	–	–	–	1 270 **ICI/154**	2 600 **ICI/159**	2 970 **ICI/159**	5 180 **ICI/157**	5 970 **ICI/162**	11 380 **ICI/157**	–	–	–	–	–	–			
									4,49	7,6	9,42	15,4	18,4	31,8	37,6	52,5	65,7	75,4	125	1250	
	125	–	–	–	–	–	–	–	4 210 **C2I/123**	7 500 **C2I/129**	9 340 **C2I/130**	14 920 **C2I/127**	17 610 **C2I/125**	29 920 **C2I/123**	36 010 **C2I/125**	51 800 **C2I/129**	64 750 **C2I/129**	73 090 **C2I/127**			
							1,55	2,89	3,85	6,42	7,58	13							125	1250	
	125	–	–	–	–	–	1 460 **ICI/123**	2 810 **ICI/127**	3 740 **ICI/127**	6 160 **ICI/126**	7 500 **ICI/130**	12 440 **ICI/126**	–	–	–	–	–	–			
									4,62	7,6	9,8	15,4	19,9	31,8	40,5	52,5	65,7	81,7	100	1000	
	100	–	–	–	–	–	–	–	4 340 **C2I/98,2**	7 500 **C2I/103**	9 720 **C2I/104**	14 920 **C2I/102**	19 080 **C2I/100**	29 920 **C2I/98,5**	38 780 **C2I/100**	51 800 **C2I/103**	64 750 **C2I/103**	79 190 **C2I/102**			
			0,27	0,32	0,53	0,62	1,4	3,1	4,1	6,1	8,72	12,3							100	1000	
	100	–	255 **ICI/99,4**	300 **ICI/99,4**	520 **ICI/103**	610 **ICI/103**	1 340 **ICI/100**	3 010 **ICI/102**	3 930 **ICI/100**	6 150 **ICI/106**	8 500 **ICI/102**	12 440 **ICI/106**	–	–	–	–	–	–			
									4,68	8,08	8,9	16,6	20,2	32,8	41	52,5	65,6	81	90	900	
	90	–	–	–	–	–	–	–	4 360 **C2I/87,8**	7 750 **C2I/90,4**	8 500 **C2I/90**	15 500 **C2I/87,9**	19 310 **C2I/90,3**	30 990 **C2I/89**	39 020 **C2I/89,7**	49 480 **C2I/88,8**	61 850 **C2I/88,8**	78 510 **C2I/91,4**			
									5,32	7,6	9,8	15,4	22,2	31,8	40,5	52,5	65,7	83,9	80	800	
	80	–	–	–	–	–	–	–	4 990 **C2I/78,6**	7 500 **C2I/82,7**	9 720 **C2I/83,1**	14 920 **C2I/81,4**	21 200 **C2I/80,2**	29 920 **C2I/78,8**	38 780 **C2I/80,3**	51 800 **C2I/82,6**	64 750 **C2I/82,6**	81 370 **C2I/81,2**			
		0,18	0,29	0,35	0,59	0,69	1,39	2,78	3,22	5,68	6,25	12,2							80	800	
	80	160 **ICI/75,2**	270 **ICI/79,5**	335 **ICI/79,5**	580 **ICI/82,7**	675 **ICI/82,7**	1 270 **ICI/76,7**	2 600 **ICI/78,1**	3 000 **ICI/78,1**	5 300 **ICI/78,1**	6 000 **ICI/80,5**	11 380 **ICI/78,1**	–	–	–	–	–	–			
									4,79	7,97	8,78	16,4	21,1	32,4	40,2	51,9	64,8	77,2	71	710	
	71	–	–	–	–	–	–	–	4 530 **C2I/70,2**	7 750 **C2I/72,3**	8 500 **C2I/72**	15 500 **C2I/70,3**	20 500 **C2I/72,2**	31 050 **C2I/71,2**	38 750 **C2I/71,7**	49 590 **C2I/71,1**	61 980 **C2I/71,1**	75 900 **C2I/73,1**			
									5,31	7,59	9,79	15,3	22,1	31,8	40,4	52,5	65,6	87,2	63	630	
	63	–	–	–	–	–	–	–	4 990 **C2I/62**	7 500 **C2I/65,2**	9 720 **C2I/65,5**	14 920 **C2I/64,2**	21 200 **C2I/63,2**	29 930 **C2I/62,1**	38 790 **C2I/63,3**	51 810 **C2I/65,1**	64 760 **C2I/65,1**	84 620 **C2I/64**			
		0,18	0,28	0,35	0,58	0,68	1,56	2,95	3,94	6,49	7,68	13,1							63	630	
	63	165 **ICI/60,1**	270 **ICI/63,6**	335 **ICI/63,6**	580 **ICI/66,2**	680 **ICI/66,2**	1 450 **ICI/61,3**	2 800 **ICI/62,5**	3 740 **ICI/62,5**	6 150 **ICI/62,5**	7 500 **ICI/64,4**	12 420 **ICI/62,5**	–	–	–	–	–	–			
									4,77	7,97	8,78	16,4	21,1	32,4	42,6	51,9	64,9	85,1	56	560	
	56	–	–	–	–	–	–	–	4 500 **C2I/55,4**	7 750 **C2I/57**	8 500 **C2I/56,8**	15 500 **C2I/55,5**	20 500 **C2I/56,9**	31 050 **C2I/56,1**	41 070 **C2I/56,6**	49 580 **C2I/56**	61 980 **C2I/56**	83 650 **C2I/57,6**			
112 000							1,08	2,28		4,44		9,06							200	1800	**9**
	200	–	–	–	–	–	1 110 **ICI/192**	2 410 **ICI/199**	–	4 630 **ICI/196**	–	9 450 **ICI/196**	–	–	–	–	–	–			
									3,86	5,95	8,39	12,2	17	24,3	33,2	42,7	50,3	66,5	160	1400	
	160	–	–	–	–	–	–	–	3 970 **C2I/151**	6 250 **C2I/154**	9 070 **C2I/158**	12 580 **C2I/151**	18 130 **C2I/156**	25 910 **C2I/156**	34 810 **C2I/154**	45 550 **C2I/156**	53 590 **C2I/156**	73 000 **C2I/161**			
							1,22	2,41	2,77	4,91	5,43	10,7							160	1400	
	160	–	–	–	–	–	1 280 **ICI/154**	2 610 **ICI/159**	3 000 **ICI/159**	5 260 **ICI/157**	6 000 **ICI/162**	11 430 **ICI/157**	–	–	–	–	–	–			
									4,04	6,81	8,47	14	16,5	29	33,8	47,9	59,1	67,8	125	1120	
	125	–	–	–	–	–	–	–	4 230 **C2I/123**	7 500 **C2I/129**	9 380 **C2I/130**	15 160 **C2I/127**	17 670 **C2I/125**	30 420 **C2I/123**	36 130 **C2I/125**	52 670 **C2I/129**	65 000 **C2I/129**	73 340 **C2I/127**			
							1,39	2,63	3,46	5,85	6,79	11,8							125	1120	
	125	–	–	–	–	–	1 460 **ICI/123**	2 850 **ICI/127**	3 750 **ICI/127**	6 270 **ICI/126**	7 500 **ICI/130**	12 650 **ICI/126**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

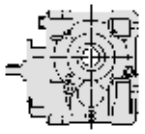


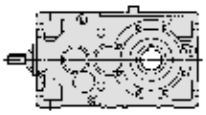


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / **i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
112 000									4,18	6,84	8,85	14	18	29,1	36,6	48	59,3	73,7	100	900	**9**
	100	–	–	–	–	–	–	–	4 350 **C2I/98,2**	7 500 **C2I/103**	9 750 **C2I/104**	15 150 **C2I/102**	19 150 **C2I/100**	30 400 **C2I/98,5**	38 990 **C2I/100**	52 630 **C2I/103**	65 000 **C2I/103**	79 460 **C2I/102**			
			0,24	0,28	0,47	0,56	1,26	2,8	3,75	5,49	8,07	11,1							100	900	
	100	–	255 **ICI/99,4**	300 **ICI/99,4**	520 **ICI/103**	610 **ICI/103**	1 340 **ICI/100**	3 020 **ICI/102**	3 990 **ICI/100**	6 150 **ICI/106**	8 750 **ICI/102**	12 440 **ICI/106**	–	–	–	–	–	–			
									4,17	7,18	7,91	14,8	18	29,7	36,6	47,5	59,4	73,7	90	800	
	90	–	–	–	–	–	–	–	4 370 **C2I/87,8**	7 750 **C2I/90,4**	8 500 **C2I/90**	15 500 **C2I/87,9**	19 380 **C2I/90,3**	31 500 **C2I/89**	39 160 **C2I/89,7**	50 370 **C2I/88,8**	62 960 **C2I/88,8**	80 390 **C2I/91,4**			
									4,73	6,75	8,73	13,9	19,7	28,8	36,6	47,5	58,5	77,2	80	710	
	80	–	–	–	–	–	–	–	5 000 **C2I/78,6**	7 500 **C2I/82,7**	9 750 **C2I/83,1**	15 190 **C2I/81,4**	21 200 **C2I/80,2**	30 470 **C2I/78,8**	39 490 **C2I/80,3**	52 740 **C2I/82,6**	65 000 **C2I/82,6**	84 340 **C2I/81,2**			
		0,16	0,25	0,31	0,53	0,62	1,24	2,48	2,85	5,04	5,54	10,9							80	710	
	80	165 **ICI/75,2**	270 **ICI/79,5**	335 **ICI/79,5**	585 **ICI/82,7**	690 **ICI/82,7**	1 270 **ICI/76,7**	2 610 **ICI/78,1**	3 000 **ICI/78,1**	5 300 **ICI/78,1**	6 000 **ICI/80,5**	11 420 **ICI/78,1**	–	–	–	–	–	–			
									4,27	7,07	7,79	14,5	18,8	29,2	36,9	46,9	58,6	71	71	630	
	71	–	–	–	–	–	–	–	4 540 **C2I/70,2**	7 750 **C2I/72,3**	8 500 **C2I/72**	15 500 **C2I/70,3**	20 580 **C2I/72,2**	31 500 **C2I/71,2**	40 170 **C2I/71,7**	50 490 **C2I/71,1**	63 110 **C2I/71,1**	78 670 **C2I/73,1**			
									4,73	6,75	8,73	13,9	19,7	28,8	36,6	47,5	58,5	77,8	63	560	
	63	–	–	–	–	–	–	–	5 000 **C2I/62**	7 500 **C2I/65,2**	9 750 **C2I/65,5**	15 190 **C2I/64,2**	21 200 **C2I/63,2**	30 470 **C2I/62,1**	39 490 **C2I/63,3**	52 740 **C2I/65,1**	65 000 **C2I/65,1**	85 000 **C2I/64**			
		0,16	0,25	0,31	0,52	0,61	1,39	2,67	3,52	5,88	6,83	11,9							63	560	
	63	165 **ICI/60,1**	270 **ICI/63,6**	335 **ICI/63,6**	590 **ICI/66,2**	690 **ICI/66,2**	1 450 **ICI/61,3**	2 850 **ICI/62,5**	3 750 **ICI/62,5**	6 260 **ICI/62,5**	7 500 **ICI/64,4**	12 640 **ICI/62,5**	–	–	–	–	–	–			
100 000							0,97	2,04		3,96		8,09							200	1600	**8**
	200	–	–	–	–	–	1 110 **ICI/192**	2 410 **ICI/199**	–	4 640 **ICI/196**	–	9 480 **ICI/196**	–	–	–	–	–	–			
									3,51	5,41	7,62	11,1	15,5	22,1	30,1	38,7	45,7	59,4	160	1250	
	160	–	–	–	–	–	–	–	4 040 **C2I/151**	6 360 **C2I/154**	9 230 **C2I/158**	12 800 **C2I/151**	18 450 **C2I/156**	26 350 **C2I/156**	35 410 **C2I/154**	46 200 **C2I/156**	54 500 **C2I/156**	73 000 **C2I/161**			
							1,09	2,16	2,47	4,38	4,85	9,55							160	1250	
	160	–	–	–	–	–	1 280 **ICI/154**	2 620 **ICI/159**	3 000 **ICI/159**	5 260 **ICI/157**	6 000 **ICI/162**	11 470 **ICI/157**	–	–	–	–	–	–			
									3,62	6,08	7,59	12,7	14,8	26,1	30,3	43	52,7	60,7	125	1000	
	125	–	–	–	–	–	–	–	4 240 **C2I/123**	7 500 **C2I/129**	9 410 **C2I/130**	15 430 **C2I/127**	17 740 **C2I/125**	30 700 **C2I/123**	36 260 **C2I/125**	53 000 **C2I/129**	65 000 **C2I/129**	73 610 **C2I/127**			
							1,25	2,39	3,1	5,31	6,06	10,6							125	1000	
	125	–	–	–	–	–	1 470 **ICI/123**	2 900 **ICI/127**	3 760 **ICI/127**	6 380 **ICI/126**	7 500 **ICI/130**	12 710 **ICI/126**	–	–	–	–	–	–			
									3,73	6,08	7,9	12,7	16,1	26,1	32,7	43	52,7	65,8	100	800	
	100	–	–	–	–	–	–	–	4 370 **C2I/98,2**	7 500 **C2I/103**	9 790 **C2I/104**	15 430 **C2I/102**	19 220 **C2I/100**	30 700 **C2I/98,5**	39 130 **C2I/100**	53 000 **C2I/103**	65 000 **C2I/103**	79 750 **C2I/102**			
			0,22	0,25	0,42	0,5	1,13	2,5	3,39	4,88	7,18	9,87							100	800	
	100	–	255 **ICI/99,4**	300 **ICI/99,4**	520 **ICI/103**	615 **ICI/103**	1 350 **ICI/100**	3 030 **ICI/102**	4 060 **ICI/100**	6 150 **ICI/106**	8 750 **ICI/102**	12 440 **ICI/106**	–	–	–	–	–	–			
									3,72	6,37	7,02	13,1	16	26,3	32,6	42,9	53,6	65,6	90	710	
	90	–	–	–	–	–	–	–	4 390 **C2I/87,8**	7 750 **C2I/90,4**	8 500 **C2I/90**	15 500 **C2I/87,9**	19 460 **C2I/90,3**	31 500 **C2I/89**	39 310 **C2I/89,7**	51 290 **C2I/88,8**	64 110 **C2I/88,8**	80 690 **C2I/91,4**			
									4,2	5,99	7,74	12,5	17,4	25,7	33	42,3	51,9	69	80	630	
	80	–	–	–	–	–	–	–	5 000 **C2I/78,6**	7 500 **C2I/82,7**	9 750 **C2I/83,1**	15 460 **C2I/81,4**	21 200 **C2I/80,2**	30 700 **C2I/78,8**	40 210 **C2I/80,3**	53 000 **C2I/82,6**	65 000 **C2I/82,6**	85 000 **C2I/81,2**			
		0,14	0,23	0,28	0,48	0,56	1,1	2,21	2,53	4,48	4,92	9,68							80	630	
	80	165 **ICI/75,2**	270 **ICI/79,5**	335 **ICI/79,5**	595 **ICI/82,7**	700 **ICI/82,7**	1 280 **ICI/76,7**	2 620 **ICI/78,1**	3 000 **ICI/78,1**	5 300 **ICI/78,1**	6 000 **ICI/80,5**	11 460 **ICI/78,1**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

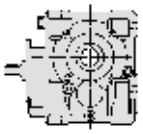


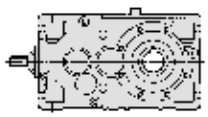


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / *i*																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
100 000									3,81	6,28	6,92	12,9	16,7	25,9	33,7	42,4	53	65,4	71	560	**8**
	71	–	–	–	–	–	–	–	4 560 **C2I/70,2**	7 750 **C2I/72,3**	8 500 **C2I/72**	15 500 **C2I/70,3**	20 600 **C2I/72,2**	31 500 **C2I/71,2**	41 200 **C2I/71,7**	51 400 **C2I/71,1**	64 250 **C2I/71,1**	81 500 **C2I/73,1**			
90 000							0,85	1,79		3,48		7,1							200	1400	**7,1**
	200	–	–	–	–	–	1 110 **ICI/192**	2 420 **ICI/199**	–	4 660 **ICI/196**	–	9 520 **ICI/196**	–	–	–	–	–	–			
									3,2	4,93	6,85	10,1	13,9	19,9	27,4	34,7	40,9	53,2	160	1120	
	160	–	–	–	–	–	–	–	4 110 **C2I/151**	6 460 **C2I/154**	9 250 **C2I/158**	13 010 **C2I/151**	18 500 **C2I/156**	26 500 **C2I/156**	36 000 **C2I/154**	46 200 **C2I/156**	54 500 **C2I/156**	73 000 **C2I/161**			
							0,98	1,94	2,21	3,92	4,35	8,59							160	1120	
	160	–	–	–	–	–	1 280 **ICI/154**	2 630 **ICI/159**	3 000 **ICI/159**	5 260 **ICI/157**	6 000 **ICI/162**	11 510 **ICI/157**	–	–	–	–	–	–			
									3,27	5,47	6,85	11,5	13,4	23,5	27,3	38,7	47,5	54,8	125	900	
	125	–	–	–	–	–	–	–	4 260 **C2I/123**	7 500 **C2I/129**	9 440 **C2I/130**	15 500 **C2I/127**	17 800 **C2I/125**	30 700 **C2I/123**	36 380 **C2I/125**	53 000 **C2I/129**	65 000 **C2I/129**	73 850 **C2I/127**			
							1,13	2,19	2,8	4,86	5,46	9,56							125	900	
	125	–	–	–	–	–	1 470 **ICI/123**	2 950 **ICI/127**	3 780 **ICI/127**	6 480 **ICI/126**	7 500 **ICI/130**	12 750 **ICI/126**	–	–	–	–	–	–			
									3,31	5,4	7,03	11,3	14,3	23,2	29,1	38,2	46,8	58,6	100	710	
	100	–	–	–	–	–	–	–	4 370 **C2I/98,2**	7 500 **C2I/103**	9 830 **C2I/104**	15 500 **C2I/102**	19 290 **C2I/100**	30 700 **C2I/98,5**	39 280 **C2I/100**	53 000 **C2I/103**	65 000 **C2I/103**	80 000 **C2I/102**			
			0,19	0,23	0,38	0,44	1	2,22	3,07	4,33	6,37	8,76							100	710	
	100	–	255 **ICI/99,4**	305 **ICI/99,4**	525 **ICI/103**	615 **ICI/103**	1 350 **ICI/100**	3 040 **ICI/102**	4 140 **ICI/100**	6 150 **ICI/106**	8 750 **ICI/102**	12 440 **ICI/106**	–	–	–	–	–	–			
									3,31	5,66	6,23	11,6	14,3	23,3	29	38,8	48,5	58,5	90	630	
	90	–	–	–	–	–	–	–	4 400 **C2I/87,8**	7 750 **C2I/90,4**	8 500 **C2I/90**	15 500 **C2I/87,9**	19 500 **C2I/90,3**	31 500 **C2I/89**	39 460 **C2I/89,7**	52 230 **C2I/88,8**	65 280 **C2I/88,8**	81 000 **C2I/91,4**			
									3,73	5,32	6,88	11,2	15,5	22,9	29,9	37,6	46,2	61,4	80	560	
	80	–	–	–	–	–	–	–	5 000 **C2I/78,6**	7 500 **C2I/82,7**	9 750 **C2I/83,1**	15 500 **C2I/81,4**	21 200 **C2I/80,2**	30 700 **C2I/78,8**	40 930 **C2I/80,3**	53 000 **C2I/82,6**	65 000 **C2I/82,6**	85 000 **C2I/81,2**			
		0,13	0,2	0,25	0,43	0,5	0,98	1,97	2,25	3,98	4,37	8,63							80	560	
	80	165 **ICI/75,2**	275 **ICI/79,5**	345 **ICI/79,5**	610 **ICI/82,7**	710 **ICI/82,7**	1 280 **ICI/76,7**	2 630 **ICI/78,1**	3 000 **ICI/78,1**	5 300 **ICI/78,1**	6 000 **ICI/80,5**	11 500 **ICI/78,1**	–	–	–	–	–	–			
80 000							0,76	1,6		3,12		6,37							200	1250	**6,3**
	200	–	–	–	–	–	1 120 **ICI/192**	2 430 **ICI/199**	–	4 680 **ICI/196**	–	9 550 **ICI/196**	–	–	–	–	–	–			
									2,9	4,42	6,11	9,12	12,4	17,8	24,8	31	36,5	47,5	160	1000	
	160	–	–	–	–	–	–	–	4 180 **C2I/151**	6 500 **C2I/154**	9 250 **C2I/158**	13 200 **C2I/151**	18 500 **C2I/156**	26 500 **C2I/156**	36 500 **C2I/154**	46 200 **C2I/156**	54 500 **C2I/156**	73 000 **C2I/161**			
							0,88	1,74	1,98	3,5	3,88	7,69							160	1000	
	160	–	–	–	–	–	1 290 **ICI/154**	2 640 **ICI/159**	3 000 **ICI/159**	5 260 **ICI/157**	6 000 **ICI/162**	11 550 **ICI/157**	–	–	–	–	–	–			
									2,92	4,86	6,12	10,2	11,9	20,9	24,4	34,4	42,2	48,9	125	800	
	125	–	–	–	–	–	–	–	4 270 **C2I/123**	7 500 **C2I/129**	9 480 **C2I/130**	15 500 **C2I/127**	17 860 **C2I/125**	30 700 **C2I/123**	36 520 **C2I/125**	53 000 **C2I/129**	65 000 **C2I/129**	74 130 **C2I/127**			
							1,01	1,98	2,5	4,33	4,85	8,53							125	800	
	125	–	–	–	–	–	1 480 **ICI/123**	3 000 **ICI/127**	3 790 **ICI/127**	6 500 **ICI/126**	7 500 **ICI/130**	12 800 **ICI/126**	–	–	–	–	–	–			
									2,94	4,79	6,27	10	12,7	20,6	25,9	33,9	41,5	52	100	630	
	100	–	–	–	–	–	–	–	4 370 **C2I/98,2**	7 500 **C2I/103**	9 860 **C2I/104**	15 500 **C2I/102**	19 360 **C2I/100**	30 700 **C2I/98,5**	39 430 **C2I/100**	53 000 **C2I/103**	65 000 **C2I/103**	80 000 **C2I/102**			
			0,17	0,2	0,34	0,39	0,89	1,98	2,77	3,84	5,65	7,77							100	630	
	100	–	255 **ICI/99,4**	305 **ICI/99,4**	525 **ICI/103**	615 **ICI/103**	1 360 **ICI/100**	3 060 **ICI/102**	4 210 **ICI/100**	6 150 **ICI/106**	8 750 **ICI/102**	12 440 **ICI/106**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.

9 - Bevel helical gear reducer selection tables

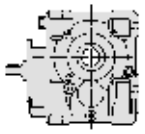


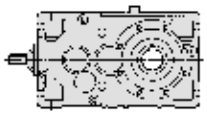


$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW / M_{N2} N m / ... / **/ i**																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
80 000	90	–	–	–	–	–	–	–	2,95 4 420 **C2I/87,8**	5,03 7 750 **C2I/90,4**	5,54 8 500 **C2I/90**	10,3 15 500 **C2I/87,9**	12,7 19 500 **C2I/90,3**	20,8 31 500 **C2I/89**	25,9 39 610 **C2I/89,7**	35,1 53 160 **C2I/88,8**	43,9 66 450 **C2I/88,8**	52,2 81 300 **C2I/91,4**	90	560	**6,3**
71 000	200	–	–	–	–	–	0,68 1 120 **ICI/192**	1,44 2 440 **ICI/199**	–	2,8 4 700 **ICI/196**	–	5,72 9 590 **ICI/196**	–	–	–	–	–	–	200	1120	**5,6**
	160	–	–	–	–	–	–	–	2,66 4 240 **C2I/151**	3,98 6 500 **C2I/154**	5,5 9 250 **C2I/158**	8,21 13 200 **C2I/151**	11,2 18 500 **C2I/156**	16 26 500 **C2I/156**	22,4 36 500 **C2I/154**	27,9 46 200 **C2I/156**	32,9 54 500 **C2I/156**	42,8 73 000 **C2I/161**	160	900	
	160	–	–	–	–	–	0,79 1 290 **ICI/154**	1,57 2 640 **ICI/159**	1,78 3 000 **ICI/159**	3,15 5 260 **ICI/157**	3,49 6 000 **ICI/162**	6,95 11 590 **ICI/157**	–	–	–	–	–	–	160	900	
	125	–	–	–	–	–	–	–	2,6 4 290 **C2I/123**	4,32 7 500 **C2I/129**	5,44 9 500 **C2I/130**	9,06 15 500 **C2I/127**	10,6 17 930 **C2I/125**	18,5 30 700 **C2I/123**	21,7 36 660 **C2I/125**	30,5 53 000 **C2I/129**	37,4 65 000 **C2I/129**	43,6 74 400 **C2I/127**	125	710	
	125	–	–	–	–	–	0,9 1 480 **ICI/123**	1,75 3 000 **ICI/127**	2,22 3 810 **ICI/127**	3,84 6 500 **ICI/126**	4,31 7 500 **ICI/130**	7,57 12 800 **ICI/126**	–	–	–	–	–	–	125	710	
	100	–	–	–	–	–	–	–	2,61 4 370 **C2I/98,2**	4,26 7 500 **C2I/103**	5,59 9 900 **C2I/104**	8,93 15 500 **C2I/102**	11,4 19 430 **C2I/100**	18,3 30 700 **C2I/98,5**	23,1 39 580 **C2I/100**	30,1 53 000 **C2I/103**	36,9 65 000 **C2I/103**	46,2 80 000 **C2I/102**	100	560	
	100	–	0,15 255 **ICI/99,4**	0,18 305 **ICI/99,4**	0,3 530 **ICI/103**	0,35 615 **ICI/103**	0,8 1 360 **ICI/100**	1,77 3 070 **ICI/102**	2,51 4 290 **ICI/100**	3,42 6 150 **ICI/106**	5,02 8 750 **ICI/102**	6,91 12 440 **ICI/106**	–	–	–	–	–	–	100	560	
63 000	200	–	–	–	–	–	0,61 1 130 **ICI/192**	1,29 2 450 **ICI/199**	–	2,51 4 710 **ICI/196**	–	5,13 9 620 **ICI/196**	–	–	–	–	–	–	200	1000	**5**
	160	–	–	–	–	–	–	–	2,4 4 320 **C2I/151**	3,54 6 500 **C2I/154**	4,89 9 250 **C2I/158**	7,3 13 200 **C2I/151**	9,93 18 500 **C2I/156**	14,2 26 500 **C2I/156**	19,9 36 500 **C2I/154**	24,8 46 200 **C2I/156**	29,2 54 500 **C2I/156**	38 73 000 **C2I/161**	160	800	
	160	–	–	–	–	–	0,71 1 300 **ICI/154**	1,4 2 650 **ICI/159**	1,58 3 000 **ICI/159**	2,8 5 260 **ICI/157**	3,1 6 000 **ICI/162**	6,2 11 630 **ICI/157**	–	–	–	–	–	–	160	800	
	125	–	–	–	–	–	–	–	2,31 4 310 **C2I/123**	3,83 7 500 **C2I/129**	4,83 9 500 **C2I/130**	8,04 15 500 **C2I/127**	9,48 18 000 **C2I/125**	16,5 30 700 **C2I/123**	19,3 36 790 **C2I/125**	27,1 53 000 **C2I/129**	33,2 65 000 **C2I/129**	38,8 74 680 **C2I/127**	125	630	
	125	–	–	–	–	–	0,8 1 490 **ICI/123**	1,56 3 000 **ICI/127**	1,98 3 820 **ICI/127**	3,41 6 500 **ICI/126**	3,82 7 500 **ICI/130**	6,72 12 800 **ICI/126**	–	–	–	–	–	–	125	630	
56 000	200	–	–	–	–	–	0,55 1 130 **ICI/192**	1,17 2 460 **ICI/199**	–	2,27 4 730 **ICI/196**	–	4,63 9 650 **ICI/196**	–	–	–	–	–	–	200	900	**4,5**
	160	–	–	–	–	–	–	–	2,16 4 370 **C2I/151**	3,14 6 500 **C2I/154**	4,34 9 250 **C2I/158**	6,48 13 200 **C2I/151**	8,81 18 500 **C2I/156**	12,6 26 500 **C2I/156**	17,6 36 500 **C2I/154**	22 46 200 **C2I/156**	25,9 54 500 **C2I/156**	33,7 73 000 **C2I/161**	160	710	
	160	–	–	–	–	–	0,63 1 300 **ICI/154**	1,25 2 660 **ICI/159**	1,4 3 000 **ICI/159**	2,49 5 260 **ICI/157**	2,76 6 000 **ICI/162**	5,52 11 670 **ICI/157**	–	–	–	–	–	–	160	710	
	125	–	–	–	–	–	–	–	2,06 4 320 **C2I/123**	3,4 7 500 **C2I/129**	4,29 9 500 **C2I/130**	7,15 15 500 **C2I/127**	8,43 18 000 **C2I/125**	14,6 30 700 **C2I/123**	17,3 36 930 **C2I/125**	24,1 53 000 **C2I/129**	29,5 65 000 **C2I/129**	34,6 74 960 **C2I/127**	125	560	
	125	–	–	–	–	–	0,71 1 490 **ICI/123**	1,38 3 000 **ICI/127**	1,77 3 830 **ICI/127**	3,03 6 500 **ICI/126**	3,4 7 500 **ICI/130**	5,97 12 800 **ICI/126**	–	–	–	–	–	–	125	560	

For n_1 lower than 560 min^{-1} see page 195.

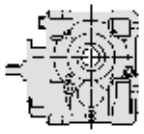
9 - Bevel helical gear reducer selection tables

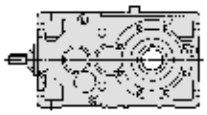




$n_{N2} \cdot L_h$ min^{-1} · h	i_N	P_{N2} kW M_{N2} N m ... / *i*																	i_N	n_1 min^{-1}	n_{N2}
		50	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320**	**321**	**360**			
50 000							0,49	1,04		2,02		4,13							200	800	**4**
	200	–	–	–	–	–	1 130 **ICI/192**	2 470 **ICI/199**	–	4 750 **ICI/196**	–	9 690 **ICI/196**	–	–	–	–	–	–			
									1,91	2,79	3,85	5,75	7,82	11,2	15,7	19,5	23	29,9	160	630	
	160	–	–	–	–	–	–	–	4 370 **C2I/151**	6 500 **C2I/154**	9 250 **C2I/158**	13 200 **C2I/151**	18 500 **C2I/156**	26 500 **C2I/156**	36 500 **C2I/154**	46 200 **C2I/156**	54 500 **C2I/156**	73 000 **C2I/161**			
							0,56	1,11	1,25	2,21	2,44	4,92							160	630	
	160	–	–	–	–	–	1 310 **ICI/154**	2 670 **ICI/159**	3 000 **ICI/159**	5 260 **ICI/157**	6 000 **ICI/162**	11 720 **ICI/157**	–	–	–	–	–	–			
45 000							0,44	0,93		1,8		3,68							200	710	**3,55**
	200	–	–	–	–	–	1 140 **ICI/192**	2 480 **ICI/199**	–	4 760 **ICI/196**	–	9 730 **ICI/196**	–	–	–	–	–	–			
									1,7	2,48	3,42	5,11	6,95	9,95	13,9	17,3	20,5	26,6	160	560	
	160	–	–	–	–	–	–	–	4 370 **C2I/151**	6 500 **C2I/154**	9 250 **C2I/158**	13 200 **C2I/151**	18 500 **C2I/156**	26 500 **C2I/156**	36 500 **C2I/154**	46 200 **C2I/156**	54 500 **C2I/156**	73 000 **C2I/161**			
							0,5	0,99	1,11	1,96	2,17	4,39							160	560	
	160	–	–	–	–	–	1 310 **ICI/154**	2 680 **ICI/159**	3 000 **ICI/159**	5 260 **ICI/157**	6 000 **ICI/162**	11 760 **ICI/157**	–	–	–	–	–	–			
40 000							0,39	0,83		1,61		3,27							200	630	**3,15**
	200	–	–	–	–	–	1 140 **ICI/192**	2 490 **ICI/199**	–	4 780 **ICI/196**	–	9 750 **ICI/196**	–	–	–	–	–	–			
35 500							0,35	0,74		1,43		2,91							200	560	**2,8**
	200	–	–	–	–	–	1 150 **ICI/192**	2 500 **ICI/199**	–	4 800 **ICI/196**	–	9 750 **ICI/196**	–	–	–	–	–	–			

For n_1 lower than 560 min^{-1} see page 195.





Summary of transmission ratios *i*, torques M_{N2} [N m] valid for $n_1 \leqslant$ 90 min^{-1}

	i_N	*i* M_{N2} [N m]																
		50	63	64	80	81	100	125	140	160	180	200	225	250	280	320	321	360
R CI	4	–	–	–	–	–	–	–	–	–	–	***4,1*** 6 300	–	***4***[1)] 12 200	–	***3,9*** 21 200	***3,9*** 26 500	–
	5	–	–	–	–	–	–	***5,06*** 2 300	–	***4,89*** 3 870	–	***5,11*** 9 000	–	***5,06*** 18 500	–	***4,89*** 31 500	***4,89*** 38 700	–
	6,3	***6,53*** 175	***6,57*** 315	***6,57*** 387	***6,27*** 670	***6,27*** 750	***6,53*** 1 360	***6,57*** 3 000	–	***6,27*** 5 600	–	***6,53*** 11 500	–	***6,57*** 24 300	–	***6,27*** 40 000	***6,27*** 50 000	–
	8	***7,85*** 195	***8***[1)] 325	***8***[1)] 400	***8,33*** 690	***8,33*** 800	***7,85*** 1 650	***8*** 3 350	***8,15*** 4 120	***8,27*** 7 300	***8,31*** 8 250	***8,27*** 14 500	***8,14*** 16 000	***8,21*** 25 000	***8,15*** 33 500	***7,83*** 40 000	***7,83*** 53 000	***8***[1)] 65 000
	9	–	–	–	–	–	–	–	***9***[1)] 4 500	***9,04*** 6 000	***9,33*** 9 250	***8,93*** 12 500	***9,33*** 18 000	***9,04*** 28 000	***9***[1)] 36 500	***8,75***[1)] 45 000	***8,75***[1)] 58 000	***9,2***[1)] 73 000
	10	***10,3*** 195	***10***[1)] 335	***10***[1)] 412	***10,4*** 710	***10,4*** 850	***9,81*** 1 700	***10***[1)] 3 000	***10,2*** 3 450	***10,3*** 6 900	***10,4*** 7 750	***10,3*** 13 200	***10,2*** 15 000	***10***[1)] 30 000	***10,2*** 35 500	***10,2*** 47 500	***10,2*** 58 000	***10***[1)] 67 000
	11,2	–	–	–	–	–	–	–	***11,3*** 3 870	***11,4*** 6 500	***11,7*** 8 250	***11,3*** 11 500	***11,7*** 16 500	***11,4*** 24 300	***11,3***[1)] 34 500	***11*** 41 200	***11*** 48 700	***11,5***[1)] 77 500
	12,5	***12,4*** 200	***12,6*** 345	***12,6*** 437	***13,1*** 730	***13,1*** 875	***12,4*** 1 650	***12,6*** 3 450	***12,9*** 3 870	***13*** 7 500	***13,1*** 8 500	***13*** 12 500	***12,8*** 15 000	***12,6*** 25 000	***12,9*** 28 000	***12,8*** 38 700	***12,8*** 47 500	***12,6*** 56 000
	14	–	–	–	–	–	–	–	***14,2*** 4 250	***14,2*** 7 100	***14,7*** 9 500	***14,2*** 14 500	***14,7*** 17 000	***14,1*** 28 000	***14,2*** 31 500	***14,2*** 45 000	***14,2*** 53 000	***14,5*** 65 000
	16	***15,2*** 175	***15,8*** 280	***15,8*** 355	***16,4***[1)] 630	***16,4***[1)] 730	***15,2*** 1 500	***15,8*** 3 000	***15,8*** 4 250	***15,5*** 6 500	***16*** 9 250	***15,5*** 13 200	***16*** 18 500	***16*** 26 500	***15,8*** 33 500	***16,3*** 38 700	***16,3*** 48 700	***16*** 71 000
	18	–	–	–	–	–	–	–	***18***[1)] 3 450	***18***[1)] 6 000	***18,7*** 7 100	***18***[1)] 11 800	***18,7*** 14 000	***17,9*** 24 300	***18***[1)] 27 200	***18***[1)] 40 000	***18***[1)] 48 700	***18,4***[1)] 54 500
	20	***19,3*** 175	***20***[1)] 290	***20***[1)] 365	***20,8***[1)] 650	***20,8***[1)] 775	***19,3*** 1 500	***20***[1)] 3 000	***20***[1)] 3 550	***19,7*** 6 500	***20,3*** 7 500	***19,7*** 12 800	***20,3*** 15 000	***20,3*** 26 500	***20***[1)] 30 000	***19,7*** 45 000	***19,7*** 53 000	***20,3*** 61 500
	25	***24,1*** 170	***25***[1)] 290	***25***[1)] 355	***26***[1)] 650	***26***[1)] 730	***24,1*** 1 180	***25***[1)] 2 650	–	***24,6*** 5 300	–	***24,6*** 10 600	–	***25,4*** 21 800	–	–	–	–
	31,5	–	***31,3*** 250	***31,3*** 280	***32,5***[1)] 515	***32,5***[1)] 630	***30,1*** 1 150	***31,3*** 2 240	–	***30,8*** 4 250	–	***30,8*** 8 750	–	***31,7*** 18 000	–	–	–	–
R ICI	31,5	***32,1*** 195	***33*** 335	***33*** 387	***31,4*** 750	***31,4*** 825	***32,8*** 1 550	***32,4*** 3 150	–	***31,4*** 6 700	–	***32,7*** 13 600	–	–	–	–	–	–
	40	***38,6*** 200	***40,1*** 387	***40,1*** 475	***41,8*** 825	***41,8*** 950	***39,4*** 1 700	***39,4*** 3 450	***40,2*** 4 000	***41,4*** 7 500	***41,6*** 9 000	***41,4*** 15 500	–	–	–	–	–	–
	50	***49*** 200	***50,9*** 345	***50,9*** 412	***53*** 750	***53*** 850	***49,9*** 1 550	***50***[1)] 3 450	***49,3*** 4 370	***52,5*** 7 100	***50,8*** 9 250	***52,5*** 14 000	–	–	–	–	–	–
	63	***60,1*** 175	***63,6*** 335	***63,6*** 412	***66,2*** 710	***66,2*** 825	***61,3*** 1 500	***62,5***[1)] 3 000	***62,5***[1)] 4 370	***62,5*** 6 500	***64,4*** 8 750	***62,5*** 13 200	–	–	–	–	–	–
	80	***75,2*** 175	***79,5*** 335	***79,5*** 412	***82,7*** 710	***82,7*** 825	***76,7*** 1 500	***78,1*** 2 650	***78,1*** 3 070	***78,1*** 5 300	***80,5*** 6 150	***78,1*** 13 200	–	–	–	–	–	–
	100	–	***99,4*** 280	***99,4*** 345	***103*** 615	***103*** 670	***100*** 1 600	***102*** 3 450	***100*** 4 370	***106*** 7 500	***102*** 9 250	***106*** 15 000	–	–	–	–	–	–
	125	–	–	–	–	–	***123*** 1 500	***127*** 3 000	***127*** 4 370	***126*** 6 500	***130*** 9 250	***126*** 13 200	–	–	–	–	–	–
	160	–	–	–	–	–	***154*** 1 500	***159*** 3 000	***159*** 3 650	***157*** 6 500	***162*** 7 300	***157*** 13 200	–	–	–	–	–	–
	200	–	–	–	–	–	***192*** 1 150	***199*** 2 720	–	***196*** 5 300	–	***196*** 10 600	–	–	–	–	–	–
RC2I	20	–	–	–	–	–	–	–	***20,4*** 4 620	***20,6*** 7 750	***21,4*** 10 600	***20,5*** 15 500	***19,9*** 19 500	***21,5*** 31 500	***20,8*** 40 000	***20,6*** 54 500	***20,6*** 69 000	***21,4*** 85 000
	22,4	–	–	–	–	–	–	–	***23,8***[1)] 5 150	***23,8*** 7 750	***23,7*** 10 900	***22,4*** 15 500	***23*** 21 800	***23,6*** 31 500	***23,8***[1)] 43 700	***23***[1)] 54 500	***23***[1)] 69 000	***23,7*** 87 500
	25	–	–	–	–	–	–	–	***24,5*** 5 000	***25,1*** 7 750	***26***[1)] 10 300	***27*** 15 500	***26,3*** 21 800	***27,2*** 31 500	***26,4*** 43 700	***25,1*** 54 500	***25,1*** 69 000	***26***[1)] 87 500
	28	–	–	–	–	–	–	–	***28,6*** 5 150	***28,9*** 7 750	***28,8***[1)] 10 900	***29,5*** 15 500	***30,3*** 21 800	***29,9*** 31 500	***30,1*** 43 700	***28***[1)] 54 500	***28***[1)] 69 000	***28,8***[1)] 87 500
	31,5	–	–	–	–	–	–	–	***32*** 5 000	***33,1*** 7 500	***33,2*** 10 600	***34,2*** 15 500	***33,7*** 21 200	***33,1*** 30 700	***33,7*** 42 500	***31,3*** 54 500	***31,3*** 69 000	***32,5***[1)] 87 500
	35,5	–	–	–	–	–	–	–	***37,5*** 5 150	***37,5*** 7 750	***37,3*** 10 900	***35,3*** 15 500	***36,2*** 21 800	***37,2*** 31 500	***37,5*** 42 500	***36,3*** 54 500	***36,3*** 69 000	***37,3*** 77 500
	40	–	–	–	–	–	–	–	***38,7*** 5 150	***39,5*** 7 750	***41***[1)] 10 900	***42,6*** 15 500	***41,4*** 21 800	***42,8*** 31 500	***41,6*** 43 700	***39,5*** 54 500	***39,5*** 69 000	***41***[1)] 85 000
	45	–	–	–	–	–	–	–	***45,1*** 5 150	***45,6*** 7 750	***45,4*** 10 900	***46,6*** 15 500	***47,8*** 21 800	***47,1*** 31 500	***47,5*** 43 700	***44,2*** 54 500	***44,2*** 69 000	***45,4*** 87 500
	50	–	–	–	–	–	–	–	***50,4*** 5 000	***52,1*** 7 500	***52,4*** 10 600	***53,9*** 15 500	***53,1*** 21 200	***52,1*** 30 700	***53,1*** 42 500	***51,3*** 53 000	***51,3*** 65 000	***50,5*** 85 000
	56	–	–	–	–	–	–	–	***55,4*** 5 150	***57*** 7 750	***56,8*** 10 000	***55,5*** 15 500	***56,9*** 21 800	***56,1*** 31 500	***56,6*** 43 700	***56*** 54 500	***56*** 69 000	***57,6*** 87 500
	63	–	–	–	–	–	–	–	***62*** 5 000	***65,2*** 7 500	***65,5*** 10 600	***64,2*** 15 500	***63,2*** 21 200	***62,1*** 30 700	***63,3*** 42 500	***65,1*** 53 000	***65,1*** 65 000	***64*** 85 000
	71	–	–	–	–	–	–	–	***70,2*** 5 150	***72,3*** 7 750	***72***[1)] 10 300	***70,3*** 15 500	***72,2*** 21 800	***71,2*** 31 500	***71,7*** 43 700	***71,1*** 54 500	***71,1*** 69 000	***73,1*** 87 500
	80	–	–	–	–	–	–	–	***78,6*** 5 000	***82,7*** 7 500	***83,1*** 10 600	***81,4*** 15 500	***80,2*** 21 200	***78,8*** 30 700	***80,3*** 42 500	***82,6*** 53 000	***82,6*** 65 000	***81,2*** 85 000
	90	–	–	–	–	–	–	–	***87,8*** 4 620	***90,4*** 7 750	***90***[1)] 9 500	***87,9*** 15 500	***90,3*** 20 600	***89*** 31 500	***89,7*** 42 500	***88,8*** 54 500	***88,8*** 69 000	***91,4*** 85 000
	100	–	–	–	–	–	–	–	***98,2*** 4 620	***103*** 7 500	***104*** 10 600	***102*** 15 500	***100*** 20 600	***98,5*** 30 700	***100*** 42 500	***103*** 53 000	***103*** 65 000	***102*** 85 000
	125	–	–	–	–	–	–	–	***123*** 4 620	***129*** 7 500	***130*** 10 300	***127*** 15 500	***125*** 19 000	***123*** 30 700	***125*** 38 700	***129*** 53 000	***129*** 65 000	***127*** 80 000
	160	–	–	–	–	–	–	–	***151*** 4 370	***154*** 6 500	***158*** 9 250	***151*** 13 200	***156*** 18 500	***156*** 26 500	***154*** 36 500	***156*** 46 200	***156*** 54 500	***161*** 73 000

1) **Finite** transmission ratio.

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10 - Dimensions, designs, mounting positions of bevel helical gear reducers

10.1 - Gear reducers R CI 198

Dimensions 198
Designs (direction of rotation) 199
Mounting positions 200
Lubrication details 201

10.2 - Gear reducers R ICI 202

Dimensions 202
Designs (direction of rotation) 202
Mounting positions 203
Lubrication details 204

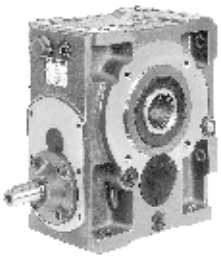
10.3 - Gear reducers R C2I 205

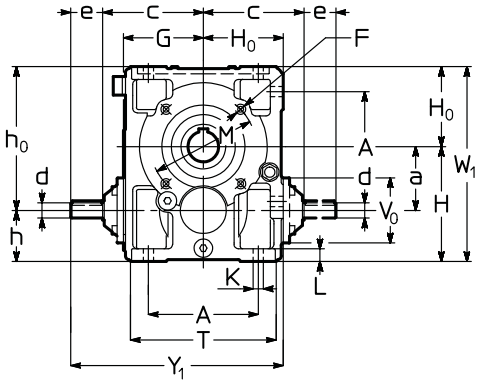
Dimensions 205
Designs (direction of rotation) 205
Mounting positions 206
Lubrication details 207

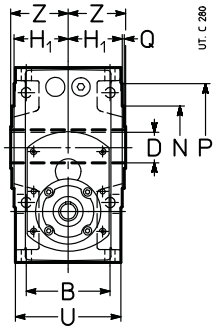
10.1 - Gear reducers R CI

Dimensions

R CI 50 ... 100

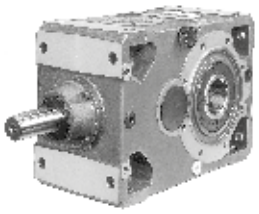


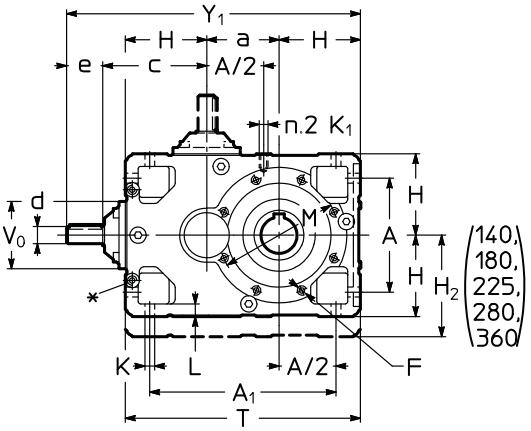


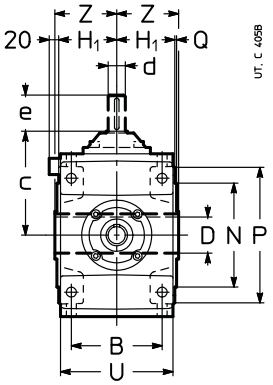


Size	a	A	B	c i_N ⩽ 8	c i_N ⩾ 10	D Ø H7	d Ø	e	Y_1	d Ø	e	Y_1	d Ø	e	Y_1	F 1)	H h11	H_0 h11 G	H_1 h12	h h11	h_0 h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	V_0 Ø	W_1	Z	kg
							i_N ⩽ 8			i_N = 10 ... 16			i_N ⩾ 20																				
50	50	86	75	100	94	24	16	30	197	16	30	191	14	30	191	M6	100	67	49	50	117	9,5	12	85	70	105	2,5	120	95	78	167	53	9
63	63	102	90	119	108	30	19	40	239	16	30	218	14	30	218	M8	125	80	58,5	62	143	11,5	14	100	80	120	3	143	114	78	205	63	14
64	63	102	90	119	108	32	19	40	239	16	30	218	14	30	218	M8	125	80	58,5	62	143	11,5	14	100	80	120	3	143	114	78	205	63	14
80	80	132	106	142	131	38	24	50	292	19	40	271	16	30	261	M10	150	100	69,5	70	180	14	17	130	110	160	3,5	180	135	86	250	75	25
81	80	132	106	142	131	40	24	50	292	19	40	271	16	30	261	M10	150	100	69,5	70	180	14	17	130	110	160	3,5	180	135	86	250	75	25
100	100	172	131	168	157	48	28	60	353	24	50	332	19	40	322	M12	180	125	84,5	80	225	16	20	165	130	200	3,5	228	165	104	305	90	45

R CI 125 ... 360





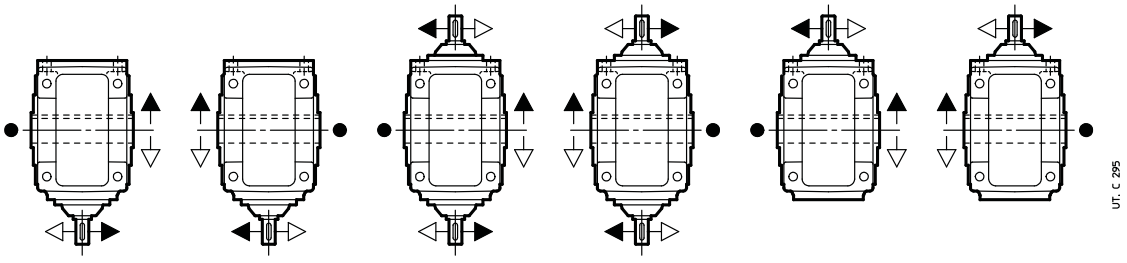


Size	a	A	A_1	B	c i_N ⩽ 8	c i_N ⩾ 9	D Ø H7	d Ø	e	Y_1	d Ø	e	Y_1	d Ø	e	Y_1	F 1)	H h11	H_1 h12	H_2 h11	K Ø	K_1 2)	L	M Ø	N Ø h6	P Ø	Q	T	U	V_0 Ø	Z	kg
															i_N ⩾ 18																			
					⩽ 8	⩾ 9		i_N ⩽ 8			i_N = 9 ... 16																						
125	125	212	337	162	202	188	60	38	80	557	28	60	523	24	50	513	3)	150	103,5	-	18	M12	23	215	180	250	4	425	201	122	110	89
					⩽ 9	⩾ 10		i_N ⩽ 9			i_N = 10 ... 16																						
140	140	212	352	162	202	188	70	38	80	572	28	60	538	24	50	528	3)	150	103,5	180	18	M12	23	265	230	300	4	440	201	122	125	102
					⩽ 8	⩾ 9		i_N ⩽ 8			i_N = 9 ... 16																						
160	160	252	412	201	246	226	80	48	110	696	38	80	646	32	80	646	M16	180	128,5	-	22	M16	28	265	230	300	4	520	249	155	136	158
					⩽ 9	⩾ 10		i_N ⩽ 9			i_N = 10 ... 16																						
180	180	252	432	201	246	226	90	48	110	716	38	80	666	32	80	666	M16	180	128,5	225	22	M16	28	300	250	350	5	540	249	155	150	181
					⩽ 8	⩾ 9		i_N ⩽ 8			i_N = 9 ... 16																						
200	200	320	520	250	305	282	100	55	110	840	48	110	817	38	80	787	3)	225	158	-	27	M20	34	350	300	400	5	650	307	190	167	282
					⩽ 9	⩾ 10		i_N ⩽ 9			i_N = 10 ... 16																						
225	225	320	545	250	305	282	110	55	110	865	48	110	842	38	80	812	M20	225	158	280	27	M20	34	400	350	450	5	675	307	190	180	324
					⩽10	⩾11,2		i_N ⩽ 10			i_N = 11,2 ... 16																						
250	250	396	646	310	380	357	125	70	140	1050	55	110	997	48	110	997	3)	280	195	-	33	M24	42	500	450	550	5	810	380	238	206	495
					⩽11,2	⩾12,5		i_N ⩽ 11,2			i_N = 12,5 ... 16																						
280	280	396	676	310	380	357	140	70	140	1080	55	110	1027	48	110	1027	M24	280	195	355	33	M24	42	500	450	550	5	840	380	238	222	568
								i_N ⩽ 10			i_N = 11,2 ... 16																						
320, 321	320	510	830	386	480		160	90	170	1325	70	140	1295	70	140	1295	3)	355	241	-	39	M30	52	600	550	660	6	1030	470	290	254	882
								i_N ⩽ 11,2			i_N = 12,5 ... 16																						
360	360	510	870	386	480		180	90	170	1365	70	140	1335	70	140	1335	M30	355	241	450	39	M30	52	600	550	660	6	1070	470	290	273	1013

See notes on following page.

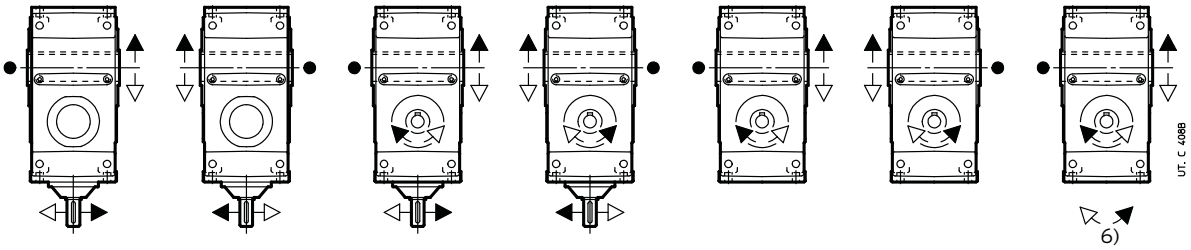
Designs (direction of rotation)

R CI 50 ... 100



U03A U03A sin U03D [4] U03D sin [4] U03E U03E sin

R CI 125 ... 360



U02A U02A sin (140, 180, 225, 280, 360) U02H U02H sin U02V U02V sin U02D [7]

● Position of reference groove (see ch. 6) for radial load verification.
∗ Machined surface and N. 2 threaded holes (dimensions in ch. 6 «Gear reducer input face») on opposite side (not in view) too.
1) Working length of thread 2 · F.
2) Working length of thread 2 · K1.
3) For dimension, number and angular position see ch. 6.
4) Not possible for size 50 with $i_N < 8$.
6) Direction of rotation of the second high speed shaft overhang not in view.
7) Design not possible for sizes 140, 180, 225, 280 and 360.

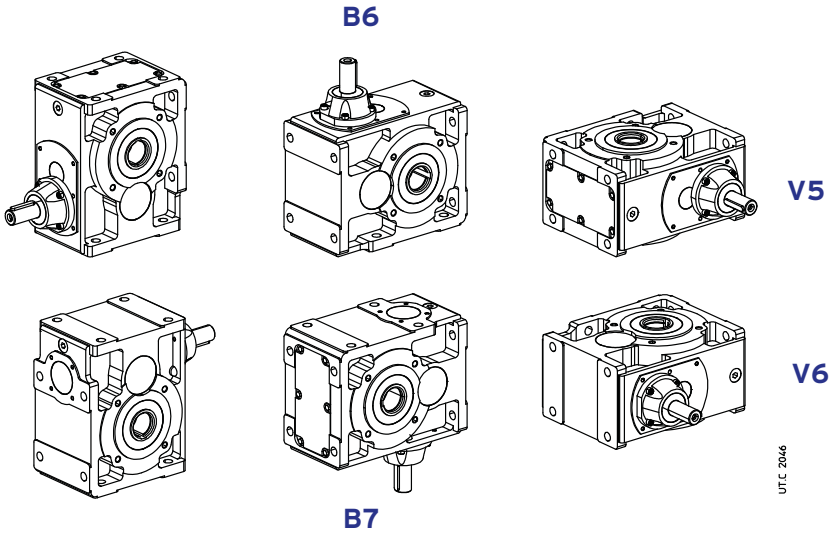
Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

R CI 50 ... 100

Designs:

UO3A
UO3Asin
UO3D
UO3Dsin
UO3E
UO3Esin

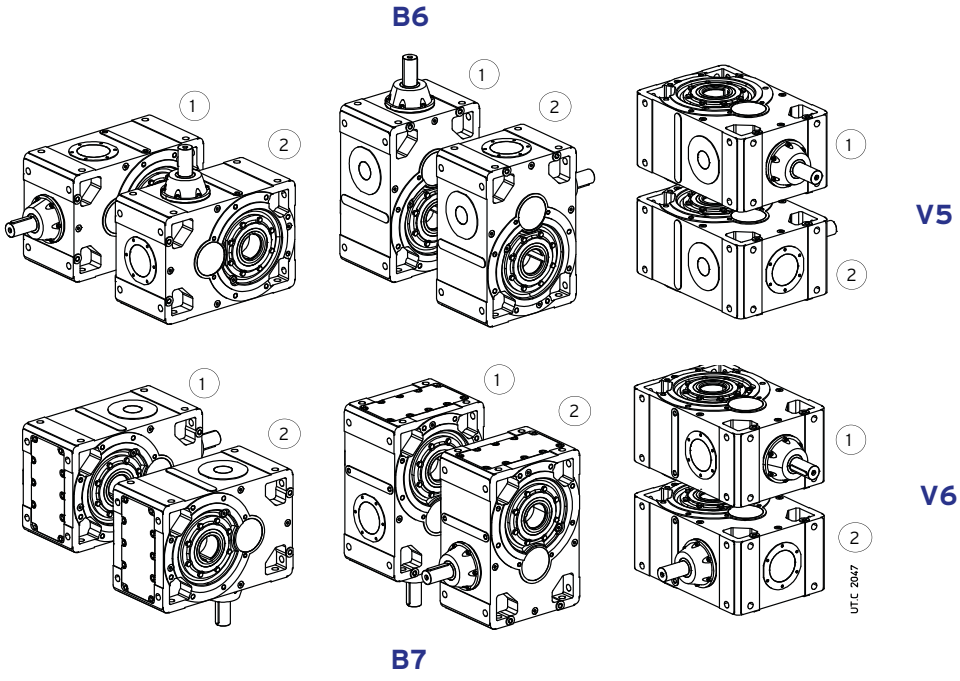


R CI 125 ... 360

Designs:

(1)
UO2A
UO2Asin
UO2H
UO2Hsin

(2)
UO2V
UO2Vsin
UO2D



Oil quantity R CI 50 ... 360

Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

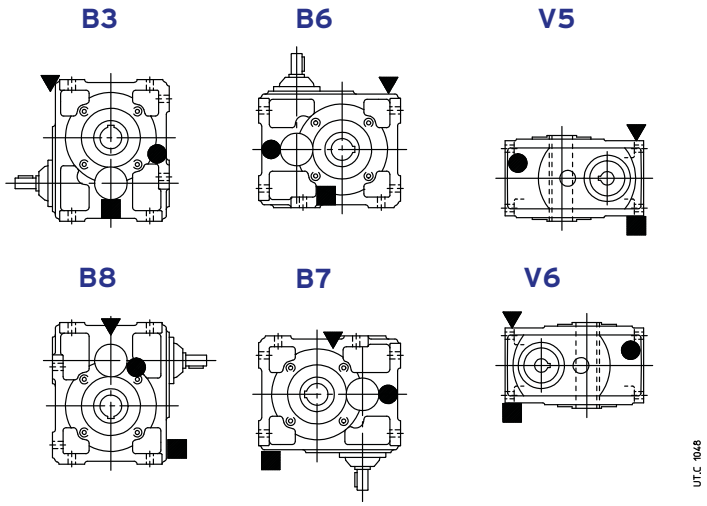
Mounting position	50	63, 64	80, 81	100	125	140	160	180	200	225	250	280	320, 321	360
B3	0,4	0,8	1,3	2,6	5,3	8,2	10,5	16,1	20,5	31,5	40	61	78	120
B8	0,6	1	2	3,8	5,3	5,5	10,5	10,7	20,5	21	40	41	78	80
B6	0,4	0,8	1,3	2,9	7	8,7	13,7	17	26,7	33,3	52	65	102	127
B7	0,4	0,8	1,3	2,9	7,6	9,7	15	19	29	37	57	72	111	141
V5	0,45	0,95	1,8	3,5	8,9	10,3	17,5	20,1	34	39,3	67	77	130	150
V6	0,45	0,95	1,8	3,5	8,9	10,3	17,5	20,1	34	39,3	67	77	130	150

Lubrication details

R CI 100

Designs:

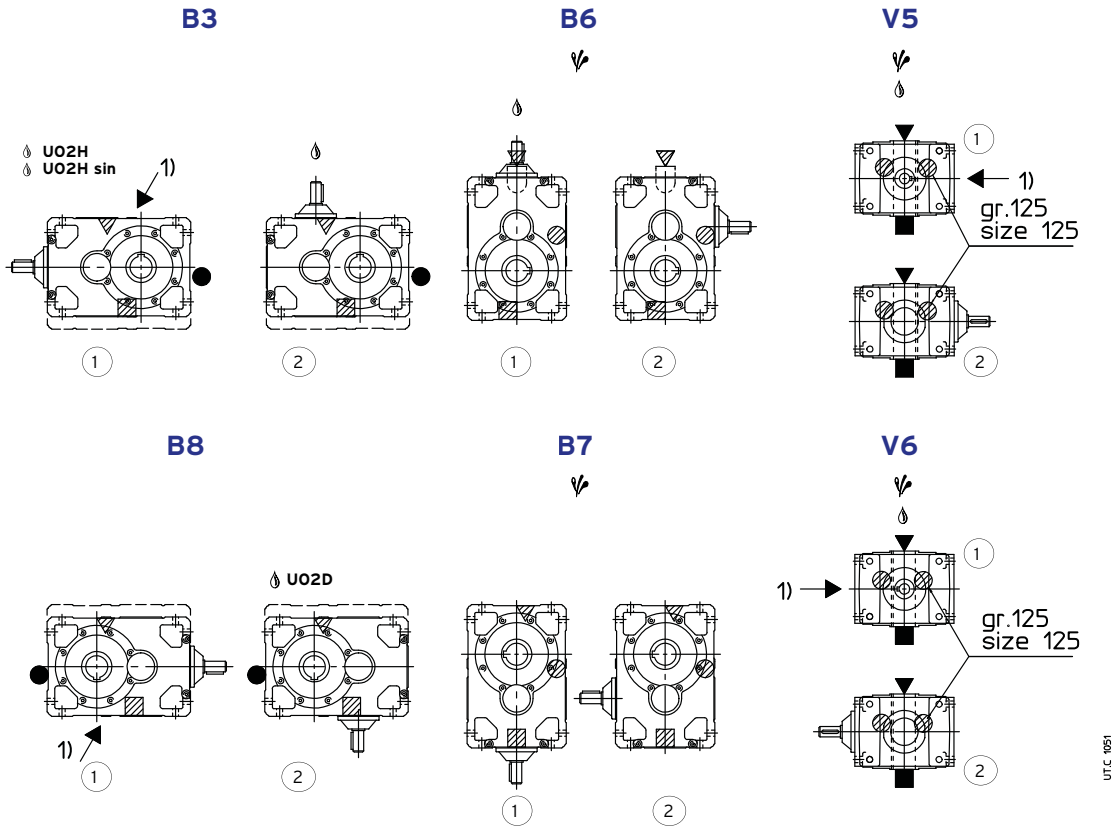
U03A
U03A sin
U03D
U03D sin
U03E
U03Esin



R CI 125 ... 360

Designs:

(1)
U02A
U02Asin
U02H
U02Hsin
(2)
U02V
U02Vsin
U02D



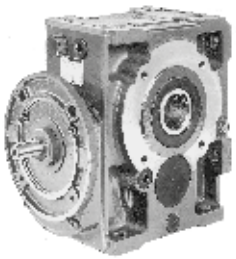
1) Position of intermediate hole for mounting position identification.
Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.
Possible bearing lubrication pump or high speed shaft lubrication device (see ch. 17 (19)).

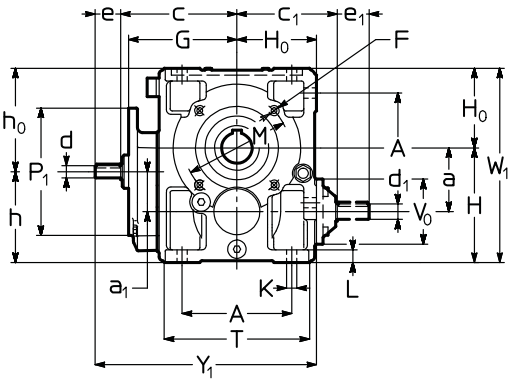
▼ oil filler plug
● oil level plug
■ oil drain plug
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

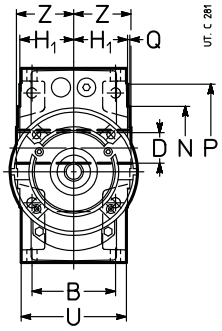
10.2 - Gear reducers R ICI

Dimensions

R ICI 50 ... 200



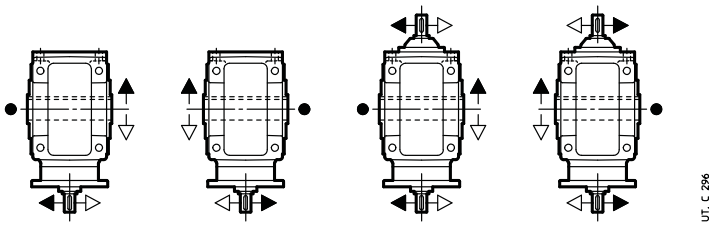




Size	a	a1	A	B	c	c1	D Ø H7	d Ø	e	Y1	d Ø	e	Y1	d1 Ø	e1	d1 Ø	e1	F	G	H h11	H0 h11	H1 h12	h h11	h0 h11	K Ø	L	M Ø	N Ø h6	P Ø	P1	Q	T	U	V0 Ø	W1	Z	kg
									$i_N \leq 80$			$i_N \geq 100$		4) $i_N \leq 40$		5) $i_N \geq 50$		1)																				
50	50	40	86	75	107	94	24	11	23	197	-	-	-	16	30	14	30	M6	98	100	67	49	90	77	9,5	12	85	70	105	140 3)	2,5	120	95	78	167	53	11
63	63	50	102	90	127	108	30	14	30	237	14	30	237	16	30	14	30	M8	118	125	80	58,5	112	93	11,5	14	100	80	120	160 3)	3	143	114	78	205	63	17
64	63	50	102	90	127	108	32	14	30	237	14	30	237	16	30	14	30	M8	118	125	80	58,5	112	93	11,5	14	100	80	120	160 3)	3	143	114	78	205	63	17
80	80	50	132	106	147	131	38	14	30	277	14	30	277	19	40	16	30	M10	138	150	100	69,5	120	130	14	17	130	110	160	160 3)	3,5	180	135	86	250	75	28
81	80	50	132	106	147	131	40	14	30	277	14	30	277	19	40	16	30	M10	138	150	100	69,5	120	130	14	17	130	110	160	160 3)	3,5	180	135	86	250	75	28
100	100	62,5	172	131	181	157	48	19	40	346	16	30	336	24	50	19	40	M12	170	180	125	84,5	143	162	16	20	165	130	200	200	3,5	228	165	104	305	90	50
125	125	80	212	162	216	188	60	24	50	416	19	40	406	28	60	24	50	2)	205	225	150	103,5	180	195	18	23	215	180	250	200	4	274	201	122	375	110	88
140	140	80	212	162	216	188	70	24	50	416	19	40	406	28	60	24	50	2)	205	240	150	103,5	180	210	18	23	265	230	300	200	4	274	201	122	390	125	102
160	160	100	252	201	258	226	80	28	60	498	24	50	488	38	80	32	80	2)	247	280	180	128,5	220	240	22	28	265	230	300	250	4	328	249	155	460	136	164
180	180	100	252	201	258	226	90	28	60	498	24	50	488	38	80	32	80	2)	247	300	180	128,5	220	260	22	28	300	250	350	250	5	328	249	155	480	150	188
200	200	125	320	250	318	282	100	32	80	623	32	80	623	48	110	38	80	2)	305	355	225	158	280	300	27	34	350	300	400	300	5	410	307	190	580	167	296

Designs (direction of rotation)

R ICI 50 ... 200



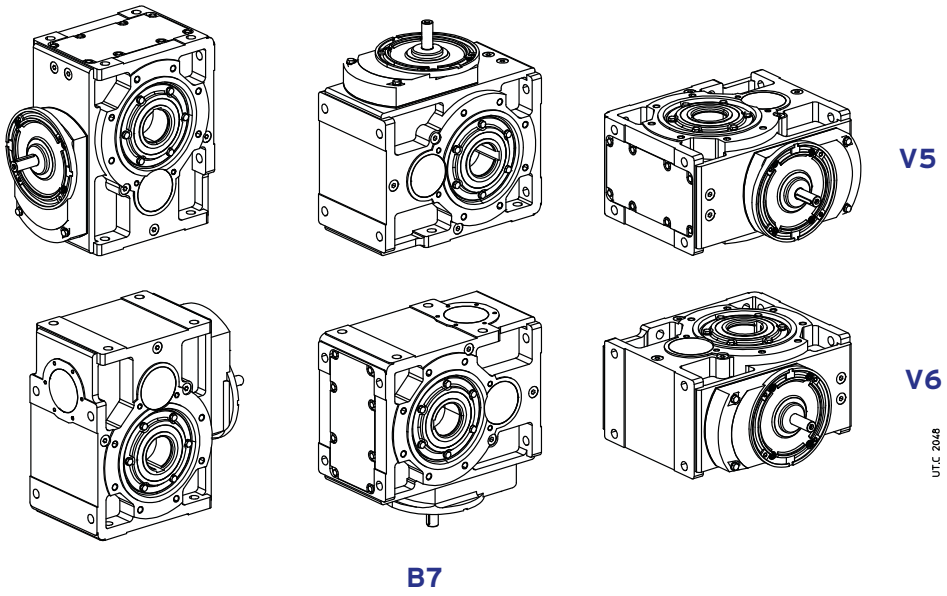
● Position of reference groove (see ch. 6) for radial load verification.
1) Working length of thread 2 · F.
2) For dimension, number and angular position see ch. 6.
3) Square flange: for dimensions see ch. 6.
4) For sizes 140 and 180 the dimensions are valid for $i_N \leq 50$ and $i_N = 100$.
5) For sizes 140 and 180 the dimensions are valid for the following ratios $i_N = 63$, $i_N = 80$, $i_N = 125$ and $i_N = 160$.

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

R ICI 50 ... 200

Designs:
UO3A
UO3Asin
UO3D
UO3Dsin



Oil quantity R ICI 50 ... 200

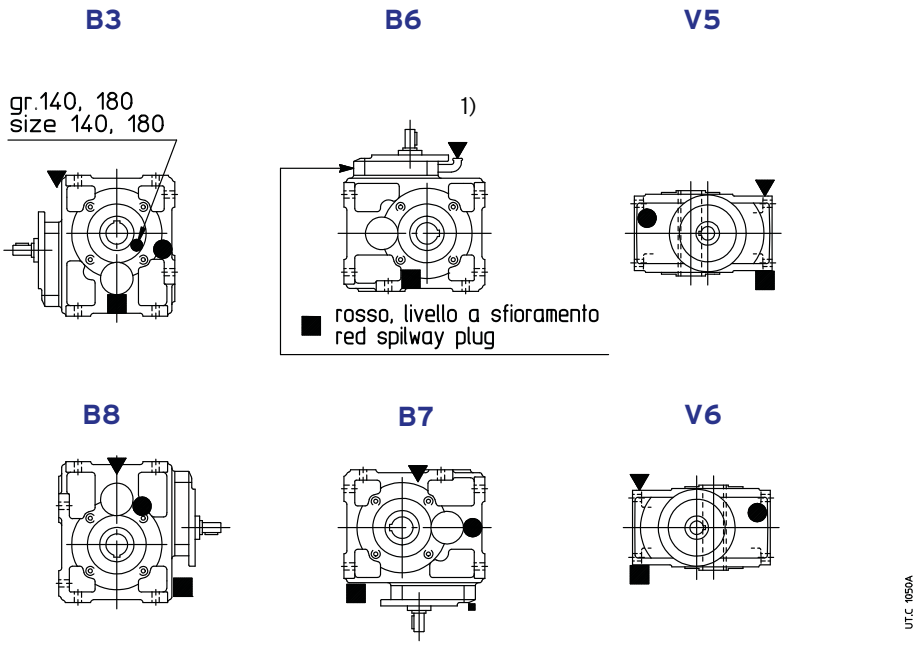
Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	50	63, 64	80, 81	100	125	140	160	180	200
B3	0,45	1	1,6	3	6	6,8	10,6	11,9	20
B8	0,65	1,2	2,2	4,2	9	10,6	16	18,9	30
B6	0,8	1,6	2,7	5,8	11,6	13,7	21	24,8	40
B7	0,45	1	1,6	3	6	6,8	10,6	11,9	20
V5	0,5	1,15	2	3,8	7	8,3	13	15,3	24
V6	0,5	1,15	2	3,8	7	8,3	13	15,3	24

Lubrication details

R ICI 100 ... 200

Designs:
UO3A
UO3Asin
UO3D
UO3Dsin



1) See also ch. 6 page 43.

▼ oil filler plug
● oil level plug
■ oil drain plug

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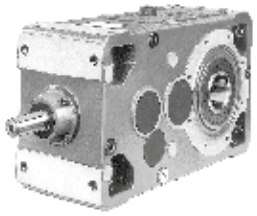
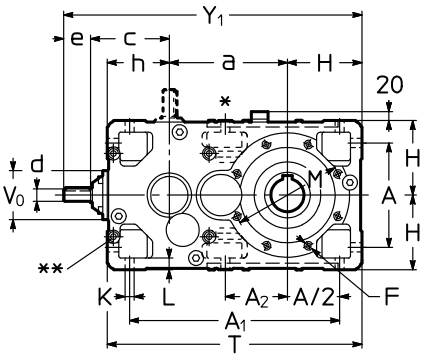
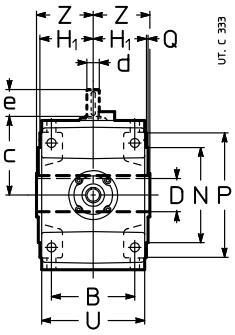
10.3 - Gear reducers R C2I

Dimensions

R C2I 140 ... 360



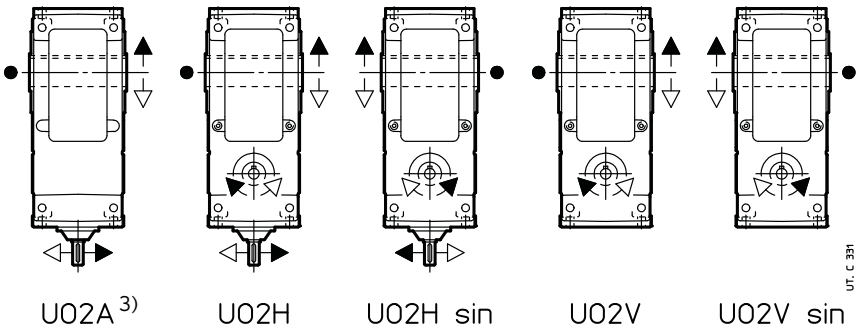




Size	a	A	A_1	A_2	B	c i_N ⩽ 31,5	c i_N ⩾ 35,5	D Ø H7	d Ø	e	Y_1	d Ø	e	Y_1	d Ø	e	Y_1	F 1)	H h11	H_1 h12	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	V_0 Ø	Z	kg
									i_N ⩽ 31,5			i_N = 35,5 ... 63			i_N ⩾ 71																		
140	240	212	427	127	162	168	157	70	28	60	618	24	50	597	19	40	587	2)	150	103,5	125	18	23	265	230	300	4	515	201	104	125	111
160	285	252	507	150*	201	202	188	80	38	80	747	28	60	713	24	50	703	M16	180	128,5	150	22	28	265	230	300	4	615	249	122	136	182
180	305	252	527	170	201	202	188	90	38	80	767	28	60	733	24	50	723	M16	180	128,5	150	22	28	300	250	350	5	635	249	122	150	200
200	360	320	635	198*	250	246	226	100	48	110	941	38	80	891	32	80	891	2)	225	158	180	27	34	350	300	400	5	765	307	155	167	321
225	385	320	660	223	250	246	226	110	48	110	966	38	80	916	32	80	916	M20	225	158	180	27	34	400	350	450	5	790	307	155	180	352
250	450	396	791	247*	310	305	282	125	55	110	1145	48	110	1122	38	80	1092	2)	280	195	225	33	42	500	450	550	5	955	380	190	206	563
280	480	396	821	277	310	305	282	140	55	110	1175	48	110	1152	38	80	1122	M24	280	195	225	33	42	500	450	550	5	985	380	190	222	617
320, 321	570	510	1005	318*	386	380	357	160	70	140	1445	55	110	1392	48	110	1392	2)	355	241	280	39	52	600	550	660	6	1205	470	238	254	991
360	610	510	1045	358	386	380	357	180	70	140	1485	55	110	1432	48	110	1432	M30	355	241	280	39	52	600	550	660	6	1245	470	238	273	1086

Designs (direction of rotation)

R C2I 140 ... 360



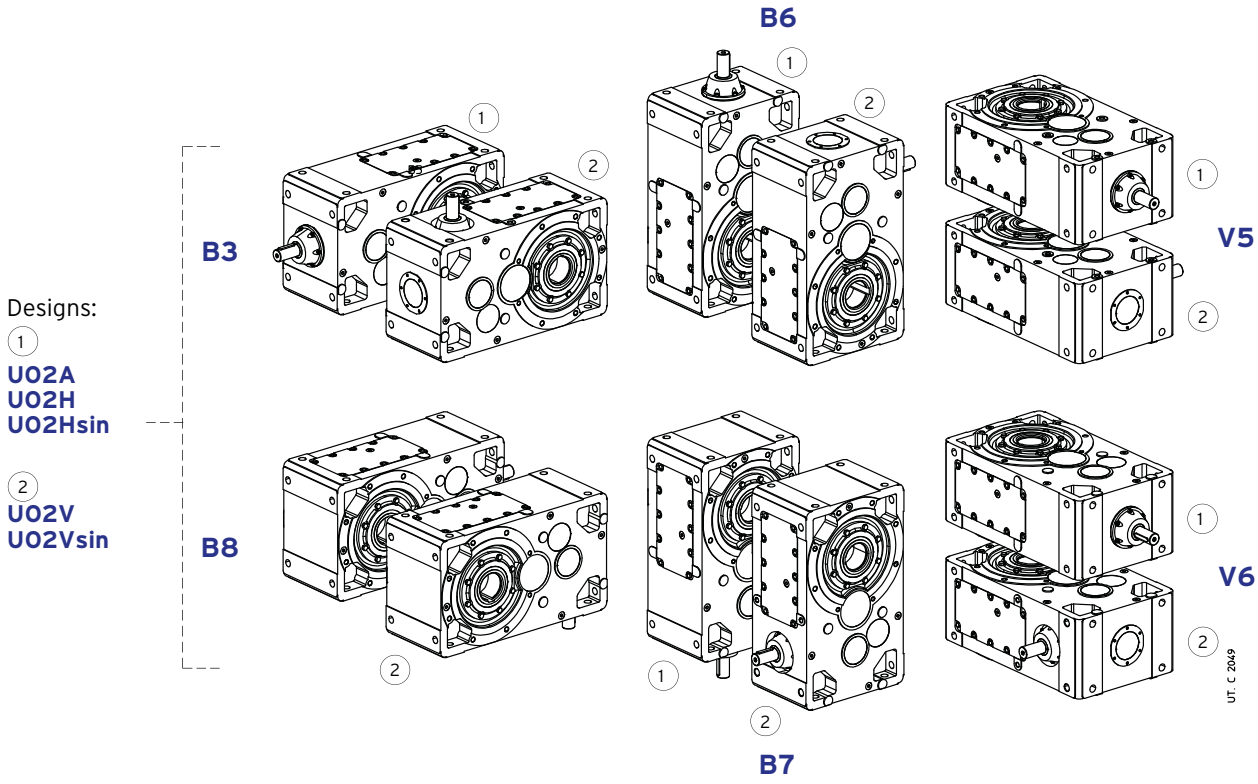
● Position of reference groove (see ch. 6) for radial load verification.
* Only No. 2 holes M 16 32 (size 160), M 20 38 (size 200), M 24 46 (size 250) and M 30 58 (sizes 320 and 321) and not for design U02A.
* *Machined surface and N.4 threaded holes (dimensions in ch. 6 «Gear reducer input face») on opposite side (not in view) too.
1) Working length of thread 2 · F.
2) For dimension, number and angular position see ch. 6.
3) The housing of this design is not pre-arranged for the other designs.

42

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

R C2I 140 ... 360



Oil quantity R C2I 140 ... 360

Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	140	160	180	200	225	250	280	320, 321	360
B3	6,6	12	13	25	26	47	51	97	100
B8	6,6	12	13	25	26	47	51	97	100
B6	10,8	20	21	39	41	75	80	152	156
B7	9,7	18	19	35	37	67	72	137	140
V5	9,7	18	19	35	37	67	72	137	140
V6	9,7	18	19	35	37	67	72	137	140

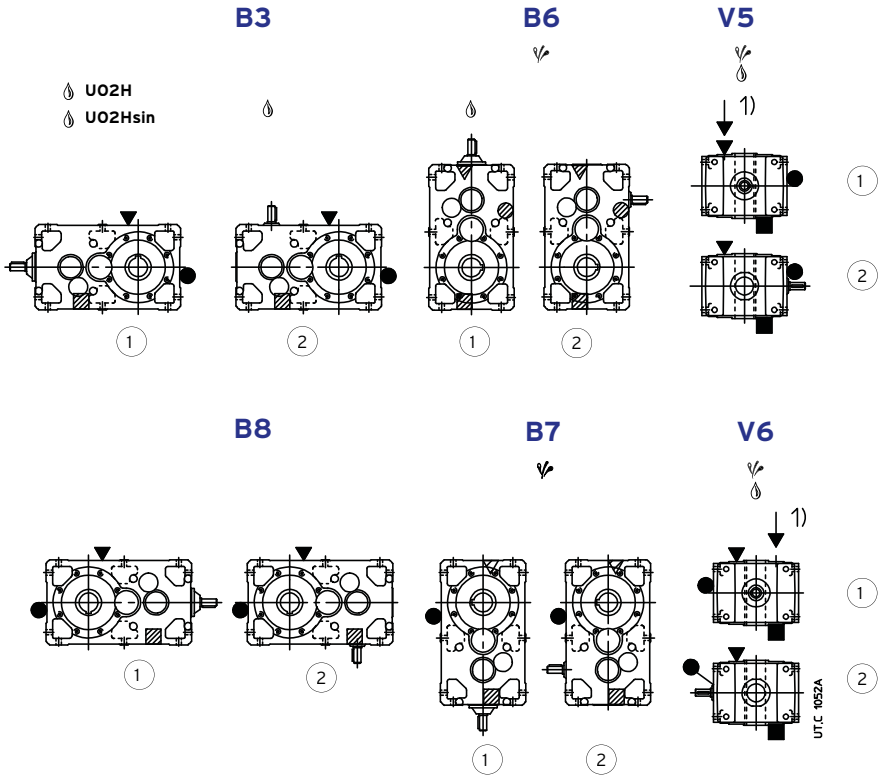
Lubrication details

R C2I 140 ... 360

Designs:

(1)
U02A
U02H
U02Hsin

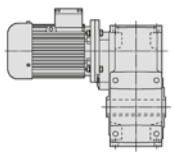
(2)
U02V
U02Vsin



1) Position of intermediate hole for mounting position identification.
Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.
Possible bearing lubrication pump or high speed shaft lubrication device (see ch. 17 (19)).

▼ oil filler plug
● oil level plug
■ oil drain plug
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

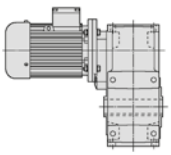
11 – Helical gearmotor selection tables



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
0,09	**3,42**	231	1,5	**MR 4I 63 - 11 × 140** 63 A	6	263
	3,29	240	1,7	**MR 4I 64 - 11 × 140** 63 A	6	274
	4,28	185	2,12	**MR 4I 63 - 11 × 140** 63 A	6	210
	4,11	193	2,5	**MR 4I 64 - 11 × 140** 63 A	6	219
	5,21	152	2,65	**MR 4I 63 - 11 × 140** 63 A	6	173
	6,31	125	3,15	**MR 4I 63 - 11 × 140** 63 A	6	143
	7,68	103	3,75	**MR 4I 63 - 11 × 140** 63 A	6	117
	10,7	76	3,55	**MR 3I 63 - 11 × 140** 63 A	6	84,3
	14	58	1,18	**MR 3I 40 - 11 × 140** 63 A	6	64,3
	14,2	57	2,36	**MR 3I 50 - 11 × 140** 63 A	6	63,2
	16,9	47,8	1,8	**MR 3I 40 - 11 × 140** 63 A	6	53,2
	17,3	46,7	3,35	**MR 3I 50 - 11 × 140** 63 A	6	52
	20,5	39,4	2,5	**MR 3I 40 - 11 × 140** 63 A	6	43,9
	23,3	34,7	2	**MR 3I 40 - 11 × 140** 63 A	6	38,7
	28,1	28,7	3	**MR 3I 40 - 11 × 140** 63 A	6	32
	34,1	23,7	4	**MR 3I 40 - 11 × 140** 63 A	6	26,4
	33,7	24,5	2,8	**MR 2I 40 - 11 × 140** 63 A	6	26,7
	44,1	18,3	5,3	**MR 3I 40 - 11 × 140** 63 A	6	20,4
	40,7	20,3	4	**MR 2I 40 - 11 × 140** 63 A	6	22,1
	49,4	16,7	5,6	**MR 2I 40 - 11 × 140** 63 A	6	18,2
	56,1	14,7	4,5	**MR 2I 40 - 11 × 140** 63 A	6	16,1
	67,7	12,2	6,7	**MR 2I 40 - 11 × 140** 63 A	6	13,3
	82,2	10	9,5	**MR 2I 40 - 11 × 140** 63 A	6	11
0,12	**3,42**	308	1,12	**MR 4I 63 - 11 × 140** 63 B	6	263
	3,29	321	1,32	**MR 4I 64 - 11 × 140** 63 B	6	274
	4,28	247	1,6	**MR 4I 63 - 11 × 140** 63 B	6	210
	4,11	257	1,9	**MR 4I 64 - 11 × 140** 63 B	6	219
	5,32	198	1,7	**MR 4I 63 - 11 × 140** 63 A	4	263
	5,12	206	2	**MR 4I 64 - 11 × 140** 63 A	4	274
	5,21	203	1,9	**MR 4I 63 - 11 × 140** 63 B	6	173
	4,99	211	2,36	**MR 4I 64 - 11 × 140** 63 B	6	180
	6,65	158	2,5	**MR 4I 63 - 11 × 140** 63 A	4	210
	8,1	130	3	**MR 4I 63 - 11 × 140** 63 A	4	173
	9,81	107	3,75	**MR 4I 63 - 11 × 140** 63 A	4	143
	10,7	101	2,65	**MR 3I 63 - 11 × 140** 63 B	6	84,3
	14	77	0,9	**MR 3I 40 - 11 × 140** 63 B	6	64,3
	14,2	76	1,8	**MR 3I 50 - 11 × 140** 63 B	6	63,2
	11,9	88	4,5	**MR 4I 63 - 11 × 140** 63 A	4	117
	13,3	81	4	**MR 3I 63 - 11 × 140** 63 B	6	67,5
	16,9	64	1,32	**MR 3I 40 - 11 × 140** 63 B	6	53,2
	17,3	62	2,5	**MR 3I 50 - 11 × 140** 63 B	6	52
	16,6	65	4,25	**MR 3I 63 - 11 × 140** 63 A	4	84,3
	21,8	49,5	1,4	**MR 3I 40 - 11 × 140** 63 A	4	64,3
	20,5	53	1,9	**MR 3I 40 - 11 × 140** 63 B	6	43,9
	22,1	48,7	2,8	**MR 3I 50 - 11 × 140** 63 A	4	63,2
	26,3	41	2	**MR 3I 40 - 11 × 140** 63 A	4	53,2
	26,9	40	3,75	**MR 3I 50 - 11 × 140** 63 A	4	52
	31,9	33,8	2,8	**MR 3I 40 - 11 × 140** 63 A	4	43,9
	36,2	29,8	2,24	**MR 3I 40 - 11 × 140** 63 A	4	38,7
	33,7	32,6	2,12	**MR 2I 40 - 11 × 140** 63 B	6	26,7
	43,7	24,6	3,35	**MR 3I 40 - 11 × 140** 63 A	4	32
	40,7	27	3	**MR 2I 40 - 11 × 140** 63 B	6	22,1
	53,1	20,3	4,75	**MR 3I 40 - 11 × 140** 63 A	4	26,4
	52,4	21	3,15	**MR 2I 40 - 11 × 140** 63 A	4	26,7
	68,5	15,7	6	**MR 3I 40 - 11 × 140** 63 A	4	20,4
	63,3	17,4	4,75	**MR 2I 40 - 11 × 140** 63 A	4	22,1
	76,9	14,3	6,3	**MR 2I 40 - 11 × 140** 63 A	4	18,2
	87,2	12,6	5,3	**MR 2I 40 - 11 × 140** 63 A	4	16,1
	105	10,4	7,5	**MR 2I 40 - 11 × 140** 63 A	4	13,3
	128	8,6	10,6	**MR 2I 40 - 11 × 140** 63 A	4	11
	165	6,7	12,5	**MR 2I 40 - 11 × 140** 63 A	4	8,48

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
0,18	**2,86**	552	1,32	**MR 4I 80 - 14 × 160** 71 A	6	314
	2,86	552	1,5	**MR 4I 81 - 14 × 160** 71 A	6	314
	3,42	463	1,6	**MR 4I 80 - 14 × 160** 71 A	6	263
	3,42	463	1,8	**MR 4I 81 - 14 × 160** 71 A	6	263
	4,72	335	1	**MR 4I 63 - 14 × 160** 71 A	6	191
	4,54	348	1,18	**MR 4I 64 - 14 × 160** 71 A	6	198
	4,27	371	2,24	**MR 4I 80 - 14 × 160** 71 A	6	211
	4,27	371	2,65	**MR 4I 81 - 14 × 160** 71 A	6	211
	5,32	297	1,12	**MR 4I 63 - 11 × 140** 63 B	4	263
	5,12	309	1,32	**MR 4I 64 - 11 × 140** 63 B	4	274
	5,9	268	1,5	**MR 4I 63 - 14 × 160** 71 A	6	152
	5,67	279	1,7	**MR 4I 64 - 14 × 160** 71 A	6	159
	5,67	279	2,8	**MR 4I 80 - 14 × 160** 71 A	6	159
	5,67	279	3,55	**MR 4I 81 - 14 × 160** 71 A	6	159
	6,65	238	1,7	**MR 4I 63 - 11 × 140** 63 B	4	210
	6,39	248	2	**MR 4I 64 - 11 × 140** 63 B	4	219
	7,19	220	1,8	**MR 4I 63 - 14 × 160** 71 A	6	125
	6,49	244	3,35	**MR 4I 80 - 14 × 160** 71 A	6	139
	8,1	195	2	**MR 4I 63 - 11 × 140** 63 B	4	173
	7,76	204	2,5	**MR 4I 64 - 11 × 140** 63 B	4	180
	9,81	161	2,5	**MR 4I 63 - 11 × 140** 63 B	4	143
	11,9	132	3	**MR 4I 63 - 11 × 140** 63 B	4	117
	14,7	110	2,5	**MR 3I 63 - 14 × 160** 71 A	6	61,1
	19,5	83	1,6	**MR 3I 50 - 14 × 160** 71 A	6	46,2
	16,6	97	2,8	**MR 3I 63 - 11 × 140** 63 B	4	84,3
	21,8	74	0,95	**MR 3I 40 - 11 × 140** 63 B	4	64,3
	22,1	73	1,8	**MR 3I 50 - 11 × 140** 63 B	4	63,2
	26,3	61	1,4	**MR 3I 40 - 11 × 140** 63 B	4	53,2
	26,9	60	2,5	**MR 3I 50 - 11 × 140** 63 B	4	52
	31,9	51	1,9	**MR 3I 40 - 11 × 140** 63 B	4	43,9
	36,2	44,6	1,5	**MR 3I 40 - 11 × 140** 63 B	4	38,7
	33,7	49	1,4	**MR 2I 40 - 14 × 140** 71 A	** 6	26,7
	33,1	48,9	3,75	**MR 3I 50 - 11 × 140** 63 B	4	42,4
	36,9	44,7	3	**MR 2I 50 - 14 × 160** 71 A	6	24,4
	43,7	37	2,24	**MR 3I 40 - 11 × 140** 63 B	4	32
	40,7	40,5	2	**MR 2I 40 - 14 × 140** 71 A	** 6	22,1
	39,7	40,7	5	**MR 3I 50 - 11 × 140** 63 B	4	35,3
	53,1	30,5	3,15	**MR 3I 40 - 11 × 140** 63 B	4	26,4
	52,4	31,5	2,12	**MR 2I 40 - 11 × 140** 63 B	4	26,7
	68,5	23,6	4	**MR 3I 40 - 11 × 140** 63 B	4	20,4
	63,3	26,1	3,15	**MR 2I 40 - 11 × 140** 63 B	4	22,1
	76,9	21,5	4,25	**MR 2I 40 - 11 × 140** 63 B	4	18,2
	87,2	18,9	3,55	**MR 2I 40 - 11 × 140** 63 B	4	16,1
	105	15,7	5	**MR 2I 40 - 11 × 140** 63 B	4	13,3
	128	12,9	7,1	**MR 2I 40 - 11 × 140** 63 B	4	11
	165	10	8,5	**MR 2I 40 - 11 × 140** 63 B	4	8,48
0,25	**2,86**	767	1,12	**MR 4I 81 - 14 × 160** 71 B	6	314
	3,42	642	1,12	**MR 4I 80 - 14 × 160** 71 B	6	263
	3,42	642	1,32	**MR 4I 81 - 14 × 160** 71 B	6	263
	4,45	493	1,5	**MR 4I 80 - 14 × 160** 71 A	4	314
	4,45	493	1,7	**MR 4I 81 - 14 × 160** 71 A	4	314
	4,27	515	1,6	**MR 4I 80 - 14 × 160** 71 B	6	211
	4,27	515	1,9	**MR 4I 81 - 14 × 160** 71 B	6	211
	5,12	429	1	**MR 4I 64 - 11 × 140** 63 C	4	274
	5,9	372	1,06	**MR 4I 63 - 14 × 160** 71 B	6	152
	5,67	388	1,25	**MR 4I 64 - 14 × 160** 71 B	6	159
	5,32	413	1,8	**MR 4I 80 - 14 × 160** 71 A	4	263
	5,32	413	2	**MR 4I 81 - 14 × 160** 71 A	4	263
	5,67	387	2	**MR 4I 80 - 14 × 160** 71 B	6	159
	6,65	330	1,18	**MR 4I 63 - 11 × 140** 63 C	4	210
	6,39	344	1,4	**MR 4I 64 - 11 × 140** 63 C	4	219
	7,35	299	1,12	**MR 4I 63 - 14 × 160** 71 A	4	191
	7,06	311	1,32	**MR 4I 64 - 14 × 160** 71 A	4	198
	7,19	306	1,32	**MR 4I 63 - 14 × 160** 71 B	6	125

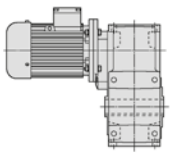
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
** Mounting position **B5A** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)							i
0,25	**6,89**	319	1,6	**MR 4I 64 - 14 × 160**	71	B		6			131
	6,64	331	2,5	**MR 4I 80 - 14 × 160**	71	A		4			211
	8,1	271	1,5	**MR 4I 63 - 11 × 140**	63	C		4			173
	7,76	283	1,8	**MR 4I 64 - 11 × 140**	63	C		4			180
	9,18	239	1,6	**MR 4I 63 - 14 × 160**	71	A		4			152
	8,81	249	1,9	**MR 4I 64 - 14 × 160**	71	A		4			159
	8,83	249	3,15	**MR 4I 80 - 14 × 160**	71	A		4			159
	9,11	246	2,36	**MR 3I 80 - 14 × 160**	71	B		6			98,8
	9,11	246	2,8	**MR 3I 81 - 14 × 160**	71	B		6			98,8
	9,81	224	1,8	**MR 4I 63 - 11 × 140**	63	C		4			143
	9,42	233	2,12	**MR 4I 64 - 11 × 140**	63	C		4			149
	11,2	197	2	**MR 4I 63 - 14 × 160**	71	A		4			125
	10,7	205	2,5	**MR 4I 64 - 14 × 160**	71	A		4			131
	10,9	206	2,8	**MR 3I 80 - 14 × 160**	71	B		6			82,7
	10,9	206	3,15	**MR 3I 81 - 14 × 160**	71	B		6			82,7
	11,9	184	2,12	**MR 4I 63 - 11 × 140**	63	C		4			117
	11,4	192	2,65	**MR 4I 64 - 11 × 140**	63	C		4			122
	14,7	152	1,8	**MR 3I 63 - 14 × 160**	71	B		6			61,1
	19,5	115	1,18	**MR 3I 50 - 14 × 160**	71	B		6			46,2
	16,6	135	2	**MR 3I 63 - 11 × 140**	63	C		4			84,3
	18,4	122	2,65	**MR 3I 63 - 14 × 160**	71	B		6			48,9
	22,1	101	1,32	**MR 3I 50 - 11 × 140**	63	C		4			63,2
	23,7	95	1,6	**MR 3I 50 - 14 × 160**	71	B		6			38
	20,8	108	3	**MR 3I 63 - 11 × 140**	63	C		4			67,5
	22,9	98	2,8	**MR 3I 63 - 14 × 160**	71	A		4			61,1
	26,3	85	1	**MR 3I 40 - 11 × 140**	63	C		4			53,2
	26,9	83	1,8	**MR 3I 50 - 11 × 140**	63	C		4			52
	30,3	74	1,8	**MR 3I 50 - 14 × 160**	71	A		4			46,2
	29,1	77	2,36	**MR 3I 50 - 14 × 160**	71	B		6			30,9
	28,6	78	4	**MR 3I 63 - 14 × 160**	71	A		4			48,9
	31,9	70	1,4	**MR 3I 40 - 11 × 140**	63	C		4			43,9
	36,2	62	1,12	**MR 3I 40 - 11 × 140**	63	C		4			38,7
	33,7	68	1	**MR 2I 40 - 14 × 140**	71	B	**	6			26,7
	33,1	68	2,65	**MR 3I 50 - 11 × 140**	63	C		4			42,4
	36,8	61	2,5	**MR 3I 50 - 14 × 160**	71	A		4			38
	36,9	62	2,12	**MR 2I 50 - 14 × 160**	71	B		6			24,4
	43,7	51	1,6	**MR 3I 40 - 11 × 140**	63	C		4			32
	40,7	56	1,5	**MR 2I 40 - 14 × 140**	71	B	**	6			22,1
	39,7	57	3,55	**MR 3I 50 - 11 × 140**	63	C		4			35,3
	45,2	49,6	3,55	**MR 3I 50 - 14 × 160**	71	A		4			30,9
	44,8	51	3	**MR 2I 50 - 14 × 160**	71	B		6			20,1
	53,1	42,3	2,24	**MR 3I 40 - 11 × 140**	63	C		4			26,4
	52,4	43,7	1,5	**MR 2I 40 - 11 × 140**	63	C		4			26,7
	49,4	46,4	2,12	**MR 2I 40 - 14 × 140**	71	B	**	6			18,2
	60,2	37,3	4,75	**MR 3I 50 - 14 × 160**	71	A		4			23,3
	57,4	40	3,15	**MR 2I 50 - 11 × 140**	63	C		4			24,4
	57,4	40	3,15	**MR 2I 50 - 14 × 160**	71	A		4			24,4
	68,5	32,7	2,8	**MR 3I 40 - 11 × 140**	63	C		4			20,4
	63,3	36,2	2,24	**MR 2I 40 - 11 × 140**	63	C		4			22,1
	72,3	31,1	6,3	**MR 3I 50 - 14 × 160**	71	A		4			19,4
	69,7	32,9	4,5	**MR 2I 50 - 11 × 140**	63	C		4			20,1
	69,7	32,9	4,5	**MR 2I 50 - 14 × 160**	71	A		4			20,1
	76,9	29,8	3,15	**MR 2I 40 - 11 × 140**	63	C		4			18,2
	87,2	26,3	2,5	**MR 2I 40 - 11 × 140**	63	C		4			16,1
	85,6	26,8	6,7	**MR 2I 50 - 11 × 140**	63	C		4			16,3
	85,6	26,8	6,7	**MR 2I 50 - 14 × 160**	71	A		4			16,3
	105	21,8	3,75	**MR 2I 40 - 11 × 140**	63	C		4			13,3
	128	17,9	5	**MR 2I 40 - 11 × 140**	63	C		4			11
	165	13,9	6	**MR 2I 40 - 11 × 140**	63	C		4			8,48
	208	11	5	**MR 2I 40 - 11 × 140**	63	C		4			6,75
0,37	**2,58**	1259	1,06	**MR 4I 100 - 19 × 200**	80	A		6			349
	3,14	1036	1,5	**MR 4I 100 - 19 × 200**	80	A		6			287
	3,75	867	1,8	**MR 4I 100 - 19 × 200**	80	A		6			240

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)							i
0,37	**4,45**	730	1	**MR 4I 80 - 14 × 160**	71	B		4			314
	4,45	730	1,12	**MR 4I 81 - 14 × 160**	71	B		4			314
	4,27	762	1,12	**MR 4I 80 - 14 × 160**	71	C		6			211
	4,27	762	1,25	**MR 4I 81 - 14 × 160**	71	C		6			211
	4,29	759	1,12	**MR 4I 81 - 19 × 200**	80	A		6			210
	4,6	706	2,5	**MR 4I 100 - 19 × 200**	80	A		6			196
	5,32	611	1,18	**MR 4I 80 - 14 × 160**	71	B		4			263
	5,32	611	1,4	**MR 4I 81 - 14 × 160**	71	B		4			263
	5,67	573	1,4	**MR 4I 80 - 14 × 160**	71	C		6			159
	5,67	573	1,7	**MR 4I 81 - 14 × 160**	71	C		6			159
	5,35	608	1,4	**MR 4I 80 - 19 × 200**	80	A		6			168
	5,35	608	1,6	**MR 4I 81 - 19 × 200**	80	A		6			168
	5,53	588	3	**MR 4I 100 - 19 × 200**	80	A		6			163
	6,89	472	1,06	**MR 4I 64 - 14 × 160**	71	C		6			131
	6,64	490	1,7	**MR 4I 80 - 14 × 160**	71	B		4			211
	6,64	490	2	**MR 4I 81 - 14 × 160**	71	B		4			211
	9,18	354	1,12	**MR 4I 63 - 14 × 160**	71	B		4			152
	8,81	369	1,32	**MR 4I 64 - 14 × 160**	71	B		4			159
	8,83	368	2,12	**MR 4I 80 - 14 × 160**	71	B		4			159
	8,83	368	2,65	**MR 4I 81 - 14 × 160**	71	B		4			159
	9,11	365	1,6	**MR 3I 80 - 14 × 160**	71	C		6			98,8
	9,11	365	1,9	**MR 3I 81 - 14 × 160**	71	C		6			98,8
	11,2	291	1,32	**MR 4I 63 - 14 × 160**	71	B		4			125
	10,7	303	1,6	**MR 4I 64 - 14 × 160**	71	B		4			131
	10,1	322	2,65	**MR 4I 80 - 14 × 160**	71	B		4			139
	10,9	305	1,9	**MR 3I 80 - 14 × 160**	71	C		6			82,7
	10,9	305	2,24	**MR 3I 81 - 14 × 160**	71	C		6			82,7
	13,5	240	1,6	**MR 4I 63 - 14 × 160**	71	B		4			103
	13	250	1,9	**MR 4I 64 - 14 × 160**	71	B		4			108
	14,7	225	1,18	**MR 3I 63 - 14 × 160**	71	C		6			61,1
	13,4	242	3,55	**MR 4I 80 - 14 × 160**	71	B		4			104
	14,2	234	2,5	**MR 3I 80 - 14 × 160**	71	B		4			98,8
	16,5	197	2	**MR 4I 63 - 14 × 160**	71	B		4			84,9
	16,6	200	1,32	**MR 3I 63 - 11 × 140**	71	B	*	4			84,3
	16	208	1,7	**MR 3I 64 - 11 × 140**	71	B	*	4			87,7
	18,4	180	1,7	**MR 3I 63 - 14 × 160**	71	C		6			48,9
	18,4	181	1,5	**MR 3I 63 - 19 × 200**	80	A		6			48,9
	17,7	188	1,9	**MR 3I 64 - 19 × 200**	80	A		6			50,9
	16,9	196	3	**MR 3I 80 - 14 × 160**	71	B		4			82,7
	22,1	150	0,9	**MR 3I 50 - 11 × 140**	71	B	*	4			63,2
	23,7	140	1,12	**MR 3I 50 - 14 × 160**	71	C		6			38
	20,8	160	2	**MR 3I 63 - 11 × 140**	71	B	*	4			67,5
	22,9	145	1,9	**MR 3I 63 - 14 × 160**	71	B		4			61,1
	26,9	123	1,25	**MR 3I 50 - 11 × 140**	71	B	*	4			52
	30,3	110	1,18	**MR 3I 50 - 14 × 160**	71	B		4			46,2
	29,1	114	1,6	**MR 3I 50 - 14 × 160**	71	C		6			30,9
	28,6	116	2,65	**MR 3I 63 - 14 × 160**	71	B		4			48,9
	36,8	90	1,7	**MR 3I 50 - 14 × 160**	71	B		4			38
	38,7	86	2,12	**MR 3I 50 - 14 × 160**	71	C		6			23,3
	36,9	92	1,4	**MR 2I 50 - 14 × 160**	71	C		6			24,4
	37,4	91	3	**MR 2I 63 - 14 × 160**	71	C		6			24,1
	37,4	91	3	**MR 2I 63 - 19 × 200**	80	A		6			24,1
	40,7	83	1	**MR 2I 40 - 14 × 140**	71	C	**	6			22,1
	45,2	73	2,5	**MR 3I 50 - 14 × 160**	71	B		4			30,9
	44,8	76	2	**MR 2I 50 - 14 × 160**	71	C		6			20,1
	52,4	65	1,06	**MR 2I 40 - 14 × 140**	71	B	**	4			26,7
	49,4	69	1,4	**MR 2I 40 - 14 × 140**	71	C	**	6			18,2
	60,2	55	3,15	**MR 3I 50 - 14 × 160**	71	B		4			23,3
	57,4	59	2,12	**MR 2I 50 - 14 × 160**	71	B		4			24,4
	63,3	54	1,5	**MR 2I 40 - 14 × 140**	71	B	**	4			22,1
	72,3	46	4,25	**MR 3I 50 - 14 × 160**	71	B		4			19,4
	69,7	48,6	3	**MR 2I 50 - 14 × 160**	71	B		4			20,1
	76,9	44,1	2,12	**MR 2I 40 - 14 × 140**	71	B	**	4			18,2
	87,2	38,9	1,7	**MR 2I 40 - 14 × 140**	71	B	**	4			16,1
	85,6	39,6	4,5	**MR 2I 50 - 14 × 160**	71	B		4			16,3

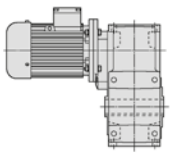
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).
** Mounting position **B5A** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)					i
0,37	**105**	32,2	2,5	**MR 2I 40 - 14 x 140**	71	B	**	4	13,3
	114	29,8	6	**MR 2I 50 - 14 x 160**	71	B		4	12,3
	128	26,5	3,35	**MR 2I 40 - 14 x 140**	71	B	**	4	11
	137	24,8	8	**MR 2I 50 - 14 x 160**	71	B		4	10,2
	165	20,5	4,25	**MR 2I 40 - 14 x 140**	71	B	**	4	8,48
	208	16,3	3,35	**MR 2I 40 - 14 x 140**	71	B	**	4	6,75
0,55	**3,14**	1540	1	**MR 4I 100 - 19 x 200**	80	B		6	287
	4,02	1203	1,12	**MR 4I 100 - 19 x 200**	80	A		4	349
	3,75	1289	1,18	**MR 4I 100 - 19 x 200**	80	B		6	240
	4,88	990	1,5	**MR 4I 100 - 19 x 200**	80	A		4	287
	5,35	903	1,06	**MR 4I 81 - 19 x 200**	80	B		6	168
	5,83	829	1,8	**MR 4I 100 - 19 x 200**	80	A		4	240
	6,64	728	1,18	**MR 4I 80 - 14 x 160**	71	C		4	211
	6,64	728	1,32	**MR 4I 81 - 14 x 160**	71	C		4	211
	6,67	725	1	**MR 4I 80 - 19 x 200**	80	A		4	210
	6,67	725	1,18	**MR 4I 81 - 19 x 200**	80	A		4	210
	7,16	675	2,65	**MR 4I 100 - 19 x 200**	80	A		4	196
	8,21	601	2,24	**MR 3I 100 - 19 x 200**	80	B		6	110
	8,83	547	1,4	**MR 4I 80 - 14 x 160**	71	C		4	159
	8,83	547	1,8	**MR 4I 81 - 14 x 160**	71	C		4	159
	8,32	581	1,4	**MR 4I 80 - 19 x 200**	80	A		4	168
	8,32	581	1,7	**MR 4I 81 - 19 x 200**	80	A		4	168
	8,6	562	3,15	**MR 4I 100 - 19 x 200**	80	A		4	163
	9,98	494	3	**MR 3I 100 - 19 x 200**	80	B		6	90,1
	10,7	451	1,12	**MR 4I 64 - 14 x 160**	71	C		4	131
	10,1	478	1,8	**MR 4I 80 - 14 x 160**	71	C		4	139
	10,1	478	2	**MR 4I 81 - 14 x 160**	71	C		4	139
	11,1	437	1,8	**MR 4I 80 - 19 x 200**	80	A		4	127
	11,1	437	2,24	**MR 4I 81 - 19 x 200**	80	A		4	127
	11,2	430	4	**MR 4I 100 - 19 x 200**	80	A		4	124
	11,9	414	3,55	**MR 3I 100 - 19 x 200**	80	B		6	75,5
	13,5	357	1,12	**MR 4I 63 - 14 x 160**	71	C		4	103
	13	372	1,32	**MR 4I 64 - 14 x 160**	71	C		4	108
	12,7	382	2,24	**MR 4I 80 - 19 x 200**	80	A		4	111
	12,7	382	2,5	**MR 4I 81 - 19 x 200**	80	A		4	111
	14,2	348	1,7	**MR 3I 80 - 14 x 160**	71	C		4	98,8
	14,2	348	1,9	**MR 3I 81 - 14 x 160**	71	C		4	98,8
	16,5	293	1,32	**MR 4I 63 - 14 x 160**	71	C		4	84,9
	15,8	306	1,6	**MR 4I 64 - 14 x 160**	71	C		4	88,6
	18,4	268	1	**MR 3I 63 - 19 x 200**	80	B		6	48,9
	17,7	279	1,32	**MR 3I 64 - 19 x 200**	80	B		6	50,9
	16,8	287	3	**MR 4I 80 - 19 x 200**	80	A		4	83,2
	16,9	292	2	**MR 3I 80 - 14 x 160**	71	C		4	82,7
	16,9	292	2,24	**MR 3I 81 - 14 x 160**	71	C		4	82,7
	22,9	215	1,25	**MR 3I 63 - 14 x 160**	71	C		4	61,1
	22	224	1,6	**MR 3I 64 - 14 x 160**	71	C		4	63,5
	23	215	1,5	**MR 3I 63 - 19 x 200**	80	B		6	39,1
	22,1	224	1,8	**MR 3I 64 - 19 x 200**	80	B		6	40,8
	21,1	234	2,8	**MR 3I 80 - 14 x 160**	71	C		4	66,3
	21,2	233	2,5	**MR 3I 80 - 19 x 200**	80	A		4	66
	30,3	163	0,8	**MR 3I 50 - 14 x 160**	71	C		4	46,2
	28,6	172	1,8	**MR 3I 63 - 14 x 160**	71	C		4	48,9
	28,6	172	1,6	**MR 3I 63 - 19 x 200**	80	A		4	48,9
	27,5	179	2	**MR 3I 64 - 19 x 200**	80	A		4	50,9
	36,8	134	1,12	**MR 3I 50 - 14 x 160**	71	C		4	38
	36,9	137	0,95	**MR 2I 50 - 19 x 160**	80	B	**	6	24,4
	34,9	142	2,36	**MR 3I 63 - 14 x 160**	71	C		4	40,1
	35,8	138	2,24	**MR 3I 63 - 19 x 200**	80	A		4	39,1
	37,4	135	2	**MR 2I 63 - 19 x 200**	80	B		6	24,1
	45,2	109	1,6	**MR 3I 50 - 14 x 160**	71	C		4	30,9
	44,8	112	1,32	**MR 2I 50 - 19 x 160**	80	B	**	6	20,1
	43,6	113	3	**MR 3I 63 - 19 x 200**	80	A		4	32,1
	46,7	108	3	**MR 2I 63 - 19 x 200**	80	B		6	19,3
	60,2	82	2,12	**MR 3I 50 - 14 x 160**	71	C		4	23,3
	57,4	88	1,5	**MR 2I 50 - 14 x 160**	71	C		4	24,4
	55,1	92	1,9	**MR 2I 50 - 19 x 160**	80	B	**	6	16,3
	58,1	87	3,15	**MR 2I 63 - 14 x 160**	71	C		4	24,1
	58,1	87	3,15	**MR 2I 63 - 19 x 200**	80	A		4	24,1

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)					i
0,55	**63,3**	80	1	**MR 2I 40 - 14 x 140**	71	C	**	4	22,1
	72,3	68	2,8	**MR 3I 50 - 14 x 160**	71	C		4	19,4
	69,7	72	2,12	**MR 2I 50 - 14 x 160**	71	C		4	20,1
	76,9	66	1,4	**MR 2I 40 - 14 x 140**	71	C	**	4	18,2
	87,2	58	1,12	**MR 2I 40 - 14 x 140**	71	C	**	4	16,1
	85,6	59	3	**MR 2I 50 - 14 x 160**	71	C		4	16,3
	105	47,9	1,7	**MR 2I 40 - 14 x 140**	71	C	**	4	13,3
	114	44,3	4	**MR 2I 50 - 14 x 160**	71	C		4	12,3
	128	39,4	2,24	**MR 2I 40 - 14 x 140**	71	C	**	4	11
	137	36,9	5,3	**MR 2I 50 - 14 x 160**	71	C		4	10,2
	165	30,5	2,8	**MR 2I 40 - 14 x 140**	71	C	**	4	8,48
	175	28,8	6	**MR 2I 50 - 14 x 160**	71	C		4	8,01
	208	24,3	2,24	**MR 2I 40 - 14 x 140**	71	C	**	4	6,75
	218	23,1	6,3	**MR 2I 50 - 14 x 160**	71	C		4	6,42
0,75	**3,1**	2126	1,4	**MR 4I 125 - 24 x 200**	90	S		6	290
	3,83	1723	1,8	**MR 4I 125 - 24 x 200**	90	S		6	235
	4,88	1350	1,12	**MR 4I 100 - 19 x 200**	80	B		4	287
	4,6	1432	1,25	**MR 4I 100 - 19 x 200**	80	C		6	196
	4,7	1403	1,06	**MR 4I 100 - 24 x 200**	90	S		6	192
	4,78	1378	2,5	**MR 4I 125 - 24 x 200**	90	S		6	188
	5,83	1130	1,32	**MR 4I 100 - 19 x 200**	80	B		4	240
	5,53	1192	1,5	**MR 4I 100 - 19 x 200**	80	C		6	163
	5,77	1142	1,5	**MR 4I 100 - 24 x 200**	90	S		6	156
	5,82	1132	3,15	**MR 4I 125 - 24 x 200**	90	S		6	155
	7,11	926	1,06	**MR 4I 81 - 19 x 200**	80	C		6	127
	7,16	920	1,9	**MR 4I 100 - 19 x 200**	80	B		4	196
	8,21	820	1,7	**MR 3I 100 - 19 x 200**	80	C		6	110
	7,05	934	3,75	**MR 4I 125 - 24 x 200**	90	S		6	128
	8,32	792	1,06	**MR 4I 80 - 19 x 200**	80	B		4	168
	8,32	792	1,25	**MR 4I 81 - 19 x 200**	80	B		4	168
	8,6	766	2,24	**MR 4I 100 - 19 x 200**	80	B		4	163
	9,98	674	2,24	**MR 3I 100 - 19 x 200**	80	C		6	90,1
	11,1	596	1,32	**MR 4I 80 - 19 x 200**	80	B		4	127
	11,1	596	1,6	**MR 4I 81 - 19 x 200**	80	B		4	127
	11,2	586	3	**MR 4I 100 - 19 x 200**	80	B		4	124
	12,8	527	2,5	**MR 3I 100 - 19 x 200**	80	B		4	110
	12,7	520	1,6	**MR 4I 80 - 19 x 200**	80	B		4	111
	12,7	520	1,9	**MR 4I 81 - 19 x 200**	80	B		4	111
	14,2	475	1,25	**MR 3I 80 - 14 x 160**	80	B	*	4	98,8
	14,2	475	1,4	**MR 3I 81 - 14 x 160**	80	B	*	4	98,8
	13,6	494	1,18	**MR 3I 80 - 19 x 200**	80	C		6	66
	13,6	494	1,32	**MR 3I 81 - 19 x 200**	80	C		6	66
	15,5	433	3,15	**MR 3I 100 - 19 x 200**	80	B		4	90,1
	14,9	450	3,15	**MR 3I 100 - 24 x 200**	90	S		6	60,2
	17,7	381	0,95	**MR 3I 64 - 19 x 200**	80	C		6	50,9
	16,8	391	2,12	**MR 4I 80 - 19 x 200**	80	B		4	83,2
	16,8	391	2,5	**MR 4I 81 - 19 x 200**	80	B		4	83,2
	16,9	398	1,5	**MR 3I 80 - 14 x 160**	80	B	*	4	82,7
	16,9	398	1,7	**MR 3I 81 - 14 x 160**	80	B	*	4	82,7
	17	396	1,7	**MR 3I 80 - 19 x 200**	80	C		6	52,9
	17	396	2	**MR 3I 81 - 19 x 200**	80	C		6	52,9
	17,3	389	1,5	**MR 3I 80 - 24 x 200**	90	S		6	52
	17,3	389	1,7	**MR 3I 81 - 24 x 200**	90	S		6	52
	18,5	363	3,75	**MR 3I 100 - 19 x 200**	80	B		4	75,5
	22,9	294	0,95	**MR 3I 63 - 14 x 160**	80	B	*	4	61,1
	22	306	1,18	**MR 3I 64 - 14 x 160**	80	B	*	4	63,5
	23	293	1,06	**MR 3I 63 - 19 x 200**	80	C		6	39,1
	22,1	305	1,32	**MR 3I 64 - 19 x 200**	80	C		6	40,8
	21,1	319	2,12	**MR 3I 80 - 14 x 160**	80	B	*	4	66,3
	21,2	317	1,8	**MR 3I 80 - 19 x 200**	80	B		4	66
	21,2	317	2,12	**MR 3I 81 - 19 x 200**	80	B		4	66
	28,6	235	1,32	**MR 3I 63 - 14 x 160**	80	B	*	4	48,9
	28,6	235	1,18	**MR 3I 63 - 19 x 200**	80	B		4	48,9
	27,5	245	1,6	**MR 3I 64 - 14 x 160**	80	B	*	4	50,9
	27,5	245	1,5	**MR 3I 64 - 19 x 200**	80	B		4	50,9
	28	240	1,4	**MR 3I 63 - 19 x 200**	80	C		6	32,1
	26,8	251	1,8	**MR 3I 64 - 19 x 200**	80	C		6	33,5
	26,5	254	2,65	**MR 3I 80 - 19 x 200**	80	B		4	52,9

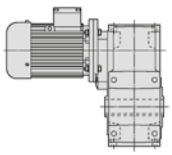
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).
** Mounting position **B5A** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
0,75	**35,8**	188	1,7	**MR 3I 63 - 19 x 200**	80	B	4	39,1
	34,3	196	2	**MR 3I 64 - 19 x 200**	80	B	4	40,8
	32,6	207	1,9	**MR 3I 64 - 19 x 200**	80	C	6	27,6
	37,4	184	1,5	**MR 2I 63 - 19 x 200**	80	C	6	24,1
	35,9	191	1,9	**MR 2I 64 - 19 x 200**	80	C	6	25,1
	37,4	184	1,5	**MR 2I 63 - 24 x 200**	90	S	6	24,1
	35,9	191	1,9	**MR 2I 64 - 24 x 200**	90	S	6	25,1
	44,8	153	1	**MR 2I 50 - 19 x 160**	80	C	** 6	20,1
	43,6	155	2,12	**MR 3I 63 - 19 x 200**	80	B	4	32,1
	46,7	147	2,12	**MR 2I 63 - 19 x 200**	80	C	6	19,3
	46,7	147	2,12	**MR 2I 63 - 24 x 200**	90	S	6	19,3
	57,4	120	1,06	**MR 2I 50 - 19 x 160**	80	B	** 4	24,4
	55,1	125	1,4	**MR 2I 50 - 19 x 160**	80	C	** 6	16,3
	52,8	128	2,5	**MR 3I 63 - 19 x 200**	80	B	4	26,5
	58,1	118	2,24	**MR 2I 63 - 19 x 200**	80	B	4	24,1
	69,7	99	1,5	**MR 2I 50 - 19 x 160**	80	B	** 4	20,1
	73,2	94	1,9	**MR 2I 50 - 19 x 160**	80	C	** 6	12,3
	64,2	105	3,15	**MR 3I 63 - 19 x 200**	80	B	4	21,8
	72,6	95	3,35	**MR 2I 63 - 19 x 200**	80	B	4	19,3
	76,9	89	1,06	**MR 2I 40 - 14 x 140**	71	D	** 4	18,2
	85,6	80	2,24	**MR 2I 50 - 19 x 160**	80	B	** 4	16,3
	105	65	1,25	**MR 2I 40 - 14 x 140**	71	D	** 4	13,3
	114	60	2,8	**MR 2I 50 - 19 x 160**	80	B	** 4	12,3
	128	54	1,7	**MR 2I 40 - 14 x 140**	71	D	** 4	11
	137	50	3,75	**MR 2I 50 - 19 x 160**	80	B	** 4	10,2
	165	41,6	2	**MR 2I 40 - 14 x 140**	71	D	** 4	8,48
	175	39,3	4,25	**MR 2I 50 - 19 x 160**	80	B	** 4	8,01
	208	33,1	1,6	**MR 2I 40 - 14 x 140**	71	D	** 4	6,75
	218	31,5	4,5	**MR 2I 50 - 19 x 160**	80	B	** 4	6,42
1,1	**3,1**	3118	0,95	**MR 4I 125 - 24 x 200**	90	L	6	290
	3,83	2526	1,18	**MR 4I 125 - 24 x 200**	90	L	6	235
	4,82	2005	1,5	**MR 4I 125 - 24 x 200**	90	S	4	290
	4,78	2021	1,7	**MR 4I 125 - 24 x 200**	90	L	6	188
	5,77	1675	1,06	**MR 4I 100 - 24 x 200**	90	L	6	156
	5,95	1624	1,9	**MR 4I 125 - 24 x 200**	90	S	4	235
	5,82	1660	2,12	**MR 4I 125 - 24 x 200**	90	L	6	155
	7,16	1350	1,32	**MR 4I 100 - 19 x 200**	80	C	4	196
	7,31	1323	1,18	**MR 4I 100 - 24 x 200**	90	S	4	192
	7,44	1299	2,65	**MR 4I 125 - 24 x 200**	90	S	4	188
	8,6	1124	1,6	**MR 4I 100 - 19 x 200**	80	C	4	163
	8,97	1077	1,6	**MR 4I 100 - 24 x 200**	90	S	4	156
	9,06	1067	3,35	**MR 4I 125 - 24 x 200**	90	S	4	155
	9,69	1020	2,8	**MR 3I 125 - 24 x 200**	90	L	6	92,9
	11,1	874	1,12	**MR 4I 81 - 19 x 200**	80	C	4	127
	11,2	859	2	**MR 4I 100 - 19 x 200**	80	C	4	124
	10,8	897	2	**MR 4I 100 - 24 x 200**	90	S	4	130
	12,8	773	1,7	**MR 3I 100 - 19 x 200**	80	C	4	110
	12,3	803	1,6	**MR 3I 100 - 24 x 200**	90	L	6	73,2
	11	881	4	**MR 4I 125 - 24 x 200**	90	S	4	128
	12	826	3,35	**MR 3I 125 - 24 x 200**	90	L	6	75,3
	12,7	763	1,12	**MR 4I 80 - 19 x 200**	80	C	4	111
	12,7	763	1,25	**MR 4I 81 - 19 x 200**	80	C	4	111
	14,1	685	2,5	**MR 4I 100 - 24 x 200**	90	S	4	99,3
	15,5	636	2,24	**MR 3I 100 - 19 x 200**	80	C	4	90,1
	14,9	661	2,12	**MR 3I 100 - 24 x 200**	90	L	6	60,2
	16,8	574	1,5	**MR 4I 80 - 19 x 200**	80	C	4	83,2
	16,8	574	1,7	**MR 4I 81 - 19 x 200**	80	C	4	83,2
	17,3	571	1	**MR 3I 80 - 24 x 200**	90	L	6	52
	17,3	571	1,18	**MR 3I 81 - 24 x 200**	90	L	6	52
	16,9	571	3	**MR 4I 100 - 24 x 200**	90	S	4	82,7
	18,5	532	2,65	**MR 3I 100 - 19 x 200**	80	C	4	75,5
	19,1	516	2,5	**MR 3I 100 - 24 x 200**	90	S	4	73,2
	21,2	466	1,25	**MR 3I 80 - 19 x 200**	80	C	4	66
	21,2	466	1,4	**MR 3I 81 - 19 x 200**	80	C	4	66
	21,6	457	1,5	**MR 3I 80 - 24 x 200**	90	L	6	41,7
	21,6	457	1,7	**MR 3I 81 - 24 x 200**	90	L	6	41,7
	22,8	433	3,75	**MR 3I 100 - 19 x 200**	80	C	4	61,5
	23,3	425	3,35	**MR 3I 100 - 24 x 200**	90	S	4	60,2

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
1,1	**28,6**	345	0,8	**MR 3I 63 - 19 x 200**	80	C	4	48,9
	27,5	359	1	**MR 3I 64 - 19 x 200**	80	C	4	50,9
	26,5	373	1,8	**MR 3I 80 - 19 x 200**	80	C	4	52,9
	26,5	373	2,12	**MR 3I 81 - 19 x 200**	80	C	4	52,9
	26,9	367	1,6	**MR 3I 80 - 24 x 200**	90	S	4	52
	26,9	367	1,8	**MR 3I 81 - 24 x 200**	90	S	4	52
	35,8	276	1,12	**MR 3I 63 - 19 x 200**	80	C	4	39,1
	34,3	287	1,32	**MR 3I 64 - 19 x 200**	80	C	4	40,8
	37,4	270	1	**MR 2I 63 - 24 x 200**	90	L	6	24,1
	35,9	281	1,25	**MR 2I 64 - 24 x 200**	90	L	6	25,1
	35,2	281	2,65	**MR 3I 80 - 19 x 200**	80	C	4	39,8
	33,6	294	2,24	**MR 3I 80 - 24 x 200**	90	S	4	41,7
	34,6	291	2	**MR 2I 80 - 24 x 200**	90	L	6	26
	34,6	291	2,24	**MR 2I 81 - 24 x 200**	90	L	6	26
	43,6	227	1,5	**MR 3I 63 - 19 x 200**	80	C	4	32,1
	41,7	237	1,8	**MR 3I 64 - 19 x 200**	80	C	4	33,5
	46,7	216	1,5	**MR 2I 63 - 24 x 200**	90	L	6	19,3
	44,8	225	1,7	**MR 2I 64 - 24 x 200**	90	L	6	20,1
	44,7	221	3,35	**MR 3I 80 - 24 x 200**	90	S	4	31,3
	43,2	233	2,8	**MR 2I 80 - 24 x 200**	90	L	6	20,8
	52,8	187	1,7	**MR 3I 63 - 19 x 200**	80	C	4	26,5
	50,7	195	2	**MR 3I 64 - 19 x 200**	80	C	4	27,6
	58,1	174	1,5	**MR 2I 63 - 19 x 200**	80	C	4	24,1
	55,9	180	1,9	**MR 2I 64 - 19 x 200**	80	C	4	25,1
	58,1	174	1,5	**MR 2I 63 - 24 x 200**	90	S	4	24,1
	55,9	180	1,9	**MR 2I 64 - 24 x 200**	90	S	4	25,1
	56,8	177	1,9	**MR 2I 63 - 24 x 200**	90	L	6	15,8
	54,5	185	2,36	**MR 2I 64 - 24 x 200**	90	L	6	16,5
	53,8	187	3	**MR 2I 80 - 24 x 200**	90	S	4	26
	69,7	145	1,06	**MR 2I 50 - 19 x 160**	80	C	** 4	20,1
	64,2	154	2,12	**MR 3I 63 - 19 x 200**	80	C	4	21,8
	72,6	139	2,24	**MR 2I 63 - 19 x 200**	80	C	4	19,3
	72,6	139	2,24	**MR 2I 63 - 24 x 200**	90	S	4	19,3
	85,6	118	1,5	**MR 2I 50 - 19 x 160**	80	C	** 4	16,3
	88,4	114	2,8	**MR 2I 63 - 19 x 200**	80	C	4	15,8
	88,4	114	2,8	**MR 2I 63 - 24 x 200**	90	S	4	15,8
	114	89	2	**MR 2I 50 - 19 x 160**	80	C	** 4	12,3
	107	94	3,35	**MR 2I 63 - 19 x 200**	80	C	4	13,1
	107	94	3,35	**MR 2I 63 - 24 x 200**	90	S	4	13,1
	137	74	2,65	**MR 2I 50 - 19 x 160**	80	C	** 4	10,2
	130	77	4,25	**MR 2I 63 - 19 x 200**	80	C	4	10,7
	130	77	4,25	**MR 2I 63 - 24 x 200**	90	S	4	10,7
	175	58	3	**MR 2I 50 - 19 x 160**	80	C	** 4	8,01
	169	60	6	**MR 2I 63 - 19 x 200**	80	C	4	8,26
	169	60	6	**MR 2I 63 - 24 x 200**	90	S	4	8,26
	218	46,2	3,15	**MR 2I 50 - 19 x 160**	80	C	** 4	6,42
	214	47,1	6,3	**MR 2I 63 - 19 x 200**	80	C	4	6,53
	214	47,1	6,3	**MR 2I 63 - 24 x 200**	90	S	4	6,53
1,5	**4,82**	2734	1,12	**MR 4I 125 - 24 x 200**	90	L	4	290
	4,78	2756	1,25	**MR 4I 125 - 24 x 200**	90	LC	6	188
	4,71	2795	1,06	**MR 4I 125 - 28 x 250**	100	LA	6	191
	5,95	2215	1,4	**MR 4I 125 - 24 x 200**	90	L	4	235
	5,82	2264	1,5	**MR 4I 125 - 24 x 200**	90	LC	6	155
	5,89	2236	1,6	**MR 4I 125 - 28 x 250**	100	LA	6	153
	7,44	1772	2	**MR 4I 125 - 24 x 200**	90	L	4	188
	7,34	1835	2,24	**MR 3I 140 - 28 x 250**	100	LA	6	123
	8,97	1468	1,18	**MR 4I 100 - 24 x 200**	90	L	4	156
	9,06	1455	2,36	**MR 4I 125 - 24 x 200**	90	L	4	155
	9,69	1390	2	**MR 3I 125 - 24 x 200**	90	LC	6	92,9
	9	1496	3,35	**MR 3I 140 - 28 x 250**	100	LA	6	100
	10,1	1337	3,55	**MR 3I 140 - 28 x 250**	100	LA	6	89,4
	10,8	1223	1,4	**MR 4I 100 - 24 x 200**	90	L	4	130
	12,8	1054	1,18	**MR 3I 100 - 19 x 200**	90	L	* 4	110
	12,3	1095	1,18	**MR 3I 100 - 24 x 200**	90	LC	6	73,2
	11	1201	3	**MR 4I 125 - 24 x 200**	90	L	4	128
	12	1126	2,36	**MR 3I 125 - 24 x 200**	90	LC	6	75,3
	12	1126	2,36	**MR 3I 125 - 28 x 250**	100	LA	6	75,3

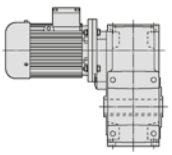
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).
** Mounting position **B5A** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)					i
1,5	**14,1**	935	1,9	**MR 4I 100 - 24** × **200** 90 L			4		99,3
	15,5	867	1,6	**MR 3I 100 - 19** × **200** 90 L	*	4			90,1
	14,9	901	1,6	**MR 3I 100 - 24** × **200** 90 LC			6		60,2
	15,6	863	1,5	**MR 3I 100 - 28** × **250** 100 LA			6		57,7
	15,1	894	3	**MR 3I 125 - 24** × **200** 90 L			4		92,9
	17,3	778	0,85	**MR 3I 81 - 24** × **200** 90 LC			6		52
	16,9	778	2,24	**MR 4I 100 - 24** × **200** 90 L			4		82,7
	18,5	726	1,9	**MR 3I 100 - 19** × **200** 90 L	*	4			75,5
	19,1	704	1,8	**MR 3I 100 - 24** × **200** 90 L			4		73,2
	18,4	734	2,24	**MR 3I 100 - 24** × **200** 90 LC			6		49
	19	710	2	**MR 3I 100 - 28** × **250** 100 LA			6		47,4
	18,6	724	3,75	**MR 3I 125 - 24** × **200** 90 L			4		75,3
	21,2	635	0,9	**MR 3I 80 - 19** × **200** 90 L	*	4			66
	21,2	635	1,06	**MR 3I 81 - 19** × **200** 90 L	*	4			66
	21,6	623	1,06	**MR 3I 80 - 24** × **200** 90 LC			6		41,7
	21,6	623	1,25	**MR 3I 81 - 24** × **200** 90 LC			6		41,7
	23,3	579	2,36	**MR 3I 100 - 24** × **200** 90 L			4		60,2
	26,5	509	1,32	**MR 3I 80 - 19** × **200** 90 L	*	4			52,9
	26,9	500	1,18	**MR 3I 80 - 24** × **200** 90 L			4		52
	26,5	509	1,5	**MR 3I 81 - 19** × **200** 90 L	*	4			52,9
	26,9	500	1,32	**MR 3I 81 - 24** × **200** 90 L			4		52
	28,7	469	1,6	**MR 3I 80 - 24** × **200** 90 LC			6		31,3
	28,7	469	1,9	**MR 3I 81 - 24** × **200** 90 LC			6		31,3
	28,6	472	3,35	**MR 3I 100 - 24** × **200** 90 L			4		49
	31,2	441	2,8	**MR 2I 100 - 24** × **200** 90 LC			6		28,8
	31,2	441	2,8	**MR 2I 100 - 28** × **250** 100 LA			6		28,8
	35,8	376	0,85	**MR 3I 63 - 19** × **200** 90 L	*	4			39,1
	34,3	392	1	**MR 3I 64 - 19** × **200** 90 L	*	4			40,8
	35,9	383	0,95	**MR 2I 64 - 24** × **200** 90 LC			6		25,1
	33,6	401	1,7	**MR 3I 80 - 24** × **200** 90 L			4		41,7
	33,6	401	1,9	**MR 3I 81 - 24** × **200** 90 L			4		41,7
	34,6	397	1,5	**MR 2I 80 - 24** × **200** 90 LC			6		26
	34,6	397	1,7	**MR 2I 81 - 24** × **200** 90 LC			6		26
	34,6	397	1,5	**MR 2I 80 - 28** × **250** 100 LA			6		26
	34,6	397	1,7	**MR 2I 81 - 28** × **250** 100 LA			6		26
	34,3	393	4,5	**MR 3I 100 - 24** × **200** 90 L			4		40,8
	37,9	362	3,75	**MR 2I 100 - 28** × **250** 100 LA			6		23,7
	43,6	309	1,06	**MR 3I 63 - 19** × **200** 90 L	*	4			32,1
	41,7	323	1,32	**MR 3I 64 - 19** × **200** 90 L	*	4			33,5
	46,7	294	1,06	**MR 2I 63 - 24** × **200** 90 LC			6		19,3
	44,8	307	1,25	**MR 2I 64 - 24** × **200** 90 LC			6		20,1
	44,7	301	2,5	**MR 3I 80 - 24** × **200** 90 L			4		31,3
	43,2	318	2,12	**MR 2I 80 - 24** × **200** 90 LC			6		20,8
	43,2	318	2,12	**MR 2I 80 - 28** × **250** 100 LA			6		20,8
	52,8	255	1,25	**MR 3I 63 - 19** × **200** 90 L	*	4			26,5
	50,7	266	1,4	**MR 3I 64 - 19** × **200** 90 L	*	4			27,6
	58,1	237	1,12	**MR 2I 63 - 24** × **200** 90 L			4		24,1
	55,9	246	1,4	**MR 2I 64 - 24** × **200** 90 L			4		25,1
	56,8	242	1,4	**MR 2I 63 - 24** × **200** 90 LC			6		15,8
	54,5	252	1,7	**MR 2I 64 - 24** × **200** 90 LC			6		16,5
	51,1	263	2,5	**MR 3I 80 - 24** × **200** 90 L			4		27,4
	53,8	255	2,24	**MR 2I 80 - 24** × **200** 90 L			4		26
	64,2	210	1,6	**MR 3I 63 - 19** × **200** 90 L	*	4			21,8
	61,6	219	2	**MR 3I 64 - 19** × **200** 90 L	*	4			22,7
	72,6	189	1,6	**MR 2I 63 - 24** × **200** 90 L			4		19,3
	69,7	197	1,9	**MR 2I 64 - 24** × **200** 90 L			4		20,1
	68	198	3,75	**MR 3I 80 - 24** × **200** 90 L			4		20,6
	67,2	205	3,15	**MR 2I 80 - 24** × **200** 90 L			4		20,8
	88,4	156	2,12	**MR 2I 63 - 24** × **200** 90 L			4		15,8
	89,4	154	4,25	**MR 2I 80 - 24** × **200** 90 L			4		15,7
	107	128	2,36	**MR 2I 63 - 24** × **200** 90 L			4		13,1
	102	134	4,75	**MR 2I 80 - 24** × **200** 90 L			4		13,7
	130	105	3,15	**MR 2I 63 - 24** × **200** 90 L			4		10,7
	169	81	4,5	**MR 2I 63 - 24** × **200** 90 L			4		8,26
	214	64	4,75	**MR 2I 63 - 24** × **200** 90 L			4		6,53
1,85	**5,95**	2731	1,12	**MR 4I 125 - 24** × **200** 90 LB			4		235
	5,89	2758	1,25	**MR 4I 125 - 28** × **250** 100 LB			6		153

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)					i
1,85	**7,44**	2185	1,6	**MR 4I 125 - 24** × **200** 90 LB			4		188
	7,34	2263	1,8	**MR 3I 140 - 28** × **250** 100 LB			6		123
	7,06	2354	2,8	**MR 3I 160 - 28** × **250** 100 LB			6		128
	9,06	1795	1,9	**MR 4I 125 - 24** × **200** 90 LB			4		155
	9	1845	2,8	**MR 3I 140 - 28** × **250** 100 LB			6		100
	10,1	1649	3	**MR 3I 140 - 28** × **250** 100 LB			6		89,4
	10,8	1508	1,18	**MR 4I 100 - 24** × **200** 90 LB			4		130
	12,8	1300	1	**MR 3I 100 - 19** × **200** 90 LB	*	4			110
	11	1481	2,36	**MR 4I 125 - 24** × **200** 90 LB			4		128
	12	1389	2	**MR 3I 125 - 28** × **250** 100 LB			6		75,3
	11,1	1503	3,35	**MR 3I 140 - 28** × **250** 100 LB			6		81,4
	14,1	1153	1,5	**MR 4I 100 - 24** × **200** 90 LB			4		99,3
	15,5	1069	1,32	**MR 3I 100 - 19** × **200** 90 LB	*	4			90,1
	15,6	1064	1,18	**MR 3I 100 - 28** × **250** 100 LB			6		57,7
	15,1	1102	2,36	**MR 3I 125 - 24** × **200** 90 LB			4		92,9
	14,7	1127	2,36	**MR 3I 125 - 28** × **250** 100 LB			6		61,1
	16,9	960	1,8	**MR 4I 100 - 24** × **200** 90 LB			4		82,7
	18,5	895	1,6	**MR 3I 100 - 19** × **200** 90 LB	*	4			75,5
	19,1	868	1,5	**MR 3I 100 - 24** × **200** 90 LB			4		73,2
	19	875	1,6	**MR 3I 100 - 28** × **250** 100 LB			6		47,4
	18,6	893	3	**MR 3I 125 - 24** × **200** 90 LB			4		75,3
	18,4	902	3,55	**MR 3I 125 - 28** × **250** 100 LB			6		48,9
	21,2	783	0,85	**MR 3I 81 - 19** × **200** 90 LB	*	4			66
	23,3	714	1,9	**MR 3I 100 - 24** × **200** 90 LB			4		60,2
	23,3	713	2,24	**MR 3I 100 - 28** × **250** 100 LB			6		38,6
	23,2	714	4,5	**MR 3I 125 - 24** × **200** 90 LB			4		60,2
	26,5	627	1,06	**MR 3I 80 - 19** × **200** 90 LB	*	4			52,9
	26,9	617	0,95	**MR 3I 80 - 24** × **200** 90 LB			4		52
	26,5	627	1,25	**MR 3I 81 - 19** × **200** 90 LB	*	4			52,9
	26,9	617	1,06	**MR 3I 81 - 24** × **200** 90 LB			4		52
	28,6	582	2,8	**MR 3I 100 - 24** × **200** 90 LB			4		49
	31,2	543	2,24	**MR 2I 100 - 28** × **250** 100 LB			6		28,8
	33,6	494	1,32	**MR 3I 80 - 24** × **200** 90 LB			4		41,7
	33,6	494	1,6	**MR 3I 81 - 24** × **200** 90 LB			4		41,7
	34,6	490	1,18	**MR 2I 80 - 28** × **250** 100 LB			6		26
	34,6	490	1,4	**MR 2I 81 - 28** × **250** 100 LB			6		26
	34,3	484	3,55	**MR 3I 100 - 24** × **200** 90 LB			4		40,8
	37,9	447	3	**MR 2I 100 - 28** × **250** 100 LB			6		23,7
	44,7	372	2	**MR 3I 80 - 24** × **200** 90 LB			4		31,3
	44,7	372	2,36	**MR 3I 81 - 24** × **200** 90 LB			4		31,3
	43,2	393	1,7	**MR 2I 80 - 28** × **250** 100 LB			6		20,8
	43,2	393	2	**MR 2I 81 - 28** × **250** 100 LB			6		20,8
	58,1	292	0,9	**MR 2I 63 - 24** × **200** 90 LB			4		24,1
	55,9	304	1,18	**MR 2I 64 - 24** × **200** 90 LB			4		25,1
	51,1	325	2	**MR 3I 80 - 24** × **200** 90 LB			4		27,4
	51,1	325	2,36	**MR 3I 81 - 24** × **200** 90 LB			4		27,4
	53,8	315	1,8	**MR 2I 80 - 24** × **200** 90 LB			4		26
	53,8	315	2,12	**MR 2I 81 - 24** × **200** 90 LB			4		26
	72,6	233	1,32	**MR 2I 63 - 24** × **200** 90 LB			4		19,3
	69,7	243	1,6	**MR 2I 64 - 24** × **200** 90 LB			4		20,1
	68	244	3	**MR 3I 80 - 24** × **200** 90 LB			4		20,6
	67,2	252	2,65	**MR 2I 80 - 24** × **200** 90 LB			4		20,8
	88,4	192	1,7	**MR 2I 63 - 24** × **200** 90 LB			4		15,8
	84,7	200	2,12	**MR 2I 64 - 24** × **200** 90 LB			4		16,5
	89,4	190	3,55	**MR 2I 80 - 24** × **200** 90 LB			4		15,7
	107	158	1,9	**MR 2I 63 - 24** × **200** 90 LB			4		13,1
	102	166	4	**MR 2I 80 - 24** × **200** 90 LB			4		13,7
	130	130	2,5	**MR 2I 63 - 24** × **200** 90 LB			4		10,7
	136	125	5,6	**MR 2I 80 - 24** × **200** 90 LB			4		10,3
	169	100	3,55	**MR 2I 63 - 24** × **200** 90 LB			4		8,26
	214	79	3,75	**MR 2I 63 - 24** × **200** 90 LB			4		6,53
2,2	**5,89**	3280	1,06	**MR 4I 125 - 28** × **250** 112 M			6		153
	7,44	2599	1,32	**MR 4I 125 - 24** × **200** 90 LC			4		188
	7,33	2636	1,18	**MR 4I 125 - 28** × **250** 100 LA			4		191
	7,34	2691	1,5	**MR 3I 140 - 28** × **250** 112 M			6		123
	7,06	2799	2,36	**MR 3I 160 - 28** × **250** 112 M			6		128
	6,85	2883	3,35	**MR 3I 180 - 28** × **250** 112 M			6		131

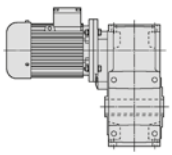
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
2,2	**9,06**	2135	1,6	**MR 4I 125 - 24 × 200** 90 LC		4	155
	9,17	2109	1,7	**MR 4I 125 - 28 × 250** 100 LA		4	153
	9	2194	2,36	**MR 3I 140 - 28 × 250** 112 M		6	100
	8,4	2350	3,35	**MR 3I 160 - 28 × 250** 112 M		6	107
	10,1	1961	2,5	**MR 3I 140 - 28 × 250** 112 M		6	89,4
	10,8	1793	1	**MR 4I 100 - 24 × 200** 90 LC		4	130
	11	1762	2	**MR 4I 125 - 24 × 200** 90 LC		4	128
	11,2	1732	2	**MR 4I 125 - 28 × 250** 100 LA		4	125
	12	1652	1,6	**MR 3I 125 - 28 × 250** 112 M		6	75,3
	11,4	1730	2,24	**MR 3I 140 - 28 × 250** 100 LA		4	123
	14,1	1371	1,25	**MR 4I 100 - 24 × 200** 90 LC		4	99,3
	15,5	1272	1,12	**MR 3I 100 - 19 × 200** 90 LC	*	4	90,1
	15,6	1266	1	**MR 3I 100 - 28 × 250** 112 M		6	57,7
	13,5	1430	2,5	**MR 4I 125 - 28 × 250** 100 LA		4	104
	15,1	1311	2	**MR 3I 125 - 24 × 200** 90 LC		4	92,9
	14,7	1340	2	**MR 3I 125 - 28 × 250** 112 M		6	61,1
	14	1411	3,35	**MR 3I 140 - 28 × 250** 100 LA		4	100
	15,7	1261	3,75	**MR 3I 140 - 28 × 250** 100 LA		4	89,4
	16,9	1141	1,5	**MR 4I 100 - 24 × 200** 90 LC		4	82,7
	18,5	1065	1,32	**MR 3I 100 - 19 × 200** 90 LC	*	4	75,5
	19,1	1033	1,25	**MR 3I 100 - 24 × 200** 90 LC		4	73,2
	19	1041	1,32	**MR 3I 100 - 28 × 250** 112 M		6	47,4
	18,6	1062	2,5	**MR 3I 125 - 28 × 250** 100 LA		4	75,3
	22,8	867	1,9	**MR 3I 100 - 19 × 200** 90 LC	*	4	61,5
	23,3	849	1,6	**MR 3I 100 - 24 × 200** 90 LC		4	60,2
	24,3	814	1,5	**MR 3I 100 - 28 × 250** 100 LA		4	57,7
	23,3	848	1,9	**MR 3I 100 - 28 × 250** 112 M		6	38,6
	22,9	862	3	**MR 3I 125 - 28 × 250** 100 LA		4	61,1
	26,5	746	0,9	**MR 3I 80 - 19 × 200** 90 LC	*	4	52,9
	26,9	734	0,8	**MR 3I 80 - 24 × 200** 90 LC		4	52
	26,5	746	1,06	**MR 3I 81 - 19 × 200** 90 LC	*	4	52,9
	26,9	734	0,9	**MR 3I 81 - 24 × 200** 90 LC		4	52
	28,6	692	2,36	**MR 3I 100 - 24 × 200** 90 LC		4	49
	29,5	669	2	**MR 3I 100 - 28 × 250** 100 LA		4	47,4
	28	706	2,5	**MR 3I 100 - 28 × 250** 112 M		6	32,2
	31,2	646	1,9	**MR 2I 100 - 28 × 250** 112 M		6	28,8
	33,6	588	1,12	**MR 3I 80 - 24 × 200** 90 LC		4	41,7
	33,6	588	1,32	**MR 3I 81 - 24 × 200** 90 LC		4	41,7
	34,6	583	1	**MR 2I 80 - 28 × 250** 112 M		6	26
	34,6	583	1,12	**MR 2I 81 - 28 × 250** 112 M		6	26
	36,2	545	3	**MR 3I 100 - 28 × 250** 100 LA		4	38,6
	37,9	532	2,5	**MR 2I 100 - 28 × 250** 112 M		6	23,7
	44,7	442	1,7	**MR 3I 80 - 24 × 200** 90 LC		4	31,3
	44,7	442	2	**MR 3I 81 - 24 × 200** 90 LC		4	31,3
	43,2	467	1,4	**MR 2I 80 - 28 × 250** 112 M		6	20,8
	43,2	467	1,7	**MR 2I 81 - 28 × 250** 112 M		6	20,8
	43,5	454	3,75	**MR 3I 100 - 28 × 250** 100 LA		4	32,2
	48,6	415	3	**MR 2I 100 - 24 × 200** 90 LC		4	28,8
	48,6	415	3	**MR 2I 100 - 28 × 250** 100 LA		4	28,8
	46,6	433	3,55	**MR 2I 100 - 28 × 250** 112 M		6	19,3
	55,9	361	0,95	**MR 2I 64 - 24 × 200** 90 LC		4	25,1
	51,1	386	1,7	**MR 3I 80 - 24 × 200** 90 LC		4	27,4
	51,1	386	2	**MR 3I 81 - 24 × 200** 90 LC		4	27,4
	53,8	375	1,5	**MR 2I 80 - 24 × 200** 90 LC		4	26
	53,8	375	1,8	**MR 2I 81 - 24 × 200** 90 LC		4	26
	53,8	375	1,5	**MR 2I 80 - 28 × 250** 100 LA		4	26
	53,8	375	1,8	**MR 2I 81 - 28 × 250** 100 LA		4	26
	57,4	351	1,9	**MR 2I 80 - 28 × 250** 112 M		6	15,7
	57,4	351	2,24	**MR 2I 81 - 28 × 250** 112 M		6	15,7
	56,9	347	4,5	**MR 3I 100 - 28 × 250** 100 LA		4	24,6
	59	342	4	**MR 2I 100 - 24 × 200** 90 LC		4	23,7
	59	342	4	**MR 2I 100 - 28 × 250** 100 LA		4	23,7
	72,6	278	1,12	**MR 2I 63 - 24 × 200** 90 LC		4	19,3
	69,7	289	1,32	**MR 2I 64 - 24 × 200** 90 LC		4	20,1
	68	290	2,5	**MR 3I 80 - 24 × 200** 90 LC		4	20,6
	67,2	300	2,24	**MR 2I 80 - 24 × 200** 90 LC		4	20,8
	67,2	300	2,24	**MR 2I 80 - 28 × 250** 100 LA		4	20,8
	68,4	289	6	**MR 3I 100 - 28 × 250** 100 LA		4	20,5

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
2,2	**88,4**	228	1,4	**MR 2I 63 - 24 × 200** 90 LC		4	15,8
	84,7	238	1,8	**MR 2I 64 - 24 × 200** 90 LC		4	16,5
	89,4	226	3	**MR 2I 80 - 24 × 200** 90 LC		4	15,7
	89,4	226	3	**MR 2I 80 - 28 × 250** 100 LA		4	15,7
	107	188	1,6	**MR 2I 63 - 24 × 200** 90 LC		4	13,1
	103	196	1,9	**MR 2I 64 - 24 × 200** 90 LC		4	13,6
	102	197	3,35	**MR 2I 80 - 24 × 200** 90 LC		4	13,7
	102	197	3,35	**MR 2I 80 - 28 × 250** 100 LA		4	13,7
	130	155	2,12	**MR 2I 63 - 24 × 200** 90 LC		4	10,7
	125	161	2,65	**MR 2I 64 - 24 × 200** 90 LC		4	11,2
	136	148	4,75	**MR 2I 80 - 28 × 250** 100 LA		4	10,3
	169	119	3	**MR 2I 63 - 24 × 200** 90 LC		4	8,26
	175	115	3,35	**MR 2I 64 - 24 × 200** 90 LC		4	7,99
	174	116	5,6	**MR 2I 80 - 28 × 250** 100 LA		4	8,03
	214	94	3,15	**MR 2I 63 - 24 × 200** 90 LC		4	6,53
	204	99	3,35	**MR 2I 64 - 24 × 200** 90 LC		4	6,86
	218	92	6,3	**MR 2I 80 - 28 × 250** 100 LA		4	6,41
3	**7,34**	3670	1,12	**MR 3I 140 - 28 × 250** 112 MC		6	123
	7,06	3817	1,7	**MR 3I 160 - 28 × 250** 112 MC		6	128
	7,06	3817	1,7	**MR 3I 160 - 38 × 300** 132 S		6	128
	6,85	3932	2,36	**MR 3I 180 - 38 × 300** 132 S		6	131
	9,17	2875	1,18	**MR 4I 125 - 28 × 250** 100 LB		4	153
	9	2992	1,7	**MR 3I 140 - 28 × 250** 112 MC		6	100
	8,4	3205	2,36	**MR 3I 160 - 28 × 250** 112 MC		6	107
	8,4	3205	2,36	**MR 3I 160 - 38 × 300** 132 S		6	107
	8,36	3220	3,15	**MR 3I 180 - 38 × 300** 132 S		6	108
	10,1	2674	1,8	**MR 3I 140 - 28 × 250** 112 MC		6	89,4
	9,61	2803	2,8	**MR 3I 160 - 28 × 250** 112 MC		6	93,7
	9,61	2803	2,8	**MR 3I 160 - 38 × 300** 132 S		6	93,7
	11,2	2362	1,5	**MR 4I 125 - 28 × 250** 100 LB		4	125
	12	2253	1,18	**MR 3I 125 - 28 × 250** 112 MC		6	75,3
	11,4	2359	1,6	**MR 3I 140 - 28 × 250** 100 LB		4	123
	11	2454	2,5	**MR 3I 160 - 28 × 250** 100 LB		4	128
	13,5	1949	1,8	**MR 4I 125 - 28 × 250** 100 LB		4	104
	15,1	1787	1,5	**MR 3I 125 - 24 × 200** 100 LB	*	4	92,9
	14,7	1828	1,5	**MR 3I 125 - 28 × 250** 112 MC		6	61,1
	14	1924	2,5	**MR 3I 140 - 28 × 250** 100 LB		4	100
	15,7	1719	2,8	**MR 3I 140 - 28 × 250** 100 LB		4	89,4
	19,1	1408	0,9	**MR 3I 100 - 24 × 200** 100 LB	*	4	73,2
	19	1420	1	**MR 3I 100 - 28 × 250** 112 MC		6	47,4
	16,5	1601	2,24	**MR 4I 125 - 28 × 250** 100 LB		4	85,1
	18,6	1448	1,8	**MR 3I 125 - 28 × 250** 100 LB		4	75,3
	18,4	1462	2,12	**MR 3I 125 - 28 × 250** 112 MC		6	48,9
	17,2	1566	3	**MR 3I 140 - 28 × 250** 100 LB		4	81,4
	19,2	1400	3,55	**MR 3I 140 - 28 × 250** 100 LB		4	72,8
	24,3	1109	1,12	**MR 3I 100 - 28 × 250** 100 LB		4	57,7
	23,3	1156	1,4	**MR 3I 100 - 28 × 250** 112 MC		6	38,6
	22,9	1175	2,24	**MR 3I 125 - 28 × 250** 100 LB		4	61,1
	29,5	913	1,5	**MR 3I 100 - 28 × 250** 100 LB		4	47,4
	28	962	1,8	**MR 3I 100 - 28 × 250** 112 MC		6	32,2
	31,2	881	1,4	**MR 2I 100 - 28 × 250** 112 MC		6	28,8
	31,2	881	1,4	**MR 2I 100 - 38 × 300** 132 S		6	28,8
	28,6	940	3,35	**MR 3I 125 - 28 × 250** 100 LB		4	48,9
	33,6	802	0,85	**MR 3I 80 - 24 × 200** 100 LB	*	4	41,7
	33,6	802	0,95	**MR 3I 81 - 24 × 200** 100 LB	*	4	41,7
	34,6	795	0,85	**MR 2I 81 - 28 × 250** 112 MC		6	26
	36,2	743	2,12	**MR 3I 100 - 28 × 250** 100 LB		4	38,6
	37,9	725	1,9	**MR 2I 100 - 28 × 250** 112 MC		6	23,7
	37,9	725	1,9	**MR 2I 100 - 38 × 300** 132 S		6	23,7
	34,9	772	4,5	**MR 3I 125 - 28 × 250** 100 LB		4	40,1
	37,4	736	3,55	**MR 2I 125 - 28 × 250** 112 MC		6	24,1
	37,4	736	3,55	**MR 2I 125 - 38 × 300** 132 S		6	24,1

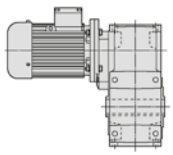
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
3	**44,7**	603	1,25	**MR 3I 80 - 24 × 200** 100 LB	*	4		31,3
	44,7	603	1,5	**MR 3I 81 - 24 × 200** 100 LB	*	4		31,3
	43,2	637	1,06	**MR 2I 80 - 28 × 250** 112 MC		6		20,8
	43,2	637	1,18	**MR 2I 81 - 28 × 250** 112 MC		6		20,8
	43,5	619	2,8	**MR 3I 100 - 28 × 250** 100 LB		4		32,2
	48,6	566	2,12	**MR 2I 100 - 28 × 250** 100 LB		4		28,8
	46,6	590	2,65	**MR 2I 100 - 28 × 250** 112 MC		6		19,3
	46,6	590	2,65	**MR 2I 100 - 38 × 300** 132 S		6		19,3
	51,1	527	1,25	**MR 3I 80 - 24 × 200** 100 LB	*	4		27,4
	51,1	527	1,5	**MR 3I 81 - 24 × 200** 100 LB	*	4		27,4
	53,8	511	1,12	**MR 2I 80 - 28 × 250** 100 LB		4		26
	53,8	511	1,32	**MR 2I 81 - 28 × 250** 100 LB		4		26
	57,4	479	1,4	**MR 2I 80 - 28 × 250** 112 MC		6		15,7
	57,4	479	1,7	**MR 2I 81 - 28 × 250** 112 MC		6		15,7
	56,9	473	3,35	**MR 3I 100 - 28 × 250** 100 LB		4		24,6
	59	466	2,8	**MR 2I 100 - 28 × 250** 100 LB		4		23,7
	69,7	394	0,95	**MR 2I 64 - 24 × 200** 100 LB	*	4		20,1
	68	396	1,9	**MR 3I 80 - 24 × 200** 100 LB	*	4		20,6
	68	396	2,24	**MR 3I 81 - 24 × 200** 100 LB	*	4		20,6
	67,2	409	1,6	**MR 2I 80 - 28 × 250** 100 LB		4		20,8
	67,2	409	1,9	**MR 2I 81 - 28 × 250** 100 LB		4		20,8
	68,4	394	4,5	**MR 3I 100 - 28 × 250** 100 LB		4		20,5
	72,5	379	4	**MR 2I 100 - 28 × 250** 100 LB		4		19,3
	84,7	325	1,32	**MR 2I 64 - 24 × 200** 100 LB	*	4		16,5
	89,4	308	2,12	**MR 2I 80 - 28 × 250** 100 LB		4		15,7
	103	267	1,4	**MR 2I 64 - 24 × 200** 100 LB	*	4		13,6
	102	269	2,36	**MR 2I 80 - 28 × 250** 100 LB		4		13,7
	125	220	1,9	**MR 2I 64 - 24 × 200** 100 LB	*	4		11,2
	136	202	3,55	**MR 2I 80 - 28 × 250** 100 LB		4		10,3
	175	157	2,5	**MR 2I 64 - 24 × 200** 100 LB	*	4		7,99
	174	158	4,25	**MR 2I 80 - 28 × 250** 100 LB		4		8,03
	204	135	2,36	**MR 2I 64 - 24 × 200** 100 LB	*	4		6,86
	218	126	4,5	**MR 2I 80 - 28 × 250** 100 LB		4		6,41
4	**7,06**	5089	1,25	**MR 3I 160 - 38 × 300** 132 M		6		128
	6,85	5242	1,8	**MR 3I 180 - 38 × 300** 132 M		6		131
	7,55	4754	2,8	**MR 3I 200 - 38 × 300** 132 M		6		119
	8,4	4273	1,8	**MR 3I 160 - 38 × 300** 132 M		6		107
	8,36	4294	2,36	**MR 3I 180 - 38 × 300** 132 M		6		108
	9,61	3737	2,12	**MR 3I 160 - 38 × 300** 132 M		6		93,7
	9,65	3721	2,5	**MR 3I 180 - 38 × 300** 132 M		6		93,3
	11,2	3149	1,12	**MR 4I 125 - 28 × 250** 112 M		4		125
	11,4	3146	1,25	**MR 3I 140 - 28 × 250** 112 M		4		123
	11	3272	1,9	**MR 3I 160 - 28 × 250** 112 M		4		128
	10,5	3418	2,12	**MR 3I 160 - 38 × 300** 132 M		6		85,7
	10,7	3370	2,65	**MR 3I 180 - 28 × 250** 112 M		4		131
	13,5	2599	1,32	**MR 4I 125 - 28 × 250** 112 M		4		104
	15,1	2383	1,12	**MR 3I 125 - 24 × 200** 112 M	*	4		92,9
	14	2565	1,9	**MR 3I 140 - 28 × 250** 112 M		4		100
	13,1	2747	2,65	**MR 3I 160 - 28 × 250** 112 M		4		107
	15,7	2292	2,12	**MR 3I 140 - 28 × 250** 112 M		4		89,4
	14,9	2403	3,15	**MR 3I 160 - 28 × 250** 112 M		4		93,7
	18,6	1931	1,4	**MR 3I 125 - 28 × 250** 112 M		4		75,3
	17,2	2088	2,24	**MR 3I 140 - 28 × 250** 112 M		4		81,4
	19,2	1866	2,65	**MR 3I 140 - 28 × 250** 112 M		4		72,8
	23,3	1544	0,9	**MR 3I 100 - 24 × 200** 112 M	*	4		60,2
	22,9	1567	1,7	**MR 3I 125 - 28 × 250** 112 M		4		61,1
	22,6	1589	2,8	**MR 3I 140 - 28 × 250** 112 M		4		62
	25,3	1420	3,35	**MR 3I 140 - 28 × 250** 112 M		4		55,4
	28,6	1257	1,25	**MR 3I 100 - 24 × 200** 112 M	*	4		49
	29,5	1217	1,12	**MR 3I 100 - 28 × 250** 112 M		4		47,4
	31,2	1175	1,06	**MR 2I 100 - 38 × 300** 132 M		6		28,8
	28,6	1253	2,5	**MR 3I 125 - 28 × 250** 112 M		4		48,9
	36,2	991	1,6	**MR 3I 100 - 28 × 250** 112 M		4		38,6
	37,9	967	1,4	**MR 2I 100 - 38 × 300** 132 M		6		23,7
	34,9	1030	3,35	**MR 3I 125 - 28 × 250** 112 M		4		40,1
	37,4	982	2,65	**MR 2I 125 - 38 × 300** 132 M		6		24,1

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
4	**43,5**	825	2,12	**MR 3I 100 - 28 × 250** 112 M		4		32,2
	48,6	755	1,6	**MR 2I 100 - 28 × 250** 112 M		4		28,8
	46,6	787	2	**MR 2I 100 - 38 × 300** 132 M		6		19,3
	42,3	850	3,55	**MR 3I 125 - 28 × 250** 112 M		4		33,1
	46,7	785	4	**MR 2I 125 - 38 × 300** 132 M		6		19,3
	53,8	681	0,85	**MR 2I 80 - 28 × 250** 112 M		4		26
	53,8	681	0,95	**MR 2I 81 - 28 × 250** 112 M		4		26
	56,9	631	2,5	**MR 3I 100 - 28 × 250** 112 M		4		24,6
	59	621	2,12	**MR 2I 100 - 28 × 250** 112 M		4		23,7
	58,1	631	4	**MR 2I 125 - 28 × 250** 112 M		4		24,1
	67,2	546	1,18	**MR 2I 80 - 28 × 250** 112 M		4		20,8
	67,2	546	1,4	**MR 2I 81 - 28 × 250** 112 M		4		20,8
	68,4	525	3,35	**MR 3I 100 - 28 × 250** 112 M		4		20,5
	72,5	506	3	**MR 2I 100 - 28 × 250** 112 M		4		19,3
	89,4	410	1,6	**MR 2I 80 - 28 × 250** 112 M		4		15,7
	89,4	410	1,9	**MR 2I 81 - 28 × 250** 112 M		4		15,7
	87,1	421	3,35	**MR 2I 100 - 28 × 250** 112 M		4		16,1
	102	359	1,8	**MR 2I 80 - 28 × 250** 112 M		4		13,7
	102	359	2,12	**MR 2I 81 - 28 × 250** 112 M		4		13,7
	114	322	4,75	**MR 2I 100 - 28 × 250** 112 M		4		12,3
	136	270	2,65	**MR 2I 80 - 28 × 250** 112 M		4		10,3
	136	270	2,8	**MR 2I 81 - 28 × 250** 112 M		4		10,3
	137	268	5	**MR 2I 100 - 28 × 250** 112 M		4		10,2
	174	210	3,15	**MR 2I 80 - 28 × 250** 112 M		4		8,03
	218	168	3,35	**MR 2I 80 - 28 × 250** 112 M		4		6,41
5,5	**6,85**	7208	1,32	**MR 3I 180 - 38 × 300** 132 MB		6		131
	7,55	6537	2	**MR 3I 200 - 38 × 300** 132 MB		6		119
	7,33	6734	2,8	**MR 3I 225 - 38 × 300** 132 MB		6		123
	8,4	5875	1,32	**MR 3I 160 - 38 × 300** 132 MB		6		107
	8,36	5904	1,8	**MR 3I 180 - 38 × 300** 132 MB		6		108
	9	5489	2,8	**MR 3I 200 - 38 × 300** 132 MB		6		100
	9,61	5139	1,5	**MR 3I 160 - 38 × 300** 132 MB		6		93,7
	9,65	5117	1,8	**MR 3I 180 - 38 × 300** 132 MB		6		93,3
	10,4	4742	3,35	**MR 3I 200 - 38 × 300** 132 MB		6		86,4
	11,4	4325	0,9	**MR 3I 140 - 28 × 250** 112 MC		4		123
	11,8	4168	0,9	**MR 3I 140 - 38 × 300** 132 MB		6		76
	11	4498	1,32	**MR 3I 160 - 28 × 250** 112 MC		4		128
	11	4498	1,32	**MR 3I 160 - 38 × 300** 132 S		4		128
	10,5	4700	1,6	**MR 3I 160 - 38 × 300** 132 MB		6		85,7
	10,7	4634	1,9	**MR 3I 180 - 28 × 250** 112 MC		4		131
	10,7	4634	1,9	**MR 3I 180 - 38 × 300** 132 S		4		131
	11,7	4203	2,8	**MR 3I 200 - 38 × 300** 132 S		4		119
	13,5	3574	1	**MR 4I 125 - 28 × 250** 112 MC		4		104
	14	3527	1,32	**MR 3I 140 - 28 × 250** 112 MC		4		100
	14,5	3399	1,4	**MR 3I 140 - 38 × 300** 132 MB		6		62
	13,1	3777	1,9	**MR 3I 160 - 28 × 250** 112 MC		4		107
	13,1	3777	1,9	**MR 3I 160 - 38 × 300** 132 S		4		107
	13	3795	2,5	**MR 3I 180 - 38 × 300** 132 S		4		108
	15,7	3151	1,5	**MR 3I 140 - 28 × 250** 112 MC		4		89,4
	16,3	3037	1,6	**MR 3I 140 - 38 × 300** 132 MB		6		55,4
	14,9	3303	2,36	**MR 3I 160 - 28 × 250** 112 MC		4		93,7
	14,9	3303	2,36	**MR 3I 160 - 38 × 300** 132 S		4		93,7
	15	3289	2,65	**MR 3I 180 - 38 × 300** 132 S		4		93,3
	16,5	2936	1,18	**MR 4I 125 - 28 × 250** 112 MC		4		85,1
	18,6	2655	1	**MR 3I 125 - 28 × 250** 112 MC		4		75,3
	18,4	2683	1	**MR 3I 125 - 38 × 300** 132 MB		6		48,9
	17,2	2872	1,6	**MR 3I 140 - 28 × 250** 112 MC		4		81,4
	18,4	2680	1,4	**MR 3I 140 - 38 × 300** 132 S		4		76
	16,3	3021	2,36	**MR 3I 160 - 28 × 250** 112 MC		4		85,7
	16,3	3021	2,36	**MR 3I 160 - 38 × 300** 132 S		4		85,7
	16,3	3036	3,15	**MR 3I 180 - 38 × 300** 132 S		4		86,1
	19,2	2566	1,9	**MR 3I 140 - 28 × 250** 112 MC		4		72,8
	18,7	2643	2,8	**MR 3I 160 - 38 × 300** 132 S		4		74,9
	22,9	2154	1,25	**MR 3I 125 - 28 × 250** 112 MC		4		61,1
	23	2147	1,5	**MR 3I 125 - 38 × 300** 132 MB		6		39,1
	22,6	2185	2,12	**MR 3I 140 - 28 × 250** 112 MC		4		62
	22,6	2185	2,12	**MR 3I 140 - 38 × 300** 132 S		4		62
	22,1	2239	3,15	**MR 3I 160 - 38 × 300** 132 S		4		63,5

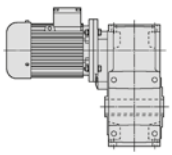
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
5,5	**25,3**	1952	2,36	**MR 3I 140 - 38 x 300** 132 S 4	55,4
	28,6	1723	1,8	**MR 3I 125 - 28 x 250** 112 MC 4	48,9
	28,6	1725	1,5	**MR 3I 125 - 38 x 300** 132 S 4	48,9
	28	1763	2	**MR 3I 125 - 38 x 300** 132 MB 6	32,1
	27,8	1779	2,5	**MR 3I 140 - 38 x 300** 132 S 4	50,4
	31,1	1590	3	**MR 3I 140 - 38 x 300** 132 S 4	45,1
	36,2	1362	1,18	**MR 3I 100 - 28 x 250** 112 MC 4	38,6
	37,9	1329	1	**MR 2I 100 - 38 x 300** 132 MB 6	23,7
	34,9	1416	2,5	**MR 3I 125 - 28 x 250** 112 MC 4	40,1
	35,8	1380	2,24	**MR 3I 125 - 38 x 300** 132 S 4	39,1
	37,4	1350	1,9	**MR 2I 125 - 38 x 300** 132 MB 6	24,1
	43,5	1134	1,5	**MR 3I 100 - 28 x 250** 112 MC 4	32,2
	48,6	1039	1,18	**MR 2I 100 - 28 x 250** 112 MC 4	28,8
	48,6	1039	1,18	**MR 2I 100 - 38 x 300** 132 S 4	28,8
	46,6	1082	1,5	**MR 2I 100 - 38 x 300** 132 MB 6	19,3
	43,6	1134	3	**MR 3I 125 - 38 x 300** 132 S 4	32,1
	46,7	1080	2,8	**MR 2I 125 - 38 x 300** 132 MB 6	19,3
	56,9	867	1,8	**MR 3I 100 - 28 x 250** 112 MC 4	24,6
	59	854	1,6	**MR 2I 100 - 28 x 250** 112 MC 4	23,7
	59	854	1,6	**MR 2I 100 - 38 x 300** 132 S 4	23,7
	52,8	936	3,35	**MR 3I 125 - 38 x 300** 132 S 4	26,5
	58,1	868	3	**MR 2I 125 - 28 x 250** 112 MC 4	24,1
	58,1	868	3	**MR 2I 125 - 38 x 300** 132 S 4	24,1
	67,2	750	0,9	**MR 2I 80 - 28 x 250** 112 MC 4	20,8
	67,2	750	1	**MR 2I 81 - 28 x 250** 112 MC 4	20,8
	68,4	722	2,36	**MR 3I 100 - 28 x 250** 112 MC 4	20,5
	72,5	696	2,24	**MR 2I 100 - 28 x 250** 112 MC 4	19,3
	72,5	696	2,24	**MR 2I 100 - 38 x 300** 132 S 4	19,3
	64,2	769	4,5	**MR 3I 125 - 38 x 300** 132 S 4	21,8
	72,6	694	4	**MR 2I 125 - 38 x 300** 132 S 4	19,3
	89,4	564	1,18	**MR 2I 80 - 28 x 250** 112 MC 4	15,7
	89,4	564	1,4	**MR 2I 81 - 28 x 250** 112 MC 4	15,7
	87,1	579	2,5	**MR 2I 100 - 28 x 250** 112 MC 4	16,1
	87,1	579	2,5	**MR 2I 100 - 38 x 300** 132 S 4	16,1
	102	493	1,32	**MR 2I 80 - 28 x 250** 112 MC 4	13,7
	102	493	1,5	**MR 2I 81 - 28 x 250** 112 MC 4	13,7
	114	443	3,55	**MR 2I 100 - 28 x 250** 112 MC 4	12,3
	114	443	3,55	**MR 2I 100 - 38 x 300** 132 S 4	12,3
	136	371	1,9	**MR 2I 80 - 28 x 250** 112 MC 4	10,3
	136	371	2,12	**MR 2I 81 - 28 x 250** 112 MC 4	10,3
	137	369	3,55	**MR 2I 100 - 38 x 300** 132 S 4	10,2
	174	289	2,24	**MR 2I 80 - 28 x 250** 112 MC 4	8,03
	174	289	2,65	**MR 2I 81 - 28 x 250** 112 MC 4	8,03
	175	288	4,75	**MR 2I 100 - 38 x 300** 132 S 4	8,01
	218	231	2,5	**MR 2I 80 - 28 x 250** 112 MC 4	6,41
	218	231	2,8	**MR 2I 81 - 28 x 250** 112 MC 4	6,41
	218	231	5,3	**MR 2I 100 - 38 x 300** 132 S 4	6,42
7,5	**7,55**	8914	1,5	**MR 3I 200 - 38 x 300** 132 MC 6	119
	7,55	8914	1,5	**MR 3I 200 - 42 x 350** 160 M 6	119
	7,33	9183	2	**MR 3I 225 - 38 x 300** 132 MC 6	123
	7,33	9183	2	**MR 3I 225 - 42 x 350** 160 M 6	123
	8,36	8051	1,32	**MR 3I 180 - 38 x 300** 132 MC 6	108
	9	7484	2	**MR 3I 200 - 38 x 300** 132 MC 6	100
	9	7484	2	**MR 3I 200 - 42 x 350** 160 M 6	100
	9,13	7372	3	**MR 3I 225 - 38 x 300** 132 MC 6	98,5
	9,13	7372	3	**MR 3I 225 - 42 x 350** 160 M 6	98,5
	9,61	7007	1,12	**MR 3I 160 - 38 x 300** 132 MC 6	93,7
	9,65	6978	1,32	**MR 3I 180 - 38 x 300** 132 MC 6	93,3
	10,4	6467	2,5	**MR 3I 200 - 38 x 300** 132 MC 6	86,4
	10,4	6467	2,5	**MR 3I 200 - 42 x 350** 160 M 6	86,4
	10,1	6639	3,35	**MR 3I 225 - 38 x 300** 132 MC 6	88,8
	10,1	6639	3,35	**MR 3I 225 - 42 x 350** 160 M 6	88,8
	11	6134	1	**MR 3I 160 - 38 x 300** 132 M 4	128
	10,5	6409	1,18	**MR 3I 160 - 38 x 300** 132 MC 6	85,7
	10,7	6319	1,4	**MR 3I 180 - 38 x 300** 132 M 4	131
	11,7	5731	2,12	**MR 3I 200 - 38 x 300** 132 M 4	119
	11,4	5903	3	**MR 3I 225 - 38 x 300** 132 M 4	123

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
7,5	**14,5**	4635	1	**MR 3I 140 - 38 x 300** 132 MC 6	62
	13,1	5150	1,4	**MR 3I 160 - 38 x 300** 132 M 4	107
	13	5176	1,9	**MR 3I 180 - 38 x 300** 132 M 4	108
	14	4811	3	**MR 3I 200 - 38 x 300** 132 M 4	100
	16,3	4141	1,18	**MR 3I 140 - 38 x 300** 132 MC 6	55,4
	14,9	4505	1,7	**MR 3I 160 - 38 x 300** 132 M 4	93,7
	15	4486	2	**MR 3I 180 - 38 x 300** 132 M 4	93,3
	16,2	4157	3,55	**MR 3I 200 - 38 x 300** 132 M 4	86,4
	18,4	3654	1	**MR 3I 140 - 38 x 300** 132 M 4	76
	17,8	3774	1,25	**MR 3I 140 - 38 x 300** 132 MC 6	50,4
	16,3	4120	1,7	**MR 3I 160 - 38 x 300** 132 M 4	85,7
	16,3	4141	2,24	**MR 3I 180 - 38 x 300** 132 M 4	86,1
	20	3372	1,4	**MR 3I 140 - 38 x 300** 132 MC 6	45,1
	18,7	3604	2,12	**MR 3I 160 - 38 x 300** 132 M 4	74,9
	18,8	3588	2,8	**MR 3I 180 - 38 x 300** 132 M 4	74,6
	22,9	2938	0,9	**MR 3I 125 - 28 x 250** 132 M * 4	61,1
	23	2927	1,06	**MR 3I 125 - 38 x 300** 132 MC 6	39,1
	22,6	2979	1,5	**MR 3I 140 - 38 x 300** 132 M 4	62
	22,1	3053	2,24	**MR 3I 160 - 38 x 300** 132 M 4	63,5
	25,3	2662	1,8	**MR 3I 140 - 38 x 300** 132 M 4	55,4
	25,2	2670	2,8	**MR 3I 160 - 38 x 300** 132 M 4	55,5
	28,6	2350	1,32	**MR 3I 125 - 28 x 250** 132 M * 4	48,9
	28,6	2352	1,12	**MR 3I 125 - 38 x 300** 132 M 4	48,9
	28	2404	1,5	**MR 3I 125 - 38 x 300** 132 MC 6	32,1
	27,8	2426	1,9	**MR 3I 140 - 38 x 300** 132 M 4	50,4
	27,6	2442	2,8	**MR 3I 160 - 38 x 300** 132 M 4	50,8
	31,1	2168	2,24	**MR 3I 140 - 38 x 300** 132 M 4	45,1
	35,8	1882	1,7	**MR 3I 125 - 38 x 300** 132 M 4	39,1
	37,4	1841	1,4	**MR 2I 125 - 38 x 300** 132 MC 6	24,1
	37,4	1841	1,4	**MR 2I 125 - 42 x 350** 160 M 6	24,1
	36,2	1859	2,5	**MR 3I 140 - 38 x 300** 132 M 4	38,7
	37,3	1805	2,65	**MR 3I 140 - 38 x 300** 132 M 4	37,5
	46,6	1476	1,06	**MR 2I 100 - 38 x 300** 132 MC 6	19,3
	43,6	1546	2,24	**MR 3I 125 - 38 x 300** 132 M 4	32,1
	46,7	1472	2,12	**MR 2I 125 - 38 x 300** 132 MC 6	19,3
	46,7	1472	2,12	**MR 2I 125 - 42 x 350** 160 M 6	19,3
	43,5	1548	2,8	**MR 3I 140 - 38 x 300** 132 M 4	32,2
	48,1	1399	2,8	**MR 3I 140 - 38 x 300** 132 M 4	29,1
	59	1165	1,18	**MR 2I 100 - 38 x 300** 132 M 4	23,7
	52,8	1276	2,36	**MR 3I 125 - 38 x 300** 132 M 4	26,5
	58,1	1183	2,12	**MR 2I 125 - 38 x 300** 132 M 4	24,1
	58,1	1183	3	**MR 2I 140 - 38 x 300** 132 M 4	24,1
	72,5	949	1,6	**MR 2I 100 - 38 x 300** 132 M 4	19,3
	64,2	1048	3,35	**MR 3I 125 - 38 x 300** 132 M 4	21,8
	72,6	947	2,8	**MR 2I 125 - 38 x 300** 132 M 4	19,3
	87,1	790	1,8	**MR 2I 100 - 38 x 300** 132 M 4	16,1
	88,4	778	3,55	**MR 2I 125 - 38 x 300** 132 M 4	15,8
	114	604	2,5	**MR 2I 100 - 38 x 300** 132 M 4	12,3
	107	642	4,25	**MR 2I 125 - 38 x 300** 132 M 4	13,1
	137	503	2,65	**MR 2I 100 - 38 x 300** 132 M 4	10,2
	130	527	5	**MR 2I 125 - 38 x 300** 132 M 4	10,7
	175	393	3,35	**MR 2I 100 - 38 x 300** 132 M 4	8,01
	169	406	6,7	**MR 2I 125 - 38 x 300** 132 M 4	8,26
	218	315	3,75	**MR 2I 100 - 38 x 300** 132 M 4	6,42
	214	321	7,5	**MR 2I 125 - 38 x 300** 132 M 4	6,53
9,2	**10,7**	7751	1,12	**MR 3I 180 - 38 x 300** 132 MB 4	131
	11,7	7030	1,7	**MR 3I 200 - 38 x 300** 132 MB 4	119
	11,4	7242	2,36	**MR 3I 225 - 38 x 300** 132 MB 4	123
	13,1	6317	1,12	**MR 3I 160 - 38 x 300** 132 MB 4	107
	13	6349	1,5	**MR 3I 180 - 38 x 300** 132 MB 4	108
	14	5902	2,36	**MR 3I 200 - 38 x 300** 132 MB 4	100
	14,9	5526	1,4	**MR 3I 160 - 38 x 300** 132 MB 4	93,7
	15	5502	1,6	**MR 3I 180 - 38 x 300** 132 MB 4	93,3
	16,2	5100	3	**MR 3I 200 - 38 x 300** 132 MB 4	86,4

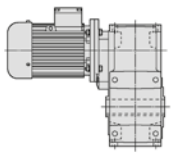
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
9,2	**18,4**	4482	0,85	**MR 3I 140 - 38 × 300**	132 MB	4		76
	16,3	5054	1,4	**MR 3I 160 - 38 × 300**	132 MB	4		85,7
	16,3	5079	1,8	**MR 3I 180 - 38 × 300**	132 MB	4		86,1
	16,7	4955	2,8	**MR 3I 200 - 38 × 300**	132 MB	4		84
	18,7	4421	1,7	**MR 3I 160 - 38 × 300**	132 MB	4		74,9
	18,8	4402	2,36	**MR 3I 180 - 38 × 300**	132 MB	4		74,6
	22,6	3655	1,25	**MR 3I 140 - 38 × 300**	132 MB	4		62
	22,1	3745	1,8	**MR 3I 160 - 38 × 300**	132 MB	4		63,5
	21,9	3763	2,5	**MR 3I 180 - 38 × 300**	132 MB	4		63,8
	25,3	3266	1,4	**MR 3I 140 - 38 × 300**	132 MB	4		55,4
	25,2	3275	2,24	**MR 3I 160 - 38 × 300**	132 MB	4		55,5
	25,3	3261	2,65	**MR 3I 180 - 38 × 300**	132 MB	4		55,3
	28,6	2885	0,9	**MR 3I 125 - 38 × 300**	132 MB	4		48,9
	27,8	2976	1,5	**MR 3I 140 - 38 × 300**	132 MB	4		50,4
	27,6	2996	2,24	**MR 3I 160 - 38 × 300**	132 MB	4		50,8
	27,4	3011	3	**MR 3I 180 - 38 × 300**	132 MB	4		51
	31,1	2659	1,8	**MR 3I 140 - 38 × 300**	132 MB	4		45,1
	31,5	2620	2,8	**MR 3I 160 - 38 × 300**	132 MB	4		44,4
	35,8	2308	1,32	**MR 3I 125 - 38 × 300**	132 MB	4		39,1
	36,2	2281	2	**MR 3I 140 - 38 × 300**	132 MB	4		38,7
	36,4	2271	3,35	**MR 3I 160 - 38 × 300**	132 MB	4		38,5
	37,3	2214	2,12	**MR 3I 140 - 38 × 300**	132 MB	4		37,5
	43,6	1896	1,8	**MR 3I 125 - 38 × 300**	132 MB	4		32,1
	43,5	1899	2,24	**MR 3I 140 - 38 × 300**	132 MB	4		32,2
	48,1	1716	2,24	**MR 3I 140 - 38 × 300**	132 MB	4		29,1
	59	1429	0,95	**MR 2I 100 - 38 × 300**	132 MB	4		23,7
	52,8	1565	2	**MR 3I 125 - 38 × 300**	132 MB	4		26,5
	58,1	1451	1,8	**MR 2I 125 - 38 × 300**	132 MB	4		24,1
	58,1	1451	2,36	**MR 2I 140 - 38 × 300**	132 MB	4		24,1
	64,6	1306	2,8	**MR 2I 140 - 38 × 300**	132 MB	4		21,7
	72,5	1164	1,32	**MR 2I 100 - 38 × 300**	132 MB	4		19,3
	64,2	1286	2,65	**MR 3I 125 - 38 × 300**	132 MB	4		21,8
	72,6	1161	2,36	**MR 2I 125 - 38 × 300**	132 MB	4		19,3
	87,1	969	1,5	**MR 2I 100 - 38 × 300**	132 MB	4		16,1
	88,4	954	2,8	**MR 2I 125 - 38 × 300**	132 MB	4		15,8
	114	741	2,12	**MR 2I 100 - 38 × 300**	132 MB	4		12,3
	107	787	3,35	**MR 2I 125 - 38 × 300**	132 MB	4		13,1
	137	617	2,12	**MR 2I 100 - 38 × 300**	132 MB	4		10,2
	130	647	4,25	**MR 2I 125 - 38 × 300**	132 MB	4		10,7
	175	482	2,8	**MR 2I 100 - 38 × 300**	132 MB	4		8,01
	169	498	5,3	**MR 2I 125 - 38 × 300**	132 MB	4		8,26
	218	387	3,15	**MR 2I 100 - 38 × 300**	132 MB	4		6,42
	214	394	6	**MR 2I 125 - 38 × 300**	132 MB	4		6,53
11	**7,55**	13075	1	**MR 3I 200 - 42 × 350**	160 L	6		119
	7,33	13468	1,4	**MR 3I 225 - 42 × 350**	160 L	6		123
	7,2	13712	2	**MR 3I 250 - 42 × 350**	160 L	6		125
	7,31	13504	2,65	**MR 3I 280 - 42 × 350**	160 L	6		123
	9	10977	1,4	**MR 3I 200 - 42 × 350**	160 L	6		100
	9,13	10813	2	**MR 3I 225 - 42 × 350**	160 L	6		98,5
	9,14	10803	2,8	**MR 3I 250 - 42 × 350**	160 L	6		98,5
	10,4	9485	1,7	**MR 3I 200 - 42 × 350**	160 L	6		86,4
	10,1	9738	2,24	**MR 3I 225 - 42 × 350**	160 L	6		88,8
	10,1	9764	3,15	**MR 3I 250 - 42 × 350**	160 L	6		89
	11,6	8545	1	**MR 3I 180 - 42 × 350**	160 L	6		77,9
	11,7	8405	1,4	**MR 3I 200 - 38 × 300**	132 MC	4		119
	11,7	8405	1,4	**MR 3I 200 - 42 × 350**	160 M	4		119
	11,4	8658	2	**MR 3I 225 - 38 × 300**	132 MC	4		123
	11,4	8658	2	**MR 3I 225 - 42 × 350**	160 M	4		123
	11,2	8815	2,8	**MR 3I 250 - 42 × 350**	160 M	4		125
	14,2	6965	1	**MR 3I 160 - 42 × 350**	160 L	6		63,5
	13	7591	1,25	**MR 3I 180 - 38 × 300**	132 MC	4		108
	14,1	6999	1,4	**MR 3I 180 - 42 × 350**	160 L	6		63,8
	14	7057	2	**MR 3I 200 - 38 × 300**	132 MC	4		100
	14	7057	2	**MR 3I 200 - 42 × 350**	160 M	4		100
	14,2	6951	3	**MR 3I 225 - 38 × 300**	132 MC	4		98,5
	14,2	6951	3	**MR 3I 225 - 42 × 350**	160 M	4		98,5

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
11	**14,9**	6607	1,18	**MR 3I 160 - 38 × 300**	132 MC	4		93,7
	16,2	6092	1,25	**MR 3I 160 - 42 × 350**	160 L	6		55,5
	15	6579	1,32	**MR 3I 180 - 38 × 300**	132 MC	4		93,3
	16,3	6066	1,5	**MR 3I 180 - 42 × 350**	160 L	6		55,3
	16,2	6097	2,5	**MR 3I 200 - 38 × 300**	132 MC	4		86,4
	16,2	6097	2,5	**MR 3I 200 - 42 × 350**	160 M	4		86,4
	16,3	6043	1,18	**MR 3I 160 - 38 × 300**	132 MC	4		85,7
	18,5	5333	1,12	**MR 3I 160 - 42 × 350**	160 M	4		75,6
	16,3	6073	1,5	**MR 3I 180 - 38 × 300**	132 MC	4		86,1
	18	5493	1,5	**MR 3I 180 - 42 × 350**	160 M	4		77,9
	16,7	5925	2,36	**MR 3I 200 - 38 × 300**	132 MC	4		84
	16,7	5925	2,36	**MR 3I 200 - 42 × 350**	160 M	4		84
	18,7	5286	1,4	**MR 3I 160 - 38 × 300**	132 MC	4		74,9
	20,3	4873	1,5	**MR 3I 160 - 42 × 350**	160 L	6		44,4
	18,8	5263	2	**MR 3I 180 - 38 × 300**	132 MC	4		74,6
	20,3	4853	2,12	**MR 3I 180 - 42 × 350**	160 L	6		44,2
	19,3	5119	2,8	**MR 3I 200 - 42 × 350**	160 M	4		72,6
	22,6	4370	1,06	**MR 3I 140 - 38 × 300**	132 MC	4		62
	22,1	4477	1,5	**MR 3I 160 - 38 × 300**	132 MC	4		63,5
	22,1	4477	1,5	**MR 3I 160 - 42 × 350**	160 M	4		63,5
	21,9	4499	2,12	**MR 3I 180 - 38 × 300**	132 MC	4		63,8
	21,9	4499	2,12	**MR 3I 180 - 42 × 350**	160 M	4		63,8
	25,3	3904	1,18	**MR 3I 140 - 38 × 300**	132 MC	4		55,4
	25,2	3916	1,9	**MR 3I 160 - 38 × 300**	132 MC	4		55,5
	25,2	3916	1,9	**MR 3I 160 - 42 × 350**	160 M	4		55,5
	25,3	3899	2,24	**MR 3I 180 - 42 × 350**	160 M	4		55,3
	27,8	3558	1,32	**MR 3I 140 - 38 × 300**	132 MC	4		50,4
	27,6	3582	1,9	**MR 3I 160 - 38 × 300**	132 MC	4		50,8
	27,6	3582	1,9	**MR 3I 160 - 42 × 350**	160 M	4		50,8
	27,4	3600	2,5	**MR 3I 180 - 42 × 350**	160 M	4		51
	31,1	3179	1,5	**MR 3I 140 - 38 × 300**	132 MC	4		45,1
	31,5	3133	2,36	**MR 3I 160 - 38 × 300**	132 MC	4		44,4
	31,5	3133	2,36	**MR 3I 160 - 42 × 350**	160 M	4		44,4
	35,8	2760	1,12	**MR 3I 125 - 38 × 300**	132 MC	4		39,1
	37,4	2699	0,95	**MR 2I 125 - 42 × 350**	160 L	6		24,1
	36,2	2727	1,7	**MR 3I 140 - 38 × 300**	132 MC	4		38,7
	37,4	2699	1,32	**MR 2I 140 - 42 × 350**	160 L	6		24,1
	36,4	2715	2,8	**MR 3I 160 - 42 × 350**	160 M	4		38,5
	36,6	2758	2,12	**MR 2I 160 - 42 × 350**	160 L	6		24,6
	37,3	2647	1,8	**MR 3I 140 - 38 × 300**	132 MC	4		37,5
	41,5	2430	1,6	**MR 2I 140 - 42 × 350**	160 L	6		21,7
	38,4	2573	2,8	**MR 3I 160 - 42 × 350**	160 M	4		36,5
	40	2521	2,5	**MR 2I 160 - 42 × 350**	160 L	6		22,5
	43,6	2267	1,5	**MR 3I 125 - 38 × 300**	132 MC	4		32,1
	46,7	2160	1,4	**MR 2I 125 - 42 × 350**	160 L	6		19,3
	43,5	2271	1,9	**MR 3I 140 - 38 × 300**	132 MC	4		32,2
	45,8	2201	1,9	**MR 2I 140 - 42 × 350**	160 L	6		19,6
	44,3	2230	3,35	**MR 3I 160 - 42 × 350**	160 M	4		31,6
	43,5	2316	3	**MR 2I 160 - 42 × 350**	160 L	6		20,7
	48,1	2052	1,9	**MR 3I 140 - 38 × 300**	132 MC	4		29,1
	51,3	1967	2,12	**MR 2I 140 - 42 × 350**	160 L	6		17,6
	49,3	2002	3,35	**MR 3I 160 - 42 × 350**	160 M	4		28,4
	52,8	1871	1,6	**MR 3I 125 - 38 × 300**	132 MC	4		26,5
	58,1	1735	1,5	**MR 2I 125 - 38 × 300**	132 MC	4		24,1
	58,1	1735	1,5	**MR 2I 125 - 42 × 350**	160 M	4		24,1
	56,8	1774	1,6	**MR 2I 125 - 42 × 350**	160 L	6		15,8
	58,1	1735	2	**MR 2I 140 - 38 × 300**	132 MC	4		24,1
	58,1	1735	2	**MR 2I 140 - 42 × 350**	160 M	4		24,1
	64,6	1562	2,36	**MR 2I 140 - 38 × 300**	132 MC	4		21,7
	64,6	1562	2,36	**MR 2I 140 - 42 × 350**	160 M	4		21,7
	72,5	1391	1,12	**MR 2I 100 - 38 × 300**	132 MC	4		19,3
	64,2	1537	2,24	**MR 3I 125 - 38 × 300**	132 MC	4		21,8
	72,6	1388	2	**MR 2I 125 - 38 × 300**	132 MC	4		19,3
	72,6	1388	2	**MR 2I 125 - 42 × 350**	160 M	4		19,3
	71,3	1415	2,8	**MR 2I 140 - 38 × 300**	132 MC	4		19,6
	71,3	1415	2,8	**MR 2I 140 - 42 × 350**	160 M	4		19,6
	87,1	1158	1,25	**MR 2I 100 - 38 × 300**	132 MC	4		16,1
	88,4	1140	2,36	**MR 2I 125 - 38 × 300**	132 MC	4		15,8
	88,4	1140	2,36	**MR 2I 125 - 42 × 350**	160 M	4		15,8

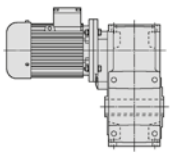
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
11	**114**	885	1,7	**MR 2I 100 - 38 × 300** 132 MC		4	12,3
	107	941	2,8	**MR 2I 125 - 38 × 300** 132 MC		4	13,1
	107	941	2,8	**MR 2I 125 - 42 × 350** 160 M		4	13,1
	137	737	1,8	**MR 2I 100 - 38 × 300** 132 MC		4	10,2
	130	773	3,55	**MR 2I 125 - 38 × 300** 132 MC		4	10,7
	130	773	3,55	**MR 2I 125 - 42 × 350** 160 M		4	10,7
	175	577	2,36	**MR 2I 100 - 38 × 300** 132 MC		4	8,01
	169	595	4,5	**MR 2I 125 - 38 × 300** 132 MC		4	8,26
	169	595	4,5	**MR 2I 125 - 42 × 350** 160 M		4	8,26
	218	462	2,65	**MR 2I 100 - 38 × 300** 132 MC		4	6,42
	214	471	5	**MR 2I 125 - 38 × 300** 132 MC		4	6,53
	214	471	5	**MR 2I 125 - 42 × 350** 160 M		4	6,53
15	**7,2**	18698	1,4	**MR 3I 250 - 48 × 350** 180 L		6	125
	7,31	18414	2	**MR 3I 280 - 48 × 350** 180 L		6	123
	9	14969	1	**MR 3I 200 - 48 × 350** 180 L		6	100
	9,13	14745	1,5	**MR 3I 225 - 48 × 350** 180 L		6	98,5
	9,14	14731	2,12	**MR 3I 250 - 48 × 350** 180 L		6	98,5
	8,97	15015	2,65	**MR 3I 280 - 48 × 350** 180 L		6	100
	10,4	12934	1,25	**MR 3I 200 - 48 × 350** 180 L		6	86,4
	10,1	13279	1,6	**MR 3I 225 - 48 × 350** 180 L		6	88,8
	10,1	13315	2,36	**MR 3I 250 - 48 × 350** 180 L		6	89
	10	13416	3,15	**MR 3I 280 - 48 × 350** 180 L		6	89,7
	11,7	11461	1,06	**MR 3I 200 - 42 × 350** 160 L		4	119
	10,7	12568	1,18	**MR 3I 200 - 48 × 350** 180 L		6	84
	11,4	11807	1,5	**MR 3I 225 - 42 × 350** 160 L		4	123
	11,2	12020	2,12	**MR 3I 250 - 42 × 350** 160 L		4	125
	10,9	12368	2,36	**MR 3I 250 - 48 × 350** 180 L		6	82,7
	11,4	11838	2,8	**MR 3I 280 - 42 × 350** 160 L		4	123
	14,1	9544	1	**MR 3I 180 - 48 × 350** 180 L		6	63,8
	14	9623	1,5	**MR 3I 200 - 42 × 350** 160 L		4	100
	14,2	9479	2,12	**MR 3I 225 - 42 × 350** 160 L		4	98,5
	14,2	9470	3	**MR 3I 250 - 42 × 350** 160 L		4	98,5
	16,3	8272	1,06	**MR 3I 180 - 48 × 350** 180 L		6	55,3
	16,2	8315	1,8	**MR 3I 200 - 42 × 350** 160 L		4	86,4
	15,8	8536	2,5	**MR 3I 225 - 42 × 350** 160 L		4	88,8
	18	7491	1,12	**MR 3I 180 - 42 × 350** 160 L		4	77,9
	16,7	8079	1,7	**MR 3I 200 - 42 × 350** 160 L		4	84
	16,9	7958	2,5	**MR 3I 225 - 42 × 350** 160 L		4	82,7
	20,3	6646	1,12	**MR 3I 160 - 48 × 350** 180 L		6	44,4
	20,3	6617	1,6	**MR 3I 180 - 48 × 350** 180 L		6	44,2
	19,3	6981	2,12	**MR 3I 200 - 42 × 350** 160 L		4	72,6
	18,8	7167	2,8	**MR 3I 225 - 42 × 350** 160 L		4	74,5
	22,1	6105	1,12	**MR 3I 160 - 42 × 350** 160 L		4	63,5
	21,9	6136	1,5	**MR 3I 180 - 42 × 350** 160 L		4	63,8
	22,4	6022	2,24	**MR 3I 200 - 42 × 350** 160 L		4	62,6
	25,2	5340	1,4	**MR 3I 160 - 42 × 350** 160 L		4	55,5
	25,3	5317	1,7	**MR 3I 180 - 42 × 350** 160 L		4	55,3
	25,9	5203	2,8	**MR 3I 200 - 42 × 350** 160 L		4	54,1
	27,8	4852	0,95	**MR 3I 140 - 38 × 300** 160 L	*	4	50,4
	27,6	4884	1,4	**MR 3I 160 - 42 × 350** 160 L		4	50,8
	27,4	4908	1,9	**MR 3I 180 - 42 × 350** 160 L		4	51
	26,6	5056	2,65	**MR 3I 200 - 42 × 350** 160 L		4	52,6
	31,1	4335	1,12	**MR 3I 140 - 38 × 300** 160 L	*	4	45,1
	31,5	4272	1,7	**MR 3I 160 - 42 × 350** 160 L		4	44,4
	31,7	4254	2,36	**MR 3I 180 - 42 × 350** 160 L		4	44,2
	36,2	3719	1,25	**MR 3I 140 - 38 × 300** 160 L	*	4	38,7
	37,4	3681	1	**MR 2I 140 - 48 × 350** 180 L		6	24,1
	36,4	3703	2	**MR 3I 160 - 42 × 350** 160 L		4	38,5
	36,6	3761	1,5	**MR 2I 160 - 48 × 350** 180 L		6	24,6
	35,1	3840	2,5	**MR 3I 180 - 42 × 350** 160 L		4	39,9
	35,5	3875	2,12	**MR 2I 180 - 48 × 350** 180 L		6	25,4
	37,3	3610	1,32	**MR 3I 140 - 38 × 300** 160 L	*	4	37,5
	41,5	3313	1,18	**MR 2I 140 - 48 × 350** 180 L		6	21,7
	38,4	3509	2,12	**MR 3I 160 - 42 × 350** 160 L		4	36,5
	40	3438	1,9	**MR 2I 160 - 48 × 350** 180 L		6	22,5
	38,5	3494	2,8	**MR 3I 180 - 42 × 350** 160 L		4	36,3
	38,6	3565	2,5	**MR 2I 180 - 48 × 350** 180 L		6	23,3

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
15	**43,5**	3097	1,4	**MR 3I 140 - 38 × 300** 160 L	*	4	32,2
	45,8	3002	1,4	**MR 2I 140 - 48 × 350** 180 L		6	19,6
	44,3	3041	2,5	**MR 3I 160 - 42 × 350** 160 L		4	31,6
	43,5	3158	2,12	**MR 2I 160 - 48 × 350** 180 L		6	20,7
	42,7	3155	3,35	**MR 3I 180 - 42 × 350** 160 L		4	32,8
	43,3	3174	2,8	**MR 2I 180 - 48 × 350** 180 L		6	20,8
	48,1	2798	1,4	**MR 3I 140 - 38 × 300** 160 L	*	4	29,1
	51,3	2682	1,6	**MR 2I 140 - 48 × 350** 180 L		6	17,6
	49,3	2730	2,5	**MR 3I 160 - 42 × 350** 160 L		4	28,4
	49,8	2762	2,65	**MR 2I 160 - 48 × 350** 180 L		6	18,1
	58,1	2366	1,06	**MR 2I 125 - 42 × 350** 160 L		4	24,1
	58,1	2366	1,5	**MR 2I 140 - 42 × 350** 160 L		4	24,1
	56,9	2418	2,36	**MR 2I 160 - 42 × 350** 160 L		4	24,6
	64,6	2130	1,8	**MR 2I 140 - 42 × 350** 160 L		4	21,7
	62,2	2210	2,8	**MR 2I 160 - 42 × 350** 160 L		4	22,5
	72,6	1893	1,4	**MR 2I 125 - 42 × 350** 160 L		4	19,3
	71,3	1930	2,12	**MR 2I 140 - 42 × 350** 160 L		4	19,6
	67,7	2030	3,35	**MR 2I 160 - 42 × 350** 160 L		4	20,7
	79,8	1724	2,36	**MR 2I 140 - 42 × 350** 160 L		4	17,6
	77,4	1776	4	**MR 2I 160 - 42 × 350** 160 L		4	18,1
	88,4	1555	1,8	**MR 2I 125 - 42 × 350** 160 L		4	15,8
	93	1479	2,8	**MR 2I 140 - 42 × 350** 160 L		4	15,1
	95,2	1444	2,65	**MR 2I 140 - 42 × 350** 160 L		4	14,7
	107	1284	2,12	**MR 2I 125 - 42 × 350** 160 L		4	13,1
	105	1308	3	**MR 2I 140 - 42 × 350** 160 L		4	13,3
	118	1169	3,55	**MR 2I 140 - 42 × 350** 160 L		4	11,9
	130	1054	2,5	**MR 2I 125 - 42 × 350** 160 L		4	10,7
	137	1003	3,75	**MR 2I 140 - 42 × 350** 160 L		4	10,2
	169	812	3,35	**MR 2I 125 - 42 × 350** 160 L		4	8,26
	214	642	3,75	**MR 2I 125 - 42 × 350** 160 L		4	6,53
18,5	**7,2**	23060	1,18	**MR 3I 250 - 55 × 400** 200 LR		6	125
	7,31	22711	1,6	**MR 3I 280 - 55 × 400** 200 LR		6	123
	7,1	23390	1,9	**MR 3I 320 - 55 × 400** 200 LR		6	127
	7,1	23390	2,36	**MR 3I 321 - 55 × 400** 200 LR		6	127
	9,14	18169	1,7	**MR 3I 250 - 55 × 400** 200 LR		6	98,5
	8,97	18518	2,12	**MR 3I 280 - 55 × 400** 200 LR		6	100
	10,1	16422	1,9	**MR 3I 250 - 55 × 400** 200 LR		6	89
	10	16547	2,5	**MR 3I 280 - 55 × 400** 200 LR		6	89,7
	11,4	14562	1,18	**MR 3I 225 - 48 × 350** 180 M		4	123
	11,2	14825	1,7	**MR 3I 250 - 48 × 350** 180 M		4	125
	11,4	14600	2,36	**MR 3I 280 - 48 × 350** 180 M		4	123
	14	11868	1,18	**MR 3I 200 - 48 × 350** 180 M		4	100
	14,2	11690	1,7	**MR 3I 225 - 48 × 350** 180 M		4	98,5
	14,2	11680	2,5	**MR 3I 250 - 48 × 350** 180 M		4	98,5
	16,2	10255	1,5	**MR 3I 200 - 48 × 350** 180 M		4	86,4
	15,8	10528	2	**MR 3I 225 - 48 × 350** 180 M		4	88,8
	15,7	10557	2,8	**MR 3I 250 - 48 × 350** 180 M		4	89
	16,7	9964	1,4	**MR 3I 200 - 48 × 350** 180 M		4	84
	16,9	9815	2	**MR 3I 225 - 48 × 350** 180 M		4	82,7
	16,9	9806	2,8	**MR 3I 250 - 48 × 350** 180 M		4	82,7
	19,3	8610	1,7	**MR 3I 200 - 48 × 350** 180 M		4	72,6
	18,8	8839	2,36	**MR 3I 225 - 48 × 350** 180 M		4	74,5
	21,9	7567	1,25	**MR 3I 180 - 48 × 350** 180 M		4	63,8
	22,4	7427	1,8	**MR 3I 200 - 48 × 350** 180 M		4	62,6
	22,7	7316	2,65	**MR 3I 225 - 48 × 350** 180 M		4	61,7
	25,2	6586	1,12	**MR 3I 160 - 48 × 350** 180 M		4	55,5
	25,3	6558	1,32	**MR 3I 180 - 48 × 350** 180 M		4	55,3
	25,9	6418	2,24	**MR 3I 200 - 48 × 350** 180 M		4	54,1
	25,2	6589	3,15	**MR 3I 225 - 48 × 350** 180 M		4	55,5
	27,6	6024	1,12	**MR 3I 160 - 48 × 350** 180 M		4	50,8
	27,4	6054	1,5	**MR 3I 180 - 48 × 350** 180 M		4	51
	26,6	6236	2,24	**MR 3I 200 - 48 × 350** 180 M		4	52,6
	27	6142	3,15	**MR 3I 225 - 48 × 350** 180 M		4	51,8

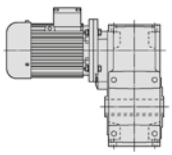
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
18,5	**31,5**	5269	1,4	**MR 3I 160 - 48 × 350** 180 M	4		44,4
	31,7	5247	1,9	**MR 3I 180 - 48 × 350** 180 M	4		44,2
	30,8	5388	2,65	**MR 3I 200 - 48 × 350** 180 M	4		45,4
	36,4	4566	1,7	**MR 3I 160 - 48 × 350** 180 M	4		38,5
	35,1	4737	2	**MR 3I 180 - 48 × 350** 180 M	4		39,9
	33,7	4928	3	**MR 3I 200 - 48 × 350** 180 M	4		41,5
	38,4	4328	1,7	**MR 3I 160 - 48 × 350** 180 M	4		36,5
	38,5	4310	2,36	**MR 3I 180 - 48 × 350** 180 M	4		36,3
	44,3	3751	2	**MR 3I 160 - 48 × 350** 180 M	4		31,6
	42,7	3891	2,65	**MR 3I 180 - 48 × 350** 180 M	4		32,8
	49,3	3367	2	**MR 3I 160 - 48 × 350** 180 M	4		28,4
	49	3392	2,24	**MR 3I 180 - 48 × 350** 180 M	4		28,6
	58,1	2919	0,9	**MR 2I 125 - 48 × 350** 180 M	4		24,1
	58,1	2919	1,18	**MR 2I 140 - 48 × 350** 180 M	4		24,1
	56,9	2982	1,9	**MR 2I 160 - 48 × 350** 180 M	4		24,6
	55,2	3072	2,65	**MR 2I 180 - 48 × 350** 180 M	4		25,4
	64,6	2627	1,4	**MR 2I 140 - 48 × 350** 180 M	4		21,7
	62,2	2726	2,36	**MR 2I 160 - 48 × 350** 180 M	4		22,5
	60	2827	3,15	**MR 2I 180 - 48 × 350** 180 M	4		23,3
	72,6	2335	1,18	**MR 2I 125 - 48 × 350** 180 M	4		19,3
	71,3	2380	1,7	**MR 2I 140 - 48 × 350** 180 M	4		19,6
	67,7	2504	2,65	**MR 2I 160 - 48 × 350** 180 M	4		20,7
	79,8	2126	1,9	**MR 2I 140 - 48 × 350** 180 M	4		17,6
	77,4	2190	3,35	**MR 2I 160 - 48 × 350** 180 M	4		18,1
	88,4	1918	1,4	**MR 2I 125 - 48 × 350** 180 M	4		15,8
	93	1824	2,24	**MR 2I 140 - 48 × 350** 180 M	4		15,1
	89,4	1898	3,55	**MR 2I 160 - 48 × 350** 180 M	4		15,7
	95,2	1781	2,24	**MR 2I 140 - 48 × 350** 180 M	4		14,7
	99,6	1704	3,55	**MR 2I 160 - 48 × 350** 180 M	4		14,1
	107	1583	1,7	**MR 2I 125 - 48 × 350** 180 M	4		13,1
	105	1613	2,5	**MR 2I 140 - 48 × 350** 180 M	4		13,3
	103	1645	4	**MR 2I 160 - 48 × 350** 180 M	4		13,6
	118	1442	2,8	**MR 2I 140 - 48 × 350** 180 M	4		11,9
	118	1439	5	**MR 2I 160 - 48 × 350** 180 M	4		11,9
	130	1300	2	**MR 2I 125 - 48 × 350** 180 M	4		10,7
	137	1237	3,15	**MR 2I 140 - 48 × 350** 180 M	4		10,2
	136	1247	5,6	**MR 2I 160 - 48 × 350** 180 M	4		10,3
	169	1001	2,65	**MR 2I 125 - 48 × 350** 180 M	4		8,26
	214	792	3	**MR 2I 125 - 48 × 350** 180 M	4		6,53
22	**7,31**	27008	1,32	**MR 3I 280 - 55 × 400** 200 L	6		123
	7,1	27815	1,6	**MR 3I 320 - 55 × 400** 200 L	6		127
	7,1	27815	2	**MR 3I 321 - 55 × 400** 200 L	6		127
	6,89	28653	2,65	**MR 3I 360 - 55 × 400** 200 L	6		131
	9,14	21606	1,4	**MR 3I 250 - 55 × 400** 200 L	6		98,5
	8,97	22022	1,8	**MR 3I 280 - 55 × 400** 200 L	6		100
	8,6	22976	2,24	**MR 3I 320 - 55 × 400** 200 L	6		105
	10,1	19529	1,6	**MR 3I 250 - 55 × 400** 200 L	6		89
	10	19677	2,12	**MR 3I 280 - 55 × 400** 200 L	6		89,7
	9,99	19775	2,5	**MR 3I 320 - 55 × 400** 200 L	6		90,1
	11,4	17317	1	**MR 3I 225 - 48 × 350** 180 L	4		123
	11,2	17629	1,4	**MR 3I 250 - 48 × 350** 180 L	4		125
	11,4	17362	1,9	**MR 3I 280 - 48 × 350** 180 L	4		123
	14	14113	1	**MR 3I 200 - 48 × 350** 180 L	4		100
	14,2	13902	1,5	**MR 3I 225 - 48 × 350** 180 L	4		98,5
	14,2	13890	2	**MR 3I 250 - 48 × 350** 180 L	4		98,5
	14	14157	2,65	**MR 3I 280 - 48 × 350** 180 L	4		100
	16,2	12195	1,25	**MR 3I 200 - 48 × 350** 180 L	4		86,4
	15,8	12520	1,7	**MR 3I 225 - 48 × 350** 180 L	4		88,8
	15,7	12554	2,36	**MR 3I 250 - 48 × 350** 180 L	4		89
	16,7	11849	1,18	**MR 3I 200 - 48 × 350** 180 L	4		84
	16,9	11672	1,7	**MR 3I 225 - 48 × 350** 180 L	4		82,7
	16,9	11662	2,36	**MR 3I 250 - 48 × 350** 180 L	4		82,7
	19,3	10239	1,4	**MR 3I 200 - 48 × 350** 180 L	4		72,6
	18,8	10512	2	**MR 3I 225 - 48 × 350** 180 L	4		74,5
	18,7	10540	2,65	**MR 3I 250 - 48 × 350** 180 L	4		74,7

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
22	**21,9**	8999	1,06	**MR 3I 180 - 48 × 350** 180 L	4		63,8
	22,4	8832	1,6	**MR 3I 200 - 48 × 350** 180 L	4		62,6
	22,7	8700	2,24	**MR 3I 225 - 48 × 350** 180 L	4		61,7
	25,3	7799	1,12	**MR 3I 180 - 48 × 350** 180 L	4		55,3
	25,9	7632	1,9	**MR 3I 200 - 48 × 350** 180 L	4		54,1
	25,2	7835	2,65	**MR 3I 225 - 48 × 350** 180 L	4		55,5
	27,6	7164	0,95	**MR 3I 160 - 48 × 350** 180 L	4		50,8
	27,4	7199	1,32	**MR 3I 180 - 48 × 350** 180 L	4		51
	26,6	7416	1,8	**MR 3I 200 - 48 × 350** 180 L	4		52,6
	27	7304	2,65	**MR 3I 225 - 48 × 350** 180 L	4		51,8
	31,5	6266	1,18	**MR 3I 160 - 48 × 350** 180 L	4		44,4
	31,7	6239	1,6	**MR 3I 180 - 48 × 350** 180 L	4		44,2
	30,8	6407	2,24	**MR 3I 200 - 48 × 350** 180 L	4		45,4
	36,4	5430	1,4	**MR 3I 160 - 48 × 350** 180 L	4		38,5
	36,6	5516	1,06	**MR 2I 160 - 55 × 400** 200 L	6		24,6
	35,1	5633	1,7	**MR 3I 180 - 48 × 350** 180 L	4		39,9
	35,5	5683	1,5	**MR 2I 180 - 55 × 400** 200 L	6		25,4
	33,7	5861	2,5	**MR 3I 200 - 48 × 350** 180 L	4		41,5
	37,1	5432	2,12	**MR 2I 200 - 55 × 400** 200 L	6		24,2
	38,4	5147	1,4	**MR 3I 160 - 48 × 350** 180 L	4		36,5
	40	5042	1,32	**MR 2I 160 - 55 × 400** 200 L	6		22,5
	38,5	5125	2	**MR 3I 180 - 48 × 350** 180 L	4		36,3
	38,6	5229	1,7	**MR 2I 180 - 55 × 400** 200 L	6		23,3
	40,7	4857	3	**MR 3I 200 - 48 × 350** 180 L	4		34,4
	40,6	4965	2,5	**MR 2I 200 - 55 × 400** 200 L	6		22,2
	44,3	4461	1,7	**MR 3I 160 - 48 × 350** 180 L	4		31,6
	43,5	4632	1,5	**MR 2I 160 - 55 × 400** 200 L	6		20,7
	42,7	4627	2,24	**MR 3I 180 - 48 × 350** 180 L	4		32,8
	43,3	4655	2	**MR 2I 180 - 55 × 400** 200 L	6		20,8
	44,5	4443	3,35	**MR 3I 200 - 48 × 350** 180 L	4		31,5
	44,2	4560	3	**MR 2I 200 - 55 × 400** 200 L	6		20,3
	49,3	4004	1,7	**MR 3I 160 - 48 × 350** 180 L	4		28,4
	49,8	4051	1,8	**MR 2I 160 - 55 × 400** 200 L	6		18,1
	49	4034	1,8	**MR 3I 180 - 48 × 350** 180 L	4		28,6
	50	4034	2	**MR 2I 180 - 55 × 400** 200 L	6		18
	51,4	3840	4	**MR 3I 200 - 48 × 350** 180 L	4		27,2
	58,1	3471	1	**MR 2I 140 - 48 × 350** 180 L	4		24,1
	56,9	3546	1,6	**MR 2I 160 - 48 × 350** 180 L	4		24,6
	57,4	3511	2	**MR 2I 160 - 55 × 400** 200 L	6		15,7
	55,2	3653	2,24	**MR 2I 180 - 48 × 350** 180 L	4		25,4
	64,6	3124	1,18	**MR 2I 140 - 48 × 350** 180 L	4		21,7
	62,2	3242	2	**MR 2I 160 - 48 × 350** 180 L	4		22,5
	60	3362	2,65	**MR 2I 180 - 48 × 350** 180 L	4		23,3
	72,6	2777	1	**MR 2I 125 - 48 × 350** 180 L	4		19,3
	71,3	2830	1,4	**MR 2I 140 - 48 × 350** 180 L	4		19,6
	67,7	2977	2,24	**MR 2I 160 - 48 × 350** 180 L	4		20,7
	79,8	2529	1,6	**MR 2I 140 - 48 × 350** 180 L	4		17,6
	77,4	2604	2,8	**MR 2I 160 - 48 × 350** 180 L	4		18,1
	88,4	2281	1,18	**MR 2I 125 - 48 × 350** 180 L	4		15,8
	93	2169	1,9	**MR 2I 140 - 48 × 350** 180 L	4		15,1
	89,4	2257	3	**MR 2I 160 - 48 × 350** 180 L	4		15,7
	95,2	2118	1,9	**MR 2I 140 - 48 × 350** 180 L	4		14,7
	99,6	2026	3	**MR 2I 160 - 48 × 350** 180 L	4		14,1
	107	1882	1,4	**MR 2I 125 - 48 × 350** 180 L	4		13,1
	105	1919	2	**MR 2I 140 - 48 × 350** 180 L	4		13,3
	103	1957	3,35	**MR 2I 160 - 48 × 350** 180 L	4		13,6
	118	1714	2,36	**MR 2I 140 - 48 × 350** 180 L	4		11,9
	118	1711	4,25	**MR 2I 160 - 48 × 350** 180 L	4		11,9
	130	1546	1,7	**MR 2I 125 - 48 × 350** 180 L	4		10,7
	137	1471	2,65	**MR 2I 140 - 48 × 350** 180 L	4		10,2
	136	1483	4,75	**MR 2I 160 - 48 × 350** 180 L	4		10,3
	152	1329	2,65	**MR 2I 140 - 48 × 350** 180 L	4		9,22
	151	1331	4,75	**MR 2I 160 - 48 × 350** 180 L	4		9,24
	169	1190	2,24	**MR 2I 125 - 48 × 350** 180 L	4		8,26
	214	941	2,5	**MR 2I 125 - 48 × 350** 180 L	4		6,53

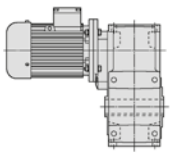
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)		i
30	**7,1**	37930	1,18	**MR 3I 320 - 60** × **450** 225 M	6	127
	7,1	37930	1,5	**MR 3I 321 - 60** × **450** 225 M	6	127
	6,89	39072	1,9	**MR 3I 360 - 60** × **450** 225 M	6	131
	9,14	29463	1,06	**MR 3I 250 - 60** × **450** 225 M	6	98,5
	8,97	30030	1,32	**MR 3I 280 - 60** × **450** 225 M	6	100
	8,6	31331	1,7	**MR 3I 320 - 60** × **450** 225 M	6	105
	8,6	31331	2,12	**MR 3I 321 - 60** × **450** 225 M	6	105
	8,74	30818	2,8	**MR 3I 360 - 60** × **450** 225 M	6	103
	10,1	26630	1,18	**MR 3I 250 - 60** × **450** 225 M	6	89
	10	26832	1,6	**MR 3I 280 - 60** × **450** 225 M	6	89,7
	9,99	26966	1,8	**MR 3I 320 - 60** × **450** 225 M	6	90,1
	9,99	26966	2,24	**MR 3I 321 - 60** × **450** 225 M	6	90,1
	9,71	27736	3	**MR 3I 360 - 60** × **450** 225 M	6	92,7
	11,2	24040	1,06	**MR 3I 250 - 55** × **400** 200 L	4	125
	10,9	24737	1,18	**MR 3I 250 - 60** × **450** 225 M	6	82,7
	11,4	23676	1,4	**MR 3I 280 - 55** × **400** 200 L	4	123
	11	24383	1,7	**MR 3I 320 - 55** × **400** 200 L	4	127
	11	24383	2,12	**MR 3I 321 - 55** × **400** 200 L	4	127
	10,9	24685	2,12	**MR 3I 320 - 60** × **450** 225 M	6	82,5
	10,9	24685	2,65	**MR 3I 321 - 60** × **450** 225 M	6	82,5
	10,7	25118	3	**MR 3I 360 - 55** × **400** 200 L	4	131
	14,6	18455	1,06	**MR 3I 225 - 60** × **450** 225 M	6	61,7
	14,2	18940	1,5	**MR 3I 250 - 55** × **400** 200 L	4	98,5
	14	19305	1,9	**MR 3I 280 - 55** × **400** 200 L	4	100
	13,4	20142	2,5	**MR 3I 320 - 55** × **400** 200 L	4	105
	16,2	16620	1,25	**MR 3I 225 - 60** × **450** 225 M	6	55,5
	15,7	17119	1,7	**MR 3I 250 - 55** × **400** 200 L	4	89
	15,6	17249	2,36	**MR 3I 280 - 55** × **400** 200 L	4	89,7
	18,2	14778	1,12	**MR 3I 225 - 55** × **400** 200 L	4	76,8
	16,9	15902	1,7	**MR 3I 250 - 55** × **400** 200 L	4	82,7
	16,6	16208	2,24	**MR 3I 280 - 55** × **400** 200 L	4	84,3
	19,8	13592	1,06	**MR 3I 200 - 60** × **450** 225 M	6	45,4
	19,3	13954	1,5	**MR 3I 225 - 60** × **450** 225 M	6	46,6
	18,7	14373	2	**MR 3I 250 - 55** × **400** 200 L	4	74,7
	18,6	14482	2,8	**MR 3I 280 - 55** × **400** 200 L	4	75,3
	22,4	12044	1,12	**MR 3I 200 - 55** × **400** 200 L	4	62,6
	22,7	11864	1,6	**MR 3I 225 - 55** × **400** 200 L	4	61,7
	22,8	11838	2,36	**MR 3I 250 - 55** × **400** 200 L	4	61,5
	25,9	10407	1,4	**MR 3I 200 - 55** × **400** 200 L	4	54,1
	25,2	10684	1,9	**MR 3I 225 - 55** × **400** 200 L	4	55,5
	25,2	10700	2,65	**MR 3I 250 - 55** × **400** 200 L	4	55,6
	27,4	9817	0,95	**MR 3I 180 - 48** × **350** 200 L	* 4	51
	26,6	10112	1,32	**MR 3I 200 - 55** × **400** 200 L	4	52,6
	27	9961	2	**MR 3I 225 - 55** × **400** 200 L	4	51,8
	27,1	9939	2,8	**MR 3I 250 - 55** × **400** 200 L	4	51,7
	31,7	8508	1,18	**MR 3I 180 - 48** × **350** 200 L	* 4	44,2
	30,8	8737	1,7	**MR 3I 200 - 55** × **400** 200 L	4	45,4
	30	8970	2,24	**MR 3I 225 - 55** × **400** 200 L	4	46,6
	35,1	7681	1,25	**MR 3I 180 - 48** × **350** 200 L	* 4	39,9
	33,7	7992	1,9	**MR 3I 200 - 55** × **400** 200 L	4	41,5
	34,7	7771	2,65	**MR 3I 225 - 55** × **400** 200 L	4	40,4
	38,5	6989	1,4	**MR 3I 180 - 48** × **350** 200 L	* 4	36,3
	40,7	6624	2,12	**MR 3I 200 - 55** × **400** 200 L	4	34,4
	39,6	6800	3	**MR 3I 225 - 55** × **400** 200 L	4	35,4
	42,7	6309	1,7	**MR 3I 180 - 48** × **350** 200 L	* 4	32,8
	44,5	6058	2,5	**MR 3I 200 - 55** × **400** 200 L	4	31,5
	45,7	5891	3,55	**MR 3I 225 - 55** × **400** 200 L	4	30,6
	49	5500	1,32	**MR 3I 180 - 48** × **350** 200 L	* 4	28,6
	51,4	5236	2,8	**MR 3I 200 - 55** × **400** 200 L	4	27,2
	56,9	4836	1,18	**MR 2I 160 - 55** × **400** 200 L	4	24,6
	55,2	4982	1,6	**MR 2I 180 - 55** × **400** 200 L	4	25,4
	57,8	4761	2,36	**MR 2I 200 - 55** × **400** 200 L	4	24,2
	62,2	4420	1,4	**MR 2I 160 - 55** × **400** 200 L	4	22,5
	60	4584	2	**MR 2I 180 - 55** × **400** 200 L	4	23,3
	63,2	4352	2,8	**MR 2I 200 - 55** × **400** 200 L	4	22,2

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)		i
30	**67,7**	4060	1,6	**MR 2I 160 - 55** × **400** 200 L	4	20,7
	67,4	4080	2,24	**MR 2I 180 - 55** × **400** 200 L	4	20,8
	68,8	3998	3,35	**MR 2I 200 - 55** × **400** 200 L	4	20,3
	77,4	3551	2	**MR 2I 160 - 55** × **400** 200 L	4	18,1
	77,8	3536	2,24	**MR 2I 180 - 55** × **400** 200 L	4	18
	89,4	3078	2,24	**MR 2I 160 - 55** × **400** 200 L	4	15,7
	86,2	3192	2,24	**MR 2I 180 - 55** × **400** 200 L	4	16,3
	95,2	2888	1,32	**MR 2I 140 - 48** × **350** 200 L	* 4	14,7
	99,6	2763	2,24	**MR 2I 160 - 55** × **400** 200 L	4	14,1
	97,2	2829	3	**MR 2I 180 - 55** × **400** 200 L	4	14,4
	105	2616	1,5	**MR 2I 140 - 48** × **350** 200 L	* 4	13,3
	103	2668	2,5	**MR 2I 160 - 55** × **400** 200 L	4	13,6
	103	2681	3,35	**MR 2I 180 - 55** × **400** 200 L	4	13,6
	118	2338	1,7	**MR 2I 140 - 48** × **350** 200 L	* 4	11,9
	118	2334	3	**MR 2I 160 - 55** × **400** 200 L	4	11,9
	118	2324	3,75	**MR 2I 180 - 55** × **400** 200 L	4	11,8
	137	2006	1,9	**MR 2I 140 - 48** × **350** 200 L	* 4	10,2
	136	2023	3,55	**MR 2I 160 - 55** × **400** 200 L	4	10,3
	131	2098	3,75	**MR 2I 180 - 55** × **400** 200 L	4	10,7
	152	1812	1,9	**MR 2I 140 - 48** × **350** 200 L	* 4	9,22
	151	1815	3,55	**MR 2I 160 - 55** × **400** 200 L	4	9,24
	150	1829	3,75	**MR 2I 180 - 55** × **400** 200 L	4	9,31
	174	1578	3,75	**MR 2I 160 - 55** × **400** 200 L	4	8,03
	218	1260	3,75	**MR 2I 160 - 55** × **400** 200 L	4	6,41
37	**7,1**	46780	1,18	**MR 3I 321 - 65** × **550** 250 M	6	127
	6,89	48189	1,6	**MR 3I 360 - 65** × **550** 250 M	6	131
	8,6	38642	1,4	**MR 3I 320 - 65** × **550** 250 M	6	105
	8,6	38642	1,7	**MR 3I 321 - 65** × **550** 250 M	6	105
	8,74	38009	2,24	**MR 3I 360 - 65** × **550** 250 M	6	103
	9,99	33257	1,5	**MR 3I 320 - 65** × **550** 250 M	6	90,1
	9,99	33257	1,9	**MR 3I 321 - 65** × **550** 250 M	6	90,1
	9,71	34208	2,36	**MR 3I 360 - 65** × **550** 250 M	6	92,7
	11,4	29200	1,18	**MR 3I 280 - 60** × **450** 225 S	4	123
	11	30073	1,4	**MR 3I 320 - 60** × **450** 225 S	4	127
	11	30073	1,7	**MR 3I 321 - 60** × **450** 225 S	4	127
	10,9	30445	1,7	**MR 3I 320 - 65** × **550** 250 M	6	82,5
	10,9	30445	2,12	**MR 3I 321 - 65** × **550** 250 M	6	82,5
	10,7	30979	2,36	**MR 3I 360 - 60** × **450** 225 S	4	131
	14,2	23360	1,18	**MR 3I 250 - 60** × **450** 225 S	4	98,5
	14	23809	1,5	**MR 3I 280 - 60** × **450** 225 S	4	100
	13,4	24841	2	**MR 3I 320 - 60** × **450** 225 S	4	105
	13,4	24841	2,5	**MR 3I 321 - 60** × **450** 225 S	4	105
	15,7	21114	1,4	**MR 3I 250 - 60** × **450** 225 S	4	89
	15,6	21274	1,9	**MR 3I 280 - 60** × **450** 225 S	4	89,7
	15,5	21380	2,12	**MR 3I 320 - 60** × **450** 225 S	4	90,1
	16,9	19613	1,4	**MR 3I 250 - 60** × **450** 225 S	4	82,7
	16,6	19990	1,8	**MR 3I 280 - 60** × **450** 225 S	4	84,3
	17	19572	2,5	**MR 3I 320 - 60** × **450** 225 S	4	82,5
	18,7	17727	1,6	**MR 3I 250 - 60** × **450** 225 S	4	74,7
	18,6	17861	2,24	**MR 3I 280 - 60** × **450** 225 S	4	75,3
	22,4	14855	0,9	**MR 3I 200 - 60** × **450** 225 S	4	62,6
	22,7	14632	1,32	**MR 3I 225 - 60** × **450** 225 S	4	61,7
	22,8	14600	1,9	**MR 3I 250 - 60** × **450** 225 S	4	61,5
	22,3	14881	2,36	**MR 3I 280 - 60** × **450** 225 S	4	62,7
	25,9	12835	1,12	**MR 3I 200 - 60** × **450** 225 S	4	54,1
	25,2	13177	1,6	**MR 3I 225 - 60** × **450** 225 S	4	55,5
	25,2	13196	2,12	**MR 3I 250 - 60** × **450** 225 S	4	55,6
	25	13296	3	**MR 3I 280 - 60** × **450** 225 S	4	56
	26,6	12472	1,12	**MR 3I 200 - 60** × **450** 225 S	4	52,6
	27	12285	1,6	**MR 3I 225 - 60** × **450** 225 S	4	51,8
	27,1	12258	2,24	**MR 3I 250 - 60** × **450** 225 S	4	51,7
	26,6	12494	2,8	**MR 3I 280 - 60** × **450** 225 S	4	52,7

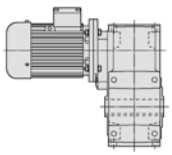
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and *fs* decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
37	**30,8**	10776	1,32	**MR 3I 200 - 60** × **450** 225 S	4		45,4
	30	11064	1,8	**MR 3I 225 - 60** × **450** 225 S	4		46,6
	30	11079	2,5	**MR 3I 250 - 60** × **450** 225 S	4		46,7
	33,7	9857	1,5	**MR 3I 200 - 60** × **450** 225 S	4		41,5
	34,7	9584	2,12	**MR 3I 225 - 60** × **450** 225 S	4		40,4
	33	10069	2,8	**MR 3I 250 - 60** × **450** 225 S	4		42,4
	40,7	8169	1,8	**MR 3I 200 - 60** × **450** 225 S	4		34,4
	39,6	8387	2,36	**MR 3I 225 - 60** × **450** 225 S	4		35,4
	44,5	7472	2	**MR 3I 200 - 60** × **450** 225 S	4		31,5
	45,7	7266	2,8	**MR 3I 225 - 60** × **450** 225 S	4		30,6
	51,4	6458	2,36	**MR 3I 200 - 60** × **450** 225 S	4		27,2
	51,3	6481	2,8	**MR 3I 225 - 60** × **450** 225 S	4		27,3
	56,9	5964	0,95	**MR 2I 160 - 60** × **450** 225 S	4		24,6
	55,2	6144	1,32	**MR 2I 180 - 60** × **450** 225 S	4		25,4
	57,8	5872	1,9	**MR 2I 200 - 60** × **450** 225 S	4		24,2
	56,1	6049	2,65	**MR 2I 225 - 60** × **450** 225 S	4		25
	62,2	5452	1,18	**MR 2I 160 - 60** × **450** 225 S	4		22,5
	60	5654	1,6	**MR 2I 180 - 60** × **450** 225 S	4		23,3
	63,2	5368	2,24	**MR 2I 200 - 60** × **450** 225 S	4		22,2
	67,7	5007	1,32	**MR 2I 160 - 60** × **450** 225 S	4		20,7
	67,4	5032	1,8	**MR 2I 180 - 60** × **450** 225 S	4		20,8
	68,8	4930	2,65	**MR 2I 200 - 60** × **450** 225 S	4		20,3
	77,4	4380	1,6	**MR 2I 160 - 60** × **450** 225 S	4		18,1
	77,8	4361	1,8	**MR 2I 180 - 60** × **450** 225 S	4		18
	79,6	4260	3,35	**MR 2I 200 - 60** × **450** 225 S	4		17,6
	89,4	3796	1,8	**MR 2I 160 - 60** × **450** 225 S	4		15,7
	84,3	4026	2,24	**MR 2I 180 - 60** × **450** 225 S	4		16,6
	87,1	3897	3,75	**MR 2I 200 - 60** × **450** 225 S	4		16,1
	99,6	3407	1,8	**MR 2I 160 - 60** × **450** 225 S	4		14,1
	97,2	3489	2,5	**MR 2I 180 - 60** × **450** 225 S	4		14,4
	103	3291	2	**MR 2I 160 - 60** × **450** 225 S	4		13,6
	103	3307	2,65	**MR 2I 180 - 60** × **450** 225 S	4		13,6
	118	2878	2,5	**MR 2I 160 - 60** × **450** 225 S	4		11,9
	118	2866	3	**MR 2I 180 - 60** × **450** 225 S	4		11,8
	136	2495	2,8	**MR 2I 160 - 60** × **450** 225 S	4		10,3
	131	2587	3,15	**MR 2I 180 - 60** × **450** 225 S	4		10,7
	151	2239	2,8	**MR 2I 160 - 60** × **450** 225 S	4		9,24
	174	1946	3,15	**MR 2I 160 - 60** × **450** 225 S	4		8,03
	218	1554	3,15	**MR 2I 160 - 60** × **450** 225 S	4		6,41
45	**6,89**	58609	1,25	**MR 3I 360 - 75** × **550** 280 S	6		131
	8,6	46997	1,12	**MR 3I 320 - 75** × **550** 280 S	6		105
	8,6	46997	1,4	**MR 3I 321 - 75** × **550** 280 S	6		105
	8,74	46227	1,9	**MR 3I 360 - 75** × **550** 280 S	6		103
	9,99	40448	1,25	**MR 3I 320 - 75** × **550** 280 S	6		90,1
	9,99	40448	1,5	**MR 3I 321 - 75** × **550** 280 S	6		90,1
	9,71	41604	2	**MR 3I 360 - 75** × **550** 280 S	6		92,7
	11,4	35513	0,95	**MR 3I 280 - 60** × **450** 225 M	4		123
	11	36575	1,12	**MR 3I 320 - 60** × **450** 225 M	4		127
	11	36575	1,4	**MR 3I 321 - 60** × **450** 225 M	4		127
	10,9	37028	1,4	**MR 3I 320 - 75** × **550** 280 S	6		82,5
	10,9	37028	1,7	**MR 3I 321 - 75** × **550** 280 S	6		82,5
	10,7	37677	2	**MR 3I 360 - 60** × **450** 225 M	4		131
	11,1	36421	2,24	**MR 3I 360 - 75** × **550** 280 S	6		81,1
	14,2	28411	1	**MR 3I 250 - 60** × **450** 225 M	4		98,5
	14	28957	1,25	**MR 3I 280 - 60** × **450** 225 M	4		100
	13,4	30212	1,6	**MR 3I 320 - 60** × **450** 225 M	4		105
	13,4	30212	2	**MR 3I 321 - 60** × **450** 225 M	4		105
	13,6	29717	2,65	**MR 3I 360 - 60** × **450** 225 M	4		103
	15,7	25679	1,12	**MR 3I 250 - 60** × **450** 225 M	4		89
	15,6	25874	1,6	**MR 3I 280 - 60** × **450** 225 M	4		89,7
	15,5	26002	1,8	**MR 3I 320 - 60** × **450** 225 M	4		90,1
	15,5	26002	2,24	**MR 3I 321 - 60** × **450** 225 M	4		90,1

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
45	**16,9**	23853	1,18	**MR 3I 250 - 60** × **450** 225 M	4		82,7
	16,6	24312	1,5	**MR 3I 280 - 60** × **450** 225 M	4		84,3
	17	23804	2	**MR 3I 320 - 60** × **450** 225 M	4		82,5
	17	23804	2,5	**MR 3I 321 - 60** × **450** 225 M	4		82,5
	18,7	21560	1,32	**MR 3I 250 - 60** × **450** 225 M	4		74,7
	18,6	21723	1,9	**MR 3I 280 - 60** × **450** 225 M	4		75,3
	19,7	20487	2,24	**MR 3I 320 - 60** × **450** 225 M	4		71
	22,7	17796	1,12	**MR 3I 225 - 60** × **450** 225 M	4		61,7
	22,8	17757	1,5	**MR 3I 250 - 60** × **450** 225 M	4		61,5
	22,3	18098	2	**MR 3I 280 - 60** × **450** 225 M	4		62,7
	25,2	16027	1,32	**MR 3I 225 - 60** × **450** 225 M	4		55,5
	25,2	16049	1,7	**MR 3I 250 - 60** × **450** 225 M	4		55,6
	25	16171	2,5	**MR 3I 280 - 60** × **450** 225 M	4		56
	27	14941	1,32	**MR 3I 225 - 60** × **450** 225 M	4		51,8
	27,1	14908	1,8	**MR 3I 250 - 60** × **450** 225 M	4		51,7
	26,6	15195	2,36	**MR 3I 280 - 60** × **450** 225 M	4		52,7
	30,8	13106	1,12	**MR 3I 200 - 60** × **450** 225 M	4		45,4
	30	13456	1,5	**MR 3I 225 - 60** × **450** 225 M	4		46,6
	30	13475	2,12	**MR 3I 250 - 60** × **450** 225 M	4		46,7
	29,8	13577	3	**MR 3I 280 - 60** × **450** 225 M	4		47,1
	33,7	11988	1,25	**MR 3I 200 - 60** × **450** 225 M	4		41,5
	34,7	11657	1,8	**MR 3I 225 - 60** × **450** 225 M	4		40,4
	33	12246	2,36	**MR 3I 250 - 60** × **450** 225 M	4		42,4
	40,7	9935	1,4	**MR 3I 200 - 60** × **450** 225 M	4		34,4
	39,6	10200	2	**MR 3I 225 - 60** × **450** 225 M	4		35,4
	37,9	10649	2,65	**MR 3I 250 - 60** × **450** 225 M	4		36,9
	44,5	9087	1,6	**MR 3I 200 - 60** × **450** 225 M	4		31,5
	45,7	8837	2,36	**MR 3I 225 - 60** × **450** 225 M	4		30,6
	41,7	9678	3	**MR 3I 250 - 60** × **450** 225 M	4		33,5
	51,4	7855	1,9	**MR 3I 200 - 60** × **450** 225 M	4		27,2
	51,3	7882	2,36	**MR 3I 225 - 60** × **450** 225 M	4		27,3
	48,8	8284	3,35	**MR 3I 250 - 60** × **450** 225 M	4		28,7
	55,2	7472	1,12	**MR 2I 180 - 60** × **450** 225 M	4		25,4
	57,8	7142	1,6	**MR 2I 200 - 60** × **450** 225 M	4		24,2
	56,1	7357	2,24	**MR 2I 225 - 60** × **450** 225 M	4		25
	62,2	6630	0,95	**MR 2I 160 - 60** × **450** 225 M	4		22,5
	60	6876	1,32	**MR 2I 180 - 60** × **450** 225 M	4		23,3
	63,2	6528	1,9	**MR 2I 200 - 60** × **450** 225 M	4		22,2
	60,9	6770	2,65	**MR 2I 225 - 60** × **450** 225 M	4		23
	67,7	6090	1,12	**MR 2I 160 - 60** × **450** 225 M	4		20,7
	67,4	6120	1,5	**MR 2I 180 - 60** × **450** 225 M	4		20,8
	68,8	5996	2,24	**MR 2I 200 - 60** × **450** 225 M	4		20,3
	69,8	5907	3,15	**MR 2I 225 - 60** × **450** 225 M	4		20
	77,4	5327	1,32	**MR 2I 160 - 60** × **450** 225 M	4		18,1
	77,8	5304	1,5	**MR 2I 180 - 60** × **450** 225 M	4		18
	79,6	5181	2,65	**MR 2I 200 - 60** × **450** 225 M	4		17,6
	89,4	4617	1,5	**MR 2I 160 - 60** × **450** 225 M	4		15,7
	84,3	4896	1,8	**MR 2I 180 - 60** × **450** 225 M	4		16,6
	87,1	4739	3,15	**MR 2I 200 - 60** × **450** 225 M	4		16,1
	99,6	4144	1,5	**MR 2I 160 - 60** × **450** 225 M	4		14,1
	97,2	4243	2	**MR 2I 180 - 60** × **450** 225 M	4		14,4
	101	4096	3,15	**MR 2I 200 - 60** × **450** 225 M	4		13,9
	103	4002	1,6	**MR 2I 160 - 60** × **450** 225 M	4		13,6
	103	4022	2,24	**MR 2I 180 - 60** × **450** 225 M	4		13,6
	108	3817	3,35	**MR 2I 200 - 60** × **450** 225 M	4		13
	118	3501	2	**MR 2I 160 - 60** × **450** 225 M	4		11,9
	118	3486	2,5	**MR 2I 180 - 60** × **450** 225 M	4		11,8
	136	3034	2,36	**MR 2I 160 - 60** × **450** 225 M	4		10,3
	131	3147	2,5	**MR 2I 180 - 60** × **450** 225 M	4		10,7
	151	2723	2,36	**MR 2I 160 - 60** × **450** 225 M	4		9,24
	174	2367	2,5	**MR 2I 160 - 60** × **450** 225 M	4		8,03
	218	1890	2,5	**MR 2I 160 - 60** × **450** 225 M	4		6,41

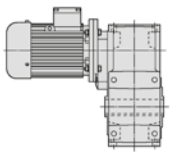
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
55	**11**	44703	0,95	**MR 3I 320 - 65** × **550** 250 M		4	127
	11	44703	1,18	**MR 3I 321 - 65** × **550** 250 M		4	127
	10,7	46050	1,6	**MR 3I 360 - 65** × **550** 250 M		4	131
	13,4	36926	1,32	**MR 3I 320 - 65** × **550** 250 M		4	105
	13,4	36926	1,7	**MR 3I 321 - 65** × **550** 250 M		4	105
	13,6	36321	2,24	**MR 3I 360 - 65** × **550** 250 M		4	103
	15,5	31781	1,5	**MR 3I 320 - 65** × **550** 250 M		4	90,1
	15,5	31781	1,8	**MR 3I 321 - 65** × **550** 250 M		4	90,1
	15,1	32689	2,5	**MR 3I 360 - 65** × **550** 250 M		4	92,7
	18,2	27128	1,18	**MR 3I 280 - 65** × **550** 250 M		4	76,9
	17	29093	1,6	**MR 3I 320 - 65** × **550** 250 M		4	82,5
	17	29093	2	**MR 3I 321 - 65** × **550** 250 M		4	82,5
	17,3	28616	2,8	**MR 3I 360 - 65** × **550** 250 M		4	81,1
	19,7	25039	1,8	**MR 3I 320 - 65** × **550** 250 M		4	71
	19,7	25039	2,24	**MR 3I 321 - 65** × **550** 250 M		4	71
	22,8	21703	1,25	**MR 3I 250 - 65** × **550** 250 M		4	61,5
	22,3	22120	1,6	**MR 3I 280 - 65** × **550** 250 M		4	62,7
	20,9	23664	2	**MR 3I 320 - 65** × **550** 250 M		4	67,1
	20,9	23664	2,5	**MR 3I 321 - 65** × **550** 250 M		4	67,1
	25,2	19588	1,06	**MR 3I 225 - 60** × **450** 250 M	*	4	55,5
	25,2	19616	1,4	**MR 3I 250 - 65** × **550** 250 M		4	55,6
	25	19765	2	**MR 3I 280 - 65** × **550** 250 M		4	56
	24,2	20367	2,24	**MR 3I 320 - 65** × **550** 250 M		4	57,8
	27	18261	1,06	**MR 3I 225 - 60** × **450** 250 M	*	4	51,8
	27,1	18221	1,5	**MR 3I 250 - 65** × **550** 250 M		4	51,7
	26,6	18572	1,9	**MR 3I 280 - 65** × **550** 250 M		4	52,7
	26,5	18644	2,5	**MR 3I 320 - 65** × **550** 250 M		4	52,9
	30	16446	1,25	**MR 3I 225 - 60** × **450** 250 M	*	4	46,6
	30	16469	1,7	**MR 3I 250 - 65** × **550** 250 M		4	46,7
	29,8	16594	2,36	**MR 3I 280 - 65** × **550** 250 M		4	47,1
	34,7	14247	1,4	**MR 3I 225 - 60** × **450** 250 M	*	4	40,4
	33	14967	1,9	**MR 3I 250 - 65** × **550** 250 M		4	42,4
	34	14520	2,5	**MR 3I 280 - 65** × **550** 250 M		4	41,2
	39,6	12467	1,6	**MR 3I 225 - 60** × **450** 250 M	*	4	35,4
	37,9	13016	2,12	**MR 3I 250 - 65** × **550** 250 M		4	36,9
	37,6	13115	2,65	**MR 3I 280 - 65** × **550** 250 M		4	37,2
	45,7	10800	1,9	**MR 3I 225 - 60** × **450** 250 M	*	4	30,6
	41,7	11829	2,5	**MR 3I 250 - 65** × **550** 250 M		4	33,5
	43	11475	3,15	**MR 3I 280 - 65** × **550** 250 M		4	32,5
	51,3	9634	1,9	**MR 3I 225 - 60** × **450** 250 M	*	4	27,3
	48,8	10125	2,65	**MR 3I 250 - 65** × **550** 250 M		4	28,7
	57,8	8729	1,32	**MR 2I 200 - 65** × **550** 250 M		4	24,2
	56,1	8992	1,8	**MR 2I 225 - 65** × **550** 250 M		4	25
	56	9002	2,65	**MR 2I 250 - 65** × **550** 250 M		4	25
	63,2	7979	1,5	**MR 2I 200 - 65** × **550** 250 M		4	22,2
	60,9	8275	2,12	**MR 2I 225 - 65** × **550** 250 M		4	23
	63,7	7920	3	**MR 2I 250 - 65** × **550** 250 M		4	22
	68,8	7329	1,8	**MR 2I 200 - 65** × **550** 250 M		4	20,3
	69,8	7219	2,5	**MR 2I 225 - 65** × **550** 250 M		4	20
	79,6	6333	2,24	**MR 2I 200 - 65** × **550** 250 M		4	17,6
	77,6	6502	2,65	**MR 2I 225 - 65** × **550** 250 M		4	18,1
	84,3	5984	1,5	**MR 2I 180 - 60** × **450** 250 M	*	4	16,6
	87,1	5792	2,5	**MR 2I 200 - 65** × **550** 250 M		4	16,1
	89,5	5632	3	**MR 2I 225 - 65** × **550** 250 M		4	15,6
	97,2	5186	1,7	**MR 2I 180 - 60** × **450** 250 M	*	4	14,4
	101	5007	2,5	**MR 2I 200 - 65** × **550** 250 M		4	13,9
	95,7	5267	3,35	**MR 2I 225 - 65** × **550** 250 M		4	14,6
	103	4916	1,8	**MR 2I 180 - 60** × **450** 250 M	*	4	13,6
	108	4665	2,8	**MR 2I 200 - 65** × **550** 250 M		4	13
	110	4595	3,75	**MR 2I 225 - 65** × **550** 250 M		4	12,8
	118	4260	2	**MR 2I 180 - 60** × **450** 250 M	*	4	11,8
	125	4030	3,35	**MR 2I 200 - 65** × **550** 250 M		4	11,2
	131	3846	2,12	**MR 2I 180 - 60** × **450** 250 M	*	4	10,7
	137	3687	3,55	**MR 2I 200 - 65** × **550** 250 M		4	10,2

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
55	**150**	3353	2,12	**MR 2I 180 - 60** × **450** 250 M	*	4	9,31
	158	3186	3,75	**MR 2I 200 - 65** × **550** 250 M		4	8,85
	175	2884	4,25	**MR 2I 200 - 65** × **550** 250 M		4	8,01
	218	2311	4,75	**MR 2I 200 - 65** × **550** 250 M		4	6,42
75	**10,7**	62795	1,18	**MR 3I 360 - 75** × **550** 280 S		4	131
	13,4	50354	1	**MR 3I 320 - 75** × **550** 280 S		4	105
	13,4	50354	1,25	**MR 3I 321 - 75** × **550** 280 S		4	105
	13,6	49529	1,6	**MR 3I 360 - 75** × **550** 280 S		4	103
	15,5	43337	1,06	**MR 3I 320 - 75** × **550** 280 S		4	90,1
	15,5	43337	1,32	**MR 3I 321 - 75** × **550** 280 S		4	90,1
	15,1	44576	1,8	**MR 3I 360 - 75** × **550** 280 S		4	92,7
	17	39673	1,18	**MR 3I 320 - 75** × **550** 280 S		4	82,5
	17	39673	1,5	**MR 3I 321 - 75** × **550** 280 S		4	82,5
	17,3	39022	2	**MR 3I 360 - 75** × **550** 280 S		4	81,1
	19,7	34145	1,32	**MR 3I 320 - 75** × **550** 280 S		4	71
	19,7	34145	1,6	**MR 3I 321 - 75** × **550** 280 S		4	71
	19,2	35120	2,36	**MR 3I 360 - 75** × **550** 280 S		4	73
	22,8	29595	0,95	**MR 3I 250 - 75** × **550** 280 S		4	61,5
	22,3	30164	1,18	**MR 3I 280 - 75** × **550** 280 S		4	62,7
	20,9	32269	1,5	**MR 3I 320 - 75** × **550** 280 S		4	67,1
	20,9	32269	1,8	**MR 3I 321 - 75** × **550** 280 S		4	67,1
	21,2	31740	2,5	**MR 3I 360 - 75** × **550** 280 S		4	66
	25,2	26749	1,06	**MR 3I 250 - 75** × **550** 280 S		4	55,6
	25	26952	1,5	**MR 3I 280 - 75** × **550** 280 S		4	56
	24,2	27773	1,6	**MR 3I 320 - 75** × **550** 280 S		4	57,8
	24,2	27773	2	**MR 3I 321 - 75** × **550** 280 S		4	57,8
	23,6	28566	2,65	**MR 3I 360 - 75** × **550** 280 S		4	59,4
	27,1	24847	1,12	**MR 3I 250 - 75** × **550** 280 S		4	51,7
	26,6	25325	1,4	**MR 3I 280 - 75** × **550** 280 S		4	52,7
	26,5	25424	1,9	**MR 3I 320 - 75** × **550** 280 S		4	52,9
	26,5	25424	2,36	**MR 3I 321 - 75** × **550** 280 S		4	52,9
	26,9	25007	3,15	**MR 3I 360 - 75** × **550** 280 S		4	52
	30	22458	1,25	**MR 3I 250 - 75** × **550** 280 S		4	46,7
	29,8	22629	1,8	**MR 3I 280 - 75** × **550** 280 S		4	47,1
	30,8	21881	2	**MR 3I 320 - 75** × **550** 280 S		4	45,5
	30,8	21881	2,5	**MR 3I 321 - 75** × **550** 280 S		4	45,5
	33	20410	1,4	**MR 3I 250 - 75** × **550** 280 S		4	42,4
	34	19800	1,8	**MR 3I 280 - 75** × **550** 280 S		4	41,2
	34,4	19589	2,5	**MR 3I 320 - 75** × **550** 280 S		4	40,7
	37,9	17749	1,6	**MR 3I 250 - 75** × **550** 280 S		4	36,9
	37,6	17884	2	**MR 3I 280 - 75** × **550** 280 S		4	37,2
	37,5	17974	2,5	**MR 3I 320 - 75** × **550** 280 S		4	37,4
	41,7	16131	1,8	**MR 3I 250 - 75** × **550** 280 S		4	33,5
	43	15648	2,24	**MR 3I 280 - 75** × **550** 280 S		4	32,5
	48,8	13807	2	**MR 3I 250 - 75** × **550** 280 S		4	28,7
	48,6	13862	2,36	**MR 3I 280 - 75** × **550** 280 S		4	28,8
	57,8	11904	0,95	**MR 2I 200 - 75** × **550** 280 S		4	24,2
	56,1	12262	1,32	**MR 2I 225 - 75** × **550** 280 S		4	25
	56	12276	1,9	**MR 2I 250 - 75** × **550** 280 S		4	25
	56,9	12090	2,65	**MR 2I 280 - 75** × **550** 280 S		4	24,6
	63,2	10881	1,12	**MR 2I 200 - 75** × **550** 280 S		4	22,2
	60,9	11284	1,6	**MR 2I 225 - 75** × **550** 280 S		4	23
	63,7	10800	2,24	**MR 2I 250 - 75** × **550** 280 S		4	22
	68,8	9994	1,32	**MR 2I 200 - 75** × **550** 280 S		4	20,3
	69,8	9844	1,9	**MR 2I 225 - 75** × **550** 280 S		4	20
	71,1	9672	2,5	**MR 2I 250 - 75** × **550** 280 S		4	19,7
	79,6	8635	1,6	**MR 2I 200 - 75** × **550** 280 S		4	17,6
	77,6	8866	2	**MR 2I 225 - 75** × **550** 280 S		4	18,1
	78,7	8742	2,8	**MR 2I 250 - 75** × **550** 280 S		4	17,8
	87,1	7899	1,8	**MR 2I 200 - 75** × **550** 280 S		4	16,1
	89,5	7680	2,12	**MR 2I 225 - 75** × **550** 280 S		4	15,6
	101	6827	1,9	**MR 2I 200 - 75** × **550** 280 S		4	13,9
	95,7	7182	2,36	**MR 2I 225 - 75** × **550** 280 S		4	14,6

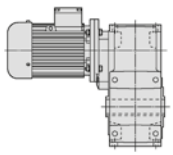
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
75	**108**	6361	2	**MR 2I 200 - 75** × **550** 280 S		4	13
	110	6266	2,65	**MR 2I 225 - 75** × **550** 280 S		4	12,8
	125	5496	2,5	**MR 2I 200 - 75** × **550** 280 S		4	11,2
	122	5643	3	**MR 2I 225 - 75** × **550** 280 S		4	11,5
	137	5027	2,65	**MR 2I 200 - 75** × **550** 280 S		4	10,2
	141	4888	3,55	**MR 2I 225 - 75** × **550** 280 S		4	9,95
	158	4345	2,8	**MR 2I 200 - 75** × **550** 280 S		4	8,85
	175	3933	3,15	**MR 2I 200 - 75** × **550** 280 S		4	8,01
	218	3151	3,55	**MR 2I 200 - 75** × **550** 280 S		4	6,42
90	**13,4**	60425	1	**MR 3I 321 - 75** × **550** 280 M		4	105
	13,6	59434	1,32	**MR 3I 360 - 75** × **550** 280 M		4	103
	15,5	52005	0,9	**MR 3I 320 - 75** × **550** 280 M		4	90,1
	15,5	52005	1,12	**MR 3I 321 - 75** × **550** 280 M		4	90,1
	15,1	53491	1,5	**MR 3I 360 - 75** × **550** 280 M		4	92,7
	17	47607	1	**MR 3I 320 - 75** × **550** 280 M		4	82,5
	17	47607	1,25	**MR 3I 321 - 75** × **550** 280 M		4	82,5
	17,3	46827	1,7	**MR 3I 360 - 75** × **550** 280 M		4	81,1
	19,7	40974	1,12	**MR 3I 320 - 75** × **550** 280 M		4	71
	19,7	40974	1,4	**MR 3I 321 - 75** × **550** 280 M		4	71
	19,2	42144	1,9	**MR 3I 360 - 75** × **550** 280 M		4	73
	22,3	36196	1	**MR 3I 280 - 75** × **550** 280 M		4	62,7
	20,9	38723	1,25	**MR 3I 320 - 75** × **550** 280 M		4	67,1
	20,9	38723	1,5	**MR 3I 321 - 75** × **550** 280 M		4	67,1
	21,2	38088	2	**MR 3I 360 - 75** × **550** 280 M		4	66
	25	32343	1,25	**MR 3I 280 - 75** × **550** 280 M		4	56
	24,2	33327	1,32	**MR 3I 320 - 75** × **550** 280 M		4	57,8
	24,2	33327	1,7	**MR 3I 321 - 75** × **550** 280 M		4	57,8
	23,6	34279	2,24	**MR 3I 360 - 75** × **550** 280 M		4	59,4
	27,1	29816	0,9	**MR 3I 250 - 75** × **550** 280 M		4	51,7
	26,6	30390	1,18	**MR 3I 280 - 75** × **550** 280 M		4	52,7
	26,5	30509	1,5	**MR 3I 320 - 75** × **550** 280 M		4	52,9
	26,5	30509	1,9	**MR 3I 321 - 75** × **550** 280 M		4	52,9
	26,9	30009	2,5	**MR 3I 360 - 75** × **550** 280 M		4	52
	30	26949	1,06	**MR 3I 250 - 75** × **550** 280 M		4	46,7
	29,8	27154	1,5	**MR 3I 280 - 75** × **550** 280 M		4	47,1
	30,8	26258	1,7	**MR 3I 320 - 75** × **550** 280 M		4	45,5
	30,8	26258	2,12	**MR 3I 321 - 75** × **550** 280 M		4	45,5
	29,9	27008	2,65	**MR 3I 360 - 75** × **550** 280 M		4	46,8
	33	24492	1,18	**MR 3I 250 - 75** × **550** 280 M		4	42,4
	34	23760	1,5	**MR 3I 280 - 75** × **550** 280 M		4	41,2
	34,4	23507	2,12	**MR 3I 320 - 75** × **550** 280 M		4	40,7
	34,4	23507	2,65	**MR 3I 321 - 75** × **550** 280 M		4	40,7
	37,9	21299	1,32	**MR 3I 250 - 75** × **550** 280 M		4	36,9
	37,6	21461	1,7	**MR 3I 280 - 75** × **550** 280 M		4	37,2
	37,5	21569	2,12	**MR 3I 320 - 75** × **550** 280 M		4	37,4
	37,5	21569	2,65	**MR 3I 321 - 75** × **550** 280 M		4	37,4
	41,7	19357	1,5	**MR 3I 250 - 75** × **550** 280 M		4	33,5
	43	18778	1,9	**MR 3I 280 - 75** × **550** 280 M		4	32,5
	41,8	19309	2,65	**MR 3I 320 - 75** × **550** 280 M		4	33,5
	48,8	16569	1,7	**MR 3I 250 - 75** × **550** 280 M		4	28,7
	48,6	16634	2	**MR 3I 280 - 75** × **550** 280 M		4	28,8
	46,6	17332	3	**MR 3I 320 - 75** × **550** 280 M		4	30
	56,1	14715	1,12	**MR 2I 225 - 75** × **550** 280 M		4	25
	56	14731	1,6	**MR 2I 250 - 75** × **550** 280 M		4	25
	56,9	14508	2,12	**MR 2I 280 - 75** × **550** 280 M		4	24,6
	56	14731	2,65	**MR 2I 320 - 75** × **550** 280 M		4	25
	63,2	13057	0,95	**MR 2I 200 - 75** × **550** 280 M		4	22,2
	60,9	13540	1,32	**MR 2I 225 - 75** × **550** 280 M		4	23
	63,7	12960	1,8	**MR 2I 250 - 75** × **550** 280 M		4	22
	63,2	13057	2,65	**MR 2I 280 - 75** × **550** 280 M		4	22,2
	68,8	11993	1,12	**MR 2I 200 - 75** × **550** 280 M		4	20,3
	69,8	11813	1,6	**MR 2I 225 - 75** × **550** 280 M		4	20
	71,1	11606	2,12	**MR 2I 250 - 75** × **550** 280 M		4	19,7
	69,8	11829	2,8	**MR 2I 280 - 75** × **550** 280 M		4	20,1

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)			i
90	**79,6**	10363	1,32	**MR 2I 200 - 75** × **550** 280 M		4	17,6
	77,6	10639	1,6	**MR 2I 225 - 75** × **550** 280 M		4	18,1
	78,7	10490	2,36	**MR 2I 250 - 75** × **550** 280 M		4	17,8
	87,1	9478	1,5	**MR 2I 200 - 75** × **550** 280 M		4	16,1
	89,5	9217	1,8	**MR 2I 225 - 75** × **550** 280 M		4	15,6
	86,5	9534	2,65	**MR 2I 250 - 75** × **550** 280 M		4	16,2
	101	8193	1,6	**MR 2I 200 - 75** × **550** 280 M		4	13,9
	95,7	8618	2	**MR 2I 225 - 75** × **550** 280 M		4	14,6
	95,9	8600	2,65	**MR 2I 250 - 75** × **550** 280 M		4	14,6
	108	7633	1,7	**MR 2I 200 - 75** × **550** 280 M		4	13
	110	7519	2,24	**MR 2I 225 - 75** × **550** 280 M		4	12,8
	107	7701	3,15	**MR 2I 250 - 75** × **550** 280 M		4	13,1
	125	6595	2,12	**MR 2I 200 - 75** × **550** 280 M		4	11,2
	122	6771	2,5	**MR 2I 225 - 75** × **550** 280 M		4	11,5
	119	6961	3,55	**MR 2I 250 - 75** × **550** 280 M		4	11,8
	137	6033	2,24	**MR 2I 200 - 75** × **550** 280 M		4	10,2
	141	5866	3	**MR 2I 225 - 75** × **550** 280 M		4	9,95
	130	6326	4	**MR 2I 250 - 75** × **550** 280 M		4	10,7
	158	5214	2,36	**MR 2I 200 - 75** × **550** 280 M		4	8,85
	175	4719	2,65	**MR 2I 200 - 75** × **550** 280 M		4	8,01
	218	3781	3	**MR 2I 200 - 75** × **550** 280 M		4	6,42
110	**16,7**	59021	1,18	**MR 3I 360 - 80** × **660** 315 S		4	83,7
	20,9	47328	1	**MR 3I 320 - 80** × **660** 315 S		4	67,1
	20,9	47328	1,25	**MR 3I 321 - 80** × **660** 315 S		4	67,1
	21,2	46552	1,7	**MR 3I 360 - 80** × **660** 315 S		4	66
	25	39530	1	**MR 3I 280 - 75** × **550** 315 S	*	4	56
	24,2	40733	1,12	**MR 3I 320 - 80** × **660** 315 S		4	57,8
	24,2	40733	1,4	**MR 3I 321 - 80** × **660** 315 S		4	57,8
	23,6	41897	1,8	**MR 3I 360 - 80** × **660** 315 S		4	59,4
	26,6	37143	0,95	**MR 3I 280 - 75** × **550** 315 S	*	4	52,7
	26,5	37289	1,25	**MR 3I 320 - 80** × **660** 315 S		4	52,9
	26,5	37289	1,6	**MR 3I 321 - 80** × **660** 315 S		4	52,9
	26,9	36677	2,12	**MR 3I 360 - 80** × **660** 315 S		4	52
	29,8	33189	1,18	**MR 3I 280 - 75** × **550** 315 S	*	4	47,1
	30,8	32093	1,4	**MR 3I 320 - 80** × **660** 315 S		4	45,5
	30,8	32093	1,7	**MR 3I 321 - 80** × **660** 315 S		4	45,5
	29,9	33010	2,12	**MR 3I 360 - 80** × **660** 315 S		4	46,8
	34	29040	1,25	**MR 3I 280 - 75** × **550** 315 S	*	4	41,2
	34,4	28731	1,7	**MR 3I 320 - 80** × **660** 315 S		4	40,7
	34,4	28731	2,12	**MR 3I 321 - 80** × **660** 315 S		4	40,7
	33,1	29800	2,36	**MR 3I 360 - 80** × **660** 315 S		4	42,3
	37,6	26230	1,32	**MR 3I 280 - 75** × **550** 315 S	*	4	37,2
	37,5	26362	1,7	**MR 3I 320 - 80** × **660** 315 S		4	37,4
	37,5	26362	2,12	**MR 3I 321 - 80** × **660** 315 S		4	37,4
	36,4	27115	2,65	**MR 3I 360 - 80** × **660** 315 S		4	38,4
	43	22951	1,5	**MR 3I 280 - 75** × **550** 315 S	*	4	32,5
	41,8	23600	2,12	**MR 3I 320 - 80** × **660** 315 S		4	33,5
	41,8	23600	2,36	**MR 3I 321 - 80** × **660** 315 S		4	33,5
	40,3	24479	3	**MR 3I 360 - 80** × **660** 315 S		4	34,7
	48,6	20330	1,6	**MR 3I 280 - 75** × **550** 315 S	*	4	28,8
	46,6	21184	2,36	**MR 3I 320 - 80** × **660** 315 S		4	30
	56	18004	1,32	**MR 2I 250 - 80** × **660** 315 S		4	25
	56,9	17732	1,8	**MR 2I 280 - 80** × **660** 315 S		4	24,6
	56	18004	2,12	**MR 2I 320 - 80** × **660** 315 S		4	25
	63,7	15840	1,5	**MR 2I 250 - 80** × **660** 315 S		4	22
	63,2	15958	2,12	**MR 2I 280 - 80** × **660** 315 S		4	22,2
	61,3	16457	2,5	**MR 2I 320 - 80** × **660** 315 S		4	22,8
	71,1	14185	1,7	**MR 2I 250 - 80** × **660** 315 S		4	19,7
	69,8	14458	2,36	**MR 2I 280 - 80** × **660** 315 S		4	20,1
	78,7	12821	2	**MR 2I 250 - 80** × **660** 315 S		4	17,8
	78,1	12919	2,65	**MR 2I 280 - 80** × **660** 315 S		4	17,9
	86,5	11652	2,12	**MR 2I 250 - 80** × **660** 315 S		4	16,2
	89,2	11304	2,8	**MR 2I 280 - 80** × **660** 315 S		4	15,7

1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	f_S	2)			i
110	**95,7**	10533	1,7	**MR 2I 225 - 75 × 550** 315 S	*	4	14,6
	95,9	10511	2,12	**MR 2I 250 - 80 × 660** 315 S		4	14,6
	95,2	10589	3	**MR 2I 280 - 80 × 660** 315 S		4	14,7
	110	9190	1,8	**MR 2I 225 - 75 × 550** 315 S	*	4	12,8
	107	9412	2,5	**MR 2I 250 - 80 × 660** 315 S		4	13,1
	105	9593	3,35	**MR 2I 280 - 80 × 660** 315 S		4	13,3
	122	8276	2,12	**MR 2I 225 - 75 × 550** 315 S	*	4	11,5
	119	8507	2,8	**MR 2I 250 - 80 × 660** 315 S		4	11,8
	141	7170	2,36	**MR 2I 225 - 75 × 550** 315 S	*	4	9,95
	130	7732	3,15	**MR 2I 250 - 80 × 660** 315 S		4	10,7
	158	6395	2,5	**MR 2I 225 - 75 × 550** 315 S	*	4	8,88
132	**16,7**	70826	1	**MR 3I 360 - 80 × 660** 315 M		4	83,7
	20,9	56794	1,06	**MR 3I 321 - 80 × 660** 315 M		4	67,1
	21,2	55863	1,4	**MR 3I 360 - 80 × 660** 315 M		4	66
	24,2	48880	0,9	**MR 3I 320 - 80 × 660** 315 M		4	57,8
	24,2	48880	1,12	**MR 3I 321 - 80 × 660** 315 M		4	57,8
	23,6	50276	1,5	**MR 3I 360 - 80 × 660** 315 M		4	59,4
	26,5	44746	1,06	**MR 3I 320 - 80 × 660** 315 M		4	52,9
	26,5	44746	1,32	**MR 3I 321 - 80 × 660** 315 M		4	52,9
	26,9	44013	1,7	**MR 3I 360 - 80 × 660** 315 M		4	52
	30,8	38511	1,18	**MR 3I 320 - 80 × 660** 315 M		4	45,5
	30,8	38511	1,5	**MR 3I 321 - 80 × 660** 315 M		4	45,5
	29,9	39612	1,8	**MR 3I 360 - 80 × 660** 315 M		4	46,8
	34,4	34477	1,4	**MR 3I 320 - 80 × 660** 315 M		4	40,7
	34,4	34477	1,8	**MR 3I 321 - 80 × 660** 315 M		4	40,7
	33,1	35761	2	**MR 3I 360 - 80 × 660** 315 M		4	42,3
	37,5	31634	1,4	**MR 3I 320 - 80 × 660** 315 M		4	37,4
	37,5	31634	1,8	**MR 3I 321 - 80 × 660** 315 M		4	37,4
	36,4	32538	2,24	**MR 3I 360 - 80 × 660** 315 M		4	38,4
	41,8	28320	1,8	**MR 3I 320 - 80 × 660** 315 M		4	33,5
	41,8	28320	2	**MR 3I 321 - 80 × 660** 315 M		4	33,5
	40,3	29375	2,36	**MR 3I 360 - 80 × 660** 315 M		4	34,7
	46,6	25420	2	**MR 3I 320 - 80 × 660** 315 M		4	30
	46,6	25420	2,24	**MR 3I 321 - 80 × 660** 315 M		4	30
	46,3	25609	2,65	**MR 3I 360 - 80 × 660** 315 M		4	30,3
	56	21605	1,06	**MR 2I 250 - 80 × 660** 315 M		4	25
	56,9	21278	1,5	**MR 2I 280 - 80 × 660** 315 M		4	24,6
	56	21605	1,8	**MR 2I 320 - 80 × 660** 315 M		4	25
	56	21605	2,24	**MR 2I 321 - 80 × 660** 315 M		4	25
	54,4	22256	3,15	**MR 2I 360 - 80 × 660** 315 M		4	25,7
	63,7	19008	1,25	**MR 2I 250 - 80 × 660** 315 M		4	22
	63,2	19150	1,8	**MR 2I 280 - 80 × 660** 315 M		4	22,2
	61,3	19748	2	**MR 2I 320 - 80 × 660** 315 M		4	22,8
	61,3	19748	2,5	**MR 2I 321 - 80 × 660** 315 M		4	22,8
	71,1	17022	1,4	**MR 2I 250 - 80 × 660** 315 M		4	19,7
	69,8	17350	1,9	**MR 2I 280 - 80 × 660** 315 M		4	20,1
	67,8	17847	2,5	**MR 2I 320 - 80 × 660** 315 M		4	20,6
	78,7	15386	1,6	**MR 2I 250 - 80 × 660** 315 M		4	17,8
	78,1	15502	2,24	**MR 2I 280 - 80 × 660** 315 M		4	17,9
	78,8	15360	2,8	**MR 2I 320 - 80 × 660** 315 M		4	17,8
	86,5	13983	1,8	**MR 2I 250 - 80 × 660** 315 M		4	16,2
	89,2	13565	2,36	**MR 2I 280 - 80 × 660** 315 M		4	15,7
	88	13751	3,55	**MR 2I 320 - 80 × 660** 315 M		4	15,9
	95,9	12613	1,8	**MR 2I 250 - 80 × 660** 315 M		4	14,6
	95,2	12707	2,5	**MR 2I 280 - 80 × 660** 315 M		4	14,7
	107	11295	2,12	**MR 2I 250 - 80 × 660** 315 M		4	13,1
	105	11512	2,8	**MR 2I 280 - 80 × 660** 315 M		4	13,3
	119	10209	2,36	**MR 2I 250 - 80 × 660** 315 M		4	11,8
	118	10286	3,35	**MR 2I 280 - 80 × 660** 315 M		4	11,9
	130	9278	2,65	**MR 2I 250 - 80 × 660** 315 M		4	10,7
	134	9001	3,75	**MR 2I 280 - 80 × 660** 315 M		4	10,4
	152	7942	3,15	**MR 2I 250 - 80 × 660** 315 M		4	9,19

P_1 kW 1)	n_2 min^{-1}	M_2 N m	f_S	2)			i
160	**21,2**	67712	1,12	**MR 3I 360 - 80 × 660** 315 MC		4	66
	24,2	59248	0,95	**MR 3I 321 - 80 × 660** 315 MC		4	57,8
	23,6	60941	1,25	**MR 3I 360 - 80 × 660** 315 MC		4	59,4
	26,5	54238	1,06	**MR 3I 321 - 80 × 660** 315 MC		4	52,9
	26,9	53349	1,4	**MR 3I 360 - 80 × 660** 315 MC		4	52
	30,8	46680	0,95	**MR 3I 320 - 80 × 660** 315 MC		4	45,5
	30,8	46680	1,18	**MR 3I 321 - 80 × 660** 315 MC		4	45,5
	29,9	48014	1,5	**MR 3I 360 - 80 × 660** 315 MC		4	46,8
	34,4	41790	1,18	**MR 3I 320 - 80 × 660** 315 MC		4	40,7
	34,4	41790	1,5	**MR 3I 321 - 80 × 660** 315 MC		4	40,7
	33,1	43346	1,6	**MR 3I 360 - 80 × 660** 315 MC		4	42,3
	37,5	38345	1,18	**MR 3I 320 - 80 × 660** 315 MC		4	37,4
	37,5	38345	1,5	**MR 3I 321 - 80 × 660** 315 MC		4	37,4
	36,4	39440	1,8	**MR 3I 360 - 80 × 660** 315 MC		4	38,4
	41,8	34328	1,4	**MR 3I 320 - 80 × 660** 315 MC		4	33,5
	41,8	34328	1,7	**MR 3I 321 - 80 × 660** 315 MC		4	33,5
	40,3	35606	2	**MR 3I 360 - 80 × 660** 315 MC		4	34,7
	46,6	30813	1,7	**MR 3I 320 - 80 × 660** 315 MC		4	30
	46,6	30813	1,8	**MR 3I 321 - 80 × 660** 315 MC		4	30
	46,3	31041	2,24	**MR 3I 360 - 80 × 660** 315 MC		4	30,3
	56,9	25791	1,18	**MR 2I 280 - 80 × 660** 315 MC		4	24,6
	56	26188	1,5	**MR 2I 320 - 80 × 660** 315 MC		4	25
	56	26188	1,8	**MR 2I 321 - 80 × 660** 315 MC		4	25
	54,4	26977	2,5	**MR 2I 360 - 80 × 660** 315 MC		4	25,7
	63,2	23212	1,5	**MR 2I 280 - 80 × 660** 315 MC		4	22,2
	61,3	23938	1,7	**MR 2I 320 - 80 × 660** 315 MC		4	22,8
	61,3	23938	2,12	**MR 2I 321 - 80 × 660** 315 MC		4	22,8
	59,9	24469	3	**MR 2I 360 - 80 × 660** 315 MC		4	23,4
	69,8	21030	1,6	**MR 2I 280 - 80 × 660** 315 MC		4	20,1
	67,8	21632	2,12	**MR 2I 320 - 80 × 660** 315 MC		4	20,6
	67,8	21632	2,65	**MR 2I 321 - 80 × 660** 315 MC		4	20,6
	78,1	18791	1,8	**MR 2I 280 - 80 × 660** 315 MC		4	17,9
	78,8	18618	2,36	**MR 2I 320 - 80 × 660** 315 MC		4	17,8
	89,2	16442	2	**MR 2I 280 - 80 × 660** 315 MC		4	15,7
	88	16668	3	**MR 2I 320 - 80 × 660** 315 MC		4	15,9
	95,2	15402	2	**MR 2I 280 - 80 × 660** 315 MC		4	14,7
	105	13954	2,36	**MR 2I 280 - 80 × 660** 315 MC		4	13,3
	118	12468	2,65	**MR 2I 280 - 80 × 660** 315 MC		4	11,9
	134	10910	3,15	**MR 2I 280 - 80 × 660** 315 MC		4	10,4
	152	9664	3,35	**MR 2I 280 - 80 × 660** 315 MC		4	9,22

1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and f_S decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).

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12 - Dimensions, designs, mounting positions of helical gearmotors

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12.1 - Gearmotors MR 2I

Dimensions

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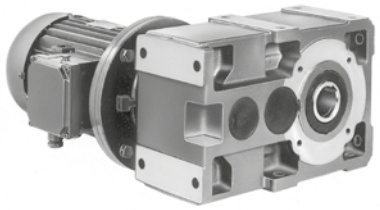

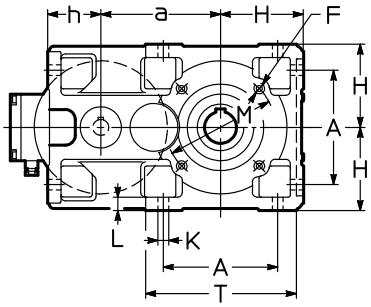

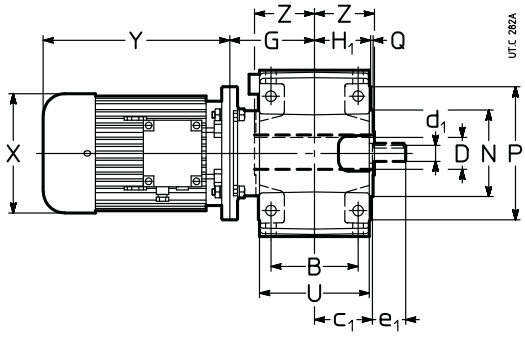

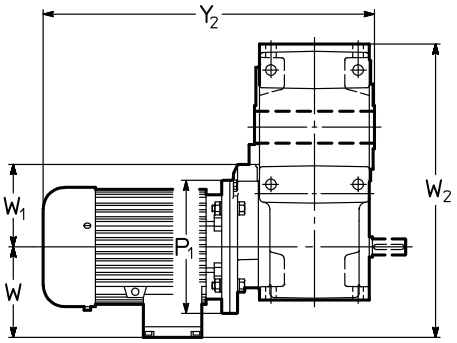

Red.	Mot.	a	A	B	c_1	D Ø H7	d_1 Ø	e_1	F	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	Z	P_1 Ø	X Ø ≈	Y ≈		Y_2 ≈		W ≈	W_1	W_2 ≈	kg	
	B5								1)																	2)		2)					2)
40	**63**	73,5	73	65	43	19	11	23	M5	69,5	56	41,5	40,5	7	10	75	60	90	2,5	102	80	46	140	123	189	244	305	360	95	56	225	12	14
	71[6]																						140	138	235	297	351	413	112	56	242	14	17
50	**63**	90	86	75	51	24	14	30	M6	77	67	49	50	9,5	12	85	70	105	2,5	120	95	53	140	123	189	244	319	374	95	70	252	16	18
	71									79													160	138	216	278	348	410	112	80	269	18	21
	80[6]																						160	156	254	323	386	455	121	80	278	22	26
63	**71**	113	102	90	61	30	16	30	M8	90	80	58,5	62	11,5	14	100	80	120	3	143	114	63	160	138	216	278	369	431	112	80	307	23	26
64	**80**	**(63)**				**(63)**																	200	156	233	302	386	455	121	100	316	28	32
	90	115				32																	200	176	287	366	440	519	141	100	336	34	40
	100[5]	**(64)**				**(64)**																	200	194	337	432	490	585	151	100	346	38	45
80	**90**	142,5	132	106	72	38	19	40	M10	108	100	69,5	70	14	17	130	110	160	3,5	180	135	75	200	176	287	366	470	549	141	100	384	46	52
81	**100**[4]					**(80)**																	250	194	310	405	493	588	151	125	394	50	57
	112[4]					40 **(81)**																	250	218	336	435	519	618	163	125	406	63	72
100	**90**	180	172	131	87	48	24	50	M12	130	125	84,5	80	16	20	165	130	200	3,5	228	165	90	200	176	287	366	507	586	141	125	446	67	73
	100																						250	194	310	405	530	625	151	125	456	71	78
	112																						250	218	336	435	556	655	163	125	468	84	93
	132[4]									150													300	257	445	553	685	793	194	150	499	119	131
125	**112**	225	212	162	107	60	28	60	3)	159	150	103,5	100	18	23	215	180	250	4	274	201	110	250	218	336	435	605	704	163	166	538	118	127
	132									164													300	257	445	553	719	827	194	166	569	153	165
	160									179													350	315	539	640	828	929	241	175	616	199	204
	180																						350	354	613	734	902	1023	278	175	653	258	248

1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) For dimension, number and angular position see ch. 6.
4) On request for 100LB 4, 112M 4 and 132M 4 also mounting position **B5R** (see ch. 1.2; dimensions Y and Y_2 increase by 27 mm, 26 mm and 35 mm, respectively).
5) Mounting position **B5R** (see ch. 1.2).
6) Mounting position **B5A** (see ch. 1.2).

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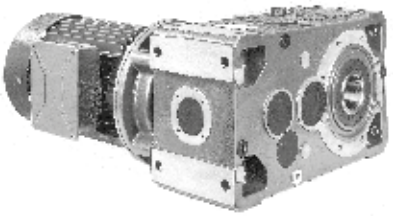
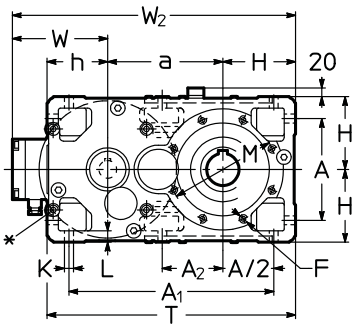
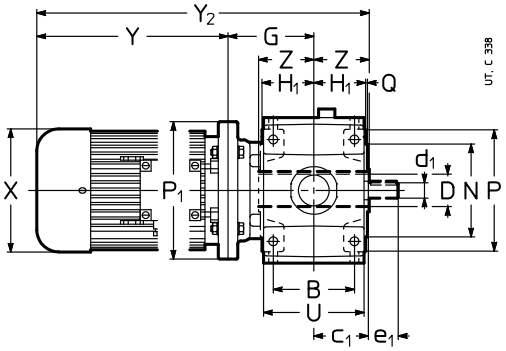
MR 2I 140 ... 360





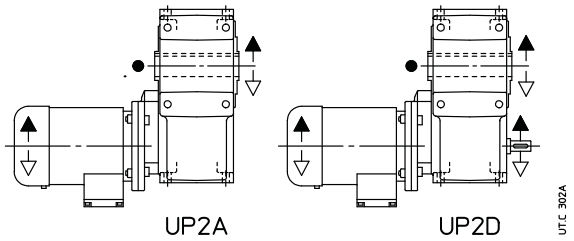


Red.	Mot.	a	A	A_1	A_2	B	c_1	D Ø H7	d_1 Ø	e_1	F	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	T	Z	P_1 Ø	X Ø ≈	Y ≈		Y_2 ≈		W ≈	W_2 ≈	kg	
	B5										1)								Q		U					2)		2)				2)
140	132	240	212	427	127	162	107	70	28	60	4)	159	150	103,5	125	18	23	265	230	300	515	125	300	257	445	553	729	837	194	584	185	197
	160											179							4		201		350	315	539	640	843	944	241	631	231	236
	180																						350	354	613	734	917	1038	278	668	290	280
	200																						350	354	654	734	958	1038	278	668	316	304
160	160	285	252	507	-	201	132	80	38	80	M16	204	180	128,5	150	22	28	265	230	300	615	136	350	315	539	640	879	980	241	706	299	304
	180																		4		249		350	354	613	734	953	1074	278	743	358	348
	200											194											400	354	654	734	984	1064	278	743	384	372
	225											224											450	411	710	-	1070	-	298	763	475	-
180	180	305	252	527	170	201	132	90	38	80	M16	204	180	128,5	150	22	28	300	250	350	635	150	350	354	613	734	967	1088	278	763	376	366
	200											194							5		249		400	354	654	734	998	1078	278	763	402	390
	225											224											450	411	710	-	1084	-	298	783	493	-
	250																						450	411	735	-	1109	-	298	783	516	-
200	200	360	320	635	-	250	162	100	48	110	4)	225	225	158	180	27	34	350	300	400	765	167	400	354	654	734	1046	1126	278	863	517	505
	225											255							5		307		450	411	710	-	1132	-	298	883	608	-
	250																						550	411	735	-	1157	-	298	883	631	-
	280																						550	490	819	-	1241	-	360	945	817	-
225	225	385	320	660	223	250	162	110	48	110	M20	255	225	158	180	27	34	400	350	450	790	180	450	411	710	-	1145	-	298	908	639	-
	250																		5		307		550	411	735	-	1170	-	298	908	662	-
	280																						550	490	819	-	1254	-	360	970	848	-
	315[3]																						550	490	820	-	1255	-	360	970	809	-
250	250	450	396	791	-	310	200	125	55	110	4)	290	280	195	225	33	42	500	450	550	955	206	550	411	735	-	1231	-	298	1028	865	-
	280																		5		380		550	490	819	-	1315	-	360	1090	1051	-
	315											310											660	604	962	-	1478	-	445	1175	1300	-
280	280	480	396	821	277	310	200	140	55	110	M24	290	280	195	225	33	42	500	450	550	985	222	550	490	819	-	1331	-	360	1120	1105	-
	315											310							5		380		660	604	962	-	1494	-	445	1205	1354	-
320	280	570	510	1005	-	386	245	160	70	140	4)	336	355	241	280	39	52	600	550	660	1205	254	550	490	819	-	1409	-	360	1285	1463	-
321	315											356							6		470		660	604	962	-	1570	-	445	1370	1711	-
360	315	610	510	1045	358	386	245	180	70	140	M30	356	355	241	280	39	52	600	550	660	1245	273	660	604	962	-	1591	-	445	1410	1806	-
																			6		470											

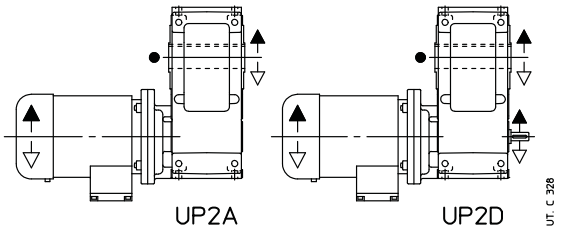
* Machined surface and N.4 threaded holes (dimensions in ch. 6 «Gear reducer input face»).
1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) Mounting position **B5R** (see ch. 1.2).
4) For dimension, number and angular position see ch. 6.

Designs[1] (direction of rotation)

MR 2I 40 ... 125



MR 2I 140 ... 360



● Position of reference groove (see ch. 6) for radial load verification.
1) For motor design see ch. 2.

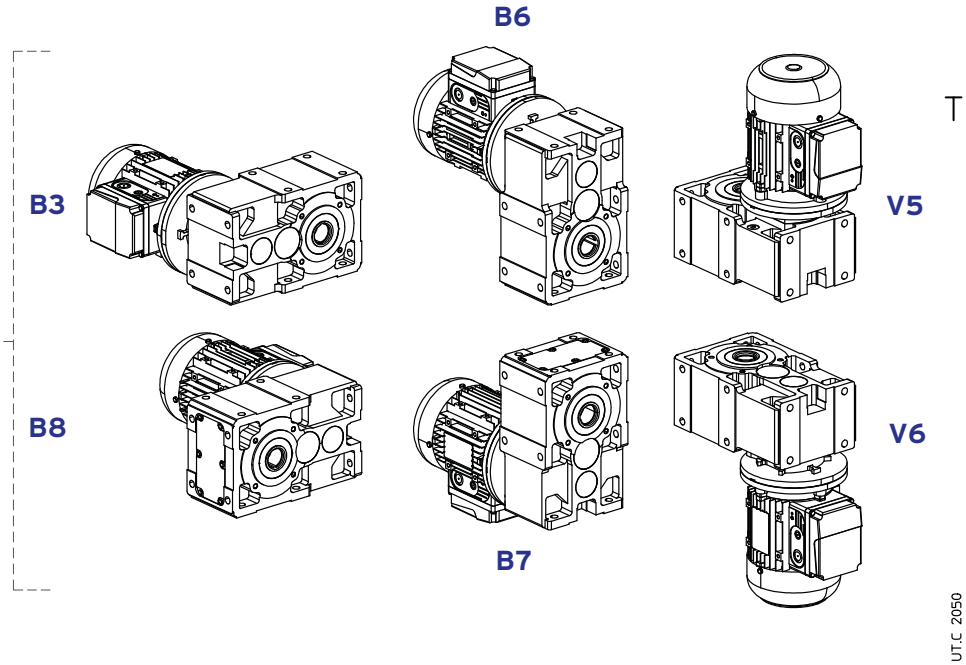
Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

MR 2I 40 ... 125

Designs:

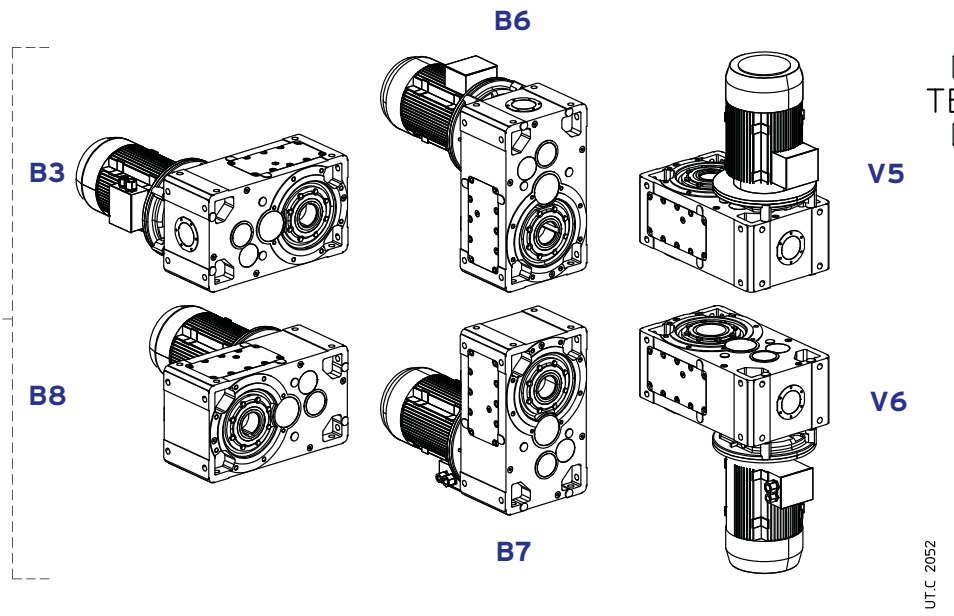
UP2A
UP2D



MR 2I 140 ... 360

Designs:

UP2A
UP2D



Oil quantity MR 2I 40 ... 360

Stated oil quantities [l] are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	40	50	63, 64	80, 81	100	125	140	160	180	200	225	250	280	320, 321	360
B3	0,4	0,6	0,9	1,5	2,9	5,6	6,6	12	13	25	26	47	51	97	100
B8	0,4	0,6	0,9	1,5	2,9	5,6	6,6	12	13	25	26	47	51	97	100
B6	0,55	0,8	1,2	2,3	5	9	9,7	18	19	35	37	67	72	137	140
B7	0,55	0,8	1,2	2,3	5	9	9,7	18	19	35	37	67	72	137	140
V5	0,55	0,8	1,2	2,3	5	9	9,7	18	19	35	37	67	72	137	140
V6	0,55	0,8	1,2	2,3	5	9	9,7	18	19	35	37	67	72	137	140

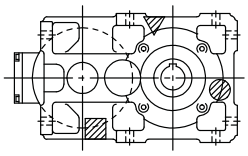
Lubrication details

MR 2I 100, 125

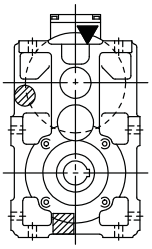
Designs:

UP2A
UP2D

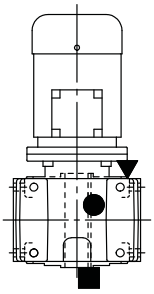
B3



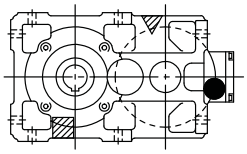
B6



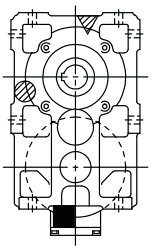
V5



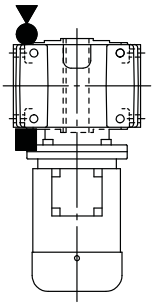
B8



B7



V6



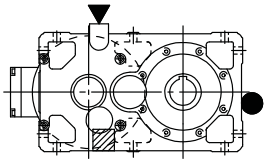
UT.C 1053

MR 2I 140 ... 360

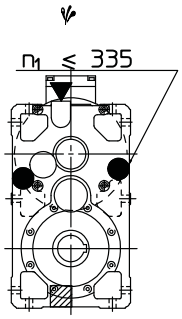
Designs:

UP2A
UP2D

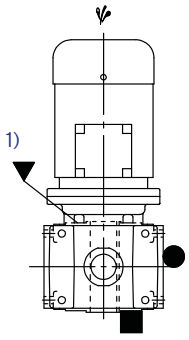
B3



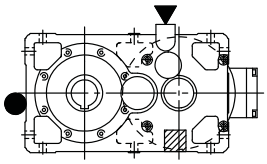
B6



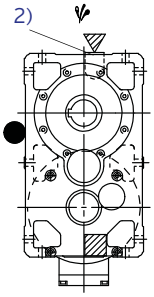
V5



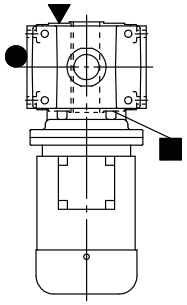
B8



B7



V6



UT.C 1054A

1) Oil filler plug possible even on low speed shaft side.
2) Oil filler plug possible even on opposite side.
Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N **see ch. 4.**

- oil filler plug
- oil level plug
- oil drain plug
- oil filler plug with oil level dip stick
- oil filler plug on opposite side (not in view)
- oil level plug on opposite side (not in view)
- oil drain plug on opposite side (not in view)

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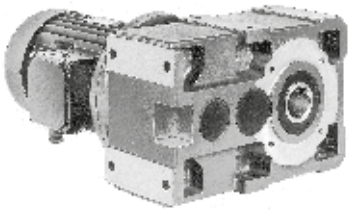
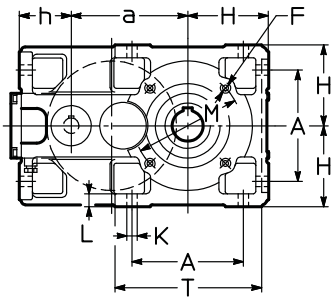
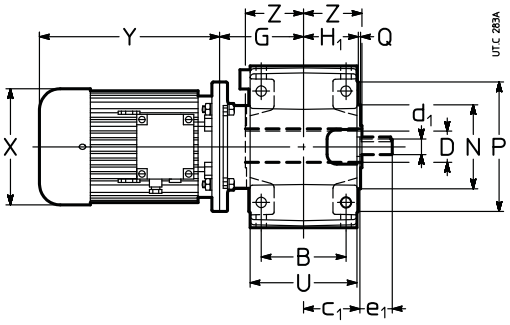
12.2 - Gearmotors MR 3I

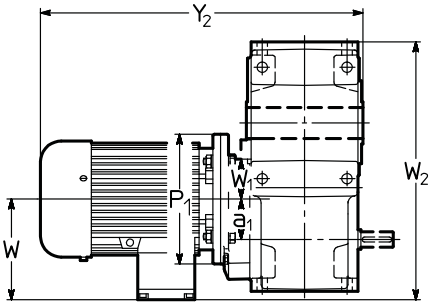
Dimensions

MR 3I 40 ... 125







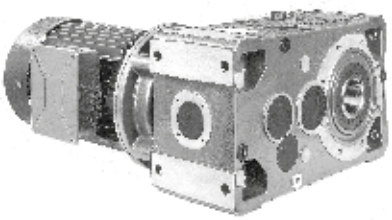


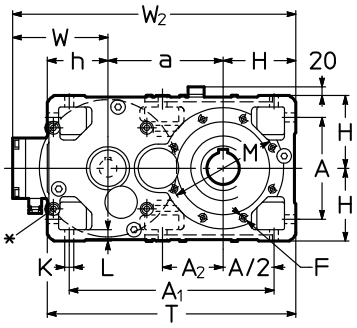
Red.	Mot.	a	A	B	c_1	D Ø H7	d_1 Ø	e_1	F	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	Z	P_1 Ø	X Ø ≈	Y ≈		Y_2 ≈		W ≈	W_1	W_2 ≈	kg	
	B5	a_1							1)																	2)		2)				2)
40	**63**	73,5 30	73	65	43	19	11	23	M5	69,5	56	41,5	40,5	7	10	75	60	90	2,5	102	80	46	140	123	189	244	305	360	95	26	194,5	14	16
50	**63** **71**	90 32	86	75	51	24	14	30	M6	77 79	67	49	50	9,5	12	85	70	105	2,5	120	95	53	140 160	123 138	189 216	244 278	319 348	374 410	95 112	35 35	220 237	19 22	21 25
63 **64**	**63** **71** **80** **90**[4]	113 **(63)** 115 **(64)** 40	102	90	61	30 **(63)** 32 **(64)**	16	30	M8	90	80	58,5	62	11,5	14	100	80	120	3	143	114	63	140 160 200 200	123 138 156 176	189 216 233 287	244 278 302 387	342 369 386 440	397 431 455 540	95 112 121 141	40 40 40 40	257 267 276 296	24 27 32 38	26 30 36 44
80 **81**	**71** **80** **90** **100**[4]	142,5 50	132	106	72	38 **(80)** 40 **(81)**	19	40	M10	108	100	69,5	70	14	17	130	110	160	3,5	180	135	75	160 200 200 200	138 156 176 194	216 233 287 337	278 302 366 432	399 416 470 520	461 485 549 615	112 121 141 151	50 50 50 50	312,5 313,5 333,5 343,5	35 40 46 52	38 44 52 59
100	**80** **90** **100** **112**	180 62,5	172	131	87	48	24	50	M12	130	125	84,5	80	16	20	165	130	200	3,5	228	165	90	200 200 250 250	156 176 194 218	233 287 310 336	302 366 405 435	453 507 530 556	522 586 625 655	121 141 151 163	62 62 62 62	385 385 393,5 405,5	62 68 72 85	66 74 79 94
125	**90** **100** **112** **132**	225 80	212	162	107	60	28	60	3)	159 164	150	103,5	100	18	23	215	180	250	4	274	201	110	200 250 250 300	176 194 218 257	287 310 336 445	366 405 435 553	556 579 605 719	635 674 704 827	141 151 163 194	86 86 86 86	475 475 475 489	109 113 126 161	115 120 135 173

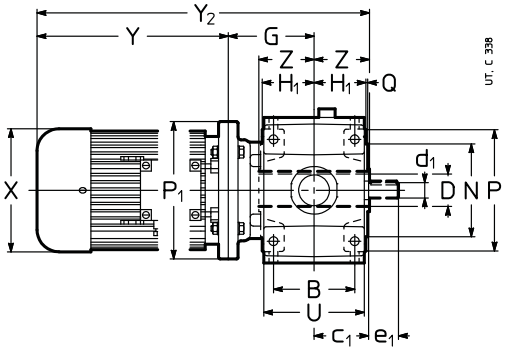
1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) For dimension, number and angular position see ch. 6.
4) Mounting position **B5R** (see ch. 1.2).

42

MR 3I 140 ... 360







Red.	Mot.	a	A	A_1	A_2	B	c_1	D Ø H7	d_1 Ø	e_1	F	G	H	H_1	h	K Ø	L	M Ø	N Ø h6	P Ø	T	Z	P_1 Ø	X Ø ≈	Y ≈		Y_2 ≈		W ≈	W_2 ≈	kg	
	B5										1)		h11		h11				Q		U					2)		2)				2)
140	100	240	212	427	127	162	107	70	24	50	4)	134	150	103,5	125	18	23	265	230	300	515	125	250	194	310	405	569	664	151	541	137	144
	112																		4		201		250	218	336	435	595	694	163	553	145	156
	132											159											300	257	445	553	729	837	194	584	185	197
	160[3]																						300	315	539	640	843	944	241	631	231	236
160	100	285	252	507	-	201	132	80	28	60	M16	179	180	128,5	150	22	28	265	230	300	615	136	250	194	310	405	625	720	151	616	205	212
	112																		4		249		250	218	336	435	651	750	163	628	213	224
	132																						300	257	445	553	760	868	194	659	253	265
	160											204											350	315	539	640	879	980	241	706	299	304
	180																						350	354	613	734	953	1074	278	743	358	348
180	112	305	252	527	170	201	132	90	28	60	M16	179	180	128,5	150	22	28	300	250	350	635	150	250	218	336	435	665	764	163	648	231	242
	132																		5		249		300	257	445	553	774	882	194	679	271	283
	160											204											350	315	539	640	893	994	241	726	317	322
	180											194											350	354	613	734	967	1088	278	763	376	366
	200[3]																						350	354	654	734	998	1078	278	763	402	390
200	132	360	320	635	-	250	162	100	35	80	4)	225	225	158	180	27	34	350	300	400	765	167	300	257	445	553	837	945	194	779	386	398
	160																		5		307		350	315	539	640	931	1032	241	826	432	437
	180																						350	354	613	734	1005	1126	278	863	491	481
	200																						400	354	654	734	1046	1126	278	863	517	505
	225											255											450	411	710	-	1132	-	298	883	608	-
225	132	385	320	660	223	250	162	110	35	80	M20	225	225	158	180	27	34	400	350	450	790	180	300	257	445	553	850	958	194	804	417	429
	160																		5		307		350	315	539	640	944	1045	241	851	463	468
	180																						350	354	613	734	1018	1139	278	888	522	512
	200																						400	354	654	734	1059	1139	278	888	548	536
	225											255											450	411	710	-	1145	-	298	908	639	-
	250[3]																						450	411	710	-	1145	-	298	908	662	-
250	160	450	396	791	-	310	200	125	45	110	4)	260	280	195	225	33	42	500	450	550	955	206	350	315	539	640	1005	1106	241	971	666	671
	180																		5		380		350	354	613	734	1079	1200	278	1008	725	715
	200																						400	354	654	734	1120	1200	278	1008	751	739
	225											290											450	411	710	-	1206	-	298	1028	842	-
	250																						550	411	735	-	1231	-	298	1028	865	-
	280																						550	490	819	-	1315	-	360	1090	1051	-
280	160	480	396	821	277	310	200	140	45	110	M24	260	280	195	225	33	42	500	450	550	985	222	350	315	539	640	1021	1122	241	1001	720	725
	180																		5		380		350	354	613	734	1095	1216	278	1038	779	769
	200																						400	354	654	734	1136	1216	278	1038	805	793
	225											290											450	411	710	-	1222	-	298	1058	896	-
	250																						550	411	735	-	1247	-	298	1058	919	-
	280											310											550	490	819	-	1331	-	360	1120	1105	-
	315[3]																						550	490	820	-	1352	-	360	1120	1354	-
320	200	570	510	1005	-	386	245	160	55	110	4)	326	355	241	280	39	52	600	550	660	1205	254	400	354	654	734	1234	1314	278	1205	1163	1151
321	225																		6		470		450	411	710	-	1290	-	298	1223	1254	-
	250											336											550	411	735	-	1325	-	298	1223	1277	-
	280																						550	490	819	-	1409	-	360	1285	1463	-
	315											356											660	604	962	-	1570	-	445	1370	1711	-
360	200	610	510	1045	358	386	245	180	55	110	M30	326	355	241	280	39	52	600	550	660	1245	273	400	354	654	734	1253	1333	278	1245	1258	1246
	225																		6		470		450	411	710	-	1309	-	298	1263	1349	-
	250											336											550	411	735	-	1344	-	298	1263	1372	-
	280																						550	490	819	-	1428	-	360	1325	1558	-
	315											356											660	604	962	-	1591	-	445	1410	1806	-

∗ Machined surface and N.4 threaded holes (dimensions in ch. 6 «Gear reducer input face»).
1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) For mounting position **B5R** (see ch. 1.2), brake motor is not possible. Moreover for size **315S** the following dimensions will be reduced **X**: Ø490, dimension **Y**: 820, dimension **W**: 360, mass: 1102 kg.
4) For dimension, number and angular position see ch. 6.

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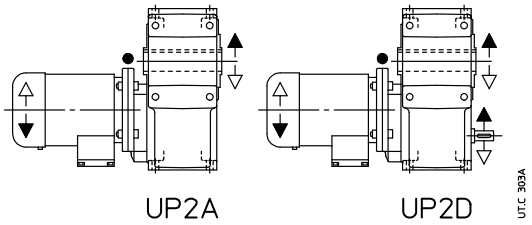
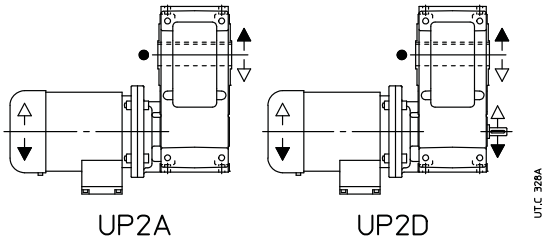
Designs[1] (direction of rotation)

MR 3I 40 ... 125



MR 3I 140 ... 360



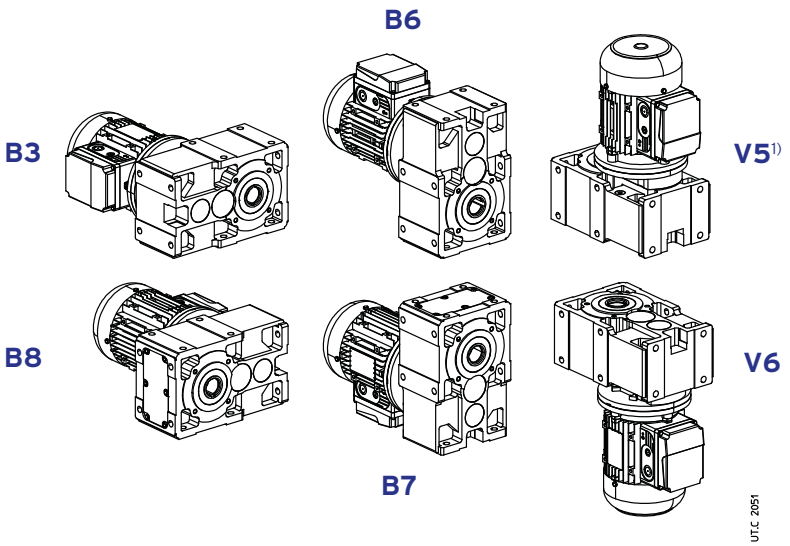
● Position of reference groove (see ch. 6) for radial load verification.
1) For motor design see ch. 2.

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

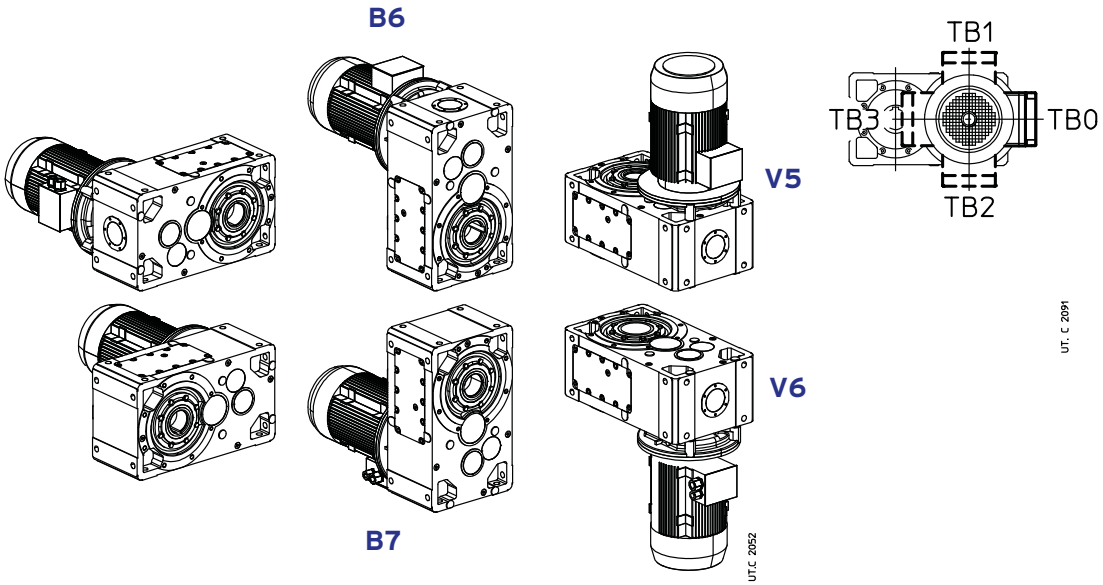
MR 3I 40 ... 125

Designs:
UP2A
UP2D



MR 3I 140 ... 360

Designs:
UP2A
UP2D



Oil quantity MR 3I 40 ... 360

Lubricant quantities [l] stated in the table are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

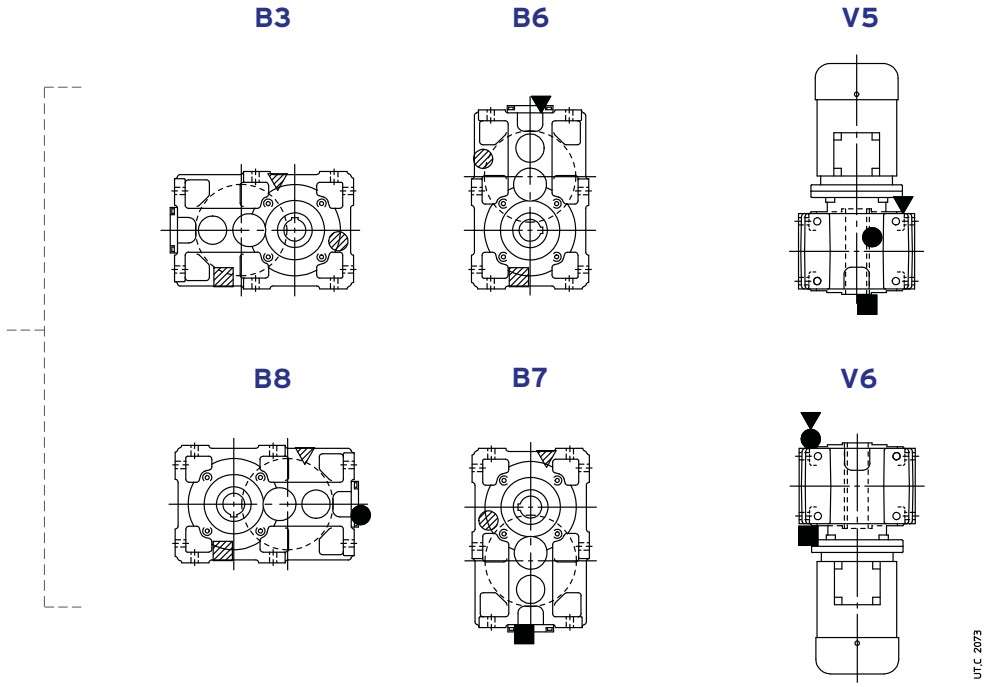
Mounting position	40	50	63, 64	80, 81	100	125	140	160	180	200	225	250	280	320, 321	360
B3	0,47	0,7	1	1,7	3,3	6,1	6,6	12	13	25	26	47	51	97	100
B8	0,47	0,7	1	1,7	3,3	6,1	9,7	18	19	35	37	67	72	137	140
B6	0,55	1,05	1,5	2,9	5,7	10,2	9,7	18	19	35	37	67	72	137	140
B7	0,55	0,9	1,3	2,5	4,9	8,8	9,7	18	19	35	37	67	72	137	140
V5[1)]	0,55	0,9	1,3	2,5	4,9	8,8	9,7	18	19	35	37	67	72	137	140
V6	0,55	0,9	1,3	2,5	4,9	8,8	9,7	18	19	35	37	67	72	137	140

1) For sizes 40 ... 125, the first reduction stage is grease lubricated «for life» (quantity 5% the oil one).

Lubrication details

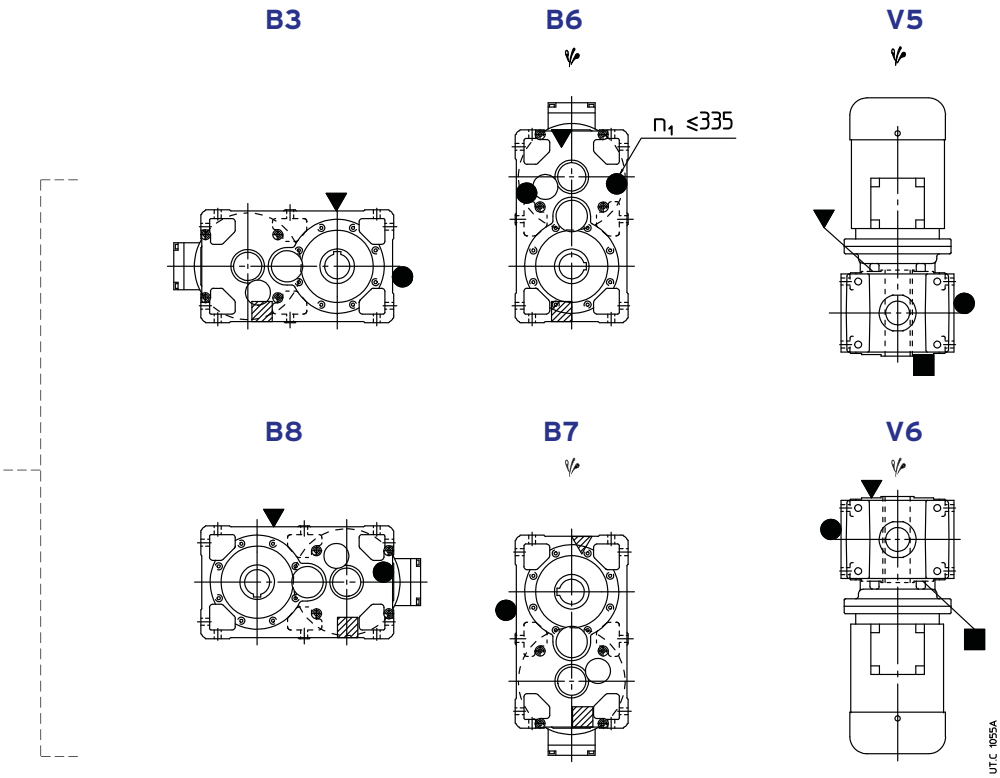
MR 3I 100, 125

Designs:
UP2A
UP2D



MR 3I 140 ... 360

Designs:
UP2A
UP2D



Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.

▼ oil filler plug
● oil level plug
■ oil drain plug
▼ oil filler plug with oil dip stick
● oil level plug with oil dip stick

▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

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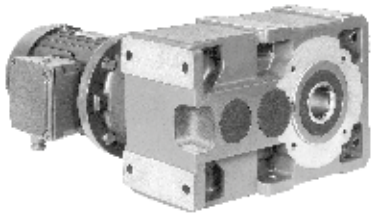
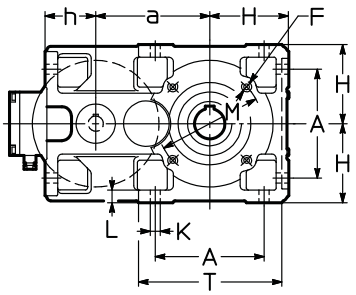
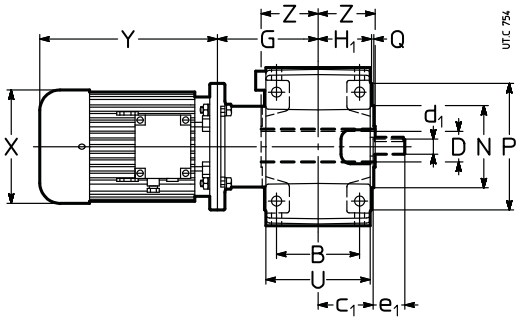
12.3 - Gearmotors MR 4I

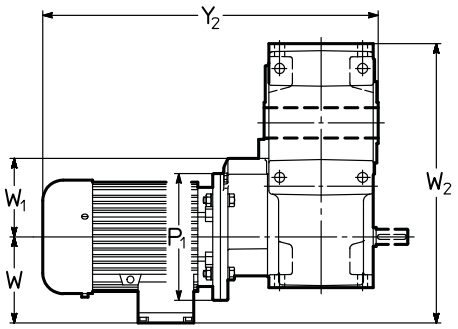
Dimensions

MR 4I 63 ... 125









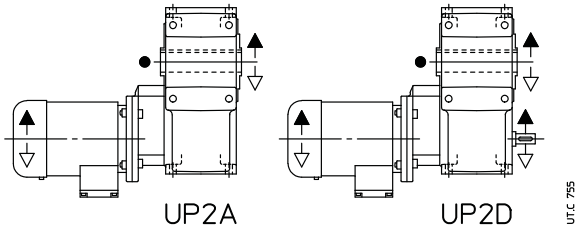
Red.	Mot. B5	a	A	B	c_1	D Ø H7	d_1 Ø	e_1	F 1)	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	Z	P_1 Ø	X Ø ≈	Y ≈	Y ≈ 2)	Y_2 ≈	Y_2 ≈ 2)	W ≈	W_1	W_2 ≈	kg	kg 2)
63 **64**	**63** **71**	113 **(63)** 115 **(64)**	102	90	61	30 **(63)** 32 **(64)**	16	30	M8	109	80	58,5	62	11,5	14	100	80	120	3	143	114	63	140 160	123 138	189 216	244 278	361 388	416 450	95 112	80 80	290 307	24 27	26 30
80 **81**	**71** **80**	142,5	132	106	72	38 **(80)** 40 **(81)**	19	40	M10	135	100	69,5	70	14	17	130	110	160	3,5	180	135	75	160 200	138 156	216 233	278 302	426 443	488 512	112 121	100 100	355 364	36 41	39 45
100	**80** **90**	180	172	131	87	48	24	50	M12	163	125	84,5	80	16	20	165	130	200	3,5	228	165	90	200 200	156 176	233 287	302 366	486 540	555 619	121 141	125 125	426 446	64 70	68 76
125	**90** **100** **112**	225	212	162	107	60	28	60	3)	203	150	103,5	100	18	23	215	180	250	4	274	201	110	200 250 250	176 194 218	287 310 336	366 405 435	600 623 649	679 718 748	141 151 163	166 166 166	516 526 538	112 116 129	118 123 138

1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) For dimension, number and angular position see ch. 6.

42

Designs[1] (direction of rotation)

MR 41 63 ... 125



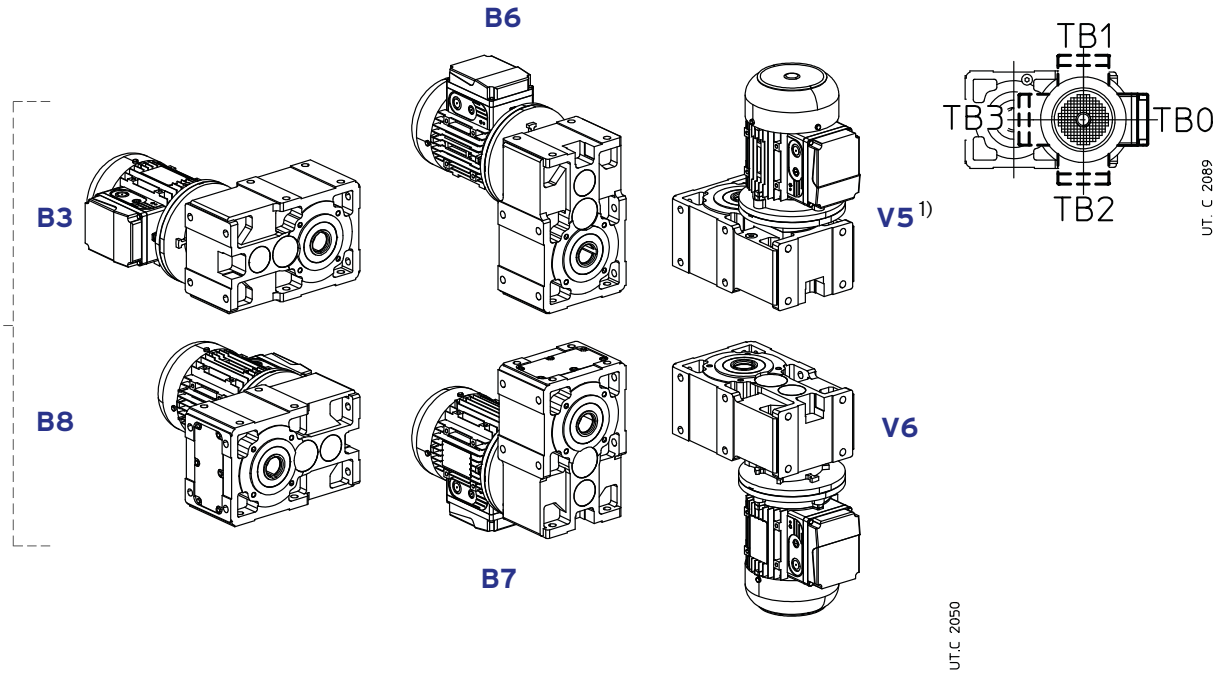
● Position of reference groove (see ch.18) for radial load verification.
1) For motor design see ch. 2.

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

MR 4I 63 ... 125

Designs:
UP2A
UP2D



Oil quantity MR 4I 63 ... 125

Lubricant quantities [l] stated in the table are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	63, 64	80, 81	100	125
B3	1,1	1,9	3,6	6,6
B8	1,1	1,9	3,6	6,6
B6	1,8	3,2	6	10,7
B7	1,4	2,7	5,3	9,4
V5[1)]	1,3	2,5	4,9	8,8
V6	1,4	2,7	5,3	9,4

1) The first 2 reduction stages lubricated «for life» with grease (10% oil quantity).

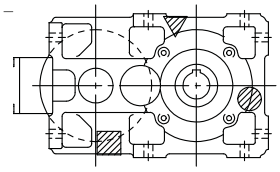
Lubrication details

MR 41 100, 125

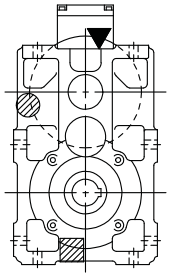
Designs:

UP2A
UP2D

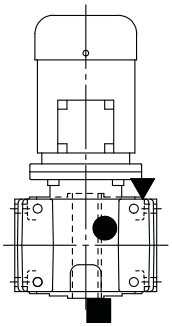
B3



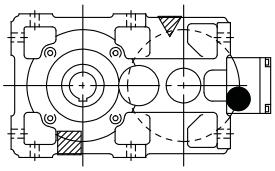
B6



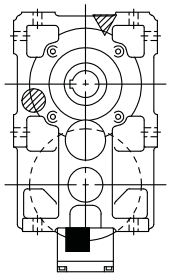
V5



B8

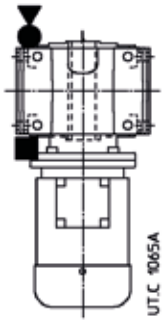


B7



V6

1)



1) See also ch. 6 page 43.

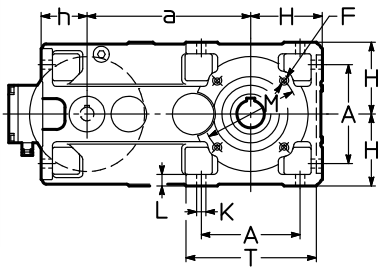
▼ oil filler plug
● oil level plug
■ oil drain plug
▼ oil filler plug with oil level dip stick
●

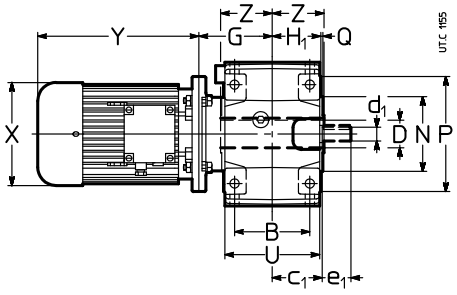
▽ oil drain plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

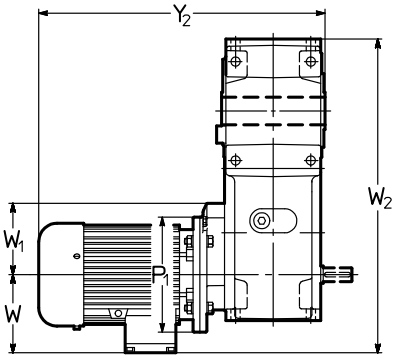
12.4 - Gearmotors MR 21 – Long model

Dimensions

MR 21 80 ... 125 – Long model





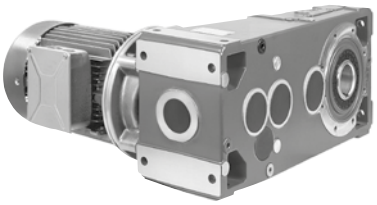


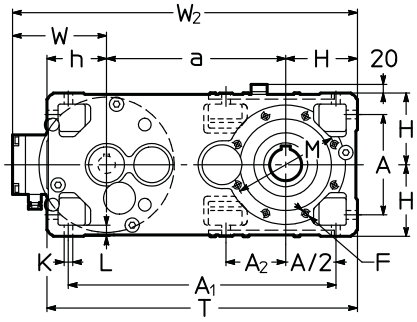
Red.	Mot.	a	A	B	c_1	D Ø H7	d_1 Ø	e_1	F	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	Z	P_1 Ø	X Ø ≈	Y ≈		Y_2 ≈		W ≈	W_1	W_2 ≈	kg	
	B5								1)																	2)		2)					2)
80	**90**	225	132	106	72	38	19	40	M10	108	100	69,5	70	14	17	130	110	160	3,5	180	135	75	200	176	287	366	470	549	141	100	466	54	60
81	**100**[4]					**(80)**																	250	194	310	405	493	588	151	125	476	59	66
	112[4]					40 **(81)**																	250	218	336	435	519	618	163	125	488	74	81
100	**90**	284,7	172	131	87	48	24	50	M12	130	125	84,5	80,3	16	20	165	130	200	3,5	228	165	90	200	176	287	366	507	586	141	125	551	76	82
	100																						250	194	310	405	530	625	151	125	561	80	87
	112																						250	218	336	435	556	655	163	125	573	93	102
	132[4]									150													300	257	445	553	685	793	194	150	604	128	140
125	**112**	358	212	162	107	60	28	60	3)	159	150	103,5	100	18	23	215	180	250	4	274	201	110	250	218	336	435	605	704	163	166	671	134	143
	132									164													300	257	445	553	719	827	194	166	702	169	181
	160									179													350	315	539	640	828	929	241	175	749	215	220
	180																						350	354	613	734	902	1023	278	175	786	274	264

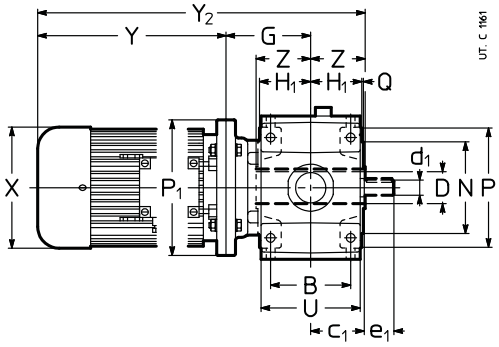
1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) For dimension, number and angular position see ch. 6.
4) On request for 100LB 4, 112M 4 and 132M 4 also mounting position **B5R** (see ch. 1.2; dimensions Y and Y_2 increase by 27 mm, 26 mm and 35 mm, respectively).

42

MR 2I 140 ... 225 – Long model







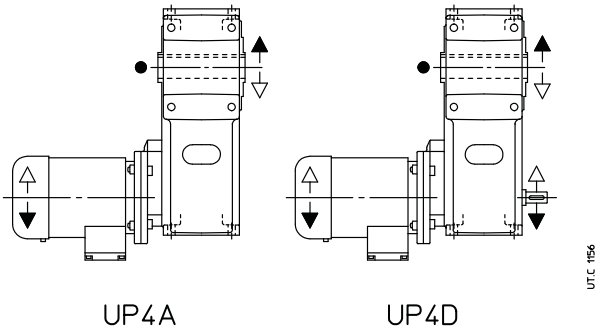
Red.	Mot.	a	A	A_1	A_2	B	c_1	D Ø H7	d_1 Ø	e_1	F	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	T	Z	P_1 Ø	X Ø ≈	Y ≈		Y_2 ≈		W ≈	W_2 ≈	kg	
	B5										1)								Q		U					2)		2)				2)
140	132	373	212	560	127	162	107	70	28	60	4)	159	150	103,5	125	18	23	265	230	300	648	125	300	257	445	553	729	837	194	717	201	213
	160											179											350	315	539	640	843	944	241	764	247	252
	180																						350	354	613	734	917	1038	278	801	306	296
	200																						350	354	654	734	958	1038	278	801	332	320
160	160	450	252	672	-	201	132	80	38	80	M16	204	180	128,5	150	22	28	265	230	300	780	136	350	315	539	640	879	980	241	871	327	332
	180																		4		249		350	354	613	734	953	1074	278	908	386	376
	200											194											400	354	654	734	984	1064	278	908	412	400
	225											224											450	411	710	-	1070	-	298	928	503	-
180	180	470	252	692	170	201	132	90	38	80	M16	204	180	128,5	150	22	28	300	250	350	800	150	350	354	613	734	967	1088	278	928	404	394
	200											194							5		249		400	354	654	734	998	1078	278	928	430	418
	225											224											450	411	710	-	1084	-	298	948	521	-
	250																						450	411	735	-	1109	-	298	948	544	-
200	200	556	320	831	-	250	162	100	48	110	4)	225	225	158,0	180	27	34	350	300	400	961	167	400	354	654	734	1046	1126	278	1059	565	553
	225											255							5		307		450	411	710	-	1132	-	298	1079	656	-
	250																						550	411	735	-	1157	-	298	1079	679	-
	280																						550	490	819	-	1241	-	360	1141	865	-
225	225	581	320	856	223	250	162	110	48	110	M20	255	225	158,0	180	27	34	400	350	450	986	180	450	411	710	-	1145	-	298	1104	688	-
	250																		5		307		550	411	735	-	1170	-	298	1104	711	-
	280																						550	490	819	-	1254	-	360	1166	897	-
	315 3)																						550	490	820	-	1255	-	360	1166	858	-

1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) Mounting position **B5R** (see ch. 1.2), brake motor is not possible. Moreover for size **315S** the following dimensions will be reduced: dimension **X**: Ø 490, dimension **Y**: 820, dimension **W**: 360, mass: 1102 kg.
4) For dimension, number and angular position see ch. 6.

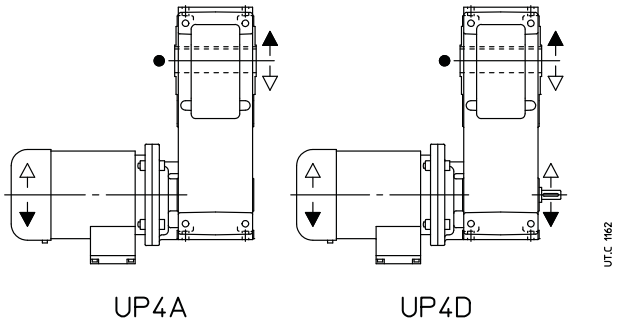
42

Designs[1] (direction of rotation)

MR 2I 80 ... 125 - Long model



MR 2I 140 ... 225 - Long model



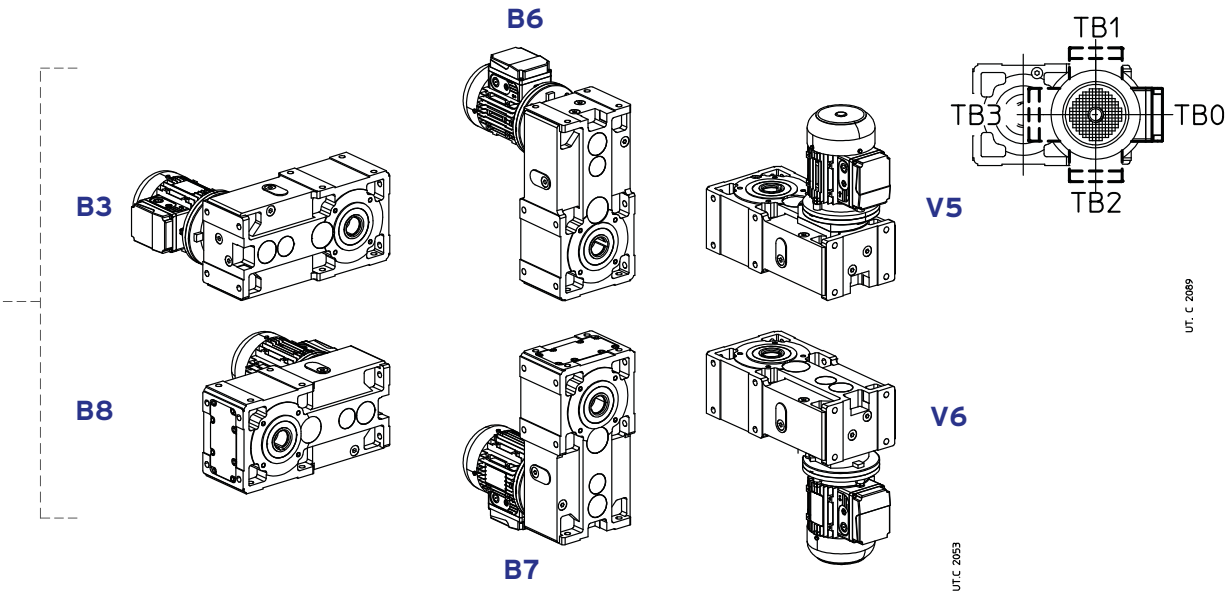
● Position of reference groove (see ch. 6) for radial load verification.
1) For motor design see ch. 2.

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

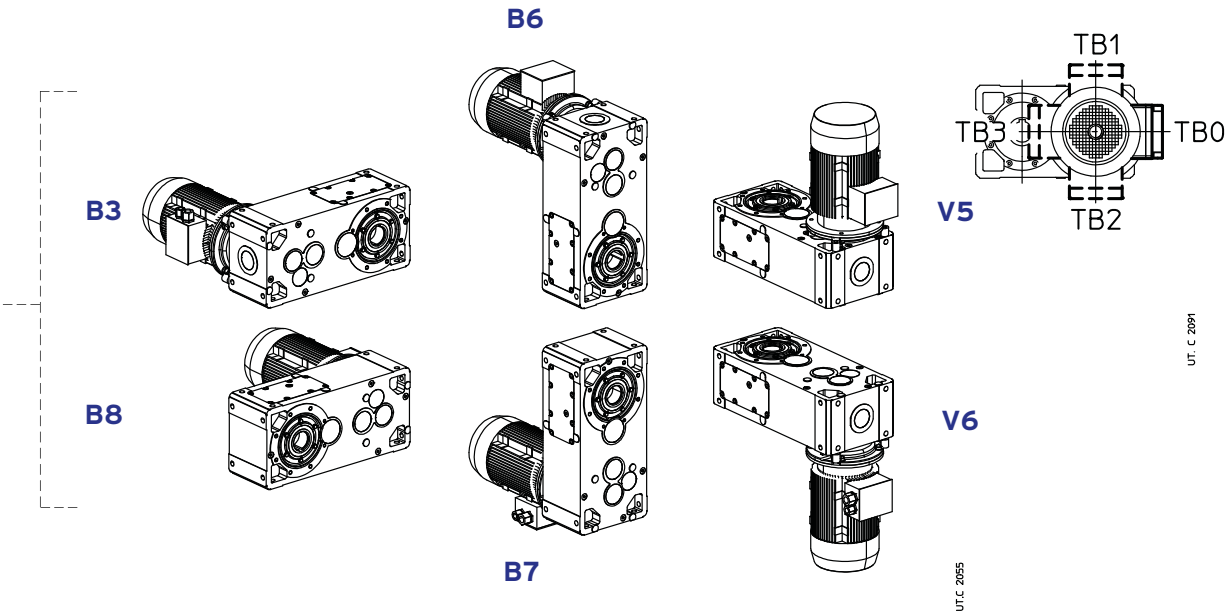
MR 2I 80 ... 125 - Long model

Designs:
UP4A
UP4D



MR 2I 140 ...225 - Long model

Designs:
UP4A
UP4D



Oil quantity MR 2I 100 ... 225 - Long model

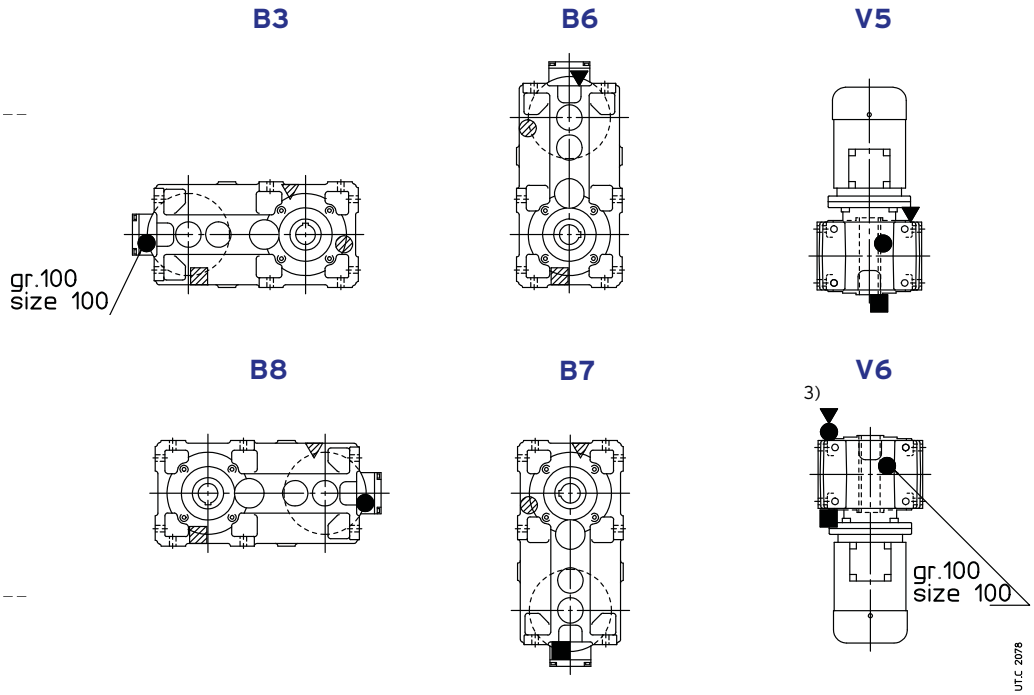
Lubricant quantities [l] stated in the table are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	80, 81	100	125	140	160	180	200	225
B3	2,0	4,2	8	8,8	16	17,4	33	34
B8	2,0	4,2	8	12	20	21	38	40
B7	3,1	7,6	14	15,6	28	29,4	55	57
B6	3,1	7,6	14	15,6	28	29,4	55	57
V5	3,1	6,6	12	13,6	24	25,4	48	50
V6	3,1	6,6	12	13,6	24	25,4	48	50

Lubrication details

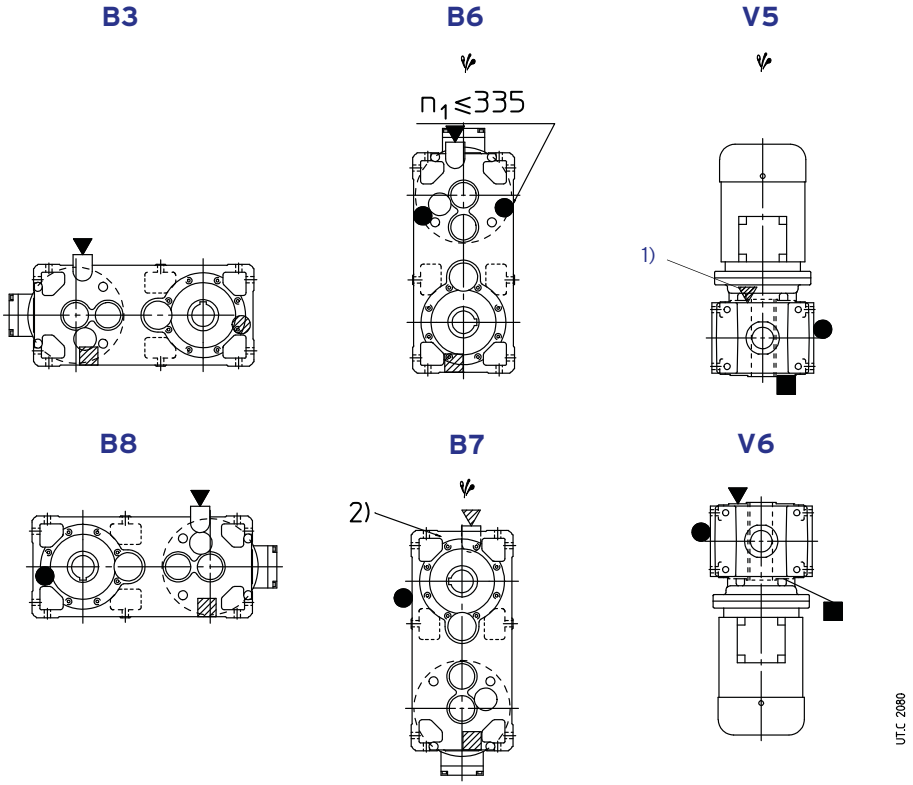
MR 2I 100 ... 125 - Long model

Designs:
UP4A
UP4D



MR 2I 140 ... 225 - Long model

Designs:
UP4A
UP4D



1) Oil filler plug possible also on low speed shaft side.
2) Oil filler plug possible also on opposite side.
3) See also ch. 6 page. 43.
Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.

▼ oil filler plug
● oil level plug
■ oil drain plug
▼ ● oil filler plug with oil level dip stick
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

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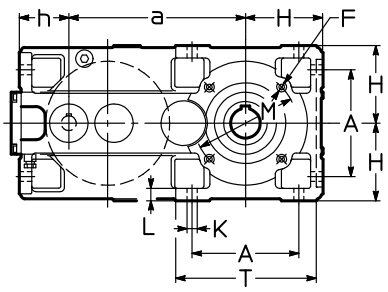
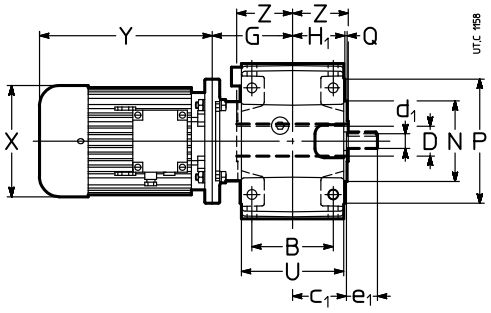
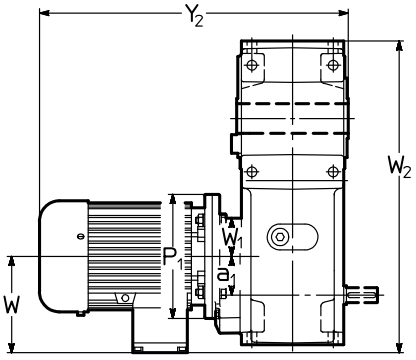
12.5 - Gearmotors MR 3I – Long model

Dimensions

MR 3I 80 ... 125 – Long model



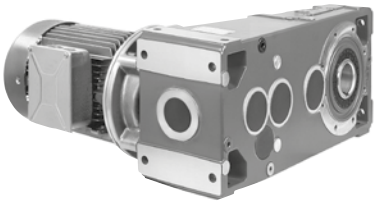


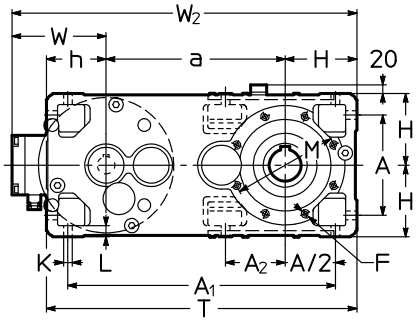


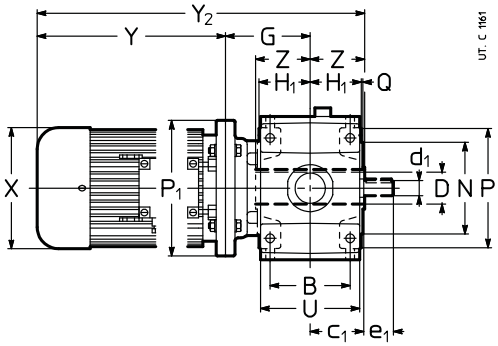
Red.	Mot.	a	A	B	c_1	D Ø H7	d_1 Ø	e_1	F	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	U	Z	P_1 Ø	X Ø ≈	Y ≈		Y_2 ≈		W ≈	W_1	W_2 ≈	kg	
	B5	a_1							1)																	2)		2)					2)
80	**71**	225	132	106	72	38	19	40	M10	108	100	69,5	70	14	17	130	110	160	3,5	180	135	75	160	138	216	278	399	461	112	50	395	41	44
81	**80**	50				**(80)**																	200	156	233	302	416	485	121	50	396	47	51
	90																						200	176	287	366	470	549	141	50	416	54	60
	100					40 **(81)**																	200	194	337	432	520	615	151	50	426	61	68
100	**80**	284,7	172	131	87	48	24	50	M12	130	125	84,5	80,3	16	20	165	130	200	3,5	228	165	90	200	156	233	302	453	522	121	62	490	71	75
	90	63																					200	176	287	366	507	586	141	62	490	77	83
	100																						250	194	310	405	530	625	151	62	498	81	88
	112																						250	218	336	435	556	655	163	62	510	94	103
125	**90**	358	212	162	107	60	28	60	3)	159	150	103,5	100	18	23	215	180	250	4,0	274	201	110	200	176	287	366	556	635	141	86	608	125	131
	100	80																					250	194	310	405	579	674	151	86	608	129	136
	112																						250	218	336	435	605	704	163	86	608	142	151
	132									164													300	257	445	553	719	827	194	86	622	177	189

1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) For dimension, number and angular position see ch. 6.

MR 3I 140 ... 225 – Long model







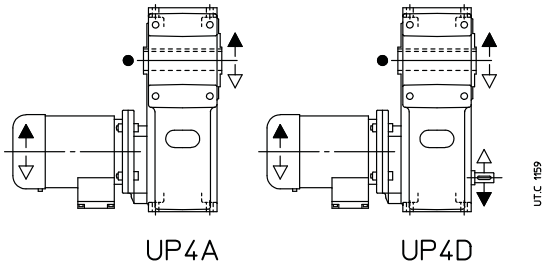
Red.	Mot. B5	a	A	A_1	A_2	B	c_1	D Ø H7	d_1 Ø	e_1	F 1)	G	H h11	H_1	h h11	K Ø	L	M Ø	N Ø h6 Q	P Ø	T U	Z	P_1 Ø	X Ø ≈	Y ≈	Y ≈ 2)	Y_2 ≈	Y_2 ≈ 2)	W ≈	W_2 ≈	kg	kg 2)
140	**100**	373	212	560	127	162	107	70	24	50	4)	134	150	103,5	125	18	23	265	230	300	648	125	250	194	310	405	569	664	151	674	153	160
	112											159							4		201		250	218	336	435	595	694	163	686	161	172
	132																						300	257	445	553	729	837	194	717	201	213
	160[3]																						300	315	539	640	843	944	241	764	247	252
160	**100**	450	252	672	-	201	132	80	28	60	M16	179	180	128,5	150	22	28	265	230	300	780	136	250	194	310	405	625	720	151	781	233	240
	112																		4		249		250	218	336	435	651	750	163	793	241	252
	132																						300	257	445	553	760	868	194	824	281	293
	160											204											350	315	539	640	879	980	241	871	327	332
	180																						350	354	613	734	953	1074	278	908	386	376
180	**112**	470	252	692	170	201	132	90	28	60	M16	179	180	128,5	150	22	28	300	250	350	800	150	250	218	336	435	665	764	163	813	259	270
	132																		5		249		300	257	445	553	774	882	194	844	299	311
	160											204											350	315	539	640	893	994	241	891	345	350
	180																						350	354	613	734	967	1088	278	928	404	394
	200[3]																						350	354	654	734	998	1078	278	928	430	418
200	**132**	556	320	831	-	250	162	100	38	80	4)	225	225	158,0	180	27	34	350	300	400	961	167	300	257	445	553	837	945	194	975	434	446
	160																		5		307		350	315	539	640	931	1032	241	1022	480	485
	180																						350	354	613	734	1005	1126	278	1059	539	529
	200																						400	354	654	734	1046	1126	278	1059	565	553
	225											255											450	411	710	-	1132	-	298	1079	656	-
225	**132**	581	320	856	223	250	162	110	38	80	M20	225	225	158,0	180	27	34	400	350	450	986	180	300	257	445	553	850	958	194	1000	466	478
	160																		5		307		350	315	539	640	944	1045	241	1047	512	517
	180																						350	354	613	734	1018	1139	278	1084	571	561
	200																						400	354	654	734	1059	1139	278	1084	597	585
	225											255											450	411	710	-	1145	-	298	1104	688	-
	250[3]																						450	411	710	-	1145	-	298	1104	711	-

1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) Mounting position **B5R** (see ch. 1.2).
4) For dimension, number and angular position see ch. 6.

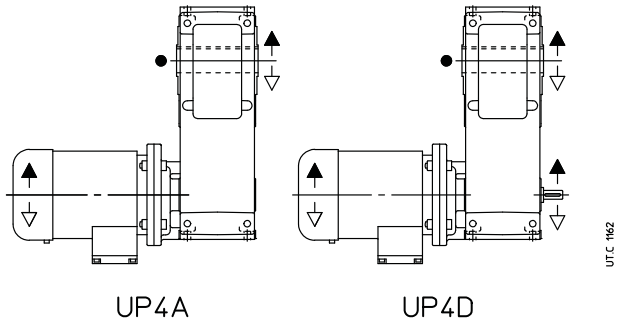
42

Designs[1] (direction of rotation)

MR 3I 80 ... 125 - Long model



MR 3I 140 ... 225 - Long model



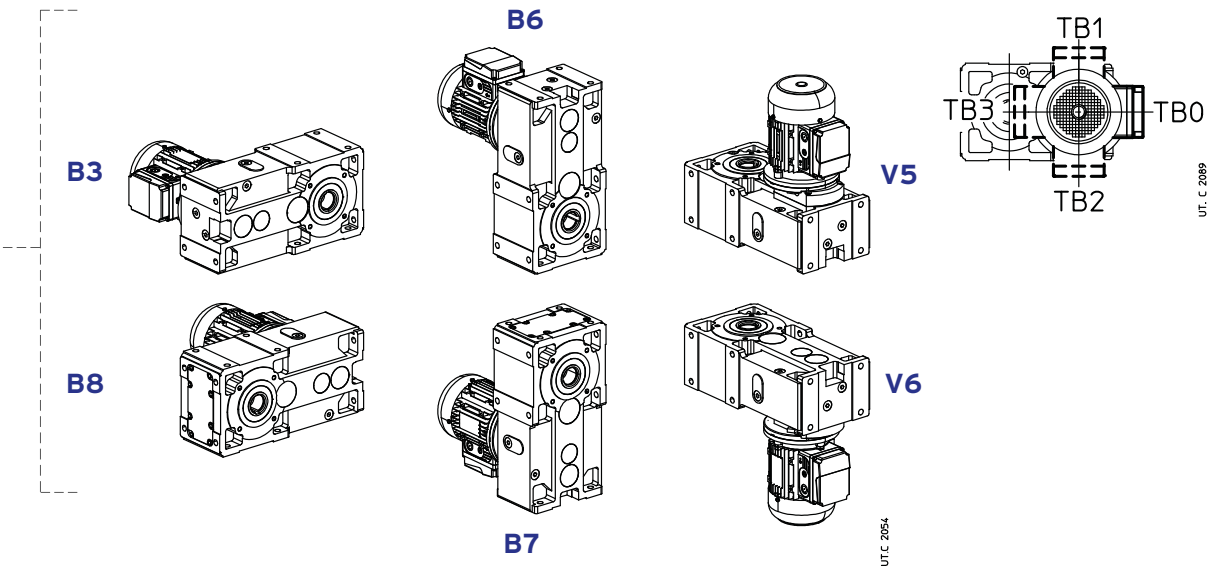
● Position of reference groove (see ch. 6) for radial load verification.
1) For motor design see ch. 2.

Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

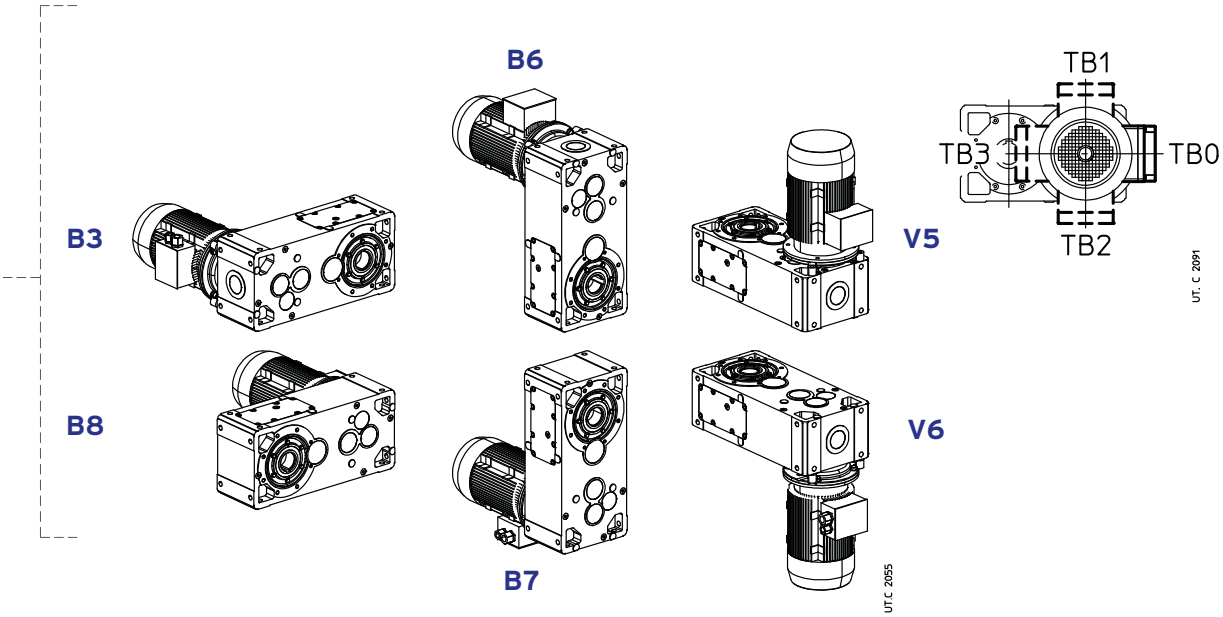
MR 3I 80 ... 125 - Long model

Designs:
UP4A
UP4D



MR 3I 140 ... 225 - Long model

Designs:
UP4A
UP4D



Oil quantity MR 3I 80 ... 225 - Long model

Lubricant quantities [l] stated in the table are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

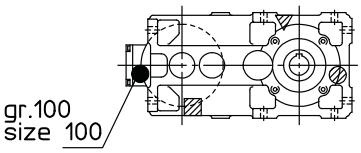
Mounting position	80, 81	100	125	140	160	180	200	225
B3	2,3	4,3	8,3	8,8	16	17,4	33	34
B8	2,3	4,3	8,3	12,6	22	23,4	44	46
B6	3,9	8,3	16	15,6	28	29,4	55	57
B7	3,3	8,3	16	15,6	28	29,4	55	57
V5	3,3	6,5	12	13,6	24	25,4	48	50
V6	3,3	6,5	12	13,6	24	25,4	48	50

Lubrication details

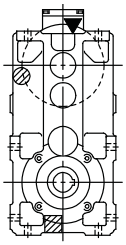
MR 3I 100 ... 125 - Long model

Designs:
UP4A
UP4D

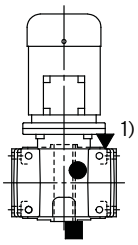
B3



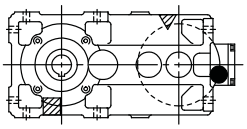
B6



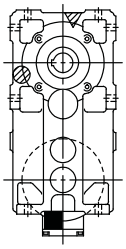
V5



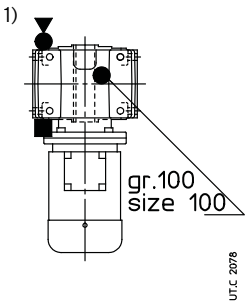
B8



B7



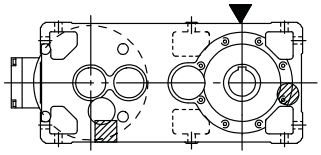
V6



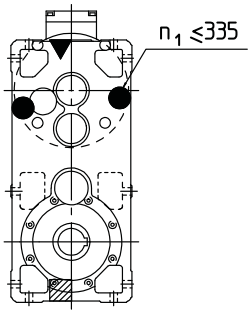
MR 3I 140 ... 225 - Long model

Designs:
UP4A
UP4D

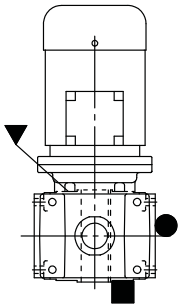
B3



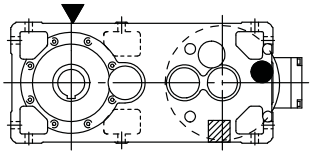
B6



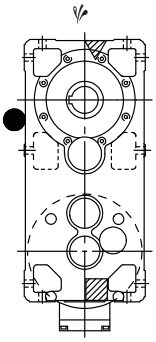
V5



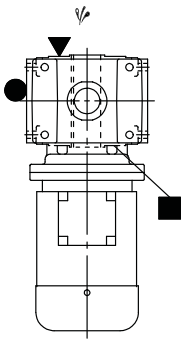
B8



B7



V6



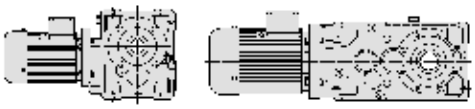
Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.
1) See also ch. 6 page 43.

▼ oil filler plug
● oil level plug
■ oil drain plug
▼● oil filler plug with oil level dip stick

▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

13 – Bevel helical gearmotor selection tables

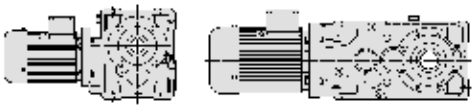
13 - Bevel helical gearmotor selection tables



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
0,09	**4,28**	185	1	**MR C3I 50 - 11 × 140** 63 A 6	210
	5,25	151	1,18	**MR C3I 50 - 11 × 140** 63 A 6	171
	6,66	119	1,7	**MR C3I 50 - 11 × 140** 63 A 6	135
	10,7	76	2,12	**MR ICI 50 - 11 × 140** 63 A 6	84,3
	11,9	68	1,06	**MR ICI 40 - 11 × 140** 63 A 6	75,8
	13,3	61	2,65	**MR ICI 50 - 11 × 140** 63 A 6	67,5
	14,4	56	1,18	MR **ICI 40 - 11 × 140** 63 A 6	62,5
	16,4	49,3	3,35	**MR ICI 50 - 11 × 140** 63 A 6	54,9
	18,8	42,9	2	**MR ICI 40 - 11 × 140** 63 A 6	47,8
	22,8	35,4	2,65	**MR ICI 40 - 11 × 140** 63 A 6	39,4
	29,5	27,4	2,65	**MR ICI 40 - 11 × 140** 63 A 6	30,5
	34,4	24	2,8	**MR CI 40 - 11 × 140** 63 A 6	26,2
	41,5	19,9	3,55	MR **CI 40 - 11 × 140** 63 A 6	21,7
	50,4	16,4	4	**MR CI 40 - 11 × 140** 63 A 6	17,9
	65,9	12,5	6,7	**MR CI 40 - 11 × 140** 63 A 6	13,7
	79,9	10,3	8,5	**MR CI 40 - 11 × 140** 63 A 6	11,3
0,12	**5,25**	201	0,85	**MR C3I 50 - 11 × 140** 63 B 6	171
	6,65	158	1,12	**MR C3I 50 - 11 × 140** 63 A 4	210
	6,66	158	1,32	**MR C3I 50 - 11 × 140** 63 B 6	135
	8,17	129	1,32	**MR C3I 50 - 11 × 140** 63 A 4	171
	10,4	102	2	**MR C3I 50 - 11 × 140** 63 A 4	135
	10,7	101	1,6	**MR ICI 50 - 11 × 140** 63 B 6	84,3
	11,9	91	0,8	**MR ICI 40 - 11 × 140** 63 B 6	75,8
	13,3	81	2	**MR ICI 50 - 11 × 140** 63 B 6	67,5
	14,4	75	0,9	**MR ICI 40 - 11 × 140** 63 B 6	62,5
	16,6	65	2,36	**MR ICI 50 - 11 × 140** 63 A 4	84,3
	18,5	58	1,18	**MR ICI 40 - 11 × 140** 63 A 4	75,8
	18,8	57	1,5	**MR ICI 40 - 11 × 140** 63 B 6	47,8
	20,8	52	3	**MR ICI 50 - 11 × 140** 63 A 4	67,5
	22,4	48,1	1,4	**MR ICI 40 - 11 × 140** 63 A 4	62,5
	22,8	47,2	2	**MR ICI 40 - 11 × 140** 63 B 6	39,4
	25,5	42,3	4	**MR ICI 50 - 11 × 140** 63 A 4	54,9
	29,3	36,8	2,24	**MR ICI 40 - 11 × 140** 63 A 4	47,8
	34,4	32	2,12	**MR CI 40 - 11 × 140** 63 B 6	26,2
	35,5	30,3	3	**MR ICI 40 - 11 × 140** 63 A 4	39,4
	41,5	26,5	2,65	**MR CI 40 - 11 × 140** 63 B 6	21,7
	45,9	23,5	3	**MR ICI 40 - 11 × 140** 63 A 4	30,5
	53,5	20,6	3,35	**MR CI 40 - 11 × 140** 63 A 4	26,2
	64,6	17	4	**MR CI 40 - 11 × 140** 63 A 4	21,7
	78,4	14	4,5	**MR CI 40 - 11 × 140** 63 A 4	17,9
	102	10,7	7,5	**MR CI 40 - 11 × 140** 63 A 4	13,7
	124	8,9	10	**MR CI 40 - 11 × 140** 63 A 4	11,3
	161	6,9	10	**MR CI 40 - 11 × 140** 63 A 4	8,72
0,18	**2,29**	690	0,9	**MR C3I 81 - 14 × 160** 71 A 6	393
	2,74	578	1	**MR C3I 80 - 14 × 160** 71 A 6	329
	2,74	578	1,12	**MR C3I 81 - 14 × 160** 71 A 6	329
	3,42	463	1,4	**MR C3I 80 - 14 × 160** 71 A 6	263
	3,42	463	1,6	**MR C3I 81 - 14 × 160** 71 A 6	263
	4,44	356	1,12	**MR C3I 64 - 14 × 160** 71 A 6	202
	4,27	370	2	**MR C3I 80 - 14 × 160** 71 A 6	211
	4,27	370	2,24	**MR C3I 81 - 14 × 160** 71 A 6	211
	5,56	285	1,12	**MR C3I 63 - 14 × 160** 71 A 6	162
	5,56	285	1,25	**MR C3I 64 - 14 × 160** 71 A 6	162
	5,33	296	2,24	MR **C3I 80 - 14 × 160** 71 A 6	169
	7,05	224	1,8	**MR C3I 63 - 14 × 160** 71 A 6	128
	7,05	224	2,12	**MR C3I 64 - 14 × 160** 71 A 6	128
	7,58	213	1,12	**MR ICI 63 - 14 × 160** 71 A 6	119
	7,58	213	1,4	**MR ICI 64 - 14 × 160** 71 A 6	119
	7,29	222	2,5	**MR ICI 80 - 14 × 160** 71 A 6	124

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
0,18	**8,17**	194	0,9	**MR C3I 50 - 11 × 140** 63 B 4	171
	9,19	172	1,18	**MR C3I 50 - 14 × 160** 71 A 6	97,9
	9,47	171	1,6	**MR ICI 63 - 14 × 160** 71 A 6	95
	9,47	171	2	**MR ICI 64 - 14 × 160** 71 A 6	95
	9,11	177	3,35	**MR ICI 80 - 14 × 160** 71 A 6	98,8
	10,4	153	1,32	**MR C3I 50 - 11 × 140** 63 B 4	135
	11,3	143	1,9	**MR ICI 63 - 14 × 160** 71 A 6	79,5
	14,7	110	1,4	**MR ICI 50 - 14 × 160** 71 A 6	61,1
	14,1	114	2,36	**MR ICI 63 - 14 × 160** 71 A 6	63,6
	16,6	97	1,6	**MR ICI 50 - 11 × 140** 63 B 4	84,3
	17,7	91	3,35	**MR ICI 63 - 14 × 160** 71 A 6	50,9
	18,5	88	0,8	**MR ICI 40 - 11 × 140** 63 B 4	75,8
	19,9	81	0,85	**MR ICI 40 - 14 × 160** 71 A 6	45,3
	20,8	78	2	**MR ICI 50 - 11 × 140** 63 B 4	67,5
	22,4	72	0,95	**MR ICI 40 - 11 × 140** 63 B 4	62,5
	26	62	1,32	**MR ICI 40 - 14 × 160** 71 A 6	34,7
	25,5	63	2,65	**MR ICI 50 - 11 × 140** 63 B 4	54,9
	28,8	57	4	**MR CI 63 - 14 × 160** 71 A 6	31,3
	29,3	55	1,5	**MR ICI 40 - 11 × 140** 63 B 4	47,8
	31,5	51	1,8	**MR ICI 40 - 14 × 160** 71 A 6	28,6
	34,4	48	1,4	**MR CI 40 - 14 × 160** 71 A 6	26,2
	32,3	50	3,55	MR **ICI 50 - 11 × 140** 63 B 4	43,3
	37,4	44,2	3,15	**MR CI 50 - 14 × 160** 71 A 6	24,1
	35,5	45,5	2	**MR ICI 40 - 11 × 140** 63 B 4	39,4
	40,7	39,7	1,8	**MR ICI 40 - 14 × 160** 71 A 6	22,1
	41,5	39,7	1,7	**MR CI 40 - 14 × 160** 71 A 6	21,7
	45,9	35,2	2	**MR ICI 40 - 11 × 140** 63 B 4	30,5
	53,5	30,9	2,24	**MR CI 40 - 11 × 140** 63 B 4	26,2
	64,6	25,5	2,65	**MR CI 40 - 11 × 140** 63 B 4	21,7
	78,4	21	3,15	**MR CI 40 - 11 × 140** 63 B 4	17,9
	102	16,1	5	**MR CI 40 - 11 × 140** 63 B 4	13,7
	124	13,3	6,7	**MR CI 40 - 11 × 140** 63 B 4	11,3
	161	10,3	6,7	**MR CI 40 - 11 × 140** 63 B 4	8,72
0,25	**3,56**	617	0,9	MR **C3I 80 - 14 × 160** 71 A 4	393
	3,56	617	1	**MR C3I 81 - 14 × 160** 71 A 4	393
	4,25	516	1,06	**MR C3I 80 - 14 × 160** 71 A 4	329
	4,25	516	1,18	**MR C3I 81 - 14 × 160** 71 A 4	329
	5,53	397	0,9	**MR C3I 64 - 14 × 160** 71 A 4	253
	5,32	413	1,5	**MR C3I 80 - 14 × 160** 71 A 4	263
	5,32	413	1,7	**MR C3I 81 - 14 × 160** 71 A 4	263
	6,91	318	1,06	**MR C3I 63 - 14 × 160** 71 A 4	202
	6,91	318	1,25	**MR C3I 64 - 14 × 160** 71 A 4	202
	7,05	312	1,25	**MR C3I 63 - 14 × 160** 71 B 6	128
	7,05	312	1,6	**MR C3I 64 - 14 × 160** 71 B 6	128
	7,58	296	1	**MR ICI 64 - 14 × 160** 71 B 6	119
	6,65	330	2,24	**MR C3I 80 - 14 × 160** 71 A 4	211
	6,65	330	2,5	**MR C3I 81 - 14 × 160** 71 A 4	211
	7,29	308	1,8	**MR ICI 80 - 14 × 160** 71 B 6	124
	7,29	308	2	**MR ICI 81 - 14 × 160** 71 B 6	124
	8,64	254	1,25	MR **C3I 63 - 14 × 160** 71 A 4	162
	8,64	254	1,4	**MR C3I 64 - 14 × 160** 71 A 4	162
	9,47	237	1,12	**MR ICI 63 - 14 × 160** 71 B 6	95
	9,47	237	1,4	**MR ICI 64 - 14 × 160** 71 B 6	95
	8,3	265	2,5	**MR C3I 80 - 14 × 160** 71 A 4	169
	9,11	246	2,36	MR **ICI 80 - 14 × 160** 71 B 6	98,8
	9,11	246	2,8	**MR ICI 81 - 14 × 160** 71 B 6	98,8
	11,3	195	0,9	**MR C3I 50 - 14 × 160** 71 A 4	124
	11	200	2	**MR C3I 63 - 14 × 160** 71 A 4	128
	11	200	2,36	**MR C3I 64 - 14 × 160** 71 A 4	128
	11,8	190	1,25	**MR ICI 63 - 14 × 160** 71 A 4	119
	11,8	190	1,6	**MR ICI 64 - 14 × 160** 71 A 4	119
	11,3	198	1,4	**MR ICI 63 - 14 × 160** 71 B 6	79,5
	11,3	198	1,7	**MR ICI 64 - 14 × 160** 71 B 6	79,5
	11,3	198	2,8	**MR ICI 80 - 14 × 160** 71 A 4	124
	11,3	198	3	**MR ICI 81 - 14 × 160** 71 A 4	124

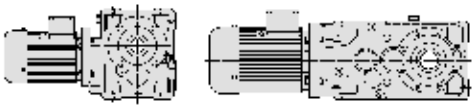
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)						i
0,25	**14,3**	154	1,32	**MR C3I 50 - 14 × 160**	71	A	4			97,9
	14,7	152	1	**MR ICI 50 - 14 × 160**	71	B	6			61,1
	14,7	152	1,8	**MR ICI 63 - 14 × 160**	71	A	4			95
	14,7	152	2,24	**MR ICI 64 - 14 × 160**	71	A	4			95
	14,2	158	3,75	**MR ICI 80 - 14 × 160**	71	A	4			98,8
	17,2	128	1,5	**MR C3I 50 - 14 × 160**	71	A	4			81,5
	16,6	135	1,18	**MR ICI 50 - 11 × 140**	63	C	4			84,3
	17,6	128	2,12	**MR ICI 63 - 14 × 160**	71	A	4			79,5
	20,8	108	1,4	**MR ICI 50 - 11 × 140**	63	C	4			67,5
	22,9	98	1,6	**MR ICI 50 - 14 × 160**	71	A	4			61,1
	22	102	2,65	MR **ICI 63 - 14 × 160**	71	A	4			63,6
	25,5	88	0,8	**MR ICI 40 - 14 × 160**	71	A	4			54,9
	25,5	88	1,9	**MR ICI 50 - 11 × 140**	63	C	4			54,9
	28,6	78	2	**MR ICI 50 - 14 × 160**	71	A	4			48,9
	27,5	82	3,55	**MR ICI 63 - 14 × 160**	71	A	4			50,9
	28,8	80	3	**MR CI 63 - 14 × 160**	71	B	6			31,3
	29,3	77	1,12	**MR ICI 40 - 11 × 140**	63	C	4			47,8
	30,9	73	0,9	**MR ICI 40 - 14 × 160**	71	A	4			45,3
	31,5	71	1,32	**MR ICI 40 - 14 × 160**	71	B	6			28,6
	34,4	67	1	**MR CI 40 - 14 × 160**	71	B	6			26,2
	35,2	64	2,65	**MR ICI 50 - 14 × 160**	71	A	4			39,8
	37,4	61	2,24	**MR CI 50 - 14 × 160**	71	B	6			24,1
	35,5	63	1,5	**MR ICI 40 - 11 × 140**	63	C	4			39,4
	40,4	56	1,5	**MR ICI 40 - 14 × 160**	71	A	4			34,7
	41,5	55	1,25	**MR CI 40 - 14 × 160**	71	B	6			21,7
	44,6	50	3,55	**MR ICI 50 - 14 × 160**	71	A	4			31,4
	46,7	49,1	3,15	**MR CI 50 - 14 × 160**	71	B	6			19,3
	45,9	48,9	1,5	**MR ICI 40 - 11 × 140**	63	C	4			30,5
	49	45,8	2	**MR ICI 40 - 14 × 160**	71	A	4			28,6
	53,5	42,9	1,6	**MR CI 40 - 11 × 140**	63	C	4			26,2
	53,5	42,9	1,6	**MR CI 40 - 14 × 160**	71	A	4			26,2
	58,1	39,4	3,55	MR **CI 50 - 11 × 140**	63	C	4			24,1
	58,1	39,4	3,55	**MR CI 50 - 14 × 160**	71	A	4			24,1
	63,3	35,4	2	**MR ICI 40 - 14 × 160**	71	A	4			22,1
	64,6	35,5	1,9	**MR CI 40 - 11 × 140**	63	C	4			21,7
	64,6	35,5	1,9	**MR CI 40 - 14 × 160**	71	A	4			21,7
	72,6	31,6	4,75	**MR CI 50 - 11 × 140**	63	C	4			19,3
	72,6	31,6	4,75	**MR CI 50 - 14 × 160**	71	A	4			19,3
	78,4	29,2	2,24	**MR CI 40 - 11 × 140**	63	C	4			17,9
	78,4	29,2	2,24	**MR CI 40 - 14 × 160**	71	A	4			17,9
	89,2	25,7	5,6	**MR CI 50 - 11 × 140**	63	C	4			15,7
	89,2	25,7	5,6	**MR CI 50 - 14 × 160**	71	A	4			15,7
	102	22,4	3,55	**MR CI 40 - 11 × 140**	63	C	4			13,7
	102	22,4	3,55	**MR CI 40 - 14 × 160**	71	A	4			13,7
	124	18,4	4,75	**MR CI 40 - 11 × 140**	63	C	4			11,3
	124	18,4	4,75	**MR CI 40 - 14 × 160**	71	A	4			11,3
	136	16,9	8,5	**MR CI 50 - 14 × 160**	71	A	4			10,3
	161	14,3	4,75	**MR CI 40 - 11 × 140**	63	C	4			8,72
	161	14,3	4,75	**MR CI 40 - 14 × 160**	71	A	4			8,72
	202	11,4	4,5	**MR CI 40 - 11 × 140**	63	C	4			6,94
	202	11,4	4,5	**MR CI 40 - 14 × 160**	71	A	4			6,94
0,37	**2,95**	1101	1,06	**MR C3I 100 - 19 × 200**	80	A	6			305
	3,69	881	1,5	**MR C3I 100 - 19 × 200**	80	A	6			244
	4,27	761	1,06	**MR C3I 81 - 14 × 160**	71	C	6			211
	4,61	705	2,12	**MR C3I 100 - 19 × 200**	80	A	6			195
	5,32	611	1,06	**MR C3I 80 - 14 × 160**	71	B	4			263
	5,32	611	1,18	**MR C3I 81 - 14 × 160**	71	B	4			263
	5,67	574	2,36	**MR C3I 100 - 19 × 200**	80	A	6			159
	6,47	513	2,65	**MR ICI 100 - 19 × 200**	80	A	6			139
	7,05	461	1,06	**MR C3I 64 - 14 × 160**	71	C	6			128
	6,65	489	1,5	**MR C3I 80 - 14 × 160**	71	B	4			211
	6,65	489	1,7	**MR C3I 81 - 14 × 160**	71	B	4			211
	7,29	456	1,18	**MR ICI 80 - 14 × 160**	71	C	6			124
	7,29	456	1,32	**MR ICI 81 - 14 × 160**	71	C	6			124
	7,86	422	2,65	**MR ICI 100 - 19 × 200**	80	A	6			114

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)						i
0,37	**8,64**	376	0,85	**MR C3I 63 - 14 × 160**	71	B	4			162
	8,64	376	0,95	**MR C3I 64 - 14 × 160**	71	B	4			162
	8,83	368	1,32	**MR C3I 64 - 19 × 200**	80	A	6			102
	9,47	351	0,8	**MR ICI 63 - 14 × 160**	71	C	6			95
	9,47	351	0,95	MR **ICI 64 - 14 × 160**	71	C	6			95
	8,3	392	1,7	**MR C3I 80 - 14 × 160**	71	B	4			169
	8,3	392	1,9	**MR C3I 81 - 14 × 160**	71	B	4			169
	9,11	365	1,6	**MR ICI 80 - 14 × 160**	71	C	6			98,8
	9,11	365	1,9	**MR ICI 81 - 14 × 160**	71	C	6			98,8
	9,83	338	3,75	MR **ICI 100 - 19 × 200**	80	A	6			91,5
	11	297	1,32	**MR C3I 63 - 14 × 160**	71	B	4			128
	11	297	1,6	**MR C3I 64 - 14 × 160**	71	B	4			128
	11,8	282	0,85	**MR ICI 63 - 14 × 160**	71	B	4			119
	11,8	282	1,06	**MR ICI 64 - 14 × 160**	71	B	4			119
	11,3	294	0,95	**MR ICI 63 - 14 × 160**	71	C	6			79,5
	11,3	294	1,12	**MR ICI 64 - 14 × 160**	71	C	6			79,5
	10,5	309	2,65	**MR C3I 80 - 14 × 160**	71	B	4			133
	11,3	293	1,8	**MR ICI 80 - 14 × 160**	71	B	4			124
	11,3	293	2,12	**MR ICI 81 - 14 × 160**	71	B	4			124
	10,9	305	1,9	**MR ICI 80 - 14 × 160**	71	C	6			82,7
	10,9	305	2,24	**MR ICI 81 - 14 × 160**	71	C	6			82,7
	14,7	225	1,18	**MR ICI 63 - 14 × 160**	71	B	4			95
	14,7	225	1,5	**MR ICI 64 - 14 × 160**	71	B	4			95
	14,2	234	2,5	**MR ICI 80 - 14 × 160**	71	B	4			98,8
	14,2	234	2,8	**MR ICI 81 - 14 × 160**	71	B	4			98,8
	18,4	180	0,85	**MR ICI 50 - 14 × 160**	71	C	6			48,9
	18,4	181	0,85	**MR ICI 50 - 19 × 200**	80	A	6			48,9
	17,6	189	1,4	**MR ICI 63 - 14 × 160**	71	B	4			79,5
	17,6	189	1,8	**MR ICI 64 - 14 × 160**	71	B	4			79,5
	16,9	196	3	**MR ICI 80 - 14 × 160**	71	B	4			82,7
	20,8	160	0,95	MR **ICI 50 - 11 × 140**	71	B	*	4		67,5
	22,9	145	1,06	**MR ICI 50 - 14 × 160**	71	B		4		61,1
	22	151	1,8	**MR ICI 63 - 14 × 160**	71	B		4		63,6
	22	151	2,24	**MR ICI 64 - 14 × 160**	71	B		4		63,6
	28,6	116	1,32	**MR ICI 50 - 14 × 160**	71	B		4		48,9
	27,5	121	2,5	**MR ICI 63 - 14 × 160**	71	B		4		50,9
	28,8	118	2	**MR CI 63 - 14 × 160**	71	C		6		31,3
	28,8	118	2,24	**MR CI 64 - 14 × 160**	71	C		6		31,3
	28,8	118	2	**MR CI 63 - 19 × 200**	80	A		6		31,3
	28,8	118	2,24	**MR CI 64 - 19 × 200**	80	A		6		31,3
	35,2	94	1,7	**MR ICI 50 - 14 × 160**	71	B		4		39,8
	37,4	91	1,5	**MR CI 50 - 14 × 160**	71	C		6		24,1
	37,4	91	1,5	**MR CI 50 - 19 × 200**	80	A		6		24,1
	36	94	2,8	**MR CI 63 - 14 × 160**	71	C		6		25
	36	94	2,8	**MR CI 63 - 19 × 200**	80	A		6		25
	35,5	94	1	**MR ICI 40 - 11 × 140**	71	B	*	4		39,4
	40,4	82	1	**MR ICI 40 - 14 × 160**	71	B		4		34,7
	41,5	82	0,85	**MR CI 40 - 14 × 160**	71	C		6		21,7
	44,6	74	2,36	**MR ICI 50 - 14 × 160**	71	B		4		31,4
	46,7	73	2,12	**MR CI 50 - 14 × 160**	71	C		6		19,3
	46,7	73	2,12	**MR CI 50 - 19 × 200**	80	A		6		19,3
	44,8	76	3	**MR CI 63 - 14 × 160**	71	B		4		31,3
	45,9	72	1	**MR ICI 40 - 11 × 140**	71	B	*	4		30,5
	49	68	1,32	**MR ICI 40 - 14 × 160**	71	B		4		28,6
	53,5	63	1,06	**MR CI 40 - 14 × 160**	71	B		4		26,2
	58,1	58	2,36	**MR CI 50 - 14 × 160**	71	B		4		24,1
	63,3	52	1,32	**MR ICI 40 - 14 × 160**	71	B		4		22,1
	64,6	52	1,32	**MR CI 40 - 14 × 160**	71	B		4		21,7
	72,6	46,7	3,15	**MR CI 50 - 14 × 160**	71	B		4		19,3
	78,4	43,3	1,5	**MR CI 40 - 14 × 160**	71	B		4		17,9
	89,2	38	3,75	**MR CI 50 - 14 × 160**	71	B		4		15,7
	102	33,1	2,5	**MR CI 40 - 14 × 160**	71	B		4		13,7
	124	27,3	3,15	MR **CI 40 - 14 × 160**	71	B		4		11,3
	136	25	6	**MR CI 50 - 14 × 160**	71	B		4		10,3
	161	21,1	3,15	**MR CI 40 - 14 × 160**	71	B		4		8,72
	202	16,8	3	**MR CI 40 - 14 × 160**	71	B		4		6,94

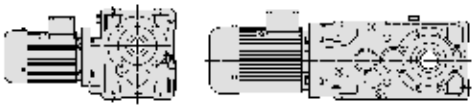
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)						i
0,55	3,69	1310	1	MR C3I 100 - 19 × 200	80	B	6	244
	4,59	1052	1,06	MR C3I 100 - 19 × 200	80	A	4	305
	4,61	1048	1,4	MR C3I 100 - 19 × 200	80	B	6	195
	5,74	842	1,5	MR C3I 100 - 19 × 200	80	A	4	244
	6,47	763	1,8	MR ICI 100 - 19 × 200	80	B	6	139
	6,65	727	1	MR C3I 80 - 14 × 160	71	C	4	211
	6,65	727	1,12	MR C3I 81 - 14 × 160	71	C	4	211
	6,67	725	0,85	MR C3I 80 - 19 × 200	80	A	4	210
	6,67	725	1	MR C3I 81 - 19 × 200	80	A	4	210
	7,18	673	2,24	MR C3I 100 - 19 × 200	80	A	4	195
	7,86	628	1,8	MR ICI 100 - 19 × 200	80	B	6	114
	8,3	582	1,12	MR C3I 80 - 14 × 160	71	C	4	169
	8,3	582	1,25	MR C3I 81 - 14 × 160	71	C	4	169
	8,33	580	1,25	MR C3I 80 - 19 × 200	80	A	4	168
	8,33	580	1,4	MR C3I 81 - 19 × 200	80	A	4	168
	8,81	548	2,5	MR C3I 100 - 19 × 200	80	A	4	159
	10,1	491	2,65	MR ICI 100 - 19 × 200	80	A	4	139
	11	441	1,12	MR C3I 64 - 14 × 160	71	C	4	128
	10,5	459	1,8	MR C3I 80 - 14 × 160	71	C	4	133
	10,5	459	2,12	MR C3I 81 - 14 × 160	71	C	4	133
	10,4	465	1,4	MR C3I 80 - 19 × 200	80	A	4	135
	10,4	465	1,6	MR C3I 81 - 19 × 200	80	A	4	135
	11,3	436	1,25	MR ICI 80 - 14 × 160	71	C	4	124
	11,3	436	1,4	MR ICI 81 - 14 × 160	71	C	4	124
	10,9	453	1,18	MR ICI 80 - 19 × 200	80	B	6	82,5
	10,9	453	1,32	MR ICI 81 - 19 × 200	80	B	6	82,5
	12,2	404	2,65	MR ICI 100 - 19 × 200	80	A	4	114
	13,7	352	1,12	MR C3I 63 - 19 × 200	80	A	4	102
	13,7	352	1,4	MR C3I 64 - 19 × 200	80	A	4	102
	14,7	335	0,8	MR ICI 63 - 14 × 160	71	C	4	95
	14,7	335	1	MR ICI 64 - 14 × 160	71	C	4	95
	14,2	348	0,8	MR ICI 63 - 19 × 200	80	B	6	63,5
	14,2	348	0,95	MR ICI 64 - 19 × 200	80	B	6	63,5
	13,2	366	2,24	MR C3I 80 - 19 × 200	80	A	4	106
	13,2	366	2,65	MR C3I 81 - 19 × 200	80	A	4	106
	14,2	348	1,7	MR ICI 80 - 14 × 160	71	C	4	98,8
	14,2	348	1,9	MR ICI 81 - 14 × 160	71	C	4	98,8
	13,6	362	1,6	MR ICI 80 - 19 × 200	80	B	6	66
	13,6	362	1,9	MR ICI 81 - 19 × 200	80	B	6	66
	15,3	323	4	MR ICI 100 - 19 × 200	80	A	4	91,5
	17,6	281	0,95	MR ICI 63 - 14 × 160	71	C	4	79,5
	17,6	281	1,18	MR ICI 64 - 14 × 160	71	C	4	79,5
	17,6	280	0,9	MR ICI 63 - 19 × 200	80	A	4	79,3
	17,6	280	1,06	MR ICI 64 - 19 × 200	80	A	4	79,3
	17,7	279	1	MR ICI 63 - 19 × 200	80	B	6	50,8
	17,7	279	1,18	MR ICI 64 - 19 × 200	80	B	6	50,8
	16,9	292	2	MR ICI 80 - 14 × 160	71	C	4	82,7
	16,9	292	2,24	MR ICI 81 - 14 × 160	71	C	4	82,7
	17	291	1,8	MR ICI 80 - 19 × 200	80	A	4	82,5
	17	291	2	MR ICI 81 - 19 × 200	80	A	4	82,5
	17	290	2	MR ICI 80 - 19 × 200	80	B	6	52,8
	17	290	2,36	MR ICI 81 - 19 × 200	80	B	6	52,8
	18,3	270	4,5	MR ICI 100 - 19 × 200	80	A	4	76,7
	22	224	1,18	MR ICI 63 - 14 × 160	71	C	4	63,6
	22	224	1,5	MR ICI 64 - 14 × 160	71	C	4	63,6
	22,1	224	1,18	MR ICI 63 - 19 × 200	80	A	4	63,5
	22,1	224	1,5	MR ICI 64 - 19 × 200	80	A	4	63,5
	21,2	233	2,5	MR ICI 80 - 19 × 200	80	A	4	66
	28,6	172	0,9	MR ICI 50 - 14 × 160	71	C	4	48,9
	28,6	172	0,9	MR ICI 50 - 19 × 200	80	A	4	48,9
	27,5	180	1,6	MR ICI 63 - 14 × 160	71	C	4	50,9
	27,5	180	1,9	MR ICI 64 - 14 × 160	71	C	4	50,9
	27,6	179	1,5	MR ICI 63 - 19 × 200	80	A	4	50,8
	27,6	179	1,9	MR ICI 64 - 19 × 200	80	A	4	50,8
	28,8	175	1,32	MR CI 63 - 19 × 200	80	B	6	31,3
	28,8	175	1,5	MR CI 64 - 19 × 200	80	B	6	31,3
	26,5	186	3,15	MR ICI 80 - 19 × 200	80	A	4	52,8
	27,7	182	2,65	MR CI 80 - 19 × 200	80	B	6	32,5

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)						i
0,55	35,2	140	1,18	MR ICI 50 - 14 × 160	71	C	4	39,8
	35,8	138	1,12	MR ICI 50 - 19 × 200	80	A	4	39,1
	37,4	135	1,06	MR CI 50 - 19 × 200	80	B	6	24,1
	34,5	143	2	MR ICI 63 - 19 × 200	80	A	4	40,6
	36	140	1,9	MR CI 63 - 19 × 200	80	B	6	25
	36	140	2,36	MR CI 64 - 19 × 200	80	B	6	25
	44,6	111	1,6	MR ICI 50 - 14 × 160	71	C	4	31,4
	43,9	112	1,5	MR ICI 50 - 19 × 200	80	A	4	31,9
	46,7	108	1,4	MR CI 50 - 19 × 200	80	B	6	19,3
	43,7	113	2,8	MR ICI 63 - 19 × 200	80	A	4	32
	44,8	113	2	MR CI 63 - 14 × 160	71	C	4	31,3
	44,8	113	2,24	MR CI 64 - 14 × 160	71	C	4	31,3
	44,8	113	2	MR CI 63 - 19 × 200	80	A	4	31,3
	44,8	113	2,24	MR CI 64 - 19 × 200	80	A	4	31,3
	45	112	2,36	MR CI 63 - 19 × 200	80	B	6	20
	55,7	89	2	MR ICI 50 - 19 × 200	80	A	4	25,1
	58,1	87	1,6	MR CI 50 - 14 × 160	71	C	4	24,1
	58,1	87	1,6	MR CI 50 - 19 × 200	80	A	4	24,1
	56	90	3	MR CI 63 - 14 × 160	71	C	4	25
	56	90	3	MR CI 63 - 19 × 200	80	A	4	25
	63,3	78	0,9	MR ICI 40 - 14 × 160	71	C	4	22,1
	64,6	78	0,85	MR CI 40 - 14 × 160	71	C	4	21,7
	66,9	74	2,5	MR ICI 50 - 19 × 200	80	A	4	20,9
	72,6	69	2,12	MR CI 50 - 14 × 160	71	C	4	19,3
	72,6	69	2,12	MR CI 50 - 19 × 200	80	A	4	19,3
	78,4	64	1	MR CI 40 - 14 × 160	71	C	4	17,9
	89,2	57	2,5	MR CI 50 - 14 × 160	71	C	4	15,7
	89,2	57	2,5	MR CI 50 - 19 × 200	80	A	4	15,7
	102	49,2	1,6	MR CI 40 - 14 × 160	71	C	4	13,7
	113	44,6	3,55	MR CI 50 - 14 × 160	71	C	4	12,4
	113	44,6	3,55	MR CI 50 - 19 × 200	80	A	4	12,4
	124	40,6	2,12	MR CI 40 - 14 × 160	71	C	4	11,3
	136	37,1	4	MR CI 50 - 14 × 160	71	C	4	10,3
	136	37,1	4	MR CI 50 - 19 × 200	80	A	4	10,3
	161	31,4	2,12	MR CI 40 - 14 × 160	71	C	4	8,72
	174	29	4,25	MR CI 50 - 14 × 160	71	C	4	8,06
	174	29	4,25	MR CI 50 - 19 × 200	80	A	4	8,06
	202	25	2	MR CI 40 - 14 × 160	71	C	4	6,94
	217	23,3	3,75	MR CI 50 - 14 × 160	71	C	4	6,46
	217	23,3	3,75	MR CI 50 - 19 × 200	80	A	4	6,46
0,75	2,39	2758	0,9	MR C3I 125 - 24 × 200	90	S	6	377
	2,95	2234	1,12	MR C3I 125 - 24 × 200	90	S	6	305
	3,69	1788	1,5	MR C3I 125 - 24 × 200	90	S	6	244
	4,61	1429	1,06	MR C3I 100 - 19 × 200	80	C	6	195
	4,63	1425	0,9	MR C3I 100 - 24 × 200	90	S	6	195
	4,61	1430	2,12	MR C3I 125 - 24 × 200	90	S	6	195
	5,74	1148	1,12	MR C3I 100 - 19 × 200	80	B	4	244
	6,47	1041	1,32	MR ICI 100 - 19 × 200	80	C	6	139
	5,76	1144	2,65	MR C3I 125 - 24 × 200	90	S	6	156
	7,18	918	1,6	MR C3I 100 - 19 × 200	80	B	4	195
	7,86	856	1,32	MR ICI 100 - 19 × 200	80	C	6	114
	7,47	902	2,65	MR ICI 125 - 24 × 200	90	S	6	121
	8,33	791	1	MR C3I 81 - 19 × 200	80	B	4	168
	8,48	777	1,06	MR C3I 80 - 19 × 200	80	C	6	106
	8,48	777	1,25	MR C3I 81 - 19 × 200	80	C	6	106
	8,81	748	1,8	MR C3I 100 - 19 × 200	80	B	4	159
	10,1	669	2	MR ICI 100 - 19 × 200	80	B	4	139
	9,33	721	3,55	MR ICI 125 - 24 × 200	90	S	6	96,4
	10,4	634	1	MR C3I 80 - 19 × 200	80	B	4	135
	10,4	634	1,12	MR C3I 81 - 19 × 200	80	B	4	135
	11,3	594	0,9	MR ICI 80 - 14 × 160	80	B	* 4	124
	11,3	594	1	MR ICI 81 - 14 × 160	80	B	* 4	124
	10,9	617	0,9	MR ICI 80 - 19 × 200	80	C	6	82,5
	10,9	617	1	MR ICI 81 - 19 × 200	80	C	6	82,5
	11,2	590	3	MR C3I 100 - 19 × 200	80	B	4	125
	12,2	550	2	MR ICI 100 - 19 × 200	80	B	4	114
	11,7	573	2,24	MR ICI 100 - 19 × 200	80	C	6	76,7
	11,5	584	4,5	MR ICI 125 - 24 × 200	90	S	6	78,1

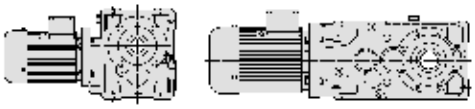
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)						*i*
0,75	**13,2**	500	1,7	**MR C3I 80 - 19 × 200**	80	B		4		106
	13,2	500	1,9	**MR C3I 81 - 19 × 200**	80	B		4		106
	14,2	475	1,25	**MR ICI 80 - 14 × 160**	80	B	*	4		98,8
	14,2	475	1,4	**MR ICI 81 - 14 × 160**	80	B	*	4		98,8
	13,6	494	1,18	**MR ICI 80 - 19 × 200**	80	C		6		66
	13,6	494	1,32	**MR ICI 81 - 19 × 200**	80	C		6		66
	13,8	486	1,12	**MR ICI 80 - 24 × 200**	90	S		6		65
	13,8	486	1,25	**MR ICI 81 - 24 × 200**	90	S		6		65
	15,3	440	2,8	**MR ICI 100 - 19 × 200**	80	B		4		91,5
	17,6	383	0,9	**MR ICI 64 - 14 × 160**	80	B	*	4		79,5
	17,7	380	0,9	**MR ICI 64 - 19 × 200**	80	C		6		50,8
	18	374	0,9	**MR ICI 64 - 24 × 200**	90	S		6		50
	16,9	398	1,5	**MR ICI 80 - 14 × 160**	80	B	*	4		82,7
	16,9	398	1,7	**MR ICI 81 - 14 × 160**	80	B	*	4		82,7
	17	397	1,32	**MR ICI 80 - 19 × 200**	80	B		4		82,5
	17	397	1,5	**MR ICI 81 - 19 × 200**	80	B		4		82,5
	17	395	1,5	**MR ICI 80 - 19 × 200**	80	C		6		52,8
	17	395	1,7	**MR ICI 81 - 19 × 200**	80	C		6		52,8
	17,3	389	1,5	**MR ICI 80 - 24 × 200**	90	S		6		52
	17,3	389	1,7	**MR ICI 81 - 24 × 200**	90	S		6		52
	18,3	369	3,35	**MR ICI 100 - 19 × 200**	80	B		4		76,7
	22,1	305	0,9	**MR ICI 63 - 19 × 200**	80	B		4		63,5
	22,1	305	1,06	**MR ICI 64 - 19 × 200**	80	B		4		63,5
	21,2	317	1,8	MR **ICI 80 - 19 × 200**	80	B		4		66
	21,2	317	2,12	**MR ICI 81 - 19 × 200**	80	B		4		66
	27,6	244	1,12	**MR ICI 63 - 19 × 200**	80	B		4		50,8
	27,6	244	1,4	**MR ICI 64 - 19 × 200**	80	B		4		50,8
	28,1	240	1,32	**MR ICI 63 - 19 × 200**	80	C		6		32
	28,1	240	1,6	**MR ICI 64 - 19 × 200**	80	C		6		32
	28,8	239	1	**MR CI 63 - 19 × 200**	80	C		6		31,3
	28,8	239	1,06	**MR CI 64 - 19 × 200**	80	C		6		31,3
	28,8	239	1	**MR CI 63 - 24 × 200**	90	S		6		31,3
	28,8	239	1,06	**MR CI 64 - 24 × 200**	90	S		6		31,3
	26,5	254	2,24	**MR ICI 80 - 19 × 200**	80	B		4		52,8
	27,7	248	1,9	**MR CI 80 - 19 × 200**	80	C		6		32,5
	27,7	248	1,9	**MR CI 80 - 24 × 200**	90	S		6		32,5
	35,2	191	0,85	**MR ICI 50 - 14 × 160**	80	B	*	4		39,8
	35,8	188	0,95	**MR ICI 50 - 19 × 200**	80	C		6		25,1
	34,5	195	1,5	**MR ICI 63 - 19 × 200**	80	B		4		40,6
	34,5	195	1,8	**MR ICI 64 - 19 × 200**	80	B		4		40,6
	36	191	1,4	**MR CI 63 - 19 × 200**	80	C		6		25
	36	191	1,7	**MR CI 64 - 19 × 200**	80	C		6		25
	36	191	1,4	**MR CI 63 - 24 × 200**	90	S		6		25
	36	191	1,7	**MR CI 64 - 24 × 200**	90	S		6		25
	33,1	203	3	**MR ICI 80 - 19 × 200**	80	B		4		42,3
	34,6	199	3	**MR CI 80 - 19 × 200**	80	C		6		26
	34,6	199	3	**MR CI 80 - 24 × 200**	90	S		6		26
	43,9	153	1,06	**MR ICI 50 - 19 × 200**	80	B		4		31,9
	46,7	147	1	**MR CI 50 - 19 × 200**	80	C		6		19,3
	43,7	154	2	**MR ICI 63 - 19 × 200**	80	B		4		32
	43,7	154	2,5	**MR ICI 64 - 19 × 200**	80	B		4		32
	44,8	153	1,5	**MR CI 63 - 19 × 200**	80	B		4		31,3
	44,8	153	1,7	**MR CI 64 - 19 × 200**	80	B		4		31,3
	45	153	1,8	**MR CI 63 - 19 × 200**	80	C		6		20
	45	153	2,12	**MR CI 64 - 19 × 200**	80	C		6		20
	45	153	1,8	**MR CI 63 - 24 × 200**	90	S		6		20
	45	153	2,12	**MR CI 64 - 24 × 200**	90	S		6		20
	43,1	160	3	**MR CI 80 - 19 × 200**	80	B		4		32,5
	55,7	121	1,5	**MR ICI 50 - 19 × 200**	80	B		4		25,1
	58,1	118	1,18	MR **CI 50 - 19 × 200**	80	B		4		24,1
	56	123	2,24	**MR CI 63 - 19 × 200**	80	B		4		25
	66,9	101	1,8	**MR ICI 50 - 19 × 200**	80	B		4		20,9
	72,6	95	1,6	**MR CI 50 - 19 × 200**	80	B		4		19,3
	70	98	2,65	**MR CI 63 - 19 × 200**	80	B		4		20
	89,2	77	1,9	**MR CI 50 - 19 × 200**	80	B		4		15,7
	87,5	79	3,35	**MR CI 63 - 19 × 200**	80	B		4		16
	102	67	1,18	**MR CI 40 - 14 × 160**	71	D		4		13,7
	113	61	2,65	**MR CI 50 - 19 × 200**	80	B		4		12,4
	124	55	1,6	**MR CI 40 - 14 × 160**	71	D		4		11,3
	136	51	3	**MR CI 50 - 19 × 200**	80	B		4		10,3
	161	42,8	1,6	**MR CI 40 - 14 × 160**	71	D		4		8,72
	174	39,6	3,15	**MR CI 50 - 19 × 200**	80	B		4		8,06

P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)						*i*
0,75	**202**	34,1	1,5	**MR CI 40 - 14 × 160**	71	D		4		6,94
	217	31,7	2,65	**MR CI 50 - 19 × 200**	80	B		4		6,46
1,1	**3,72**	2600	0,95	**MR C3I 125 - 24 × 200**	90	S		4		377
	4,59	2107	1,18	**MR C3I 125 - 24 × 200**	90	S		4		305
	5,73	1685	1,6	**MR C3I 125 - 24 × 200**	90	S		4		244
	7,18	1347	1,12	**MR C3I 100 - 19 × 200**	80	C		4		195
	7,19	1343	0,95	**MR C3I 100 - 24 × 200**	90	S		4		195
	7,17	1348	2,24	**MR C3I 125 - 24 × 200**	90	S		4		195
	7,47	1323	1,8	**MR ICI 125 - 24 × 200**	90	L		6		121
	8,81	1097	1,25	**MR C3I 100 - 19 × 200**	80	C		4		159
	8,99	1075	1,4	**MR C3I 100 - 24 × 200**	90	S		4		156
	10,1	981	1,32	**MR ICI 100 - 19 × 200**	80	C		4		139
	8,96	1079	2,8	**MR C3I 125 - 24 × 200**	90	S		4		156
	9,33	1058	2,5	**MR ICI 125 - 24 × 200**	90	L		6		96,4
	11,2	865	2	**MR C3I 100 - 19 × 200**	80	C		4		125
	11	875	1,5	MR **C3I 100 - 24 × 200**	90	S		4		127
	12,2	807	1,32	**MR ICI 100 - 19 × 200**	80	C		4		114
	11,8	839	1,32	**MR ICI 100 - 24 × 200**	90	L		6		76,4
	11,6	850	2,8	**MR ICI 125 - 24 × 200**	90	S		4		121
	13,2	733	1,12	**MR C3I 80 - 19 × 200**	80	C		4		106
	13,2	733	1,32	**MR C3I 81 - 19 × 200**	80	C		4		106
	14	690	2,5	**MR C3I 100 - 24 × 200**	90	S		4		99,9
	15,3	646	1,9	**MR ICI 100 - 19 × 200**	80	C		4		91,5
	15,1	655	1,9	**MR ICI 100 - 24 × 200**	90	S		4		92,9
	14,7	671	1,9	**MR ICI 100 - 24 × 200**	90	L		6		61,2
	14,5	680	3,75	**MR ICI 125 - 24 × 200**	90	S		4		96,4
	17	582	0,9	**MR ICI 80 - 19 × 200**	80	C		4		82,5
	17	582	1	**MR ICI 81 - 19 × 200**	80	C		4		82,5
	17,3	571	1	**MR ICI 80 - 24 × 200**	90	L		6		52
	17,3	571	1,18	**MR ICI 81 - 24 × 200**	90	L		6		52
	18,3	541	2,36	**MR ICI 100 - 19 × 200**	80	C		4		76,7
	18,3	539	2	**MR ICI 100 - 24 × 200**	90	S		4		76,4
	18,4	537	2,65	**MR ICI 100 - 24 × 200**	90	L		6		48,9
	21,2	466	1,25	**MR ICI 80 - 19 × 200**	80	C		4		66
	21,2	466	1,4	**MR ICI 81 - 19 × 200**	80	C		4		66
	21,5	458	1,18	**MR ICI 80 - 24 × 200**	90	S		4		65
	21,5	458	1,32	**MR ICI 81 - 24 × 200**	90	S		4		65
	21,6	456	1,25	**MR ICI 80 - 24 × 200**	90	L		6		41,6
	21,6	456	1,5	**MR ICI 81 - 24 × 200**	90	L		6		41,6
	22,8	433	3,15	**MR ICI 100 - 19 × 200**	80	C		4		61,3
	22,9	431	2,8	**MR ICI 100 - 24 × 200**	90	S		4		61,2
	24,6	410	2,8	**MR CI 100 - 24 × 200**	90	L		6		36,6
	27,6	358	0,95	**MR ICI 64 - 19 × 200**	80	C		4		50,8
	28	353	0,95	**MR ICI 64 - 24 × 200**	90	S		4		50
	28,1	351	0,85	**MR ICI 63 - 24 × 200**	90	L		6		32
	26,5	372	1,6	**MR ICI 80 - 19 × 200**	80	C		4		52,8
	26,5	372	1,8	MR **ICI 81 - 19 × 200**	80	C		4		52,8
	26,9	367	1,6	**MR ICI 80 - 24 × 200**	90	S		4		52
	26,9	367	1,8	**MR ICI 81 - 24 × 200**	90	S		4		52
	27,7	364	1,32	**MR CI 80 - 24 × 200**	90	L		6		32,5
	27,7	364	1,6	**MR CI 81 - 24 × 200**	90	L		6		32,5
	28	352	3,75	MR **ICI 100 - 19 × 200**	80	C		4		49,9
	28,6	345	4	**MR ICI 100 - 24 × 200**	90	S		4		48,9
	29,9	337	3,15	**MR CI 100 - 24 × 200**	90	L		6		30,1
	34,5	286	1	**MR ICI 63 - 19 × 200**	80	C		4		40,6
	34,5	286	1,18	**MR ICI 64 - 19 × 200**	80	C		4		40,6
	35	282	0,95	**MR ICI 63 - 24 × 200**	90	S		4		40
	35	282	1,18	**MR ICI 64 - 24 × 200**	90	S		4		40
	35,7	277	1,12	**MR ICI 63 - 24 × 200**	90	L		6		25,2
	35,7	277	1,4	**MR ICI 64 - 24 × 200**	90	L		6		25,2
	36	280	0,95	**MR CI 63 - 24 × 200**	90	L		6		25
	36	280	1,18	**MR CI 64 - 24 × 200**	90	L		6		25
	33,1	298	2,12	**MR ICI 80 - 19 × 200**	80	C		4		42,3
	33,1	298	2,36	**MR ICI 81 - 19 × 200**	80	C		4		42,3
	33,7	293	2	**MR ICI 80 - 24 × 200**	90	S		4		41,6
	33,7	293	2,24	**MR ICI 81 - 24 × 200**	90	S		4		41,6
	34,6	291	2	**MR CI 80 - 24 × 200**	90	L		6		26
	34,6	291	2,24	**MR CI 81 - 24 × 200**	90	L		6		26

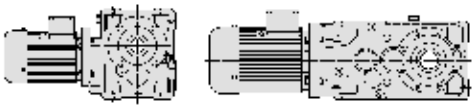
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and *f*s decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	*fs*	2)						*i*
1,1	**43,7**	226	1,4	**MR ICI 63 - 19 ×200**	80	C		4		32
	43,7	226	1,7	**MR ICI 64 - 19 ×200**	80	C		4		32
	43,8	226	1,32	**MR ICI 63 - 24 ×200**	90	S		4		32
	43,8	226	1,5	**MR ICI 64 - 24 ×200**	90	S		4		32
	44,8	225	1	**MR CI 63 - 19 ×200**	80	C		4		31,3
	44,8	225	1,12	**MR CI 64 - 19 ×200**	80	C		4		31,3
	44,8	225	1	**MR CI 63 - 24 ×200**	90	S		4		31,3
	44,8	225	1,12	**MR CI 64 - 24 ×200**	90	S		4		31,3
	45	224	1,18	**MR CI 63 - 24 ×200**	90	L		6		20
	45	224	1,5	**MR CI 64 - 24 ×200**	90	L		6		20
	42	235	2,8	**MR ICI 80 - 19 ×200**	80	C		4		33,4
	42	235	2,65	**MR ICI 80 - 24 ×200**	90	S		4		33,3
	43,1	234	2	**MR CI 80 - 19 ×200**	80	C		4		32,5
	43,1	234	2,5	**MR CI 81 - 19 ×200**	80	C		4		32,5
	43,1	234	2	**MR CI 80 - 24 ×200**	90	S		4		32,5
	43,1	234	2,5	**MR CI 81 - 24 ×200**	90	S		4		32,5
	43,3	233	2,5	**MR CI 80 - 24 ×200**	90	L		6		20,8
	46,5	217	4,75	**MR CI 100 - 24 ×200**	90	S		4		30,1
	55,7	177	1	**MR ICI 50 - 19 ×200**	80	C		4		25,1
	58,1	174	0,8	**MR CI 50 - 19 ×200**	80	C		4		24,1
	55,5	178	1,8	**MR ICI 63 - 24 ×200**	90	S		4		25,2
	55,5	178	2,12	**MR ICI 64 - 24 ×200**	90	S		4		25,2
	56	180	1,5	**MR CI 63 - 19 ×200**	80	C		4		25
	56	180	1,8	**MR CI 64 - 19 ×200**	80	C		4		25
	56	180	1,5	**MR CI 63 - 24 ×200**	90	S		4		25
	56	180	1,8	**MR CI 64 - 24 ×200**	90	S		4		25
	53,8	187	3	**MR CI 80 - 19 ×200**	80	C		4		26
	53,8	187	3	**MR CI 80 - 24 ×200**	90	S		4		26
	66,9	148	1,25	**MR ICI 50 - 19 ×200**	80	C		4		20,9
	72,6	139	1,06	MR **CI 50 - 19 ×200**	80	C		4		19,3
	67,6	146	2,24	**MR ICI 63 - 24 ×200**	90	S		4		20,7
	67,6	146	2,5	**MR ICI 64 - 24 ×200**	90	S		4		20,7
	70	144	1,9	**MR CI 63 - 19 ×200**	80	C		4		20
	70	144	2,24	**MR CI 64 - 19 ×200**	80	C		4		20
	70	144	1,9	MR **CI 63 - 24 ×200**	90	S		4		20
	70	144	2,24	**MR CI 64 - 24 ×200**	90	S		4		20
	89,2	113	1,25	**MR CI 50 - 19 ×200**	80	C		4		15,7
	87,5	115	2,36	**MR CI 63 - 19 ×200**	80	C		4		16
	87,5	115	2,36	**MR CI 63 - 24 ×200**	90	S		4		16
	113	89	1,8	**MR CI 50 - 19 ×200**	80	C		4		12,4
	111	91	3,35	**MR CI 63 - 19 ×200**	80	C		4		12,6
	111	91	3,35	**MR CI 63 - 24 ×200**	90	S		4		12,6
	136	74	2	**MR CI 50 - 19 ×200**	80	C		4		10,3
	135	75	3,75	**MR CI 63 - 19 ×200**	80	C		4		10,4
	135	75	3,75	**MR CI 63 - 24 ×200**	90	S		4		10,4
	174	58	2,12	MR **CI 50 - 19 ×200**	80	C		4		8,06
	175	57	3,75	**MR CI 63 - 19 ×200**	80	C		4		7,98
	175	57	3,75	**MR CI 63 - 24 ×200**	90	S		4		7,98
	217	46,5	1,8	**MR CI 50 - 19 ×200**	80	C		4		6,46
	222	45,4	3,75	**MR CI 63 - 19 ×200**	80	C		4		6,31
	222	45,4	3,75	**MR CI 63 - 24 ×200**	90	S		4		6,31
1,5	**4,61**	2860	1,06	**MR C3I 125 - 24 ×200**	90	LC		6		195
	4,54	2901	0,9	**MR C3I 125 - 28 ×250**	100	LA		6		198
	5,73	2298	1,18	**MR C3I 125 - 24 ×200**	90	L		4		244
	5,98	2253	1,9	**MR C2I 140 - 28 ×250**	100	LA		6		151
	5,85	2302	2,8	**MR C2I 160 - 28 ×250**	100	LA		6		154
	7,17	1839	1,7	MR **C3I 125 - 24 ×200**	90	L		4		195
	7,47	1803	1,32	**MR ICI 125 - 24 ×200**	90	LC		6		121
	7,33	1837	2,36	**MR C2I 140 - 28 ×250**	100	LA		6		123
	7,31	1841	2,5	**MR ICI 160 - 28 ×250**	100	LA		6		123
	8,99	1465	1	**MR C3I 100 - 24 ×200**	90	L		4		156
	10,1	1338	1	**MR ICI 100 - 19 ×200**	90	L	*	4		139
	9,69	1390	0,95	**MR ICI 100 - 24 ×200**	90	LC		6		92,9
	8,96	1471	2	**MR C3I 125 - 24 ×200**	90	L		4		156
	9,33	1443	1,8	**MR ICI 125 - 24 ×200**	90	LC		6		96,4
	9,22	1461	1,6	**MR ICI 125 - 28 ×250**	100	LA		6		97,7
	9,33	1443	2,12	**MR ICI 140 - 24 ×200**	90	LC		6		96,4
	9,16	1469	3	**MR C2I 140 - 28 ×250**	100	LA		6		98,2

P_1 kW 1)	n_2 min^{-1}	M_2 N m	*fs*	2)						*i*
1,5	**10,3**	1313	3,35	**MR C2I 140 - 28 ×250**	100	LA		6		87,8
	11	1193	1,12	**MR C3I 100 - 24 ×200**	90	L		4		127
	12,2	1101	1	**MR ICI 100 - 19 ×200**	90	L	*	4		114
	11,8	1144	0,95	**MR ICI 100 - 24 ×200**	90	LC		6		76,4
	12,3	1095	1,18	**MR ICI 100 - 28 ×250**	100	LA		6		73,2
	11,4	1160	3	**MR C3I 125 - 24 ×200**	90	L		4		123
	11,6	1159	2	**MR ICI 125 - 24 ×200**	90	L		4		121
	11,5	1169	2,65	**MR ICI 140 - 28 ×250**	100	LA		6		78,1
	11,5	1176	4,25	**MR C2I 140 - 28 ×250**	100	LA		6		78,6
	14	941	1,9	MR **C3I 100 - 24 ×200**	90	L		4		99,9
	15,3	881	1,4	**MR ICI 100 - 19 ×200**	90	L	*	4		91,5
	15,1	894	1,4	**MR ICI 100 - 24 ×200**	90	L		4		92,9
	14,7	915	1,4	**MR ICI 100 - 24 ×200**	90	LC		6		61,2
	14,9	901	1,18	**MR ICI 100 - 28 ×250**	100	LA		6		60,2
	14,5	927	2,8	MR **ICI 125 - 24 ×200**	90	L		4		96,4
	17,3	778	0,85	**MR ICI 81 - 24 ×200**	90	LC		6		52
	18,3	737	1,7	**MR ICI 100 - 19 ×200**	90	L	*	4		76,7
	18,3	735	1,5	**MR ICI 100 - 24 ×200**	90	L		4		76,4
	18,4	732	1,9	**MR ICI 100 - 24 ×200**	90	LC		6		48,9
	18,7	721	1,7	**MR ICI 100 - 28 ×250**	100	LA		6		48,2
	17,9	751	3,35	**MR ICI 125 - 24 ×200**	90	L		4		78,1
	21,2	635	0,9	**MR ICI 80 - 19 ×200**	90	L	*	4		66
	21,5	625	0,85	**MR ICI 80 - 24 ×200**	90	L		4		65
	21,2	635	1,06	**MR ICI 81 - 19 ×200**	90	L	*	4		66
	21,5	625	0,95	**MR ICI 81 - 24 ×200**	90	L		4		65
	21,6	622	0,95	**MR ICI 80 - 24 ×200**	90	LC		6		41,6
	21,6	622	1,06	**MR ICI 81 - 24 ×200**	90	LC		6		41,6
	22,9	588	2,12	**MR ICI 100 - 24 ×200**	90	L		4		61,2
	24,6	559	2,12	**MR CI 100 - 24 ×200**	90	LC		6		36,6
	24,6	559	2,12	**MR CI 100 - 28 ×250**	100	LA		6		36,6
	26,9	500	1,18	**MR ICI 80 - 24 ×200**	90	L		4		52
	26,9	500	1,32	**MR ICI 81 - 24 ×200**	90	L		4		52
	27	499	1,25	**MR ICI 80 - 24 ×200**	90	LC		6		33,3
	27	499	1,4	**MR ICI 81 - 24 ×200**	90	LC		6		33,3
	27,7	497	0,95	**MR CI 80 - 24 ×200**	90	LC		6		32,5
	27,7	497	1,18	**MR CI 81 - 24 ×200**	90	LC		6		32,5
	27,7	497	0,95	**MR CI 80 - 28 ×250**	100	LA		6		32,5
	27,7	497	1,18	**MR CI 81 - 28 ×250**	100	LA		6		32,5
	28,6	471	3	**MR ICI 100 - 24 ×200**	90	L		4		48,9
	29,9	460	2,36	**MR CI 100 - 24 ×200**	90	LC		6		30,1
	29,9	460	2,36	**MR CI 100 - 28 ×250**	100	LA		6		30,1
	35	385	0,85	**MR ICI 64 - 24 ×200**	90	L		4		40
	35,7	377	0,85	**MR ICI 63 - 24 ×200**	90	LC		6		25,2
	35,7	377	1	**MR ICI 64 - 24 ×200**	90	LC		6		25,2
	36	382	0,85	**MR CI 64 - 24 ×200**	90	LC		6		25
	33,7	400	1,4	MR **ICI 80 - 24 ×200**	90	L		4		41,6
	33,7	400	1,7	**MR ICI 81 - 24 ×200**	90	L		4		41,6
	34,2	393	1,7	**MR ICI 80 - 24 ×200**	90	LC		6		26,3
	34,2	393	2	**MR ICI 81 - 24 ×200**	90	LC		6		26,3
	34,6	397	1,5	**MR CI 80 - 24 ×200**	90	LC		6		26
	34,6	397	1,7	MR **CI 81 - 24 ×200**	90	LC		6		26
	34,6	397	1,5	**MR CI 80 - 28 ×250**	100	LA		6		26
	34,6	397	1,7	**MR CI 81 - 28 ×250**	100	LA		6		26
	35,1	383	3,35	**MR ICI 100 - 24 ×200**	90	L		4		39,8
	38,2	360	3,15	**MR CI 100 - 24 ×200**	90	L		4		36,6
	37,4	368	3	MR **CI 100 - 24 ×200**	90	LC		6		24,1
	37,4	368	3	**MR CI 100 - 28 ×250**	100	LA		6		24,1
	43,8	308	0,95	**MR ICI 63 - 24 ×200**	90	L		4		32
	43,8	308	1,12	**MR ICI 64 - 24 ×200**	90	L		4		32
	44,8	307	0,85	**MR CI 64 - 24 ×200**	90	L		4		31,3
	45	306	0,9	**MR CI 63 - 24 ×200**	90	LC		6		20
	45	306	1,06	**MR CI 64 - 24 ×200**	90	LC		6		20
	42	321	1,9	**MR ICI 80 - 24 ×200**	90	L		4		33,3
	42	321	2,12	**MR ICI 81 - 24 ×200**	90	L		4		33,3
	43,1	319	1,5	**MR CI 80 - 24 ×200**	90	L		4		32,5
	43,1	319	1,8	**MR CI 81 - 24 ×200**	90	L		4		32,5
	43,3	318	1,8	**MR CI 80 - 24 ×200**	90	LC		6		20,8
	43,3	318	2,12	**MR CI 81 - 24 ×200**	90	LC		6		20,8
	43,3	318	1,8	**MR CI 80 - 28 ×250**	100	LA		6		20,8
	43,3	318	2,12	**MR CI 81 - 28 ×250**	100	LA		6		20,8
	46,5	296	3,55	**MR CI 100 - 24 ×200**	90	L		4		30,1

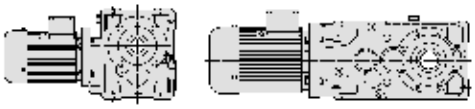
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and *fs* decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)	*i*
1,5	**55,5**	243	1,32	**MR ICI 63 - 24 × 200** 90 L 4	25,2
	55,5	243	1,6	**MR ICI 64 - 24 × 200** 90 L 4	25,2
	56	246	1,12	**MR CI 63 - 24 × 200** 90 L 4	25
	56	246	1,32	**MR CI 64 - 24 × 200** 90 L 4	25
	53,3	253	2,65	**MR ICI 80 - 24 × 200** 90 L 4	26,3
	53,8	255	2,24	**MR CI 80 - 24 × 200** 90 L 4	26
	53,8	255	2,5	**MR CI 81 - 24 × 200** 90 L 4	26
	67,6	199	1,6	**MR ICI 63 - 24 × 200** 90 L 4	20,7
	67,6	199	1,9	**MR ICI 64 - 24 × 200** 90 L 4	20,7
	70	196	1,32	**MR CI 63 - 24 × 200** 90 L 4	20
	70	196	1,7	**MR CI 64 - 24 × 200** 90 L 4	20
	70,8	190	2,8	**MR ICI 80 - 24 × 200** 90 L 4	19,8
	67,3	204	2,8	**MR CI 80 - 24 × 200** 90 L 4	20,8
	87,5	157	1,7	**MR CI 63 - 24 × 200** 90 L 4	16
	87,5	157	2,12	MR **CI 64 - 24 × 200** 90 L 4	16
	111	124	2,5	**MR CI 63 - 24 × 200** 90 L 4	12,6
	135	102	2,8	**MR CI 63 - 24 × 200** 90 L 4	10,4
	175	78	2,8	**MR CI 63 - 24 × 200** 90 L 4	7,98
	222	62	2,8	**MR CI 63 - 24 × 200** 90 L 4	6,31
1,85	**5,73**	2834	0,95	**MR C3I 125 - 24 × 200** 90 LB 4	244
	5,98	2778	1,5	**MR C2I 140 - 28 × 250** 100 LB 6	151
	5,85	2839	2,36	**MR C2I 160 - 28 × 250** 100 LB 6	154
	5,68	2924	3,15	**MR C2I 180 - 28 × 250** 100 LB 6	158
	7,17	2268	1,32	**MR C3I 125 - 24 × 200** 90 LB 4	195
	7,33	2265	1,9	**MR C2I 140 - 28 × 250** 100 LB 6	123
	7,31	2271	2	**MR ICI 160 - 28 × 250** 100 LB 6	123
	6,97	2383	3,15	**MR C2I 160 - 28 × 250** 100 LB 6	129
	8,96	1814	1,7	**MR C3I 125 - 24 × 200** 90 LB 4	156
	9,22	1802	1,32	**MR ICI 125 - 28 × 250** 100 LB 6	97,7
	9,16	1812	2,36	**MR C2I 140 - 28 × 250** 100 LB 6	98,2
	10,3	1619	2,65	**MR C2I 140 - 28 × 250** 100 LB 6	87,8
	11	1472	0,9	**MR C3I 100 - 24 × 200** 90 LB 4	127
	12,3	1351	0,95	**MR ICI 100 - 28 × 250** 100 LB 6	73,2
	11,4	1430	2,5	**MR C3I 125 - 24 × 200** 90 LB 4	123
	11,6	1430	1,7	**MR ICI 125 - 24 × 200** 90 LB 4	121
	11,5	1442	2,12	**MR ICI 140 - 28 × 250** 100 LB 6	78,1
	11,5	1450	3,35	**MR C2I 140 - 28 × 250** 100 LB 6	78,6
	12,8	1296	3,55	**MR C2I 140 - 28 × 250** 100 LB 6	70,2
	14	1160	1,5	**MR C3I 100 - 24 × 200** 90 LB 4	99,9
	15,3	1086	1,18	**MR ICI 100 - 19 × 200** 90 LB * 4	91,5
	15,1	1102	1,18	**MR ICI 100 - 24 × 200** 90 LB 4	92,9
	14,5	1144	2,24	**MR ICI 125 - 24 × 200** 90 LB 4	96,4
	14,5	1144	2,65	**MR ICI 140 - 24 × 200** 90 LB 4	96,4
	18,3	909	1,4	MR **ICI 100 - 19 × 200** 90 LB * 4	76,7
	18,3	907	1,18	**MR ICI 100 - 24 × 200** 90 LB 4	76,4
	18,7	889	1,4	**MR ICI 100 - 28 × 250** 100 LB 6	48,2
	17,9	927	2,8	**MR ICI 125 - 24 × 200** 90 LB 4	78,1
	21,2	783	0,85	**MR ICI 81 - 19 × 200** 90 LB * 4	66
	22,9	725	1,7	**MR ICI 100 - 24 × 200** 90 LB 4	61,2
	24,6	690	1,7	**MR CI 100 - 28 × 250** 100 LB 6	36,6
	22,4	741	3,55	**MR ICI 125 - 24 × 200** 90 LB 4	62,5
	26,9	617	0,95	**MR ICI 80 - 24 × 200** 90 LB 4	52
	26,9	617	1,06	**MR ICI 81 - 24 × 200** 90 LB 4	52
	27,7	612	0,95	**MR CI 81 - 28 × 250** 100 LB 6	32,5
	28,6	580	2,36	**MR ICI 100 - 24 × 200** 90 LB 4	48,9
	29,9	568	1,9	**MR CI 100 - 28 × 250** 100 LB 6	30,1
	33,7	493	1,18	**MR ICI 80 - 24 × 200** 90 LB 4	41,6
	33,7	493	1,32	**MR ICI 81 - 24 × 200** 90 LB 4	41,6
	34,6	490	1,18	**MR CI 80 - 28 × 250** 100 LB 6	26
	34,6	490	1,32	**MR CI 81 - 28 × 250** 100 LB 6	26
	35,1	473	2,8	**MR ICI 100 - 24 × 200** 90 LB 4	39,8
	38,2	443	2,65	**MR CI 100 - 24 × 200** 90 LB 4	36,6
	37,4	454	2,5	**MR CI 100 - 28 × 250** 100 LB 6	24,1
	43,7	380	0,85	**MR ICI 63 - 19 × 200** 90 LB * 4	32
	43,7	380	1	MR **ICI 64 - 19 × 200** 90 LB * 4	32
	43,8	380	0,9	**MR ICI 64 - 24 × 200** 90 LB 4	32

P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)	*i*
1,85	**42**	395	1,6	**MR ICI 80 - 24 × 200** 90 LB 4	33,3
	42	395	1,8	**MR ICI 81 - 24 × 200** 90 LB 4	33,3
	43,1	394	1,18	**MR CI 80 - 24 × 200** 90 LB 4	32,5
	43,1	394	1,5	MR **CI 81 - 24 × 200** 90 LB 4	32,5
	43,3	392	1,5	**MR CI 80 - 28 × 250** 100 LB 6	20,8
	43,3	392	1,7	**MR CI 81 - 28 × 250** 100 LB 6	20,8
	46,5	365	2,8	**MR CI 100 - 24 × 200** 90 LB 4	30,1
	55,5	299	1,06	**MR ICI 63 - 24 × 200** 90 LB 4	25,2
	55,5	299	1,25	**MR ICI 64 - 24 × 200** 90 LB 4	25,2
	56	303	0,9	**MR CI 63 - 24 × 200** 90 LB 4	25
	56	303	1,06	**MR CI 64 - 24 × 200** 90 LB 4	25
	53,3	312	2,12	**MR ICI 80 - 24 × 200** 90 LB 4	26,3
	53,3	312	2,5	**MR ICI 81 - 24 × 200** 90 LB 4	26,3
	53,8	315	1,8	**MR CI 80 - 24 × 200** 90 LB 4	26
	53,8	315	2,12	**MR CI 81 - 24 × 200** 90 LB 4	26
	58,1	292	3,75	**MR CI 100 - 24 × 200** 90 LB 4	24,1
	67,6	246	1,32	**MR ICI 63 - 24 × 200** 90 LB 4	20,7
	67,6	246	1,5	**MR ICI 64 - 24 × 200** 90 LB 4	20,7
	70	242	1,12	**MR CI 63 - 24 × 200** 90 LB 4	20
	70	242	1,32	**MR CI 64 - 24 × 200** 90 LB 4	20
	70,8	234	2,36	**MR ICI 80 - 24 × 200** 90 LB 4	19,8
	67,3	252	2,24	**MR CI 80 - 24 × 200** 90 LB 4	20,8
	67,3	252	2,65	**MR CI 81 - 24 × 200** 90 LB 4	20,8
	87,5	194	1,4	**MR CI 63 - 24 × 200** 90 LB 4	16
	87,5	194	1,7	**MR CI 64 - 24 × 200** 90 LB 4	16
	84	202	3	**MR CI 80 - 24 × 200** 90 LB 4	16,7
	111	153	2	**MR CI 63 - 24 × 200** 90 LB 4	12,6
	111	153	2,5	**MR CI 64 - 24 × 200** 90 LB 4	12,6
	135	126	2,24	**MR CI 63 - 24 × 200** 90 LB 4	10,4
	135	126	2,5	**MR CI 64 - 24 × 200** 90 LB 4	10,4
	175	97	2,24	**MR CI 63 - 24 × 200** 90 LB 4	7,98
	175	97	2,5	**MR CI 64 - 24 × 200** 90 LB 4	7,98
	222	76	2,24	**MR CI 63 - 24 × 200** 90 LB 4	6,31
	222	76	2,5	**MR CI 64 - 24 × 200** 90 LB 4	6,31
2,2	**5,98**	3304	1,32	**MR C2I 140 - 28 × 250** 112 M 6	151
	5,85	3376	2	MR **C2I 160 - 28 × 250** 112 M 6	154
	5,68	3478	2,65	**MR C2I 180 - 28 × 250** 112 M 6	158
	7,17	2697	1,12	**MR C3I 125 - 24 × 200** 90 LC 4	195
	7,07	2735	0,95	**MR C3I 125 - 28 × 250** 100 LA 4	198
	7,1	2723	1	**MR C3I 125 - 28 × 250** 112 M 6	127
	7,33	2694	1,6	**MR C2I 140 - 28 × 250** 112 M 6	123
	7,31	2701	1,7	**MR ICI 160 - 28 × 250** 112 M 6	123
	6,97	2834	2,65	**MR C2I 160 - 28 × 250** 112 M 6	129
	8,96	2157	1,4	**MR C3I 125 - 24 × 200** 90 LC 4	156
	8,83	2188	1,4	**MR C3I 125 - 28 × 250** 100 LA 4	158
	9,22	2143	1,12	**MR ICI 125 - 28 × 250** 112 M 6	97,7
	9,3	2124	1,9	**MR C2I 140 - 28 × 250** 100 LA 4	151
	9,16	2155	2	**MR C2I 140 - 28 × 250** 112 M 6	98,2
	9,14	2161	2,65	**MR ICI 160 - 28 × 250** 112 M 6	98,5
	9,1	2170	2,8	**MR C2I 160 - 28 × 250** 100 LA 4	154
	11,4	1701	2	**MR C3I 125 - 24 × 200** 90 LC 4	123
	11	1750	1,5	**MR C3I 125 - 28 × 250** 100 LA 4	127
	11,6	1700	1,4	**MR ICI 125 - 24 × 200** 90 LC 4	121
	11,5	1714	1,5	**MR ICI 125 - 28 × 250** 112 M 6	78,1
	11,5	1714	1,8	**MR ICI 140 - 28 × 250** 112 M 6	78,1
	11,4	1732	2,36	**MR C2I 140 - 28 × 250** 100 LA 4	123
	11,4	1736	2,65	**MR ICI 160 - 28 × 250** 100 LA 4	123
	14	1380	1,25	**MR C3I 100 - 24 × 200** 90 LC 4	99,9
	15,3	1291	0,95	**MR ICI 100 - 19 × 200** 90 LC * 4	91,5
	15,1	1311	0,95	**MR ICI 100 - 24 × 200** 90 LC 4	92,9
	14	1380	2,5	**MR C3I 125 - 28 × 250** 100 LA 4	100
	14,5	1360	1,9	MR **ICI 125 - 24 × 200** 90 LC 4	96,4
	14,3	1378	1,7	**MR ICI 125 - 28 × 250** 100 LA 4	97,7
	14,5	1360	2,24	**MR ICI 140 - 24 × 200** 90 LC 4	96,4
	14,3	1386	3,15	**MR C2I 140 - 28 × 250** 100 LA 4	98,2
	14,2	1389	4	**MR ICI 160 - 28 × 250** 100 LA 4	98,5

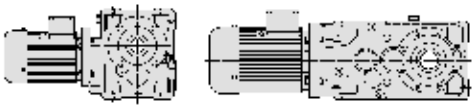
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and *f*s decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)						i
2,2	**16**	1238	3,55	**MR C2I 140 - 28 × 250**	100	LA		4		87,8
	18,3	1081	1,18	**MR ICI 100 - 19 × 200**	90	LC	*	4		76,7
	18,3	1078	1	**MR ICI 100 - 24 × 200**	90	LC		4		76,4
	19,1	1033	1,25	**MR ICI 100 - 28 × 250**	100	LA		4		73,2
	18,7	1057	1,18	**MR ICI 100 - 28 × 250**	112	M		6		48,2
	17,9	1102	2,36	**MR ICI 125 - 28 × 250**	100	LA		4		78,1
	17,9	1102	2,65	**MR ICI 140 - 28 × 250**	100	LA		4		78,1
	17,8	1108	4,25	**MR C2I 140 - 28 × 250**	100	LA		4		78,6
	19,9	990	4,25	**MR C2I 140 - 28 × 250**	100	LA		4		70,2
	22,9	863	1,4	**MR ICI 100 - 24 × 200**	90	LC		4		61,2
	23,2	850	1,25	**MR ICI 100 - 28 × 250**	100	LA		4		60,2
	23,3	846	1,6	MR **ICI 100 - 28 × 250**	112	M		6		38,5
	24,6	820	1,4	**MR CI 100 - 28 × 250**	112	M		6		36,6
	22,1	894	2,8	**MR ICI 125 - 28 × 250**	100	LA		4		63,4
	22,6	874	5	**MR C2I 140 - 28 × 250**	100	LA		4		62
	25,3	781	5,3	**MR C2I 140 - 28 × 250**	100	LA		4		55,4
	26,9	734	0,8	**MR ICI 80 - 24 × 200**	90	LC		4		52
	26,9	734	0,9	**MR ICI 81 - 24 × 200**	90	LC		4		52
	28,6	690	2	**MR ICI 100 - 24 × 200**	90	LC		4		48,9
	29,1	680	1,8	**MR ICI 100 - 28 × 250**	100	LA		4		48,2
	29,9	675	1,6	**MR CI 100 - 28 × 250**	112	M		6		30,1
	27,6	715	3,75	**MR ICI 125 - 28 × 250**	100	LA		4		50,7
	27,8	712	5,6	**MR C2I 140 - 28 × 250**	100	LA		4		50,4
	33,7	587	1	**MR ICI 80 - 24 × 200**	90	LC		4		41,6
	33,7	587	1,12	**MR ICI 81 - 24 × 200**	90	LC		4		41,6
	34,6	583	1	**MR CI 80 - 28 × 250**	112	M		6		26
	34,6	583	1,12	**MR CI 81 - 28 × 250**	112	M		6		26
	35,1	562	2,36	**MR ICI 100 - 24 × 200**	90	LC		4		39,8
	36,3	544	2,5	**MR ICI 100 - 28 × 250**	100	LA		4		38,5
	38,2	527	2,12	**MR CI 100 - 24 × 200**	90	LC		4		36,6
	38,2	527	2,12	**MR CI 100 - 28 × 250**	100	LA		4		36,6
	37,4	540	2	**MR CI 100 - 28 × 250**	112	M		6		24,1
	43,7	452	0,85	MR **ICI 64 - 19 × 200**	90	LC	*	4		32
	42	470	1,32	**MR ICI 80 - 24 × 200**	90	LC		4		33,3
	42	470	1,5	**MR ICI 81 - 24 × 200**	90	LC		4		33,3
	43,1	468	1	**MR CI 80 - 24 × 200**	90	LC		4		32,5
	43,1	468	1,25	**MR CI 81 - 24 × 200**	90	LC		4		32,5
	43,1	468	1	MR **CI 80 - 28 × 250**	100	LA		4		32,5
	43,1	468	1,25	**MR CI 81 - 28 × 250**	100	LA		4		32,5
	43,3	466	1,25	**MR CI 80 - 28 × 250**	112	M		6		20,8
	43,3	466	1,4	**MR CI 81 - 28 × 250**	112	M		6		20,8
	44,6	443	3,55	**MR ICI 100 - 24 × 200**	90	LC		4		31,4
	44,6	443	3	MR **ICI 100 - 28 × 250**	100	LA		4		31,4
	46,5	434	2,36	**MR CI 100 - 24 × 200**	90	LC		4		30,1
	46,5	434	2,36	**MR CI 100 - 28 × 250**	100	LA		4		30,1
	55,5	356	0,9	**MR ICI 63 - 24 × 200**	90	LC		4		25,2
	55,5	356	1,06	**MR ICI 64 - 24 × 200**	90	LC		4		25,2
	56	360	0,9	**MR CI 64 - 24 × 200**	90	LC		4		25
	53,3	371	1,8	**MR ICI 80 - 24 × 200**	90	LC		4		26,3
	53,3	371	2,12	**MR ICI 81 - 24 × 200**	90	LC		4		26,3
	53,8	375	1,5	**MR CI 80 - 24 × 200**	90	LC		4		26
	53,8	375	1,7	**MR CI 81 - 24 × 200**	90	LC		4		26
	53,8	375	1,5	**MR CI 80 - 28 × 250**	100	LA		4		26
	53,8	375	1,7	**MR CI 81 - 28 × 250**	100	LA		4		26
	56,6	349	4,5	**MR ICI 100 - 28 × 250**	100	LA		4		24,7
	67,6	292	1,12	**MR ICI 63 - 24 × 200**	90	LC		4		20,7
	67,6	292	1,25	**MR ICI 64 - 24 × 200**	90	LC		4		20,7
	70	288	0,95	**MR CI 63 - 24 × 200**	90	LC		4		20
	70	288	1,12	**MR CI 64 - 24 × 200**	90	LC		4		20
	70,8	279	1,9	**MR ICI 80 - 24 × 200**	90	LC		4		19,8
	70,8	279	2,36	**MR ICI 81 - 24 × 200**	90	LC		4		19,8
	67,3	300	1,9	**MR CI 80 - 24 × 200**	90	LC		4		20,8
	67,3	300	2,24	**MR CI 81 - 24 × 200**	90	LC		4		20,8
	67,3	300	1,9	**MR CI 80 - 28 × 250**	100	LA		4		20,8
	67,3	300	2,24	**MR CI 81 - 28 × 250**	100	LA		4		20,8
	67,9	291	4,75	**MR ICI 100 - 28 × 250**	100	LA		4		20,6
	87,5	231	1,18	**MR CI 63 - 24 × 200**	90	LC		4		16
	87,5	231	1,4	**MR CI 64 - 24 × 200**	90	LC		4		16
	84	240	2,5	**MR CI 80 - 24 × 200**	90	LC		4		16,7
	84	240	2,5	**MR CI 80 - 28 × 250**	100	LA		4		16,7
	84	240	2,8	**MR CI 81 - 28 × 250**	100	LA		4		16,7

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)						i
2,2	**111**	182	1,7	**MR CI 63 - 24 × 200**	90	LC		4		12,6
	111	182	2	**MR CI 64 - 24 × 200**	90	LC		4		12,6
	107	189	3,35	MR **CI 80 - 28 × 250**	100	LA		4		13,1
	135	149	1,9	**MR CI 63 - 24 × 200**	90	LC		4		10,4
	135	149	2	**MR CI 64 - 24 × 200**	90	LC		4		10,4
	142	142	3,75	**MR CI 80 - 28 × 250**	100	LA		4		9,88
	175	115	1,9	**MR CI 63 - 24 × 200**	90	LC		4		7,98
	175	115	2	**MR CI 64 - 24 × 200**	90	LC		4		7,98
	182	111	3,75	**MR CI 80 - 28 × 250**	100	LA		4		7,71
	222	91	1,9	**MR CI 63 - 24 × 200**	90	LC		4		6,31
	222	91	2	**MR CI 64 - 24 × 200**	90	LC		4		6,31
	227	89	3,75	**MR CI 80 - 28 × 250**	100	LA		4		6,16
3	**5,98**	4506	0,95	**MR C2I 140 - 28 × 250**	112	MC		6		151
	5,98	4506	0,95	MR **C2I 140 - 38 × 300**	132	S		6		151
	5,85	4604	1,4	**MR C2I 160 - 28 × 250**	112	MC		6		154
	5,85	4604	1,4	**MR C2I 160 - 38 × 300**	132	S		6		154
	5,68	4742	2	**MR C2I 180 - 28 × 250**	112	MC		6		158
	5,68	4742	2	**MR C2I 180 - 38 × 300**	132	S		6		158
	5,94	4533	3	MR **C2I 200 - 38 × 300**	132	S		6		151
	7,33	3674	1,18	**MR C2I 140 - 28 × 250**	112	MC		6		123
	7,33	3674	1,18	**MR C2I 140 - 38 × 300**	132	S		6		123
	7,31	3683	1,25	**MR ICI 160 - 28 × 250**	112	MC		6		123
	6,97	3865	2	**MR C2I 160 - 28 × 250**	112	MC		6		129
	6,97	3865	2	**MR C2I 160 - 38 × 300**	132	S		6		129
	6,93	3884	2,5	**MR C2I 180 - 28 × 250**	112	MC		6		130
	6,93	3884	2,5	**MR C2I 180 - 38 × 300**	132	S		6		130
	7,7	3499	2,65	**MR ICI 200 - 38 × 300**	132	S		6		117
	8,83	2984	1	**MR C3I 125 - 28 × 250**	100	LB		4		158
	9,3	2896	1,4	**MR C2I 140 - 28 × 250**	100	LB		4		151
	9,16	2939	1,5	**MR C2I 140 - 28 × 250**	112	MC		6		98,2
	9,16	2939	1,5	**MR C2I 140 - 38 × 300**	132	S		6		98,2
	9,14	2946	1,9	**MR ICI 160 - 28 × 250**	112	MC		6		98,5
	9,1	2959	2,12	**MR C2I 160 - 28 × 250**	100	LB		4		154
	8,71	3092	2,5	**MR C2I 160 - 28 × 250**	112	MC		6		103
	8,71	3092	2,5	**MR C2I 160 - 38 × 300**	132	S		6		103
	8,87	3035	2	**MR ICI 180 - 28 × 250**	112	MC		6		101
	8,83	3049	3	**MR C2I 180 - 28 × 250**	100	LB		4		158
	9,62	2799	4	**MR ICI 200 - 38 × 300**	132	S		6		93,5
	11	2387	1,12	**MR C3I 125 - 28 × 250**	100	LB		4		127
	11,6	2319	1	**MR ICI 125 - 24 × 200**	100	LB	*	4		121
	11,5	2338	1,12	**MR ICI 125 - 28 × 250**	112	MC		6		78,1
	11,5	2338	1,32	**MR ICI 140 - 28 × 250**	112	MC		6		78,1
	11,4	2362	1,8	**MR C2I 140 - 28 × 250**	100	LB		4		123
	11,4	2368	1,9	**MR ICI 160 - 28 × 250**	100	LB		4		123
	11,5	2338	2,36	**MR ICI 160 - 28 × 250**	112	MC		6		78,1
	10,8	2485	3	**MR C2I 160 - 28 × 250**	100	LB		4		129
	11,5	2338	4,75	**MR ICI 200 - 38 × 300**	132	S		6		78,1
	14	1882	1,9	**MR C3I 125 - 28 × 250**	100	LB		4		100
	14,5	1855	1,4	**MR ICI 125 - 24 × 200**	100	LB	*	4		96,4
	14,3	1879	1,25	MR **ICI 125 - 28 × 250**	100	LB		4		97,7
	14,2	1897	1,32	**MR ICI 125 - 28 × 250**	112	MC		6		63,4
	14,2	1899	1,25	**MR ICI 125 - 38 × 300**	132	S		6		63,4
	14,5	1855	1,6	**MR ICI 140 - 24 × 200**	100	LB	*	4		96,4
	14,2	1897	1,6	**MR ICI 140 - 28 × 250**	112	MC		6		63,4
	14,3	1889	2,24	MR **C2I 140 - 28 × 250**	100	LB		4		98,2
	14,2	1894	3	**MR ICI 160 - 28 × 250**	100	LB		4		98,5
	16	1688	2,5	**MR C2I 140 - 28 × 250**	100	LB		4		87,8
	18,7	1442	0,85	**MR ICI 100 - 28 × 250**	112	MC		6		48,2
	17,9	1503	1,7	**MR ICI 125 - 28 × 250**	100	LB		4		78,1
	17,9	1503	2	**MR ICI 140 - 28 × 250**	100	LB		4		78,1
	17,7	1518	2,36	**MR ICI 140 - 28 × 250**	112	MC		6		50,7
	17,7	1519	1,9	**MR ICI 140 - 38 × 300**	132	S		6		50,8
	17,8	1511	3	**MR C2I 140 - 28 × 250**	100	LB		4		78,6
	17,9	1503	3,75	**MR ICI 160 - 28 × 250**	100	LB		4		78,1
	19,9	1351	3,15	**MR C2I 140 - 28 × 250**	100	LB		4		70,2

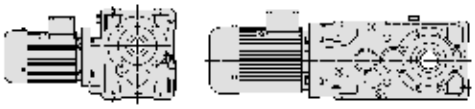
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
3	**22,9**	1176	1,06	MR **ICI 100 - 24 × 200** 100 LB * 4	61,2
	23,2	1159	0,95	**MR ICI 100 - 28 × 250** 100 LB 4	60,2
	23,3	1153	1,18	**MR ICI 100 - 28 × 250** 112 MC 6	38,5
	24,6	1119	1,06	**MR CI 100 - 28 × 250** 112 MC 6	36,6
	22,1	1219	2,12	**MR ICI 125 - 28 × 250** 100 LB 4	63,4
	22,6	1192	3,75	MR **C2I 140 - 28 × 250** 100 LB 4	62
	25,3	1065	4	**MR C2I 140 - 28 × 250** 100 LB 4	55,4
	29,1	927	1,32	**MR ICI 100 - 28 × 250** 100 LB 4	48,2
	29,9	920	1,18	**MR CI 100 - 28 × 250** 112 MC 6	30,1
	29,9	920	1,18	**MR CI 100 - 38 × 300** 132 S 6	30,1
	27,6	976	2,65	**MR ICI 125 - 28 × 250** 100 LB 4	50,7
	28,8	955	2,12	**MR CI 125 - 38 × 300** 132 S 6	31,3
	27,8	970	4,25	**MR C2I 140 - 28 × 250** 100 LB 4	50,4
	33,7	800	0,85	**MR ICI 81 - 24 × 200** 100 LB * 4	41,6
	34,6	795	0,85	**MR CI 81 - 28 × 250** 112 MC 6	26
	36,3	741	1,8	**MR ICI 100 - 28 × 250** 100 LB 4	38,5
	38,2	719	1,6	**MR CI 100 - 28 × 250** 100 LB 4	36,6
	37,4	736	1,5	**MR CI 100 - 28 × 250** 112 MC 6	24,1
	37,4	736	1,5	**MR CI 100 - 38 × 300** 132 S 6	24,1
	34,5	780	3,55	**MR ICI 125 - 28 × 250** 100 LB 4	40,6
	36	764	3,35	**MR CI 125 - 38 × 300** 132 S 6	25
	42	641	0,95	MR **ICI 80 - 24 × 200** 100 LB * 4	33,3
	42	641	1,06	**MR ICI 81 - 24 × 200** 100 LB * 4	33,3
	43,1	638	0,9	**MR CI 81 - 28 × 250** 100 LB 4	32,5
	43,3	636	0,9	**MR CI 80 - 28 × 250** 112 MC 6	20,8
	43,3	636	1,06	**MR CI 81 - 28 × 250** 112 MC 6	20,8
	44,6	604	2,12	MR **ICI 100 - 28 × 250** 100 LB 4	31,4
	46,5	592	1,8	**MR CI 100 - 28 × 250** 100 LB 4	30,1
	46,7	589	2,24	**MR CI 100 - 28 × 250** 112 MC 6	19,3
	46,7	589	2,24	**MR CI 100 - 38 × 300** 132 S 6	19,3
	45	611	4,25	**MR CI 125 - 38 × 300** 132 S 6	20
	53,3	506	1,32	**MR ICI 80 - 24 × 200** 100 LB * 4	26,3
	53,3	506	1,5	**MR ICI 81 - 24 × 200** 100 LB * 4	26,3
	53,8	511	1,12	**MR CI 80 - 28 × 250** 100 LB 4	26
	53,8	511	1,25	**MR CI 81 - 28 × 250** 100 LB 4	26
	56,6	476	3,35	**MR ICI 100 - 28 × 250** 100 LB 4	24,7
	58,1	473	2,24	**MR CI 100 - 28 × 250** 100 LB 4	24,1
	70	393	0,85	**MR CI 64 - 24 × 200** 100 LB * 4	20
	70,8	380	1,4	**MR ICI 80 - 24 × 200** 100 LB * 4	19,8
	70,8	380	1,7	**MR ICI 81 - 24 × 200** 100 LB * 4	19,8
	67,3	409	1,4	**MR CI 80 - 28 × 250** 100 LB 4	20,8
	67,3	409	1,6	**MR CI 81 - 28 × 250** 100 LB 4	20,8
	67,9	396	3,55	**MR ICI 100 - 28 × 250** 100 LB 4	20,6
	72,6	379	3,35	**MR CI 100 - 28 × 250** 100 LB 4	19,3
	87,5	314	1,06	**MR CI 64 - 24 × 200** 100 LB * 4	16
	84	327	1,8	**MR CI 80 - 28 × 250** 100 LB 4	16,7
	84	327	2	**MR CI 81 - 28 × 250** 100 LB 4	16,7
	89,2	308	3,55	**MR CI 100 - 28 × 250** 100 LB 4	15,7
	111	248	1,5	**MR CI 64 - 24 × 200** 100 LB * 4	12,6
	107	258	2,5	**MR CI 80 - 28 × 250** 100 LB 4	13,1
	113	243	5,3	**MR CI 100 - 28 × 250** 100 LB 4	12,4
	135	204	1,5	**MR CI 64 - 24 × 200** 100 LB * 4	10,4
	142	194	2,65	**MR CI 80 - 28 × 250** 100 LB 4	9,88
	175	157	1,5	**MR CI 64 - 24 × 200** 100 LB * 4	7,98
	182	151	2,65	**MR CI 80 - 28 × 250** 100 LB 4	7,71
	222	124	1,5	**MR CI 64 - 24 × 200** 100 LB * 4	6,31
	227	121	2,65	**MR CI 80 - 28 × 250** 100 LB 4	6,16
4	**5,85**	6138	1,06	**MR C2I 160 - 38 × 300** 132 M 6	154
	5,68	6323	1,5	MR **C2I 180 - 38 × 300** 132 M 6	158
	5,94	6044	2,24	**MR C2I 200 - 38 × 300** 132 M 6	151
	5,77	6226	3	**MR C2I 225 - 38 × 300** 132 M 6	156
	6,97	5153	1,5	**MR C2I 160 - 38 × 300** 132 M 6	129
	6,93	5179	1,8	**MR C2I 180 - 38 × 300** 132 M 6	130
	7,7	4665	2	**MR ICI 200 - 38 × 300** 132 M 6	117
	7,08	5074	3,15	**MR C2I 200 - 38 × 300** 132 M 6	127

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
4	**9,3**	3862	1	**MR C2I 140 - 28 × 250** 112 M 4	151
	9,16	3919	1,12	**MR C2I 140 - 38 × 300** 132 M 6	98,2
	9,1	3946	1,6	**MR C2I 160 - 28 × 250** 112 M 4	154
	8,83	4065	2,24	**MR C2I 180 - 28 × 250** 112 M 4	158
	9,62	3732	3	**MR ICI 200 - 38 × 300** 132 M 6	93,5
	11	3183	0,85	**MR C3I 125 - 28 × 250** 112 M 4	127
	11,4	3149	1,32	**MR C2I 140 - 28 × 250** 112 M 4	123
	11,4	3157	1,5	**MR ICI 160 - 28 × 250** 112 M 4	123
	10,8	3313	2,24	**MR C2I 160 - 28 × 250** 112 M 4	129
	11,5	3117	3,55	**MR ICI 200 - 38 × 300** 132 M 6	78,1
	14	2509	1,4	**MR C3I 125 - 28 × 250** 112 M 4	100
	14,5	2473	1,06	**MR ICI 125 - 24 × 200** 112 M * 4	96,4
	14,3	2505	0,95	**MR ICI 125 - 28 × 250** 112 M 4	97,7
	14,5	2473	1,18	**MR ICI 140 - 24 × 200** 112 M * 4	96,4
	14,3	2519	1,7	MR **C2I 140 - 28 × 250** 112 M 4	98,2
	14,2	2525	2,24	**MR ICI 160 - 28 × 250** 112 M 4	98,5
	13,5	2650	2,65	**MR C2I 160 - 28 × 250** 112 M 4	103
	13,8	2601	2,36	**MR ICI 180 - 28 × 250** 112 M 4	101
	16	2251	1,9	**MR C2I 140 - 28 × 250** 112 M 4	87,8
	15,5	2318	3,35	**MR C2I 160 - 28 × 250** 112 M 4	90,4
	17,9	2004	1,25	**MR ICI 125 - 28 × 250** 112 M 4	78,1
	17,9	2004	1,5	**MR ICI 140 - 28 × 250** 112 M 4	78,1
	17,7	2025	1,5	**MR ICI 140 - 38 × 300** 132 M 6	50,8
	17,8	2015	2,24	**MR C2I 140 - 28 × 250** 112 M 4	78,6
	17,9	2004	2,8	**MR ICI 160 - 28 × 250** 112 M 4	78,1
	19,9	1801	2,36	**MR C2I 140 - 28 × 250** 112 M 4	70,2
	22,9	1569	0,8	**MR ICI 100 - 24 × 200** 112 M * 4	61,2
	22,1	1626	1,6	**MR ICI 125 - 28 × 250** 112 M 4	63,4
	22,1	1626	1,8	**MR ICI 140 - 28 × 250** 112 M 4	63,4
	22,6	1589	2,8	**MR C2I 140 - 28 × 250** 112 M 4	62
	22,4	1603	3,55	MR **ICI 160 - 28 × 250** 112 M 4	62,5
	25,3	1420	3	**MR C2I 140 - 28 × 250** 112 M 4	55,4
	29,1	1236	1	**MR ICI 100 - 28 × 250** 112 M 4	48,2
	27,6	1301	2	**MR ICI 125 - 28 × 250** 112 M 4	50,7
	28,8	1273	1,6	**MR CI 125 - 38 × 300** 132 M 6	31,3
	27,6	1301	2,8	**MR ICI 140 - 28 × 250** 112 M 4	50,7
	27,8	1294	3,15	**MR C2I 140 - 28 × 250** 112 M 4	50,4
	36,3	989	1,4	**MR ICI 100 - 28 × 250** 112 M 4	38,5
	38,2	959	1,18	**MR CI 100 - 28 × 250** 112 M 4	36,6
	37,4	982	1,12	**MR CI 100 - 38 × 300** 132 M 6	24,1
	34,5	1041	2,65	**MR ICI 125 - 28 × 250** 112 M 4	40,6
	36	1019	2,5	**MR CI 125 - 38 × 300** 132 M 6	25
	44,6	805	1,6	**MR ICI 100 - 28 × 250** 112 M 4	31,4
	46,5	789	1,32	**MR CI 100 - 28 × 250** 112 M 4	30,1
	46,7	785	1,7	**MR CI 100 - 38 × 300** 132 M 6	19,3
	43,8	820	3,35	**MR ICI 125 - 28 × 250** 112 M 4	32
	45	815	3,15	MR **CI 125 - 38 × 300** 132 M 6	20
	53,8	681	0,85	**MR CI 80 - 28 × 250** 112 M 4	26
	53,8	681	0,95	**MR CI 81 - 28 × 250** 112 M 4	26
	56,6	635	2,5	**MR ICI 100 - 28 × 250** 112 M 4	24,7
	58,1	631	1,7	**MR CI 100 - 28 × 250** 112 M 4	24,1
	53,3	674	4,25	**MR ICI 125 - 28 × 250** 112 M 4	26,3
	56,3	652	4	**MR CI 125 - 38 × 300** 132 M 6	16
	67,3	545	1,06	**MR CI 80 - 28 × 250** 112 M 4	20,8
	67,3	545	1,18	**MR CI 81 - 28 × 250** 112 M 4	20,8
	67,9	528	2,65	**MR ICI 100 - 28 × 250** 112 M 4	20,6
	72,6	505	2,5	**MR CI 100 - 28 × 250** 112 M 4	19,3
	84	437	1,32	**MR CI 80 - 28 × 250** 112 M 4	16,7
	84	437	1,5	**MR CI 81 - 28 × 250** 112 M 4	16,7
	89,2	411	2,65	**MR CI 100 - 28 × 250** 112 M 4	15,7
	107	344	1,9	**MR CI 80 - 28 × 250** 112 M 4	13,1
	107	344	2,24	**MR CI 81 - 28 × 250** 112 M 4	13,1
	113	324	4	MR **CI 100 - 28 × 250** 112 M 4	12,4
	142	259	2	**MR CI 80 - 28 × 250** 112 M 4	9,88
	142	259	2,5	**MR CI 81 - 28 × 250** 112 M 4	9,88

1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).

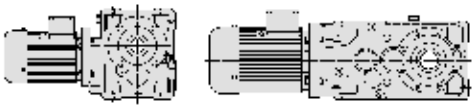


P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
4	**182**	202	2	**MR CI 80 - 28 × 250** 112 M 4	7,71
	182	202	2,5	**MR CI 81 - 28 × 250** 112 M 4	7,71
	227	161	2	**MR CI 80 - 28 × 250** 112 M 4	6,16
	227	161	2,5	**MR CI 81 - 28 × 250** 112 M 4	6,16
5,5	**5,68**	8694	1,06	**MR C2I 180 - 38 × 300** 132 MB 6	158
	5,94	8310	1,6	**MR C2I 200 - 38 × 300** 132 MB 6	151
	5,77	8560	2,24	**MR C2I 225 - 38 × 300** 132 MB 6	156
	6,97	7086	1,06	**MR C2I 160 - 38 × 300** 132 MB 6	129
	6,93	7121	1,32	**MR C2I 180 - 38 × 300** 132 MB 6	130
	7,7	6414	1,5	**MR ICI 200 - 38 × 300** 132 MB 6	117
	7,08	6977	2,24	**MR C2I 200 - 38 × 300** 132 MB 6	127
	7,18	6873	2,65	**MR C2I 225 - 38 × 300** 132 MB 6	125
	9,1	5426	1,18	**MR C2I 160 - 28 × 250** 112 MC 4	154
	9,1	5426	1,18	**MR C2I 160 - 38 × 300** 132 S 4	154
	8,83	5589	1,6	**MR C2I 180 - 28 × 250** 112 MC 4	158
	8,83	5589	1,6	**MR C2I 180 - 38 × 300** 132 S 4	158
	8,67	5697	1,7	**MR C2I 180 - 38 × 300** 132 MB 6	104
	9,62	5131	2,24	**MR ICI 200 - 38 × 300** 132 MB 6	93,5
	9,24	5342	2,36	**MR C2I 200 - 38 × 300** 132 S 4	151
	8,97	5503	3,35	**MR C2I 225 - 38 × 300** 132 S 4	156
	10,3	4814	0,9	**MR C2I 140 - 38 × 300** 132 MB 6	87,8
	11,4	4330	0,95	**MR C2I 140 - 28 × 250** 112 MC 4	123
	11,4	4330	0,95	**MR C2I 140 - 38 × 300** 132 S 4	123
	11,5	4310	1,12	**MR C2I 140 - 38 × 300** 132 MB 6	78,6
	11,4	4341	1,06	MR **ICI 160 - 28 × 250** 112 MC 4	123
	11,4	4314	1,06	**MR ICI 160 - 38 × 300** 132 MB 6	78,6
	10,8	4555	1,6	**MR C2I 160 - 28 × 250** 112 MC 4	129
	10,8	4555	1,6	**MR C2I 160 - 38 × 300** 132 S 4	129
	10,8	4578	2	**MR C2I 180 - 28 × 250** 112 MC 4	130
	10,8	4578	2	MR **C2I 180 - 38 × 300** 132 S 4	130
	12	4124	2,24	**MR ICI 200 - 38 × 300** 132 S 4	117
	11	4485	3,35	**MR C2I 200 - 38 × 300** 132 S 4	127
	14,3	3464	1,25	**MR C2I 140 - 28 × 250** 112 MC 4	98,2
	14,3	3464	1,25	**MR C2I 140 - 38 × 300** 132 S 4	98,2
	14,2	3472	1,6	**MR ICI 160 - 28 × 250** 112 MC 4	98,5
	14,3	3451	1,6	**MR ICI 160 - 38 × 300** 132 MB 6	62,9
	13,5	3644	2	**MR C2I 160 - 28 × 250** 112 MC 4	103
	13,5	3644	2	**MR C2I 160 - 38 × 300** 132 S 4	103
	13,8	3577	1,7	**MR ICI 180 - 28 × 250** 112 MC 4	101
	13,9	3555	1,7	**MR ICI 180 - 38 × 300** 132 MB 6	64,8
	13,5	3662	2,65	**MR C2I 180 - 38 × 300** 132 S 4	104
	15	3299	3,35	**MR ICI 200 - 38 × 300** 132 S 4	93,5
	16	3095	1,4	**MR C2I 140 - 28 × 250** 112 MC 4	87,8
	16	3095	1,4	**MR C2I 140 - 38 × 300** 132 S 4	87,8
	15,5	3188	2,5	**MR C2I 160 - 28 × 250** 112 MC 4	90,4
	15,5	3188	2,5	**MR C2I 160 - 38 × 300** 132 S 4	90,4
	17,9	2755	0,95	**MR ICI 125 - 28 × 250** 112 MC 4	78,1
	17,7	2785	0,9	**MR ICI 125 - 38 × 300** 132 MB 6	50,8
	17,9	2755	1,06	**MR ICI 140 - 28 × 250** 112 MC 4	78,1
	17,7	2785	1,06	**MR ICI 140 - 38 × 300** 132 MB 6	50,8
	17,8	2771	1,7	**MR C2I 140 - 28 × 250** 112 MC 4	78,6
	17,8	2771	1,7	**MR C2I 140 - 38 × 300** 132 S 4	78,6
	17,9	2755	2	**MR ICI 160 - 28 × 250** 112 MC 4	78,1
	17,8	2773	1,6	**MR ICI 160 - 38 × 300** 132 S 4	78,6
	16,9	2915	2,36	**MR C2I 160 - 38 × 300** 132 S 4	82,7
	17,4	2838	2,12	**MR ICI 180 - 28 × 250** 112 MC 4	80,5
	17,4	2844	2,65	**MR ICI 180 - 38 × 300** 132 MB 6	51,8
	17,9	2755	4	**MR ICI 200 - 38 × 300** 132 S 4	78,1
	19,9	2476	1,7	**MR C2I 140 - 28 × 250** 112 MC 4	70,2
	19,9	2476	1,7	**MR C2I 140 - 38 × 300** 132 S 4	70,2
	19,4	2550	3	MR **C2I 160 - 38 × 300** 132 S 4	72,3
	22,1	2236	1,12	**MR ICI 125 - 28 × 250** 112 MC 4	63,4
	22,1	2238	1,06	**MR ICI 125 - 38 × 300** 132 S 4	63,4
	22,2	2228	1,18	**MR ICI 125 - 38 × 300** 132 MB 6	40,6
	22,1	2236	1,32	**MR ICI 140 - 28 × 250** 112 MC 4	63,4
	22,2	2228	1,6	**MR ICI 140 - 38 × 300** 132 MB 6	40,6
	22,6	2185	2	**MR C2I 140 - 28 × 250** 112 MC 4	62
	22,6	2185	2	**MR C2I 140 - 38 × 300** 132 S 4	62
	22,3	2218	2,5	**MR ICI 160 - 38 × 300** 132 S 4	62,9
	21,5	2299	3	**MR C2I 160 - 38 × 300** 132 S 4	65,2

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
5,5	25,3	1952	2,12	**MR C2I 140 - 38 × 300** 132 S 4	55,4
	27,6	1789	1,5	**MR ICI 125 - 28 × 250** 112 MC 4	50,7
	27,6	1790	1,4	**MR ICI 125 - 38 × 300** 132 S 4	50,8
	28,8	1751	1,18	**MR CI 125 - 38 × 300** 132 MB 6	31,3
	27,6	1789	2	**MR ICI 140 - 28 × 250** 112 MC 4	50,7
	27,6	1790	1,6	**MR ICI 140 - 38 × 300** 132 S 4	50,8
	28,1	1756	2	**MR ICI 140 - 38 × 300** 132 MB 6	32
	27,8	1779	2,36	**MR C2I 140 - 38 × 300** 132 S 4	50,4
	27,8	1775	3,15	**MR ICI 160 - 38 × 300** 132 S 4	50,3
	31,1	1590	2,65	**MR C2I 140 - 38 × 300** 132 S 4	45,1
	36,3	1359	1	**MR ICI 100 - 28 × 250** 112 MC 4	38,5
	37,4	1350	0,8	**MR CI 100 - 38 × 300** 132 MB 6	24,1
	34,5	1431	2	**MR ICI 125 - 28 × 250** 112 MC 4	40,6
	34,5	1432	1,8	**MR ICI 125 - 38 × 300** 132 S 4	40,6
	36	1401	1,8	**MR CI 125 - 38 × 300** 132 MB 6	25
	35	1410	2,5	**MR ICI 140 - 28 × 250** 112 MC 4	40
	34,5	1432	2,5	**MR ICI 140 - 38 × 300** 132 S 4	40,6
	36,2	1364	3	**MR C2I 140 - 38 × 300** 132 S 4	38,7
	37,3	1324	3,15	**MR C2I 140 - 38 × 300** 132 S 4	37,5
	44,6	1107	1,18	**MR ICI 100 - 28 × 250** 112 MC 4	31,4
	46,5	1085	0,95	**MR CI 100 - 28 × 250** 112 MC 4	30,1
	46,5	1085	0,95	**MR CI 100 - 38 × 300** 132 S 4	30,1
	46,7	1080	1,25	**MR CI 100 - 38 × 300** 132 MB 6	19,3
	43,1	1146	2,5	**MR ICI 125 - 38 × 300** 132 S 4	32,5
	44,8	1126	1,8	**MR CI 125 - 38 × 300** 132 S 4	31,3
	45	1121	2,36	**MR CI 125 - 38 × 300** 132 MB 6	20
	43,5	1135	3,15	**MR C2I 140 - 38 × 300** 132 S 4	32,2
	47,1	1049	4	MR **C2I 140 - 38 × 300** 132 S 4	29,8
	56,6	873	1,8	**MR ICI 100 - 28 × 250** 112 MC 4	24,7
	58,1	868	1,25	**MR CI 100 - 28 × 250** 112 MC 4	24,1
	58,1	868	1,25	**MR CI 100 - 38 × 300** 132 S 4	24,1
	54,7	903	3	**MR ICI 125 - 38 × 300** 132 S 4	25,6
	56	900	2,8	**MR CI 125 - 38 × 300** 132 S 4	25
	67,3	749	0,9	**MR CI 81 - 28 × 250** 112 MC 4	20,8
	67,9	727	1,9	**MR ICI 100 - 28 × 250** 112 MC 4	20,6
	72,6	694	1,9	**MR CI 100 - 28 × 250** 112 MC 4	19,3
	72,6	694	1,9	**MR CI 100 - 38 × 300** 132 S 4	19,3
	66,5	742	3,75	**MR ICI 125 - 38 × 300** 132 S 4	21
	70	720	3,55	**MR CI 125 - 38 × 300** 132 S 4	20
	84	600	1	**MR CI 80 - 28 × 250** 112 MC 4	16,7
	84	600	1,12	**MR CI 81 - 28 × 250** 112 MC 4	16,7
	89,2	565	2	**MR CI 100 - 28 × 250** 112 MC 4	15,7
	89,2	565	2	**MR CI 100 - 38 × 300** 132 S 4	15,7
	87,5	576	4,25	**MR CI 125 - 38 × 300** 132 S 4	16
	107	473	1,4	**MR CI 80 - 28 × 250** 112 MC 4	13,1
	107	473	1,6	**MR CI 81 - 28 × 250** 112 MC 4	13,1
	113	446	2,8	**MR CI 100 - 28 × 250** 112 MC 4	12,4
	113	446	2,8	**MR CI 100 - 38 × 300** 132 S 4	12,4
	142	356	1,5	**MR CI 80 - 28 × 250** 112 MC 4	9,88
	142	356	1,8	**MR CI 81 - 28 × 250** 112 MC 4	9,88
	136	371	2,8	**MR CI 100 - 28 × 250** 112 MC 4	10,3
	136	371	2,8	**MR CI 100 - 38 × 300** 132 S 4	10,3
	182	278	1,5	**MR CI 80 - 28 × 250** 112 MC 4	7,71
	182	278	1,8	**MR CI 81 - 28 × 250** 112 MC 4	7,71
	174	290	2,8	**MR CI 100 - 38 × 300** 132 S 4	8,06
	227	222	1,5	**MR CI 80 - 28 × 250** 112 MC 4	6,16
	227	222	1,8	**MR CI 81 - 28 × 250** 112 MC 4	6,16
	217	233	2,8	**MR CI 100 - 38 × 300** 132 S 4	6,46
7,5	**5,94**	11332	1,18	**MR C2I 200 - 38 × 300** 132 MC 6	151
	5,94	11332	1,18	MR **C2I 200 - 42 × 350** 160 M 6	151
	5,77	11673	1,6	**MR C2I 225 - 38 × 300** 132 MC 6	156
	5,77	11673	1,6	**MR C2I 225 - 42 × 350** 160 M 6	156
	5,76	11686	2,36	**MR C2I 250 - 42 × 350** 160 M 6	156
	5,85	11509	3,15	**MR C2I 280 - 42 × 350** 160 M 6	154

1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.

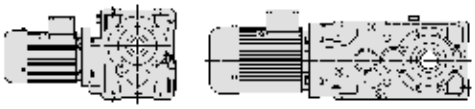
13 - Bevel helical gearmotor selection tables



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)					i
7,5	**6,93**	9711	0,95	**MR C2I 180 - 38 × 300**	132	MC	6		130
	6,93	9711	0,95	**MR C2I 180 - 42 × 350**	160	M	6		130
	7,7	8747	1,06	**MR ICI 200 - 38 × 300**	132	MC	6		117
	7,08	9514	1,6	**MR C2I 200 - 38 × 300**	132	MC	6		127
	7,08	9514	1,6	**MR C2I 200 - 42 × 350**	160	M	6		127
	7,18	9372	1,9	**MR C2I 225 - 38 × 300**	132	MC	6		125
	7,18	9372	1,9	**MR C2I 225 - 42 × 350**	160	M	6		125
	7,31	9207	3,35	**MR C2I 250 - 42 × 350**	160	M	6		123
	8,83	7622	1,18	**MR C2I 180 - 38 × 300**	132	M	4		158
	8,67	7769	1,25	**MR C2I 180 - 38 × 300**	132	MC	6		104
	8,67	7769	1,25	**MR C2I 180 - 42 × 350**	160	M	6		104
	9,62	6997	1,6	**MR ICI 200 - 38 × 300**	132	MC	6		93,5
	9,22	7306	1,32	**MR ICI 200 - 42 × 350**	160	M	6		97,7
	9,24	7285	1,7	**MR C2I 200 - 38 × 300**	132	M	4		151
	8,97	7504	2,36	**MR C2I 225 - 38 × 300**	132	M	4		156
	9,96	6762	1,18	**MR C2I 160 - 38 × 300**	132	MC	6		90,4
	9,96	6762	1,18	**MR C2I 160 - 42 × 350**	160	M	6		90,4
	10,8	6212	1,18	**MR C2I 160 - 38 × 300**	132	M	4		129
	10,8	6243	1,5	**MR C2I 180 - 38 × 300**	132	M	4		130
	12	5623	1,7	**MR ICI 200 - 38 × 300**	132	M	4		117
	11,5	5845	1,9	**MR ICI 200 - 38 × 300**	132	MC	6		78,1
	11,5	5845	1,9	MR **ICI 200 - 42 × 350**	160	M	6		78,1
	11	6116	2,36	**MR C2I 200 - 38 × 300**	132	M	4		127
	12,8	5252	0,85	**MR C2I 140 - 38 × 300**	132	MC	6		70,2
	14,3	4723	0,9	**MR C2I 140 - 38 × 300**	132	M	4		98,2
	14,2	4735	1,18	**MR ICI 160 - 28 × 250**	132	M	*	4	98,5
	14,3	4706	1,18	**MR ICI 160 - 38 × 300**	132	MC	6		62,9
	14,3	4706	1,18	**MR ICI 160 - 42 × 350**	160	M	6		62,9
	13,5	4969	1,4	**MR C2I 160 - 38 × 300**	132	M	4		103
	13,8	4878	1,25	**MR ICI 180 - 28 × 250**	132	M	*	4	101
	13,9	4848	1,25	**MR ICI 180 - 38 × 300**	132	MC	6		64,8
	13,9	4848	1,25	**MR ICI 180 - 42 × 350**	160	M	6		64,8
	13,5	4994	1,9	**MR C2I 180 - 38 × 300**	132	M	4		104
	15	4498	2,5	**MR ICI 200 - 38 × 300**	132	M	4		93,5
	13,8	4893	2,8	**MR C2I 200 - 38 × 300**	132	M	4		102
	16	4220	1	**MR C2I 140 - 38 × 300**	132	M	4		87,8
	15,5	4347	1,8	**MR C2I 160 - 38 × 300**	132	M	4		90,4
	15,6	4328	1,9	**MR C2I 180 - 38 × 300**	132	M	4		90
	15,9	4228	3,55	**MR C2I 200 - 38 × 300**	132	M	4		87,9
	17,9	3757	0,8	**MR ICI 140 - 28 × 250**	132	M	*	4	78,1
	17,7	3797	0,8	**MR ICI 140 - 38 × 300**	132	MC	6		50,8
	17,8	3779	1,25	**MR C2I 140 - 38 × 300**	132	M	4		78,6
	17,9	3757	1,5	MR **ICI 160 - 28 × 250**	132	M	*	4	78,1
	17,8	3782	1,18	**MR ICI 160 - 38 × 300**	132	M	4		78,6
	17,9	3765	1,5	**MR ICI 160 - 38 × 300**	132	MC	6		50,3
	18,3	3683	1,5	**MR ICI 160 - 42 × 350**	160	M	6		49,2
	16,9	3976	1,8	**MR C2I 160 - 38 × 300**	132	M	4		82,7
	17,4	3870	1,5	MR **ICI 180 - 28 × 250**	132	M	*	4	80,5
	17,4	3878	1,9	**MR ICI 180 - 38 × 300**	132	MC	6		51,8
	17,7	3794	1,6	**MR ICI 180 - 42 × 350**	160	M	6		50,7
	16,9	3995	2,36	**MR C2I 180 - 38 × 300**	132	M	4		83,1
	17,9	3757	3	**MR ICI 200 - 38 × 300**	132	M	4		78,1
	19,9	3376	1,25	**MR C2I 140 - 38 × 300**	132	M	4		70,2
	19,4	3477	2,12	**MR C2I 160 - 38 × 300**	132	M	4		72,3
	19,4	3463	2,36	**MR C2I 180 - 38 × 300**	132	M	4		72
	22,1	3049	0,85	**MR ICI 125 - 28 × 250**	132	M	*	4	63,4
	22,2	3038	0,85	**MR ICI 125 - 38 × 300**	132	MC	6		40,6
	22,1	3049	0,95	**MR ICI 140 - 28 × 250**	132	M	*	4	63,4
	22,2	3038	1,18	**MR ICI 140 - 38 × 300**	132	MC	6		40,6
	22,6	2979	1,5	**MR C2I 140 - 38 × 300**	132	M	4		62
	22,3	3025	1,8	**MR ICI 160 - 38 × 300**	132	M	4		62,9
	21,5	3135	2,24	**MR C2I 160 - 38 × 300**	132	M	4		65,2
	21,7	3096	2,36	**MR ICI 180 - 28 × 250**	132	M	*	4	64,4
	21,6	3116	1,9	**MR ICI 180 - 38 × 300**	132	M	4		64,8
	22,4	3006	4	**MR ICI 200 - 38 × 300**	132	M	4		62,5
	25,3	2662	1,6	**MR C2I 140 - 38 × 300**	132	M	4		55,4
	24,6	2742	2,8	**MR C2I 160 - 38 × 300**	132	M	4		57

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)					i
7,5	**27,6**	2441	1,06	**MR ICI 125 - 38 × 300**	132	M	4		50,8
	27,7	2430	1,18	MR **ICI 125 - 38 × 300**	132	MC	6		32,5
	27,6	2439	1,5	**MR ICI 140 - 28 × 250**	132	M	*	4	50,7
	27,6	2441	1,18	**MR ICI 140 - 38 × 300**	132	M	4		50,8
	28,1	2395	1,5	**MR ICI 140 - 38 × 300**	132	MC	6		32
	27,8	2426	1,7	**MR C2I 140 - 38 × 300**	132	M	4		50,4
	27,8	2420	2,36	MR **ICI 160 - 38 × 300**	132	M	4		50,3
	26,8	2508	2,8	**MR C2I 160 - 38 × 300**	132	M	4		52,1
	29,3	2351	1,7	**MR CI 160 - 42 × 350**	160	M	6		30,8
	31,1	2168	2	**MR C2I 140 - 38 × 300**	132	M	4		45,1
	34,5	1953	1,32	**MR ICI 125 - 38 × 300**	132	M	4		40,6
	35,1	1916	1,5	**MR ICI 125 - 38 × 300**	132	MC	6		25,6
	36	1910	1,32	**MR CI 125 - 38 × 300**	132	MC	6		25
	36	1910	1,32	**MR CI 125 - 42 × 350**	160	M	6		25
	34,5	1953	1,8	**MR ICI 140 - 38 × 300**	132	M	4		40,6
	36,2	1859	2,24	**MR C2I 140 - 38 × 300**	132	M	4		38,7
	33,1	2032	3	**MR ICI 160 - 38 × 300**	132	M	4		42,3
	36,6	1881	2,65	**MR CI 160 - 42 × 350**	160	M	6		24,6
	37,3	1805	2,36	**MR C2I 140 - 38 × 300**	132	M	4		37,5
	46,7	1472	0,9	**MR CI 100 - 38 × 300**	132	MC	6		19,3
	43,1	1562	1,8	**MR ICI 125 - 38 × 300**	132	M	4		32,5
	44,8	1535	1,32	**MR CI 125 - 38 × 300**	132	M	4		31,3
	45	1528	1,7	MR **CI 125 - 38 × 300**	132	MC	6		20
	45	1528	1,7	**MR CI 125 - 42 × 350**	160	M	6		20
	43,7	1540	2,24	**MR ICI 140 - 38 × 300**	132	M	4		32
	43,5	1548	2,36	**MR C2I 140 - 38 × 300**	132	M	4		32,2
	45	1528	2,36	**MR CI 140 - 38 × 300**	132	MC	6		20
	45	1528	2,36	MR **CI 140 - 42 × 350**	160	M	6		20
	45,7	1504	3,75	**MR CI 160 - 42 × 350**	160	M	6		19,7
	47,1	1431	3	**MR C2I 140 - 38 × 300**	132	M	4		29,8
	50	1375	2,5	**MR CI 140 - 38 × 300**	132	MC	6		18
	50	1375	2,5	**MR CI 140 - 42 × 350**	160	M	6		18
	58,1	1183	0,9	**MR CI 100 - 38 × 300**	132	M	4		24,1
	54,7	1232	2,24	**MR ICI 125 - 38 × 300**	132	M	4		25,6
	56	1228	2	**MR CI 125 - 38 × 300**	132	M	4		25
	54,9	1227	3,15	**MR C2I 140 - 38 × 300**	132	M	4		25,5
	72,6	947	1,4	**MR CI 100 - 38 × 300**	132	M	4		19,3
	66,5	1012	2,65	**MR ICI 125 - 38 × 300**	132	M	4		21
	70	982	2,65	**MR CI 125 - 38 × 300**	132	M	4		20
	89,2	771	1,4	**MR CI 100 - 38 × 300**	132	M	4		15,7
	87,5	786	3,15	**MR CI 125 - 38 × 300**	132	M	4		16
	113	608	2,12	**MR CI 100 - 38 × 300**	132	M	4		12,4
	111	620	4,25	**MR CI 125 - 38 × 300**	132	M	4		12,6
	136	506	2,12	**MR CI 100 - 38 × 300**	132	M	4		10,3
	135	509	4,5	**MR CI 125 - 38 × 300**	132	M	4		10,4
	174	396	2,12	**MR CI 100 - 38 × 300**	132	M	4		8,06
	175	392	4,5	**MR CI 125 - 38 × 300**	132	M	4		7,98
	217	317	2,12	**MR CI 100 - 38 × 300**	132	M	4		6,46
	222	310	4,5	**MR CI 125 - 38 × 300**	132	M	4		6,31
9,2	**9,24**	8936	1,4	**MR C2I 200 - 38 × 300**	132	MB	4		151
	8,97	9205	2	**MR C2I 225 - 38 × 300**	132	MB	4		156
	10,8	7658	1,18	**MR C2I 180 - 38 × 300**	132	MB	4		130
	12	6897	1,32	**MR ICI 200 - 38 × 300**	132	MB	4		117
	11	7503	2	**MR C2I 200 - 38 × 300**	132	MB	4		127
	11,2	7390	2,36	**MR C2I 225 - 38 × 300**	132	MB	4		125
	13,5	6096	1,18	**MR C2I 160 - 38 × 300**	132	MB	4		103
	13,5	6126	1,6	**MR C2I 180 - 38 × 300**	132	MB	4		104
	15	5518	2	**MR ICI 200 - 38 × 300**	132	MB	4		93,5
	13,8	6002	2,36	**MR C2I 200 - 38 × 300**	132	MB	4		102
	16	5177	0,85	**MR C2I 140 - 38 × 300**	132	MB	4		87,8
	15,5	5332	1,5	MR **C2I 160 - 38 × 300**	132	MB	4		90,4
	15,6	5309	1,6	**MR C2I 180 - 38 × 300**	132	MB	4		90
	15,9	5186	2,8	**MR C2I 200 - 38 × 300**	132	MB	4		87,9

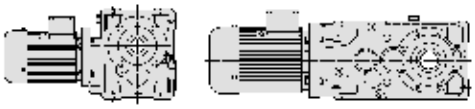
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	*fs*	2)	*i*
9,2	**17,8**	4635	1	**MR C2I 140 - 38 × 300** 132 MB 4	78,6
	17,8	4639	1	**MR ICI 160 - 38 × 300** 132 MB 4	78,6
	16,9	4877	1,4	**MR C2I 160 - 38 × 300** 132 MB 4	82,7
	16,9	4901	1,9	**MR C2I 180 - 38 × 300** 132 MB 4	83,1
	17,9	4609	2,36	**MR ICI 200 - 38 × 300** 132 MB 4	78,1
	17,2	4802	2,8	**MR C2I 200 - 38 × 300** 132 MB 4	81,4
	19,9	4142	1,06	**MR C2I 140 - 38 × 300** 132 MB 4	70,2
	19,4	4266	1,8	**MR C2I 160 - 38 × 300** 132 MB 4	72,3
	19,4	4247	2	**MR C2I 180 - 38 × 300** 132 MB 4	72
	22,6	3655	1,18	**MR C2I 140 - 38 × 300** 132 MB 4	62
	22,3	3711	1,5	**MR ICI 160 - 38 × 300** 132 MB 4	62,9
	21,5	3845	1,8	**MR C2I 160 - 38 × 300** 132 MB 4	65,2
	21,6	3823	1,5	**MR ICI 180 - 38 × 300** 132 MB 4	64,8
	21,4	3864	2,36	**MR C2I 180 - 38 × 300** 132 MB 4	65,5
	22,4	3687	3,15	**MR ICI 200 - 38 × 300** 132 MB 4	62,5
	25,3	3266	1,32	**MR C2I 140 - 38 × 300** 132 MB 4	55,4
	24,6	3363	2,24	**MR C2I 160 - 38 × 300** 132 MB 4	57
	24,7	3349	2,5	**MR C2I 180 - 38 × 300** 132 MB 4	56,8
	27,6	2994	0,85	**MR ICI 125 - 38 × 300** 132 MB 4	50,8
	27,6	2994	0,95	**MR ICI 140 - 38 × 300** 132 MB 4	50,8
	27,8	2976	1,4	**MR C2I 140 - 38 × 300** 132 MB 4	50,4
	27,8	2969	1,9	**MR ICI 160 - 38 × 300** 132 MB 4	50,3
	26,8	3076	2,24	**MR C2I 160 - 38 × 300** 132 MB 4	52,1
	27	3058	2,36	**MR ICI 180 - 38 × 300** 132 MB 4	51,8
	31,1	2659	1,6	**MR C2I 140 - 38 × 300** 132 MB 4	45,1
	30,7	2691	2,8	**MR C2I 160 - 38 × 300** 132 MB 4	45,6
	34,5	2395	1,06	**MR ICI 125 - 38 × 300** 132 MB 4	40,6
	34,5	2395	1,5	**MR ICI 140 - 38 × 300** 132 MB 4	40,6
	36,2	2281	1,8	**MR C2I 140 - 38 × 300** 132 MB 4	38,7
	33,1	2493	2,36	**MR ICI 160 - 38 × 300** 132 MB 4	42,3
	35,4	2332	3,15	**MR C2I 160 - 38 × 300** 132 MB 4	39,5
	37,3	2214	1,9	**MR C2I 140 - 38 × 300** 132 MB 4	37,5
	37,4	2210	3,15	**MR C2I 160 - 38 × 300** 132 MB 4	37,5
	43,1	1916	1,5	**MR ICI 125 - 38 × 300** 132 MB 4	32,5
	44,8	1883	1,06	**MR CI 125 - 38 × 300** 132 MB 4	31,3
	43,7	1889	1,9	**MR ICI 140 - 38 × 300** 132 MB 4	32
	43,5	1899	1,9	**MR C2I 140 - 38 × 300** 132 MB 4	32,2
	42	1965	3,35	**MR ICI 160 - 38 × 300** 132 MB 4	33,3
	43,1	1915	3,35	**MR C2I 160 - 38 × 300** 132 MB 4	32,5
	47,1	1755	2,36	**MR C2I 140 - 38 × 300** 132 MB 4	29,8
	54,7	1511	1,8	**MR ICI 125 - 38 × 300** 132 MB 4	25,6
	56	1506	1,6	**MR CI 125 - 38 × 300** 132 MB 4	25
	53,6	1540	2,24	**MR ICI 140 - 38 × 300** 132 MB 4	26,1
	54,9	1506	2,65	**MR C2I 140 - 38 × 300** 132 MB 4	25,5
	72,6	1161	1,12	**MR CI 100 - 38 × 300** 132 MB 4	19,3
	66,5	1241	2,24	MR **ICI 125 - 38 × 300** 132 MB 4	21
	70	1205	2,12	**MR CI 125 - 38 × 300** 132 MB 4	20
	70	1205	2,8	**MR CI 140 - 38 × 300** 132 MB 4	20
	77,8	1084	3,15	**MR CI 140 - 38 × 300** 132 MB 4	18
	89,2	945	1,18	**MR CI 100 - 38 × 300** 132 MB 4	15,7
	87,5	964	2,65	**MR CI 125 - 38 × 300** 132 MB 4	16
	113	745	1,7	**MR CI 100 - 38 × 300** 132 MB 4	12,4
	111	760	3,55	**MR CI 125 - 38 × 300** 132 MB 4	12,6
	136	621	1,7	**MR CI 100 - 38 × 300** 132 MB 4	10,3
	135	624	3,75	**MR CI 125 - 38 × 300** 132 MB 4	10,4
	174	486	1,7	**MR CI 100 - 38 × 300** 132 MB 4	8,06
	175	481	3,75	**MR CI 125 - 38 × 300** 132 MB 4	7,98
	217	389	1,7	**MR CI 100 - 38 × 300** 132 MB 4	6,46
	222	380	3,75	**MR CI 125 - 38 × 300** 132 MB 4	6,31
11	**5,77**	17121	1,12	**MR C2I 225 - 42 × 350** 160 L 6	156
	5,76	17140	1,6	**MR C2I 250 - 42 × 350** 160 L 6	156
	5,85	16880	2,24	**MR C2I 280 - 42 × 350** 160 L 6	154
	7,08	13954	1,12	MR **C2I 200 - 42 × 350** 160 L 6	127
	7,18	13745	1,32	**MR C2I 225 - 42 × 350** 160 L 6	125
	7,31	13504	2,36	**MR C2I 250 - 42 × 350** 160 L 6	123
	7,17	13764	2,65	**MR C2I 280 - 42 × 350** 160 L 6	125

P_1 kW 1)	n_2 min^{-1}	M_2 N m	*fs*	2)	*i*
11	**9,24**	10684	1,18	**MR C2I 200 - 38 × 300** 132 MC 4	151
	9,24	10684	1,18	**MR C2I 200 - 42 × 350** 160 M 4	151
	8,85	11163	1,32	**MR C2I 200 - 42 × 350** 160 L 6	102
	8,97	11006	1,6	**MR C2I 225 - 38 × 300** 132 MC 4	156
	8,97	11006	1,6	**MR C2I 225 - 42 × 350** 160 M 4	156
	8,98	10996	1,7	**MR C2I 225 - 42 × 350** 160 L 6	100
	8,96	11018	2,36	**MR C2I 250 - 42 × 350** 160 M 4	156
	9,1	10851	3,15	**MR C2I 280 - 42 × 350** 160 M 4	154
	10	9875	0,85	**MR C2I 180 - 42 × 350** 160 L 6	90
	10,8	9156	1	**MR C2I 180 - 38 × 300** 132 MC 4	130
	10,8	9156	1	**MR C2I 180 - 42 × 350** 160 M 4	130
	10,8	9115	1,06	**MR C2I 180 - 42 × 350** 160 L 6	83,1
	12	8247	1,12	**MR ICI 200 - 38 × 300** 132 MC 4	117
	11,5	8572	1,32	**MR ICI 200 - 42 × 350** 160 L 6	78,1
	11	8970	1,6	**MR C2I 200 - 38 × 300** 132 MC 4	127
	11	8970	1,6	**MR C2I 200 - 42 × 350** 160 M 4	127
	11,2	8836	2	**MR C2I 225 - 38 × 300** 132 MC 4	125
	11,2	8836	2	**MR C2I 225 - 42 × 350** 160 M 4	125
	11,4	8681	3,35	**MR C2I 250 - 42 × 350** 160 M 4	123
	13,5	7288	1	**MR C2I 160 - 38 × 300** 132 MC 4	103
	13,5	7288	1	**MR C2I 160 - 42 × 350** 160 M 4	103
	13,9	7110	0,85	**MR ICI 180 - 42 × 350** 160 L 6	64,8
	13,5	7325	1,32	MR **C2I 180 - 38 × 300** 132 MC 4	104
	13,5	7325	1,32	**MR C2I 180 - 42 × 350** 160 M 4	104
	15	6598	1,7	**MR ICI 200 - 38 × 300** 132 MC 4	93,5
	14,3	6888	1,32	**MR ICI 200 - 42 × 350** 160 M 4	97,7
	14,3	6902	1,6	**MR ICI 200 - 42 × 350** 160 L 6	62,9
	13,8	7176	2	MR **C2I 200 - 38 × 300** 132 MC 4	102
	13,8	7176	2	**MR C2I 200 - 42 × 350** 160 M 4	102
	14	7069	2,65	**MR C2I 225 - 42 × 350** 160 M 4	100
	15,5	6375	1,18	**MR C2I 160 - 38 × 300** 132 MC 4	90,4
	15,5	6375	1,18	**MR C2I 160 - 42 × 350** 160 M 4	90,4
	15,6	6348	1,32	**MR C2I 180 - 38 × 300** 132 MC 4	90
	15,6	6348	1,32	**MR C2I 180 - 42 × 350** 160 M 4	90
	15,9	6201	2,36	**MR C2I 200 - 42 × 350** 160 M 4	87,9
	18,3	5402	1	**MR ICI 160 - 42 × 350** 160 L 6	49,2
	16,9	5831	1,18	**MR C2I 160 - 38 × 300** 132 MC 4	82,7
	16,9	5831	1,18	**MR C2I 160 - 42 × 350** 160 M 4	82,7
	16,9	5860	1,6	**MR C2I 180 - 38 × 300** 132 MC 4	83,1
	16,9	5860	1,6	**MR C2I 180 - 42 × 350** 160 M 4	83,1
	17,9	5511	2	**MR ICI 200 - 38 × 300** 132 MC 4	78,1
	17,9	5511	2	**MR ICI 200 - 42 × 350** 160 M 4	78,1
	17,2	5741	2,36	**MR C2I 200 - 42 × 350** 160 M 4	81,4
	19,9	4952	0,85	**MR C2I 140 - 38 × 300** 132 MC 4	70,2
	19,4	5100	1,5	**MR C2I 160 - 38 × 300** 132 MC 4	72,3
	19,4	5100	1,5	**MR C2I 160 - 42 × 350** 160 M 4	72,3
	19,4	5078	1,6	**MR C2I 180 - 38 × 300** 132 MC 4	72
	19,4	5078	1,6	**MR C2I 180 - 42 × 350** 160 M 4	72
	19,9	4961	3	**MR C2I 200 - 42 × 350** 160 M 4	70,3
	22,6	4370	1	**MR C2I 140 - 38 × 300** 132 MC 4	62
	22,3	4437	1,25	**MR ICI 160 - 38 × 300** 132 MC 4	62,9
	22,3	4437	1,25	**MR ICI 160 - 42 × 350** 160 M 4	62,9
	22,9	4321	1,32	**MR ICI 160 - 42 × 350** 160 L 6	39,4
	21,5	4597	1,5	MR **C2I 160 - 38 × 300** 132 MC 4	65,2
	21,5	4597	1,5	**MR C2I 160 - 42 × 350** 160 M 4	65,2
	21,6	4571	1,32	**MR ICI 180 - 38 × 300** 132 MC 4	64,8
	21,6	4571	1,32	**MR ICI 180 - 42 × 350** 160 M 4	64,8
	22,2	4451	1,7	**MR ICI 180 - 42 × 350** 160 L 6	40,6
	21,4	4620	2	MR **C2I 180 - 38 × 300** 132 MC 4	65,5
	21,4	4620	2	**MR C2I 180 - 42 × 350** 160 M 4	65,5
	22,3	4437	2,5	**MR ICI 200 - 42 × 350** 160 M 4	62,9
	25,3	3904	1,06	**MR C2I 140 - 38 × 300** 132 MC 4	55,4
	24,6	4021	1,9	**MR C2I 160 - 38 × 300** 132 MC 4	57
	24,6	4021	1,9	**MR C2I 160 - 42 × 350** 160 M 4	57
	24,7	4004	2	**MR C2I 180 - 42 × 350** 160 M 4	56,8

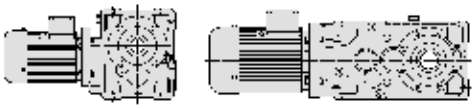
1) Potenze per servizio continuo S1; per servizi S2 ... S10 è possibile **incrementarle** (ved. cap. 1 «Caratteristiche generali»): proporzionalmente M_2 aumenta e *fs* diminuisce.
2) Per la designazione completa per l'ordinazione ved. cap. 2.



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
11	**27,6**	3580	0,8	**MR ICI 140 - 38 × 300**	132	MC	4	50,8
	27,8	3558	1,18	**MR C2I 140 - 38 × 300**	132	MC	4	50,4
	27,8	3550	1,6	**MR ICI 160 - 38 × 300**	132	MC	4	50,3
	28,4	3472	1,6	**MR ICI 160 - 42 × 350**	160	M	4	49,2
	26,8	3678	1,9	**MR C2I 160 - 38 × 300**	132	MC	4	52,1
	26,8	3678	1,9	**MR C2I 160 - 42 × 350**	160	M	4	52,1
	29,3	3448	1,18	**MR CI 160 - 42 × 350**	160	L	6	30,8
	27	3657	2	**MR ICI 180 - 38 × 300**	132	MC	4	51,8
	28,1	3510	2,36	**MR ICI 180 - 42 × 350**	160	L	6	32
	26,7	3696	2,5	**MR C2I 180 - 42 × 350**	160	M	4	52,4
	27,8	3550	3,35	**MR ICI 200 - 42 × 350**	160	M	4	50,3
	31,1	3179	1,32	**MR C2I 140 - 38 × 300**	132	MC	4	45,1
	30,7	3217	2,36	**MR C2I 160 - 38 × 300**	132	MC	4	45,6
	30,7	3217	2,36	**MR C2I 160 - 42 × 350**	160	M	4	45,6
	30,8	3203	2,8	**MR C2I 180 - 42 × 350**	160	M	4	45,4
	34,5	2864	0,9	**MR ICI 125 - 38 × 300**	132	MC	4	40,6
	36	2801	0,9	**MR CI 125 - 42 × 350**	160	L	6	25
	34,5	2864	1,25	**MR ICI 140 - 38 × 300**	132	MC	4	40,6
	36,2	2727	1,5	**MR C2I 140 - 38 × 300**	132	MC	4	38,7
	33,1	2980	2	MR **ICI 160 - 38 × 300**	132	MC	4	42,3
	35,5	2778	2	**MR ICI 160 - 42 × 350**	160	M	4	39,4
	35,4	2788	2,65	**MR C2I 160 - 42 × 350**	160	M	4	39,5
	36,6	2758	1,8	**MR CI 160 - 42 × 350**	160	L	6	24,6
	34,3	2883	2,8	**MR ICI 180 - 38 × 300**	132	MC	4	40,9
	34,5	2862	2,5	MR **ICI 180 - 42 × 350**	160	M	4	40,6
	34,1	2892	3	**MR C2I 180 - 42 × 350**	160	M	4	41
	37,3	2647	1,6	**MR C2I 140 - 38 × 300**	132	MC	4	37,5
	37,4	2643	2,65	**MR C2I 160 - 42 × 350**	160	M	4	37,5
	43,1	2291	1,25	**MR ICI 125 - 38 × 300**	132	MC	4	32,5
	45	2241	1,18	**MR CI 125 - 42 × 350**	160	L	6	20
	43,7	2258	1,6	**MR ICI 140 - 38 × 300**	132	MC	4	32
	43,5	2271	1,6	**MR C2I 140 - 38 × 300**	132	MC	4	32,2
	45	2241	1,6	**MR CI 140 - 42 × 350**	160	L	6	20
	42,3	2332	2,5	**MR ICI 160 - 42 × 350**	160	M	4	33,1
	43,1	2290	2,8	**MR C2I 160 - 42 × 350**	160	M	4	32,5
	45,5	2216	1,8	**MR CI 160 - 42 × 350**	160	M	4	30,8
	45,7	2207	2,5	**MR CI 160 - 42 × 350**	160	L	6	19,7
	47,1	2098	2	**MR C2I 140 - 38 × 300**	132	MC	4	29,8
	50	2017	1,7	**MR CI 140 - 42 × 350**	160	L	6	18
	47,1	2095	3,35	**MR C2I 160 - 42 × 350**	160	M	4	29,7
	54,7	1807	1,5	MR **ICI 125 - 38 × 300**	132	MC	4	25,6
	56	1801	1,4	**MR CI 125 - 38 × 300**	132	MC	4	25
	56	1801	1,4	**MR CI 125 - 42 × 350**	160	M	4	25
	53,6	1841	1,8	**MR ICI 140 - 38 × 300**	132	MC	4	26,1
	54,9	1800	2,12	**MR C2I 140 - 38 × 300**	132	MC	4	25,5
	57,1	1767	2	MR **CI 140 - 42 × 350**	160	L	6	15,8
	53,7	1839	3,75	**MR ICI 160 - 42 × 350**	160	M	4	26,1
	54,4	1815	3,55	**MR C2I 160 - 42 × 350**	160	M	4	25,7
	56,9	1773	2,65	**MR CI 160 - 42 × 350**	160	M	4	24,6
	63,4	1590	2,36	**MR CI 140 - 42 × 350**	160	L	6	14,2
	72,6	1388	0,95	**MR CI 100 - 38 × 300**	132	MC	4	19,3
	66,5	1484	1,8	**MR ICI 125 - 38 × 300**	132	MC	4	21
	70	1441	1,8	**MR CI 125 - 38 × 300**	132	MC	4	20
	70	1441	1,8	**MR CI 125 - 42 × 350**	160	M	4	20
	70	1441	2,36	**MR CI 140 - 38 × 300**	132	MC	4	20
	70	1441	2,36	**MR CI 140 - 42 × 350**	160	M	4	20
	70,8	1394	3,75	**MR ICI 160 - 42 × 350**	160	M	4	19,8
	77,8	1297	2,65	**MR CI 140 - 42 × 350**	160	M	4	18
	89,2	1130	1	**MR CI 100 - 38 × 300**	132	MC	4	15,7
	87,5	1153	2,12	**MR CI 125 - 38 × 300**	132	MC	4	16
	87,5	1153	2,12	**MR CI 125 - 42 × 350**	160	M	4	16
	113	891	1,4	**MR CI 100 - 38 × 300**	132	MC	4	12,4
	111	909	3	**MR CI 125 - 38 × 300**	132	MC	4	12,6
	111	909	3	**MR CI 125 - 42 × 350**	160	M	4	12,6
	136	742	1,4	**MR CI 100 - 38 × 300**	132	MC	4	10,3
	135	746	3	**MR CI 125 - 38 × 300**	132	MC	4	10,4
	135	746	3	**MR CI 125 - 42 × 350**	160	M	4	10,4

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
11	**174**	581	1,4	**MR CI 100 - 38 × 300**	132	MC	4	8,06
	175	575	3	**MR CI 125 - 38 × 300**	132	MC	4	7,98
	175	575	3	**MR CI 125 - 42 × 350**	160	M	4	7,98
	217	465	1,4	**MR CI 100 - 38 × 300**	132	MC	4	6,46
	222	454	3	**MR CI 125 - 38 × 300**	132	MC	4	6,31
	222	454	3	MR **CI 125 - 42 × 350**	160	M	4	6,31
15	**5,76**	23372	1,18	**MR C2I 250 - 48 × 350**	180	L	6	156
	5,85	23018	1,6	**MR C2I 280 - 48 × 350**	180	L	6	154
	7,18	18743	0,95	**MR C2I 225 - 48 × 350**	180	L	6	125
	7,31	18414	1,7	**MR C2I 250 - 48 × 350**	180	L	6	123
	7,17	18768	1,9	**MR C2I 280 - 48 × 350**	180	L	6	125
	8,97	15009	1,18	**MR C2I 225 - 42 × 350**	160	L	4	156
	8,98	14995	1,25	**MR C2I 225 - 48 × 350**	180	L	6	100
	8,96	15025	1,7	**MR C2I 250 - 42 × 350**	160	L	4	156
	9,1	14797	2,36	**MR C2I 280 - 42 × 350**	160	L	4	154
	10,2	13153	1,18	**MR C2I 200 - 48 × 350**	180	L	6	87,9
	11	12232	1,18	**MR C2I 200 - 42 × 350**	160	L	4	127
	11,2	12049	1,5	**MR C2I 225 - 42 × 350**	160	L	4	125
	11,4	11838	2,5	**MR C2I 250 - 42 × 350**	160	L	4	123
	13,5	9988	0,95	**MR C2I 180 - 42 × 350**	160	L	4	104
	15	8997	1,25	**MR ICI 200 - 38 × 300**	160	L	* 4	93,5
	14,3	9393	1	**MR ICI 200 - 42 × 350**	160	L	4	97,7
	14,3	9412	1,18	**MR ICI 200 - 48 × 350**	180	L	6	62,9
	13,8	9786	1,4	**MR C2I 200 - 42 × 350**	160	L	4	102
	14	9639	2	**MR C2I 225 - 42 × 350**	160	L	4	100
	14,2	9470	3	**MR C2I 250 - 42 × 350**	160	L	4	98,5
	15,6	8656	0,95	**MR C2I 180 - 42 × 350**	160	L	4	90
	15,9	8456	1,8	**MR C2I 200 - 42 × 350**	160	L	4	87,9
	15,5	8681	2,24	**MR C2I 225 - 42 × 350**	160	L	4	90,3
	16,9	7991	1,18	**MR C2I 180 - 42 × 350**	160	L	4	83,1
	17,9	7514	1,5	**MR ICI 200 - 42 × 350**	160	L	4	78,1
	17,2	7829	1,8	**MR C2I 200 - 42 × 350**	160	L	4	81,4
	17,5	7711	2,5	MR **C2I 225 - 42 × 350**	160	L	4	80,2
	19,4	6955	1,06	**MR C2I 160 - 42 × 350**	160	L	4	72,3
	19,4	6925	1,18	**MR C2I 180 - 42 × 350**	160	L	4	72
	19,9	6764	2,12	**MR C2I 200 - 42 × 350**	160	L	4	70,3
	19,4	6945	2,65	**MR C2I 225 - 42 × 350**	160	L	4	72,2
	22,3	6050	0,9	**MR ICI 160 - 42 × 350**	160	L	4	62,9
	21,5	6269	1,12	**MR C2I 160 - 42 × 350**	160	L	4	65,2
	22,2	6070	1,25	**MR ICI 180 - 48 × 350**	180	L	6	40,6
	21,4	6300	1,5	**MR C2I 180 - 42 × 350**	160	L	4	65,5
	22,3	6050	1,8	**MR ICI 200 - 42 × 350**	160	L	4	62,9
	21,8	6173	2,24	**MR C2I 200 - 42 × 350**	160	L	4	64,2
	24,6	5484	1,4	**MR C2I 160 - 42 × 350**	160	L	4	57
	24,7	5460	1,5	**MR C2I 180 - 42 × 350**	160	L	4	56,8
	25,2	5334	2,8	**MR C2I 200 - 42 × 350**	160	L	4	55,5
	27,8	4852	0,85	**MR C2I 140 - 38 × 300**	160	L	* 4	50,4
	28,4	4735	1,12	**MR ICI 160 - 42 × 350**	160	L	4	49,2
	26,8	5015	1,4	MR **C2I 160 - 42 × 350**	160	L	4	52,1
	28,1	4786	1,7	**MR ICI 180 - 48 × 350**	180	L	6	32
	26,7	5040	1,8	**MR C2I 180 - 42 × 350**	160	L	4	52,4
	27,8	4840	2,36	**MR ICI 200 - 42 × 350**	160	L	4	50,3
	26	5182	2,65	**MR C2I 200 - 42 × 350**	160	L	4	53,9
	29,3	4702	1,7	MR **CI 200 - 48 × 350**	180	L	6	30,8
	31,1	4335	1	**MR C2I 140 - 38 × 300**	160	L	* 4	45,1
	30,7	4387	1,7	**MR C2I 160 - 42 × 350**	160	L	4	45,6
	30,8	4368	2,12	**MR C2I 180 - 42 × 350**	160	L	4	45,4
	34,5	3906	0,9	**MR ICI 140 - 38 × 300**	160	L	* 4	40,6
	36,2	3719	1,12	**MR C2I 140 - 38 × 300**	160	L	* 4	38,7
	35,5	3788	1,5	**MR ICI 160 - 42 × 350**	160	L	4	39,4
	35,4	3802	2	**MR C2I 160 - 42 × 350**	160	L	4	39,5
	36,6	3761	1,32	**MR CI 160 - 48 × 350**	180	L	6	24,6
	34,5	3902	1,9	**MR ICI 180 - 42 × 350**	160	L	4	40,6
	34,1	3943	2,12	**MR C2I 180 - 42 × 350**	160	L	4	41
	33,1	4064	3	**MR ICI 200 - 42 × 350**	160	L	4	42,3
	36,6	3761	2,65	**MR CI 200 - 48 × 350**	180	L	6	24,6

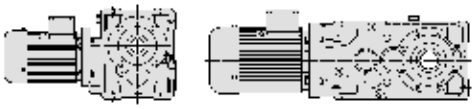
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)						i
15	**37,3**	3610	1,18	**MR C2I 140 - 38 × 300**	160	L	*	4		37,5
	37,4	3603	2	**MR C2I 160 - 42 × 350**	160	L		4		37,5
	37,5	3588	2,5	**MR C2I 180 - 42 × 350**	160	L		4		37,3
	45	3056	0,85	MR **CI 125 - 48 × 350**	180	L		6		20
	43,7	3079	1,12	**MR ICI 140 - 38 × 300**	160	L	*	4		32
	43,5	3097	1,18	**MR C2I 140 - 38 × 300**	160	L	*	4		32,2
	45	3056	1,18	**MR CI 140 - 48 × 350**	180	L		6		20
	42,3	3180	1,9	**MR ICI 160 - 42 × 350**	160	L		4		33,1
	43,1	3123	2	MR **C2I 160 - 42 × 350**	160	L		4		32,5
	45,5	3022	1,32	**MR CI 160 - 42 × 350**	160	L		4		30,8
	45,7	3009	1,9	**MR CI 160 - 48 × 350**	180	L		6		19,7
	43,8	3077	2,65	**MR ICI 180 - 42 × 350**	160	L		4		32
	41,6	3239	2,5	**MR C2I 180 - 42 × 350**	160	L		4		33,7
	44,4	3100	2,24	MR **CI 180 - 48 × 350**	180	L		6		20,3
	45,7	3009	3,75	**MR CI 200 - 48 × 350**	180	L		6		19,7
	47,1	2861	1,5	**MR C2I 140 - 38 × 300**	160	L	*	4		29,8
	50	2750	1,25	**MR CI 140 - 48 × 350**	180	L		6		18
	47,1	2856	2,5	**MR C2I 160 - 42 × 350**	160	L		4		29,7
	56	2456	1	**MR CI 125 - 42 × 350**	160	L		4		25
	53,6	2511	1,32	**MR ICI 140 - 38 × 300**	160	L	*	4		26,1
	54,9	2455	1,6	**MR C2I 140 - 38 × 300**	160	L	*	4		25,5
	57,1	2410	1,5	**MR CI 140 - 48 × 350**	180	L		6		15,8
	53,7	2508	2,65	**MR ICI 160 - 42 × 350**	160	L		4		26,1
	54,4	2476	2,5	**MR C2I 160 - 42 × 350**	160	L		4		25,7
	56,9	2418	2	**MR CI 160 - 42 × 350**	160	L		4		24,6
	63,4	2169	1,7	**MR CI 140 - 48 × 350**	180	L		6		14,2
	70	1965	1,32	**MR CI 125 - 42 × 350**	160	L		4		20
	70	1965	1,7	**MR CI 140 - 42 × 350**	160	L		4		20
	70,8	1901	2,8	**MR ICI 160 - 42 × 350**	160	L		4		19,8
	71,1	1934	2,8	MR **CI 160 - 42 × 350**	160	L		4		19,7
	77,8	1768	1,9	**MR CI 140 - 42 × 350**	160	L		4		18
	77,8	1768	3	**MR CI 160 - 42 × 350**	160	L		4		18
	87,5	1572	1,6	**MR CI 125 - 42 × 350**	160	L		4		16
	88,8	1549	2,12	**MR CI 140 - 42 × 350**	160	L		4		15,8
	84,7	1624	3	**MR CI 160 - 42 × 350**	160	L		4		16,5
	98,6	1394	2,5	**MR CI 140 - 42 × 350**	160	L		4		14,2
	111	1239	2,12	**MR CI 125 - 42 × 350**	160	L		4		12,6
	135	1018	2,24	**MR CI 125 - 42 × 350**	160	L		4		10,4
	175	784	2,24	**MR CI 125 - 42 × 350**	160	L		4		7,98
	222	620	2,24	**MR CI 125 - 42 × 350**	160	L		4		6,31
18,5	**5,85**	28389	1,32	**MR C2I 280 - 55 × 400**	200	LR		6		154
	5,76	28826	1,6	MR **C2I 320 - 55 × 400**	200	LR		6		156
	5,76	28826	2	**MR C2I 321 - 55 × 400**	200	LR		6		156
	5,59	29694	2,5	**MR C2I 360 - 55 × 400**	200	LR		6		161
	7,31	22711	1,4	**MR C2I 250 - 55 × 400**	200	LR		6		123
	7,17	23148	1,6	**MR C2I 280 - 55 × 400**	200	LR		6		125
	6,97	23811	2,24	**MR C2I 320 - 55 × 400**	200	LR		6		129
	6,97	23811	2,8	**MR C2I 321 - 55 × 400**	200	LR		6		129
	8,98	18493	1,06	**MR C2I 225 - 55 × 400**	200	LR		6		100
	8,96	18531	1,4	**MR C2I 250 - 48 × 350**	180	M		4		156
	9,14	18169	1,7	**MR C2I 250 - 55 × 400**	200	LR		6		98,5
	9,1	18250	1,9	**MR C2I 280 - 48 × 350**	180	M		4		154
	8,97	18518	2,12	**MR C2I 280 - 55 × 400**	200	LR		6		100
	9,97	16655	1,18	**MR C2I 225 - 55 × 400**	200	LR		6		90,3
	10	16547	2,36	**MR C2I 280 - 55 × 400**	200	LR		6		89,7
	11	15087	0,95	**MR C2I 200 - 48 × 350**	180	M		4		127
	11,2	14861	1,18	**MR C2I 225 - 48 × 350**	180	M		4		125
	11,2	14795	1,4	MR **C2I 225 - 55 × 400**	200	LR		6		80,2
	11,4	14600	2	**MR C2I 250 - 48 × 350**	180	M		4		123
	11,2	14881	2,36	**MR C2I 280 - 48 × 350**	180	M		4		125
	14,3	11608	0,95	**MR ICI 200 - 55 × 400**	200	LR		6		62,9
	13,8	12069	1,18	**MR C2I 200 - 48 × 350**	180	M		4		102
	14	11889	1,6	**MR C2I 225 - 48 × 350**	180	M		4		100
	14,2	11680	2,5	**MR C2I 250 - 48 × 350**	180	M		4		98,5

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)					i
18,5	**15,9**	10429	1,4	**MR C2I 200 - 48 × 350**	180	M		4	87,9
	15,5	10707	1,8	**MR C2I 225 - 48 × 350**	180	M		4	90,3
	15,7	10557	2,8	**MR C2I 250 - 48 × 350**	180	M		4	89
	16,9	9855	0,95	**MR C2I 180 - 48 × 350**	180	M		4	83,1
	17,8	9328	1	**MR ICI 200 - 48 × 350**	180	M		4	78,6
	18,3	9084	1,18	**MR ICI 200 - 55 × 400**	200	LR		6	49,2
	17,2	9655	1,4	**MR C2I 200 - 48 × 350**	180	M		4	81,4
	17,5	9511	2,12	**MR C2I 225 - 48 × 350**	180	M		4	80,2
	17,8	9344	3	**MR C2I 250 - 48 × 350**	180	M		4	78,8
	19,4	8541	0,95	MR **C2I 180 - 48 × 350**	180	M		4	72
	19,9	8343	1,8	**MR C2I 200 - 48 × 350**	180	M		4	70,3
	19,4	8565	2,12	**MR C2I 225 - 48 × 350**	180	M		4	72,2
	21,4	7770	1,18	**MR C2I 180 - 48 × 350**	180	M		4	65,5
	22,3	7462	1,5	**MR ICI 200 - 48 × 350**	180	M		4	62,9
	21,8	7613	1,8	**MR C2I 200 - 48 × 350**	180	M		4	64,2
	22,1	7499	2,65	**MR C2I 225 - 48 × 350**	180	M		4	63,2
	24,6	6763	1,12	**MR C2I 160 - 48 × 350**	180	M		4	57
	24,7	6734	1,18	**MR C2I 180 - 48 × 350**	180	M		4	56,8
	25,2	6578	2,24	**MR C2I 200 - 48 × 350**	180	M		4	55,5
	24,6	6753	2,65	**MR C2I 225 - 48 × 350**	180	M		4	56,9
	28,4	5840	0,95	**MR ICI 160 - 48 × 350**	180	M		4	49,2
	26,8	6186	1,12	**MR C2I 160 - 48 × 350**	180	M		4	52,1
	26,7	6216	1,5	**MR C2I 180 - 48 × 350**	180	M		4	52,4
	27,8	5970	1,9	**MR ICI 200 - 48 × 350**	180	M		4	50,3
	26	6392	2,12	**MR C2I 200 - 48 × 350**	180	M		4	53,9
	29,3	5799	1,4	**MR CI 200 - 55 × 400**	200	LR		6	30,8
	26,4	6296	2,8	**MR C2I 225 - 48 × 350**	180	M		4	53,1
	30,7	5410	1,4	**MR C2I 160 - 48 × 350**	180	M		4	45,6
	30,8	5387	1,7	**MR C2I 180 - 48 × 350**	180	M		4	45,4
	30,1	5523	2,65	**MR C2I 200 - 48 × 350**	180	M		4	46,6
	35,5	4672	1,25	**MR ICI 160 - 48 × 350**	180	M		4	39,4
	35,4	4689	1,6	**MR C2I 160 - 48 × 350**	180	M		4	39,5
	36,6	4639	1,06	**MR CI 160 - 55 × 400**	200	LR		6	24,6
	34,5	4813	1,5	**MR ICI 180 - 48 × 350**	180	M		4	40,6
	34,1	4864	1,7	**MR C2I 180 - 48 × 350**	180	M		4	41
	33,1	5012	2,36	**MR ICI 200 - 48 × 350**	180	M		4	42,3
	32,9	5052	2,65	**MR C2I 200 - 48 × 350**	180	M		4	42,6
	36,6	4639	2,12	**MR CI 200 - 55 × 400**	200	LR		6	24,6
	37,4	4444	1,6	**MR C2I 160 - 48 × 350**	180	M		4	37,5
	37,5	4425	2	**MR C2I 180 - 48 × 350**	180	M		4	37,3
	39,7	4187	3	**MR C2I 200 - 48 × 350**	180	M		4	35,3
	42,3	3923	1,5	**MR ICI 160 - 48 × 350**	180	M		4	33,1
	43,1	3852	1,6	**MR C2I 160 - 48 × 350**	180	M		4	32,5
	45,5	3728	1,06	**MR CI 160 - 48 × 350**	180	M		4	30,8
	45,7	3711	1,5	**MR CI 160 - 55 × 400**	200	LR		6	19,7
	43,8	3795	2,12	**MR ICI 180 - 48 × 350**	180	M		4	32
	41,6	3995	2	**MR C2I 180 - 48 × 350**	180	M		4	33,7
	44,4	3823	1,8	**MR CI 180 - 55 × 400**	200	LR		6	20,3
	42	3952	3,35	**MR ICI 200 - 48 × 350**	180	M		4	33,3
	43,4	3829	3,35	**MR C2I 200 - 48 × 350**	180	M		4	32,3
	45,5	3728	2,12	**MR CI 200 - 48 × 350**	180	M		4	30,8
	45,7	3711	3,15	**MR CI 200 - 55 × 400**	200	LR		6	19,7
	47,1	3523	2	**MR C2I 160 - 48 × 350**	180	M		4	29,7
	47,3	3508	2,5	**MR C2I 180 - 48 × 350**	180	M		4	29,6
	48,2	3518	2	**MR CI 180 - 55 × 400**	200	LR		6	18,7
	50	3319	3,75	**MR C2I 200 - 48 × 350**	180	M		4	28
	56	3029	0,8	**MR CI 125 - 48 × 350**	180	M		4	25
	53,7	3093	2,12	**MR ICI 160 - 48 × 350**	180	M		4	26,1
	54,4	3053	2,12	**MR C2I 160 - 48 × 350**	180	M		4	25,7
	56,9	2982	1,6	**MR CI 160 - 48 × 350**	180	M		4	24,6
	52,4	3167	2,65	**MR C2I 180 - 48 × 350**	180	M		4	26,7
	56,3	3014	2,36	**MR CI 180 - 55 × 400**	200	LR		6	16
	56,9	2982	3,15	**MR CI 200 - 48 × 350**	180	M		4	24,6
	70	2423	1,06	**MR CI 125 - 48 × 350**	180	M		4	20
	70	2423	1,4	**MR CI 140 - 48 × 350**	180	M		4	20
	70,8	2345	2,24	**MR ICI 160 - 48 × 350**	180	M		4	19,8
	71,1	2386	2,24	**MR CI 160 - 48 × 350**	180	M		4	19,7
	69	2458	2,8	**MR CI 180 - 48 × 350**	180	M		4	20,3

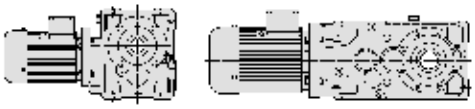
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
18,5	**77,8**	2181	1,6	**MR CI 140 - 48 × 350** 180 M 4	18
	77,8	2181	2,5	**MR CI 160 - 48 × 350** 180 M 4	18
	87,5	1938	1,32	**MR CI 125 - 48 × 350** 180 M 4	16
	88,8	1910	1,8	**MR CI 140 - 48 × 350** 180 M 4	15,8
	84,7	2003	2,5	MR **CI 160 - 48 × 350** 180 M 4	16,5
	98,6	1719	2	**MR CI 140 - 48 × 350** 180 M 4	14,2
	98,6	1719	3,15	**MR CI 160 - 48 × 350** 180 M 4	14,2
	111	1528	1,7	**MR CI 125 - 48 × 350** 180 M 4	12,6
	109	1558	2	**MR CI 140 - 48 × 350** 180 M 4	12,9
	107	1579	3,55	**MR CI 160 - 48 × 350** 180 M 4	13
	122	1392	2	**MR CI 140 - 48 × 350** 180 M 4	11,5
	123	1381	3,55	**MR CI 160 - 48 × 350** 180 M 4	11,4
	135	1255	1,8	**MR CI 125 - 48 × 350** 180 M 4	10,4
	142	1194	2	**MR CI 140 - 48 × 350** 180 M 4	9,86
	142	1197	3,55	**MR CI 160 - 48 × 350** 180 M 4	9,88
	175	966	1,8	**MR CI 125 - 48 × 350** 180 M 4	7,98
	182	934	3,55	**MR CI 160 - 48 × 350** 180 M 4	7,71
	222	764	1,8	**MR CI 125 - 48 × 350** 180 M 4	6,31
	227	746	3,55	**MR CI 160 - 48 × 350** 180 M 4	6,16
22	**5,85**	33760	1,12	**MR C2I 280 - 55 × 400** 200 L 6	154
	5,76	34279	1,32	**MR C2I 320 - 55 × 400** 200 L 6	156
	5,76	34279	1,6	**MR C2I 321 - 55 × 400** 200 L 6	156
	5,59	35312	2,12	**MR C2I 360 - 55 × 400** 200 L 6	161
	7,31	27008	1,18	**MR C2I 250 - 55 × 400** 200 L 6	123
	7,17	27527	1,32	**MR C2I 280 - 55 × 400** 200 L 6	125
	6,97	28316	1,9	**MR C2I 320 - 55 × 400** 200 L 6	129
	6,97	28316	2,36	MR **C2I 321 - 55 × 400** 200 L 6	129
	8,96	22037	1,18	**MR C2I 250 - 48 × 350** 180 L 4	156
	9,14	21606	1,4	**MR C2I 250 - 55 × 400** 200 L 6	98,5
	9,1	21703	1,6	**MR C2I 280 - 48 × 350** 180 L 4	154
	8,97	22022	1,8	**MR C2I 280 - 55 × 400** 200 L 6	100
	9,97	19806	1	**MR C2I 225 - 55 × 400** 200 L 6	90,3
	10,1	19529	1,6	**MR C2I 250 - 55 × 400** 200 L 6	89
	10	19677	2	**MR C2I 280 - 55 × 400** 200 L 6	89,7
	11,2	17672	1	**MR C2I 225 - 48 × 350** 180 L 4	125
	11,2	17594	1,18	**MR C2I 225 - 55 × 400** 200 L 6	80,2
	11,4	17362	1,7	**MR C2I 250 - 48 × 350** 180 L 4	123
	11,2	17696	2	**MR C2I 280 - 48 × 350** 180 L 4	125
	13,8	14353	1	**MR C2I 200 - 48 × 350** 180 L 4	102
	14	14138	1,32	**MR C2I 225 - 48 × 350** 180 L 4	100
	14,2	13890	2	**MR C2I 250 - 48 × 350** 180 L 4	98,5
	14	14157	2,65	**MR C2I 280 - 48 × 350** 180 L 4	100
	15,9	12402	1,18	**MR C2I 200 - 48 × 350** 180 L 4	87,9
	15,5	12732	1,5	**MR C2I 225 - 48 × 350** 180 L 4	90,3
	15,7	12554	2,36	**MR C2I 250 - 48 × 350** 180 L 4	89
	18,3	10803	1	**MR ICI 200 - 55 × 400** 200 L 6	49,2
	17,2	11482	1,18	**MR C2I 200 - 48 × 350** 180 L 4	81,4
	17,5	11310	1,7	**MR C2I 225 - 48 × 350** 180 L 4	80,2
	17,8	11112	2,5	**MR C2I 250 - 48 × 350** 180 L 4	78,8
	19,9	9921	1,5	**MR C2I 200 - 48 × 350** 180 L 4	70,3
	19,4	10186	1,8	**MR C2I 225 - 48 × 350** 180 L 4	72,2
	19,7	10043	2,8	**MR C2I 250 - 48 × 350** 180 L 4	71,2
	21,4	9240	1	**MR C2I 180 - 48 × 350** 180 L 4	65,5
	22,3	8874	1,25	MR **ICI 200 - 48 × 350** 180 L 4	62,9
	21,8	9053	1,5	**MR C2I 200 - 48 × 350** 180 L 4	64,2
	22,1	8918	2,24	**MR C2I 225 - 48 × 350** 180 L 4	63,2
	24,7	8008	1	**MR C2I 180 - 48 × 350** 180 L 4	56,8
	25,2	7822	1,9	**MR C2I 200 - 48 × 350** 180 L 4	55,5
	24,6	8031	2,24	**MR C2I 225 - 48 × 350** 180 L 4	56,9
	26,8	7356	0,95	**MR C2I 160 - 48 × 350** 180 L 4	52,1
	26,7	7392	1,25	**MR C2I 180 - 48 × 350** 180 L 4	52,4
	27,8	7099	1,6	**MR ICI 200 - 48 × 350** 180 L 4	50,3
	26	7601	1,8	**MR C2I 200 - 48 × 350** 180 L 4	53,9
	29,3	6896	1,18	**MR CI 200 - 55 × 400** 200 L 6	30,8
	26,4	7487	2,36	**MR C2I 225 - 48 × 350** 180 L 4	53,1

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
22	**30,7**	6434	1,18	**MR C2I 160 - 48 × 350** 180 L 4	45,6
	30,8	6407	1,4	**MR C2I 180 - 48 × 350** 180 L 4	45,4
	30,1	6568	2,24	**MR C2I 200 - 48 × 350** 180 L 4	46,6
	29,3	6743	2,65	**MR C2I 225 - 48 × 350** 180 L 4	47,8
	35,5	5556	1	MR **ICI 160 - 48 × 350** 180 L 4	39,4
	35,4	5576	1,32	**MR C2I 160 - 48 × 350** 180 L 4	39,5
	36,6	5516	0,9	**MR CI 160 - 55 × 400** 200 L 6	24,6
	34,5	5723	1,25	**MR ICI 180 - 48 × 350** 180 L 4	40,6
	34,1	5784	1,5	**MR C2I 180 - 48 × 350** 180 L 4	41
	33,1	5960	2	MR **ICI 200 - 48 × 350** 180 L 4	42,3
	32,9	6007	2,24	**MR C2I 200 - 48 × 350** 180 L 4	42,6
	36,6	5516	1,8	**MR CI 200 - 55 × 400** 200 L 6	24,6
	33,8	5841	3,15	**MR C2I 225 - 48 × 350** 180 L 4	41,4
	37,4	5285	1,32	**MR C2I 160 - 48 × 350** 180 L 4	37,5
	37,5	5263	1,7	**MR C2I 180 - 48 × 350** 180 L 4	37,3
	39,7	4979	2,65	**MR C2I 200 - 48 × 350** 180 L 4	35,3
	42,3	4665	1,25	**MR ICI 160 - 48 × 350** 180 L 4	33,1
	43,1	4580	1,4	**MR C2I 160 - 48 × 350** 180 L 4	32,5
	45,7	4413	1,32	**MR CI 160 - 55 × 400** 200 L 6	19,7
	43,8	4513	1,8	**MR ICI 180 - 48 × 350** 180 L 4	32
	41,6	4751	1,7	**MR C2I 180 - 48 × 350** 180 L 4	33,7
	44,4	4546	1,6	**MR CI 180 - 55 × 400** 200 L 6	20,3
	42	4700	2,8	**MR ICI 200 - 48 × 350** 180 L 4	33,3
	43,4	4554	2,8	**MR C2I 200 - 48 × 350** 180 L 4	32,3
	45,5	4433	1,8	**MR CI 200 - 48 × 350** 180 L 4	30,8
	45,7	4413	2,65	**MR CI 200 - 55 × 400** 200 L 6	19,7
	47,1	4189	1,7	**MR C2I 160 - 48 × 350** 180 L 4	29,7
	50	4034	1,4	**MR CI 160 - 55 × 400** 200 L 6	18
	47,3	4172	2,12	**MR C2I 180 - 48 × 350** 180 L 4	29,6
	48,2	4183	1,7	**MR CI 180 - 55 × 400** 200 L 6	18,7
	50	3947	3,15	**MR C2I 200 - 48 × 350** 180 L 4	28
	53,7	3678	1,8	**MR ICI 160 - 48 × 350** 180 L 4	26,1
	54,4	3631	1,7	**MR C2I 160 - 48 × 350** 180 L 4	25,7
	56,9	3546	1,32	**MR CI 160 - 48 × 350** 180 L 4	24,6
	53,4	3696	1,9	**MR ICI 180 - 48 × 350** 180 L 4	26,2
	52,4	3766	2,24	MR **C2I 180 - 48 × 350** 180 L 4	26,7
	56,3	3584	2	**MR CI 180 - 55 × 400** 200 L 6	16
	53,2	3714	3	**MR ICI 200 - 48 × 350** 180 L 4	26,3
	54,7	3610	3,55	**MR C2I 200 - 48 × 350** 180 L 4	25,6
	56,9	3546	2,65	**MR CI 200 - 48 × 350** 180 L 4	24,6
	61,1	3298	2,36	**MR CI 180 - 55 × 400** 200 L 6	14,7
	70	2881	0,9	**MR CI 125 - 48 × 350** 180 L 4	20
	70	2881	1,18	**MR CI 140 - 48 × 350** 180 L 4	20
	70,8	2788	1,9	**MR ICI 160 - 48 × 350** 180 L 4	19,8
	71,1	2837	1,9	**MR CI 160 - 48 × 350** 180 L 4	19,7
	69	2923	2,36	**MR CI 180 - 48 × 350** 180 L 4	20,3
	77,8	2593	1,32	**MR CI 140 - 48 × 350** 180 L 4	18
	77,8	2593	2,12	**MR CI 160 - 48 × 350** 180 L 4	18
	87,5	2305	1,06	**MR CI 125 - 48 × 350** 180 L 4	16
	88,8	2272	1,5	**MR CI 140 - 48 × 350** 180 L 4	15,8
	84,7	2382	2,12	**MR CI 160 - 48 × 350** 180 L 4	16,5
	98,6	2045	1,7	**MR CI 140 - 48 × 350** 180 L 4	14,2
	98,6	2045	2,65	**MR CI 160 - 48 × 350** 180 L 4	14,2
	111	1817	1,5	**MR CI 125 - 48 × 350** 180 L 4	12,6
	109	1852	1,7	**MR CI 140 - 48 × 350** 180 L 4	12,9
	107	1878	3	**MR CI 160 - 48 × 350** 180 L 4	13
	122	1655	1,7	**MR CI 140 - 48 × 350** 180 L 4	11,5
	123	1643	3	**MR CI 160 - 48 × 350** 180 L 4	11,4
	135	1493	1,5	**MR CI 125 - 48 × 350** 180 L 4	10,4
	142	1420	1,7	**MR CI 140 - 48 × 350** 180 L 4	9,86
	142	1424	3	**MR CI 160 - 48 × 350** 180 L 4	9,88
	175	1149	1,5	**MR CI 125 - 48 × 350** 180 L 4	7,98
	182	1111	3	**MR CI 160 - 48 × 350** 180 L 4	7,71
	222	909	1,5	**MR CI 125 - 48 × 350** 180 L 4	6,31
	227	887	3	**MR CI 160 - 48 × 350** 180 L 4	6,16

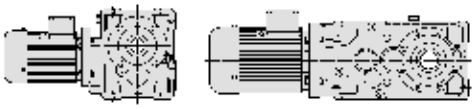
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
30	**5,76**	46744	1,18	**MR C2I 321 - 60 × 450** 225	M		6	156
	5,59	48153	1,6	**MR C2I 360 - 60 × 450** 225	M		6	161
	7,17	37537	0,95	**MR C2I 280 - 60 × 450** 225	M		6	125
	6,97	38613	1,4	MR **C2I 320 - 60 × 450** 225	M		6	129
	6,97	38613	1,7	**MR C2I 321 - 60 × 450** 225	M		6	129
	7,09	37980	1,9	**MR C2I 360 - 60 × 450** 225	M		6	127
	9,14	29463	1,06	**MR C2I 250 - 60 × 450** 225	M		6	98,5
	9,1	29595	1,18	**MR C2I 280 - 55 × 400** 200	L		4	154
	8,97	30030	1,32	**MR C2I 280 - 60 × 450** 225	M		6	100
	8,96	30050	1,4	**MR C2I 320 - 55 × 400** 200	L		4	156
	8,96	30050	1,8	**MR C2I 321 - 55 × 400** 200	L		4	156
	8,7	30955	2,36	**MR C2I 360 - 55 × 400** 200	L		4	161
	10,1	26630	1,18	**MR C2I 250 - 60 × 450** 225	M		6	89
	10	26832	1,5	**MR C2I 280 - 60 × 450** 225	M		6	89,7
	11,4	23676	1,25	**MR C2I 250 - 55 × 400** 200	L		4	123
	11,2	24131	1,5	**MR C2I 280 - 55 × 400** 200	L		4	125
	10,8	24822	2	**MR C2I 320 - 55 × 400** 200	L		4	129
	10,8	24822	2,5	**MR C2I 321 - 55 × 400** 200	L		4	129
	14	19279	1	**MR C2I 225 - 55 × 400** 200	L		4	100
	14,2	18940	1,5	MR **C2I 250 - 55 × 400** 200	L		4	98,5
	14	19305	1,9	**MR C2I 280 - 55 × 400** 200	L		4	100
	13,6	19858	2,5	**MR C2I 320 - 55 × 400** 200	L		4	103
	15,5	17362	1,12	**MR C2I 225 - 55 × 400** 200	L		4	90,3
	15,7	17119	1,7	**MR C2I 250 - 55 × 400** 200	L		4	89
	15,6	17249	2,24	**MR C2I 280 - 55 × 400** 200	L		4	89,7
	17,5	15423	1,25	**MR C2I 225 - 55 × 400** 200	L		4	80,2
	17,8	15152	1,8	**MR C2I 250 - 55 × 400** 200	L		4	78,8
	17,4	15444	2,36	**MR C2I 280 - 55 × 400** 200	L		4	80,3
	19,9	13529	1,06	**MR C2I 200 - 55 × 400** 200	L		4	70,3
	19,4	13890	1,32	**MR C2I 225 - 55 × 400** 200	L		4	72,2
	19,7	13695	2,12	**MR C2I 250 - 55 × 400** 200	L		4	71,2
	19,5	13799	3	**MR C2I 280 - 55 × 400** 200	L		4	71,7
	22,3	12101	0,9	**MR ICI 200 - 55 × 400** 200	L		4	62,9
	21,8	12345	1,12	**MR C2I 200 - 55 × 400** 200	L		4	64,2
	22,1	12160	1,6	**MR C2I 225 - 55 × 400** 200	L		4	63,2
	22,5	11947	2,36	MR **C2I 250 - 55 × 400** 200	L		4	62,1
	25,2	10667	1,4	**MR C2I 200 - 55 × 400** 200	L		4	55,5
	24,6	10951	1,6	**MR C2I 225 - 55 × 400** 200	L		4	56,9
	24,9	10798	2,65	**MR C2I 250 - 55 × 400** 200	L		4	56,1
	26,7	10080	0,9	**MR C2I 180 - 48 × 350** 200	L	*	4	52,4
	28,4	9470	1,18	**MR ICI 200 - 55 × 400** 200	L		4	49,2
	26	10365	1,32	**MR C2I 200 - 55 × 400** 200	L		4	53,9
	26,4	10210	1,7	**MR C2I 225 - 55 × 400** 200	L		4	53,1
	26,8	10031	2,8	**MR C2I 250 - 55 × 400** 200	L		4	52,1
	28,4	9697	1,7	**MR CI 250 - 60 × 450** 225	M		6	31,7
	30,8	8736	1,06	**MR C2I 180 - 48 × 350** 200	L	*	4	45,4
	30,1	8956	1,6	**MR C2I 200 - 55 × 400** 200	L		4	46,6
	29,3	9195	2	**MR C2I 225 - 55 × 400** 200	L		4	47,8
	29,7	9066	3,15	**MR C2I 250 - 55 × 400** 200	L		4	47,1
	32,2	8531	1,7	**MR CI 250 - 60 × 450** 225	M		6	27,9
	34,5	7804	0,95	**MR ICI 180 - 48 × 350** 200	L	*	4	40,6
	34,1	7887	1,06	MR **C2I 180 - 48 × 350** 200	L	*	4	41
	35,5	7576	1,5	**MR ICI 200 - 55 × 400** 200	L		4	39,4
	32,9	8192	1,6	**MR C2I 200 - 55 × 400** 200	L		4	42,6
	36,6	7522	1,32	**MR CI 200 - 60 × 450** 225	M		6	24,6
	33,8	7965	2,24	**MR C2I 225 - 55 × 400** 200	L		4	41,4
	35,5	7758	2,65	MR **CI 250 - 60 × 450** 225	M		6	25,4
	37,5	7176	1,25	**MR C2I 180 - 48 × 350** 200	L	*	4	37,3
	39,7	6789	1,9	**MR C2I 200 - 55 × 400** 200	L		4	35,3
	38,6	6970	2,5	**MR C2I 225 - 55 × 400** 200	L		4	36,2
	45,7	6018	0,95	**MR CI 160 - 60 × 450** 225	M		6	19,7
	43,8	6154	1,32	**MR ICI 180 - 48 × 350** 200	L	*	4	32
	41,6	6479	1,25	**MR C2I 180 - 48 × 350** 200	L	*	4	33,7
	44,4	6199	1,12	**MR CI 180 - 60 × 450** 225	M		6	20,3
	42,3	6361	1,8	**MR ICI 200 - 55 × 400** 200	L		4	33,1
	43,4	6210	2,12	**MR C2I 200 - 55 × 400** 200	L		4	32,3
	45,5	6045	1,32	**MR CI 200 - 55 × 400** 200	L		4	30,8
	45,7	6018	1,9	**MR CI 200 - 60 × 450** 225	M		6	19,7
	44,6	6038	2,5	**MR C2I 225 - 55 × 400** 200	L		4	31,4
	44,4	6199	2,24	**MR CI 225 - 60 × 450** 225	M		6	20,3

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)				i
30	**50**	5501	1	**MR CI 160 - 60 × 450** 225	M		6	18
	47,3	5688	1,6	**MR C2I 180 - 48 × 350** 200	L	*	4	29,6
	48,2	5705	1,25	**MR CI 180 - 60 × 450** 225	M		6	18,7
	50	5382	2,36	**MR C2I 200 - 55 × 400** 200	L		4	28
	48,7	5525	3,35	**MR C2I 225 - 55 × 400** 200	L		4	28,7
	56,9	4836	1	**MR CI 160 - 55 × 400** 200	L		4	24,6
	53,4	5040	1,4	**MR ICI 180 - 48 × 350** 200	L	*	4	26,2
	52,4	5135	1,6	MR **C2I 180 - 48 × 350** 200	L	*	4	26,7
	56,3	4888	1,5	**MR CI 180 - 60 × 450** 225	M		6	16
	53,7	5015	2,65	**MR ICI 200 - 55 × 400** 200	L		4	26,1
	54,7	4922	2,65	**MR C2I 200 - 55 × 400** 200	L		4	25,6
	56,9	4836	2	**MR CI 200 - 55 × 400** 200	L		4	24,6
	56,3	4786	3,35	MR **C2I 225 - 55 × 400** 200	L		4	24,9
	61,1	4498	1,7	**MR CI 180 - 60 × 450** 225	M		6	14,7
	70	3929	0,85	**MR CI 140 - 48 × 350** 200	L	*	4	20
	71,1	3869	1,4	**MR CI 160 - 55 × 400** 200	L		4	19,7
	69	3985	1,7	**MR CI 180 - 55 × 400** 200	L		4	20,3
	67,9	3964	2,8	**MR ICI 200 - 55 × 400** 200	L		4	20,6
	71,1	3869	3	**MR CI 200 - 55 × 400** 200	L		4	19,7
	77,8	3536	0,95	**MR CI 140 - 48 × 350** 200	L	*	4	18
	77,8	3536	1,5	**MR CI 160 - 55 × 400** 200	L		4	18
	75	3667	1,9	**MR CI 180 - 55 × 400** 200	L		4	18,7
	77,8	3536	3	**MR CI 200 - 55 × 400** 200	L		4	18
	88,8	3098	1,06	MR **CI 140 - 48 × 350** 200	L	*	4	15,8
	84,7	3248	1,5	**MR CI 160 - 55 × 400** 200	L		4	16,5
	87,5	3142	2,24	**MR CI 180 - 55 × 400** 200	L		4	16
	98,6	2788	1,25	**MR CI 140 - 48 × 350** 200	L	*	4	14,2
	98,6	2788	2	**MR CI 160 - 55 × 400** 200	L		4	14,2
	95,1	2891	2,5	**MR CI 180 - 55 × 400** 200	L		4	14,7
	109	2526	1,25	**MR CI 140 - 48 × 350** 200	L	*	4	12,9
	107	2561	2,24	**MR CI 160 - 55 × 400** 200	L		4	13
	122	2257	1,25	**MR CI 140 - 48 × 350** 200	L	*	4	11,5
	123	2240	2,24	**MR CI 160 - 55 × 400** 200	L		4	11,4
	142	1936	1,25	**MR CI 140 - 48 × 350** 200	L	*	4	9,86
	142	1941	2,24	MR **CI 160 - 55 × 400** 200	L		4	9,88
	182	1515	2,24	**MR CI 160 - 55 × 400** 200	L		4	7,71
	227	1210	2,24	**MR CI 160 - 55 × 400** 200	L		4	6,16
37	**5,59**	59388	1,25	**MR C2I 360 - 65 × 550** 250	M		6	161
	6,97	47622	1,12	**MR C2I 320 - 65 × 550** 250	M		6	129
	6,97	47622	1,4	**MR C2I 321 - 65 × 550** 250	M		6	129
	7,09	46842	1,6	MR **C2I 360 - 65 × 550** 250	M		6	127
	8,97	37036	1,06	**MR C2I 280 - 65 × 550** 250	M		6	100
	8,96	37061	1,18	**MR C2I 320 - 60 × 450** 225	S		4	156
	8,96	37061	1,4	**MR C2I 321 - 60 × 450** 225	S		4	156
	8,72	38098	1,4	**MR C2I 320 - 65 × 550** 250	M		6	103
	8,72	38098	1,7	**MR C2I 321 - 65 × 550** 250	M		6	103
	8,7	38178	2	**MR C2I 360 - 60 × 450** 225	S		4	161
	8,86	37473	2,12	**MR C2I 360 - 65 × 550** 250	M		6	102
	10	33093	1,18	**MR C2I 280 - 65 × 550** 250	M		6	89,7
	11,4	29200	1	**MR C2I 250 - 60 × 450** 225	S		4	123
	11,2	29761	1,18	**MR C2I 280 - 60 × 450** 225	S		4	125
	11,2	29629	1,32	**MR C2I 280 - 65 × 550** 250	M		6	80,3
	10,8	30614	1,7	**MR C2I 320 - 60 × 450** 225	S		4	129
	10,8	30614	2,12	**MR C2I 321 - 60 × 450** 225	S		4	129
	11	30112	2,36	**MR C2I 360 - 60 × 450** 225	S		4	127
	14,2	23360	1,18	**MR C2I 250 - 60 × 450** 225	S		4	98,5
	14	23809	1,5	MR **C2I 280 - 60 × 450** 225	S		4	100
	13,6	24491	2	**MR C2I 320 - 60 × 450** 225	S		4	103
	13,6	24491	2,5	**MR C2I 321 - 60 × 450** 225	S		4	103
	15,5	21413	0,9	**MR C2I 225 - 60 × 450** 225	S		4	90,3
	15,7	21114	1,4	**MR C2I 250 - 60 × 450** 225	S		4	89
	15,6	21274	1,8	**MR C2I 280 - 60 × 450** 225	S		4	89,7
	15,8	21079	2,24	**MR C2I 320 - 60 × 450** 225	S		4	88,8
	17,5	19022	1,06	**MR C2I 225 - 60 × 450** 225	S		4	80,2
	17,8	18688	1,5	**MR C2I 250 - 60 × 450** 225	S		4	78,8
	17,4	19047	1,9	**MR C2I 280 - 60 × 450** 225	S		4	80,3
	17	19593	2,5	**MR C2I 320 - 60 × 450** 225	S		4	82,6

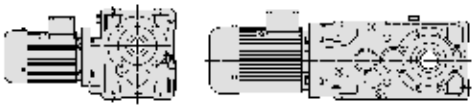
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)				*i*
37	**19,4**	17131	1,06	**MR C2I 225 - 60 × 450** 225	S	4		72,2
	19,7	16891	1,7	**MR C2I 250 - 60 × 450** 225	S	4		71,2
	19,5	17019	2,36	**MR C2I 280 - 60 × 450** 225	S	4		71,7
	22,1	14998	1,32	**MR C2I 225 - 60 × 450** 225	S	4		63,2
	22,5	14735	1,9	**MR C2I 250 - 60 × 450** 225	S	4		62,1
	22,1	15018	2,36	MR **C2I 280 - 60 × 450** 225	S	4		63,3
	25,2	13156	1,12	**MR C2I 200 - 60 × 450** 225	S	4		55,5
	24,6	13507	1,32	**MR C2I 225 - 60 × 450** 225	S	4		56,9
	24,9	13318	2,12	**MR C2I 250 - 60 × 450** 225	S	4		56,1
	24,8	13419	3	**MR C2I 280 - 60 × 450** 225	S	4		56,6
	28,4	11680	0,95	**MR ICI 200 - 60 × 450** 225	S	4		49,2
	26	12783	1,06	**MR C2I 200 - 60 × 450** 225	S	4		53,9
	26,4	12592	1,4	**MR C2I 225 - 60 × 450** 225	S	4		53,1
	26,8	12371	2,24	**MR C2I 250 - 60 × 450** 225	S	4		52,1
	28,4	11960	1,4	**MR CI 250 - 65 × 550** 250	M	6		31,7
	26,3	12609	2,8	**MR C2I 280 - 60 × 450** 225	S	4		53,1
	30,1	11046	1,32	**MR C2I 200 - 60 × 450** 225	S	4		46,6
	29,3	11340	1,6	**MR C2I 225 - 60 × 450** 225	S	4		47,8
	29,7	11182	2,5	**MR C2I 250 - 60 × 450** 225	S	4		47,1
	32,2	10522	1,4	**MR CI 250 - 65 × 550** 250	M	6		27,9
	35,5	9344	1,25	**MR ICI 200 - 60 × 450** 225	S	4		39,4
	32,9	10103	1,32	MR **C2I 200 - 60 × 450** 225	S	4		42,6
	36,6	9278	1,06	**MR CI 200 - 65 × 550** 250	M	6		24,6
	33,8	9824	1,8	**MR C2I 225 - 60 × 450** 225	S	4		41,4
	32,7	10162	2,8	**MR C2I 250 - 60 × 450** 225	S	4		42,8
	35,5	9568	2,12	**MR CI 250 - 65 × 550** 250	M	6		25,4
	39,7	8373	1,5	**MR C2I 200 - 60 × 450** 225	S	4		35,3
	38,6	8597	2	**MR C2I 225 - 60 × 450** 225	S	4		36,2
	37,6	8837	3	**MR C2I 250 - 60 × 450** 225	S	4		37,2
	40,3	8418	2,12	**MR CI 250 - 65 × 550** 250	M	6		22,3
	42,3	7845	1,5	**MR ICI 200 - 60 × 450** 225	S	4		33,1
	43,4	7659	1,7	**MR C2I 200 - 60 × 450** 225	S	4		32,3
	45,5	7455	1,06	**MR CI 200 - 60 × 450** 225	S	4		30,8
	45,7	7422	1,5	**MR CI 200 - 65 × 550** 250	M	6		19,7
	44,6	7447	2	**MR C2I 225 - 60 × 450** 225	S	4		31,4
	44,4	7646	1,8	**MR CI 225 - 65 × 550** 250	M	6		20,3
	41,4	8031	3,15	**MR C2I 250 - 60 × 450** 225	S	4		33,9
	44,1	7688	2,12	**MR CI 250 - 60 × 450** 225	S	4		31,7
	44,3	7654	2,8	**MR CI 250 - 65 × 550** 250	M	6		20,3
	50	6637	1,9	**MR C2I 200 - 60 × 450** 225	S	4		28
	48,7	6814	2,65	**MR C2I 225 - 60 × 450** 225	S	4		28,7
	48,2	7036	1,8	**MR CI 225 - 65 × 550** 250	M	6		18,7
	47,4	7005	3,75	**MR C2I 250 - 60 × 450** 225	S	4		29,5
	50,1	6764	2,12	**MR CI 250 - 60 × 450** 225	S	4		27,9
	53,7	6186	2,12	**MR ICI 200 - 60 × 450** 225	S	4		26,1
	54,7	6071	2,12	**MR C2I 200 - 60 × 450** 225	S	4		25,6
	56,9	5964	1,6	**MR CI 200 - 60 × 450** 225	S	4		24,6
	56,3	5903	2,8	MR **C2I 225 - 60 × 450** 225	S	4		24,9
	56,3	6028	2,36	**MR CI 225 - 65 × 550** 250	M	6		16
	52,2	6366	4	**MR C2I 250 - 60 × 450** 225	S	4		26,8
	55,2	6151	3,15	**MR CI 250 - 60 × 450** 225	S	4		25,4
	71,1	4771	1,12	**MR CI 160 - 60 × 450** 225	S	4		19,7
	69	4915	1,4	**MR CI 180 - 60 × 450** 225	S	4		20,3
	67,9	4889	2,24	**MR ICI 200 - 60 × 450** 225	S	4		20,6
	71,1	4771	2,36	**MR CI 200 - 60 × 450** 225	S	4		19,7
	69	4915	2,8	**MR CI 225 - 60 × 450** 225	S	4		20,3
	77,8	4361	1,25	**MR CI 160 - 60 × 450** 225	S	4		18
	75	4523	1,6	**MR CI 180 - 60 × 450** 225	S	4		18,7
	77,8	4361	2,5	**MR CI 200 - 60 × 450** 225	S	4		18
	84,7	4006	1,25	**MR CI 160 - 60 × 450** 225	S	4		16,5
	87,5	3875	1,8	**MR CI 180 - 60 × 450** 225	S	4		16
	84,7	4006	2,5	**MR CI 200 - 60 × 450** 225	S	4		16,5
	98,6	3439	1,6	**MR CI 160 - 60 × 450** 225	S	4		14,2
	95,1	3566	2	MR **CI 180 - 60 × 450** 225	S	4		14,7
	98,6	3439	3,35	**MR CI 200 - 60 × 450** 225	S	4		14,2
	107	3159	1,8	**MR CI 160 - 60 × 450** 225	S	4		13
	107	3174	2	**MR CI 180 - 60 × 450** 225	S	4		13,1
	107	3159	3,55	**MR CI 200 - 60 × 450** 225	S	4		13

P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)				*i*
37	123	2763	1,8	**MR CI 160 - 60 × 450** 225	S	4		11,4
	123	2751	2	**MR CI 180 - 60 × 450** 225	S	4		11,4
	124	2729	3,55	**MR CI 200 - 60 × 450** 225	S	4		11,3
	142	2394	1,8	**MR CI 160 - 60 × 450** 225	S	4		9,88
	137	2484	2	**MR CI 180 - 60 × 450** 225	S	4		10,3
	136	2496	3,55	**MR CI 200 - 60 × 450** 225	S	4		10,3
	182	1868	1,8	MR **CI 160 - 60 × 450** 225	S	4		7,71
	174	1953	3,55	**MR CI 200 - 60 × 450** 225	S	4		8,06
	227	1492	1,8	**MR CI 160 - 60 × 450** 225	S	4		6,16
	217	1565	3,55	**MR CI 200 - 60 × 450** 225	S	4		6,46
45	**5,59**	72229	1,06	**MR C2I 360 - 75 × 550** 280	S	6		161
	6,97	57919	1,12	**MR C2I 321 - 75 × 550** 280	S	6		129
	7,09	56969	1,32	**MR C2I 360 - 75 × 550** 280	S	6		127
	8,96	45075	0,95	**MR C2I 320 - 60 × 450** 225	M	4		156
	8,96	45075	1,18	**MR C2I 321 - 60 × 450** 225	M	4		156
	8,72	46335	1,12	**MR C2I 320 - 75 × 550** 280	S	6		103
	8,72	46335	1,4	**MR C2I 321 - 75 × 550** 280	S	6		103
	8,7	46433	1,6	MR **C2I 360 - 60 × 450** 225	M	4		161
	8,86	45576	1,7	**MR C2I 360 - 75 × 550** 280	S	6		102
	10	40249	0,95	**MR C2I 280 - 75 × 550** 280	S	6		89,7
	10,1	39879	1,25	**MR C2I 320 - 75 × 550** 280	S	6		88,8
	11,2	36196	1	**MR C2I 280 - 60 × 450** 225	M	4		125
	11,2	36035	1,06	**MR C2I 280 - 75 × 550** 280	S	6		80,3
	10,8	37234	1,4	**MR C2I 320 - 60 × 450** 225	M	4		129
	10,8	37234	1,7	**MR C2I 321 - 60 × 450** 225	M	4		129
	11	36623	2	**MR C2I 360 - 60 × 450** 225	M	4		127
	14,2	28411	1	**MR C2I 250 - 60 × 450** 225	M	4		98,5
	14	28957	1,25	**MR C2I 280 - 60 × 450** 225	M	4		100
	13,6	29787	1,7	**MR C2I 320 - 60 × 450** 225	M	4		103
	13,6	29787	2,12	**MR C2I 321 - 60 × 450** 225	M	4		103
	13,8	29299	2,65	**MR C2I 360 - 60 × 450** 225	M	4		102
	15,7	25679	1,12	**MR C2I 250 - 60 × 450** 225	M	4		89
	15,6	25874	1,5	**MR C2I 280 - 60 × 450** 225	M	4		89,7
	15,8	25636	1,8	MR **C2I 320 - 60 × 450** 225	M	4		88,8
	15,8	25636	2,24	**MR C2I 321 - 60 × 450** 225	M	4		88,8
	17,8	22729	1,18	**MR C2I 250 - 60 × 450** 225	M	4		78,8
	17,4	23166	1,6	**MR C2I 280 - 60 × 450** 225	M	4		80,3
	17	23829	2	**MR C2I 320 - 60 × 450** 225	M	4		82,6
	17	23829	2,5	**MR C2I 321 - 60 × 450** 225	M	4		82,6
	19,4	20835	0,9	**MR C2I 225 - 60 × 450** 225	M	4		72,2
	19,7	20543	1,4	**MR C2I 250 - 60 × 450** 225	M	4		71,2
	19,5	20699	1,9	**MR C2I 280 - 60 × 450** 225	M	4		71,7
	19,7	20509	2,24	**MR C2I 320 - 60 × 450** 225	M	4		71,1
	22,1	18241	1,06	**MR C2I 225 - 60 × 450** 225	M	4		63,2
	22,5	17921	1,5	**MR C2I 250 - 60 × 450** 225	M	4		62,1
	22,1	18265	2	**MR C2I 280 - 60 × 450** 225	M	4		63,3
	21,5	18789	2,5	**MR C2I 320 - 60 × 450** 225	M	4		65,1
	24,6	16427	1,12	**MR C2I 225 - 60 × 450** 225	M	4		56,9
	24,9	16197	1,7	**MR C2I 250 - 60 × 450** 225	M	4		56,1
	24,8	16321	2,5	MR **C2I 280 - 60 × 450** 225	M	4		56,6
	26,4	15315	1,12	**MR C2I 225 - 60 × 450** 225	M	4		53,1
	26,8	15046	1,8	**MR C2I 250 - 60 × 450** 225	M	4		52,1
	28,4	14545	1,18	**MR CI 250 - 75 × 550** 280	S	6		31,7
	26,3	15335	2,36	**MR C2I 280 - 60 × 450** 225	M	4		53,1
	30,1	13434	1,06	**MR C2I 200 - 60 × 450** 225	M	4		46,6
	29,3	13792	1,32	**MR C2I 225 - 60 × 450** 225	M	4		47,8
	29,7	13599	2	**MR C2I 250 - 60 × 450** 225	M	4		47,1
	32,2	12797	1,18	**MR CI 250 - 75 × 550** 280	S	6		27,9
	29,5	13702	2,65	**MR C2I 280 - 60 × 450** 225	M	4		47,5
	35,5	11364	1	**MR ICI 200 - 60 × 450** 225	M	4		39,4
	32,9	12287	1,06	**MR C2I 200 - 60 × 450** 225	M	4		42,6
	36,6	11284	0,85	**MR CI 200 - 75 × 550** 280	S	6		24,6
	33,8	11948	1,5	**MR C2I 225 - 60 × 450** 225	M	4		41,4
	32,7	12359	2,36	**MR C2I 250 - 60 × 450** 225	M	4		42,8
	35,5	11636	1,7	**MR CI 250 - 75 × 550** 280	S	6		25,4
	33,7	11990	3	**MR C2I 280 - 60 × 450** 225	M	4		41,6

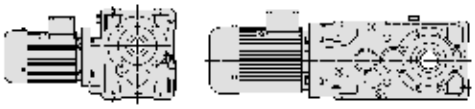
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and *f*s decreases.
2) For complete designation when ordering see ch. 2.



P_1 kW 1)	n_2 min^{-1}	M_2 N m	*fs*	2)				*i*
45	**39,7**	10184	1,25	**MR C2I 200 - 60 × 450** 225	M	4		35,3
	38,6	10455	1,7	**MR C2I 225 - 60 × 450** 225	M	4		36,2
	37,6	10748	2,5	**MR C2I 250 - 60 × 450** 225	M	4		37,2
	40,3	10238	1,7	**MR CI 250 - 75 × 550** 280	S	6		22,3
	42,3	9541	1,25	**MR ICI 200 - 60 × 450** 225	M	4		33,1
	43,4	9315	1,4	**MR C2I 200 - 60 × 450** 225	M	4		32,3
	45,7	9027	1,25	**MR CI 200 - 75 × 550** 280	S	6		19,7
	44,6	9057	1,7	**MR C2I 225 - 60 × 450** 225	M	4		31,4
	44,4	9299	1,5	**MR CI 225 - 75 × 550** 280	S	6		20,3
	41,4	9768	2,65	**MR C2I 250 - 60 × 450** 225	M	4		33,9
	44,1	9351	1,8	**MR CI 250 - 60 × 450** 225	M	4		31,7
	44,3	9309	2,36	**MR CI 250 - 75 × 550** 280	S	6		20,3
	50	8072	1,6	**MR C2I 200 - 60 × 450** 225	M	4		28
	50	8251	1,32	**MR CI 200 - 75 × 550** 280	S	6		18
	48,7	8288	2,12	**MR C2I 225 - 60 × 450** 225	M	4		28,7
	48,2	8557	1,5	**MR CI 225 - 75 × 550** 280	S	6		18,7
	47,4	8520	3,15	**MR C2I 250 - 60 × 450** 225	M	4		29,5
	50,1	8227	1,8	**MR CI 250 - 60 × 450** 225	M	4		27,9
	50,4	8190	2,65	**MR CI 250 - 75 × 550** 280	S	6		17,9
	47,1	8584	4,25	**MR C2I 280 - 60 × 450** 225	M	4		29,8
	53,7	7523	1,8	**MR ICI 200 - 60 × 450** 225	M	4		26,1
	54,7	7384	1,7	**MR C2I 200 - 60 × 450** 225	M	4		25,6
	56,9	7254	1,32	**MR CI 200 - 60 × 450** 225	M	4		24,6
	56,3	7180	2,24	**MR C2I 225 - 60 × 450** 225	M	4		24,9
	56,3	7332	2	**MR CI 225 - 75 × 550** 280	S	6		16
	52,2	7743	3,35	**MR C2I 250 - 60 × 450** 225	M	4		26,8
	55,2	7480	2,65	**MR CI 250 - 60 × 450** 225	M	4		25,4
	53,8	7511	4,5	**MR C2I 280 - 60 × 450** 225	M	4		26
	61,1	6747	2,24	**MR CI 225 - 75 × 550** 280	S	6		14,7
	62,7	6581	2,65	**MR CI 250 - 60 × 450** 225	M	4		22,3
	71,1	5803	0,95	**MR CI 160 - 60 × 450** 225	M	4		19,7
	69	5978	1,12	**MR CI 180 - 60 × 450** 225	M	4		20,3
	67,9	5946	1,8	**MR ICI 200 - 60 × 450** 225	M	4		20,6
	71,1	5803	1,9	**MR CI 200 - 60 × 450** 225	M	4		19,7
	69	5978	2,24	**MR CI 225 - 60 × 450** 225	M	4		20,3
	77,8	5304	1	**MR CI 160 - 60 × 450** 225	M	4		18
	75	5501	1,32	**MR CI 180 - 60 × 450** 225	M	4		18,7
	77,8	5304	2	**MR CI 200 - 60 × 450** 225	M	4		18
	75	5501	2,24	**MR CI 225 - 60 × 450** 225	M	4		18,7
	84,7	4872	1	**MR CI 160 - 60 × 450** 225	M	4		16,5
	87,5	4713	1,5	**MR CI 180 - 60 × 450** 225	M	4		16
	84,7	4872	2	**MR CI 200 - 60 × 450** 225	M	4		16,5
	87,5	4713	3	**MR CI 225 - 60 × 450** 225	M	4		16
	98,6	4182	1,32	**MR CI 160 - 60 × 450** 225	M	4		14,2
	95,1	4337	1,7	**MR CI 180 - 60 × 450** 225	M	4		14,7
	98,6	4182	2,65	**MR CI 200 - 60 × 450** 225	M	4		14,2
	107	3841	1,5	**MR CI 160 - 60 × 450** 225	M	4		13
	107	3861	1,7	**MR CI 180 - 60 × 450** 225	M	4		13,1
	107	3841	3	**MR CI 200 - 60 × 450** 225	M	4		13
	123	3360	1,5	**MR CI 160 - 60 × 450** 225	M	4		11,4
	123	3346	1,7	**MR CI 180 - 60 × 450** 225	M	4		11,4
	124	3319	3	**MR CI 200 - 60 × 450** 225	M	4		11,3
	142	2912	1,5	**MR CI 160 - 60 × 450** 225	M	4		9,88
	137	3021	1,7	**MR CI 180 - 60 × 450** 225	M	4		10,3
	136	3036	3	**MR CI 200 - 60 × 450** 225	M	4		10,3
	182	2272	1,5	**MR CI 160 - 60 × 450** 225	M	4		7,71
	174	2375	3	**MR CI 200 - 60 × 450** 225	M	4		8,06
	227	1815	1,5	**MR CI 160 - 60 × 450** 225	M	4		6,16
	217	1903	3	**MR CI 200 - 60 × 450** 225	M	4		6,46
55	**8,7**	56751	1,32	**MR C2I 360 - 65 × 550** 250	M	4		161
	10,8	45508	1,12	**MR C2I 320 - 65 × 550** 250	M	4		129
	10,8	45508	1,4	**MR C2I 321 - 65 × 550** 250	M	4		129
	11	44762	1,6	**MR C2I 360 - 65 × 550** 250	M	4		127
	14	35392	1,06	MR **C2I 280 - 65 × 550** 250	M	4		100
	13,6	36406	1,32	**MR C2I 320 - 65 × 550** 250	M	4		103
	13,6	36406	1,7	**MR C2I 321 - 65 × 550** 250	M	4		103
	13,8	35809	2,12	**MR C2I 360 - 65 × 550** 250	M	4		102

P_1 kW 1)	n_2 min^{-1}	M_2 N m	*fs*	2)				*i*
55	**15,6**	31624	1,18	**MR C2I 280 - 65 × 550** 250	M	4		89,7
	15,8	31333	1,5	**MR C2I 320 - 65 × 550** 250	M	4		88,8
	15,8	31333	1,8	**MR C2I 321 - 65 × 550** 250	M	4		88,8
	15,3	32228	2,24	**MR C2I 360 - 65 × 550** 250	M	4		91,4
	17,8	27779	1	**MR C2I 250 - 65 × 550** 250	M	4		78,8
	17,4	28314	1,25	**MR C2I 280 - 65 × 550** 250	M	4		80,3
	17	29125	1,6	**MR C2I 320 - 65 × 550** 250	M	4		82,6
	17	29125	2	**MR C2I 321 - 65 × 550** 250	M	4		82,6
	17,2	28647	2,5	**MR C2I 360 - 65 × 550** 250	M	4		81,2
	19,7	25108	1,12	**MR C2I 250 - 65 × 550** 250	M	4		71,2
	19,5	25299	1,6	**MR C2I 280 - 65 × 550** 250	M	4		71,7
	19,7	25067	1,8	**MR C2I 320 - 65 × 550** 250	M	4		71,1
	19,7	25067	2,24	**MR C2I 321 - 65 × 550** 250	M	4		71,1
	22,5	21903	1,25	**MR C2I 250 - 65 × 550** 250	M	4		62,1
	22,1	22324	1,6	**MR C2I 280 - 65 × 550** 250	M	4		63,3
	21,5	22964	2,12	**MR C2I 320 - 65 × 550** 250	M	4		65,1
	21,5	22964	2,65	**MR C2I 321 - 65 × 550** 250	M	4		65,1
	24,6	20078	0,9	**MR C2I 225 - 60 × 450** 250	M	*	4	56,9
	24,9	19797	1,4	**MR C2I 250 - 65 × 550** 250	M		4	56,1
	24,8	19947	2	**MR C2I 280 - 65 × 550** 250	M		4	56,6
	25	19764	2,24	**MR C2I 320 - 65 × 550** 250	M		4	56
	26,4	18718	0,95	**MR C2I 225 - 60 × 450** 250	M	*	4	53,1
	26,8	18389	1,5	**MR C2I 250 - 65 × 550** 250	M		4	52,1
	26,3	18743	1,9	**MR C2I 280 - 65 × 550** 250	M		4	53,1
	27,3	18093	2,65	**MR C2I 320 - 65 × 550** 250	M		4	51,3
	29,3	16857	1,06	**MR C2I 225 - 60 × 450** 250	M	*	4	47,8
	29,7	16621	1,7	**MR C2I 250 - 65 × 550** 250	M		4	47,1
	29,5	16747	2,12	**MR C2I 280 - 65 × 550** 250	M		4	47,5
	31,7	15572	2,8	**MR C2I 320 - 65 × 550** 250	M		4	44,2
	33,8	14603	1,25	**MR C2I 225 - 60 × 450** 250	M	*	4	41,4
	32,7	15106	1,9	**MR C2I 250 - 65 × 550** 250	M		4	42,8
	33,7	14654	2,36	**MR C2I 280 - 65 × 550** 250	M		4	41,6
	38,6	12779	1,4	**MR C2I 225 - 60 × 450** 250	M	*	4	36,2
	37,6	13136	2	**MR C2I 250 - 65 × 550** 250	M		4	37,2
	37,3	13236	2,65	**MR C2I 280 - 65 × 550** 250	M		4	37,5
	44,6	11070	1,4	**MR C2I 225 - 60 × 450** 250	M	*	4	31,4
	41,4	11938	2,12	**MR C2I 250 - 65 × 550** 250	M		4	33,9
	44,1	11429	1,5	**MR CI 250 - 65 × 550** 250	M		4	31,7
	42,6	11581	2,65	**MR C2I 280 - 65 × 550** 250	M		4	32,8
	48,7	10129	1,8	**MR C2I 225 - 60 × 450** 250	M	*	4	28,7
	47,4	10413	2,5	**MR C2I 250 - 65 × 550** 250	M		4	29,5
	50,1	10055	1,5	**MR CI 250 - 65 × 550** 250	M		4	27,9
	47,1	10492	3,35	**MR C2I 280 - 65 × 550** 250	M		4	29,8
	56,9	8866	1,06	**MR CI 200 - 65 × 550** 250	M		4	24,6
	56,3	8775	1,9	MR **C2I 225 - 60 × 450** 250	M	*	4	24,9
	52,2	9463	2,65	**MR C2I 250 - 65 × 550** 250	M		4	26,8
	55,2	9143	2,12	**MR CI 250 - 65 × 550** 250	M		4	25,4
	53,8	9180	3,55	**MR C2I 280 - 65 × 550** 250	M		4	26
	62,7	8044	2,12	**MR CI 250 - 65 × 550** 250	M		4	22,3
	69	7306	0,95	**MR CI 180 - 60 × 450** 250	M	*	4	20,3
	71,1	7093	1,6	**MR CI 200 - 65 × 550** 250	M		4	19,7
	69	7306	1,9	**MR CI 225 - 65 × 550** 250	M		4	20,3
	68,9	7314	2,8	**MR CI 250 - 65 × 550** 250	M		4	20,3
	75	6723	1,06	**MR CI 180 - 60 × 450** 250	M	*	4	18,7
	77,8	6483	1,7	**MR CI 200 - 65 × 550** 250	M		4	18
	75	6723	1,9	**MR CI 225 - 65 × 550** 250	M		4	18,7
	78,4	6435	3,35	**MR CI 250 - 65 × 550** 250	M		4	17,9
	87,5	5761	1,25	**MR CI 180 - 60 × 450** 250	M	*	4	16
	84,7	5955	1,7	**MR CI 200 - 65 × 550** 250	M		4	16,5
	87,5	5761	2,5	**MR CI 225 - 65 × 550** 250	M		4	16
	95,1	5301	1,4	**MR CI 180 - 60 × 450** 250	M	*	4	14,7
	98,6	5112	2,24	**MR CI 200 - 65 × 550** 250	M		4	14,2
	107	4718	1,4	**MR CI 180 - 60 × 450** 250	M	*	4	13,1
	107	4695	2,36	**MR CI 200 - 65 × 550** 250	M		4	13
	123	4089	1,4	**MR CI 180 - 60 × 450** 250	M	*	4	11,4
	124	4057	2,36	**MR CI 200 - 65 × 550** 250	M		4	11,3

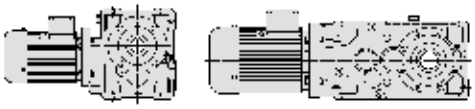
1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and *fs* decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).



P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
55	**137**	3692	1,4	MR **CI 180 - 60 × 450** 250 M * 4	10,3
	136	3711	2,36	**MR CI 200 - 65 × 550** 250 M 4	10,3
	174	2903	2,36	**MR CI 200 - 65 × 550** 250 M 4	8,06
	217	2326	2,36	**MR CI 200 - 65 × 550** 250 M 4	6,46
75	**10,8**	62056	1	**MR C2I 321 - 75 × 550** 280 S 4	129
	11	61039	1,18	**MR C2I 360 - 75 × 550** 280 S 4	127
	13,6	49645	1	MR **C2I 320 - 75 × 550** 280 S 4	103
	13,6	49645	1,25	**MR C2I 321 - 75 × 550** 280 S 4	103
	13,8	48831	1,6	**MR C2I 360 - 75 × 550** 280 S 4	102
	15,8	42727	1,06	**MR C2I 320 - 75 × 550** 280 S 4	88,8
	15,8	42727	1,32	**MR C2I 321 - 75 × 550** 280 S 4	88,8
	15,3	43948	1,6	**MR C2I 360 - 75 × 550** 280 S 4	91,4
	17,4	38609	0,95	**MR C2I 280 - 75 × 550** 280 S 4	80,3
	17	39716	1,18	**MR C2I 320 - 75 × 550** 280 S 4	82,6
	17	39716	1,5	**MR C2I 321 - 75 × 550** 280 S 4	82,6
	17,2	39065	1,9	**MR C2I 360 - 75 × 550** 280 S 4	81,2
	19,5	34499	1,18	**MR C2I 280 - 75 × 550** 280 S 4	71,7
	19,7	34182	1,32	**MR C2I 320 - 75 × 550** 280 S 4	71,1
	19,7	34182	1,6	**MR C2I 321 - 75 × 550** 280 S 4	71,1
	19,1	35158	2	**MR C2I 360 - 75 × 550** 280 S 4	73,1
	22,5	29868	0,9	**MR C2I 250 - 75 × 550** 280 S 4	62,1
	22,1	30442	1,18	**MR C2I 280 - 75 × 550** 280 S 4	63,3
	21,5	31314	1,5	MR **C2I 320 - 75 × 550** 280 S 4	65,1
	21,5	31314	1,9	**MR C2I 321 - 75 × 550** 280 S 4	65,1
	21,9	30801	2,36	**MR C2I 360 - 75 × 550** 280 S 4	64
	24,9	26996	1,06	**MR C2I 250 - 75 × 550** 280 S 4	56,1
	24,8	27201	1,5	**MR C2I 280 - 75 × 550** 280 S 4	56,6
	25	26951	1,7	**MR C2I 320 - 75 × 550** 280 S 4	56
	25	26951	2,12	**MR C2I 321 - 75 × 550** 280 S 4	56
	24,3	27721	2,5	**MR C2I 360 - 75 × 550** 280 S 4	57,6
	26,8	25076	1,12	**MR C2I 250 - 75 × 550** 280 S 4	52,1
	26,3	25559	1,4	**MR C2I 280 - 75 × 550** 280 S 4	53,1
	27,3	24672	1,9	**MR C2I 320 - 75 × 550** 280 S 4	51,3
	27,3	24672	2,36	**MR C2I 321 - 75 × 550** 280 S 4	51,3
	27,7	24267	2,8	**MR C2I 360 - 75 × 550** 280 S 4	50,5
	29,7	22665	1,25	**MR C2I 250 - 75 × 550** 280 S 4	47,1
	29,5	22837	1,6	**MR C2I 280 - 75 × 550** 280 S 4	47,5
	31,7	21234	2,12	**MR C2I 320 - 75 × 550** 280 S 4	44,2
	32,7	20598	1,4	MR **C2I 250 - 75 × 550** 280 S 4	42,8
	33,7	19983	1,8	**MR C2I 280 - 75 × 550** 280 S 4	41,6
	35,4	19010	2,36	**MR C2I 320 - 75 × 550** 280 S 4	39,5
	37,6	17913	1,5	**MR C2I 250 - 75 × 550** 280 S 4	37,2
	37,3	18049	2	**MR C2I 280 - 75 × 550** 280 S 4	37,5
	38,6	17442	2,65	**MR C2I 320 - 75 × 550** 280 S 4	36,3
	41,4	16279	1,6	**MR C2I 250 - 75 × 550** 280 S 4	33,9
	44,1	15584	1,06	**MR CI 250 - 75 × 550** 280 S 4	31,7
	42,6	15793	2	**MR C2I 280 - 75 × 550** 280 S 4	32,8
	43,1	15615	2,8	**MR C2I 320 - 75 × 550** 280 S 4	32,5
	47,4	14199	1,9	**MR C2I 250 - 75 × 550** 280 S 4	29,5
	50,1	13711	1,06	**MR CI 250 - 75 × 550** 280 S 4	27,9
	47,1	14307	2,5	**MR C2I 280 - 75 × 550** 280 S 4	29,8
	48,7	13826	3,35	**MR C2I 320 - 75 × 550** 280 S 4	28,8
	52,2	12904	2	**MR C2I 250 - 75 × 550** 280 S 4	26,8
	55,2	12467	1,6	**MR CI 250 - 75 × 550** 280 S 4	25,4
	53,8	12519	2,65	MR **C2I 280 - 75 × 550** 280 S 4	26
	54,4	12378	3,55	**MR C2I 320 - 75 × 550** 280 S 4	25,7
	62,7	10969	1,6	**MR CI 250 - 75 × 550** 280 S 4	22,3
	71,1	9672	1,18	**MR CI 200 - 75 × 550** 280 S 4	19,7
	69	9963	1,32	**MR CI 225 - 75 × 550** 280 S 4	20,3
	68,9	9974	2,12	**MR CI 250 - 75 × 550** 280 S 4	20,3
	70	9823	2,65	**MR CI 280 - 75 × 550** 280 S 4	20
	77,8	8841	1,18	**MR CI 200 - 75 × 550** 280 S 4	18
	75	9168	1,32	**MR CI 225 - 75 × 550** 280 S 4	18,7
	78,4	8775	2,36	**MR CI 250 - 75 × 550** 280 S 4	17,9

P_1 kW 1)	n_2 min^{-1}	M_2 N m	fs	2)	i
75	**84,7**	8120	1,18	**MR CI 200 - 75 × 550** 280 S 4	16,5
	87,5	7856	1,8	MR **CI 225 - 75 × 550** 280 S 4	16
	87,5	7858	2,36	**MR CI 250 - 75 × 550** 280 S 4	16
	98,6	6970	1,6	**MR CI 200 - 75 × 550** 280 S 4	14,2
	95,1	7229	2	**MR CI 225 - 75 × 550** 280 S 4	14,7
	107	6402	1,8	**MR CI 200 - 75 × 550** 280 S 4	13
	109	6307	2	**MR CI 225 - 75 × 550** 280 S 4	12,8
	124	5532	1,8	**MR CI 200 - 75 × 550** 280 S 4	11,3
	121	5680	2	**MR CI 225 - 75 × 550** 280 S 4	11,6
	136	5060	1,8	**MR CI 200 - 75 × 550** 280 S 4	10,3
	140	4920	2	**MR CI 225 - 75 × 550** 280 S 4	10
	174	3959	1,8	**MR CI 200 - 75 × 550** 280 S 4	8,06
	217	3172	1,8	**MR CI 200 - 75 × 550** 280 S 4	6,46
90	**11**	73246	1	**MR C2I 360 - 75 × 550** 280 M 4	127
	13,6	59574	1,06	**MR C2I 321 - 75 × 550** 280 M 4	103
	13,8	58597	1,32	**MR C2I 360 - 75 × 550** 280 M 4	102
	15,8	51272	0,9	**MR C2I 320 - 75 × 550** 280 M 4	88,8
	15,8	51272	1,12	**MR C2I 321 - 75 × 550** 280 M 4	88,8
	15,3	52737	1,32	**MR C2I 360 - 75 × 550** 280 M 4	91,4
	17	47659	1	**MR C2I 320 - 75 × 550** 280 M 4	82,6
	17	47659	1,25	**MR C2I 321 - 75 × 550** 280 M 4	82,6
	17,2	46878	1,6	**MR C2I 360 - 75 × 550** 280 M 4	81,2
	19,5	41398	0,95	**MR C2I 280 - 75 × 550** 280 M 4	71,7
	19,7	41018	1,12	**MR C2I 320 - 75 × 550** 280 M 4	71,1
	19,7	41018	1,4	**MR C2I 321 - 75 × 550** 280 M 4	71,1
	19,1	42190	1,7	**MR C2I 360 - 75 × 550** 280 M 4	73,1
	22,1	36530	1	**MR C2I 280 - 75 × 550** 280 M 4	63,3
	21,5	37577	1,25	**MR C2I 320 - 75 × 550** 280 M 4	65,1
	21,5	37577	1,6	**MR C2I 321 - 75 × 550** 280 M 4	65,1
	21,9	36961	2	MR **C2I 360 - 75 × 550** 280 M 4	64
	24,8	32641	1,25	**MR C2I 280 - 75 × 550** 280 M 4	56,6
	25	32341	1,4	**MR C2I 320 - 75 × 550** 280 M 4	56
	25	32341	1,7	**MR C2I 321 - 75 × 550** 280 M 4	56
	24,3	33265	2,12	**MR C2I 360 - 75 × 550** 280 M 4	57,6
	26,8	30092	0,9	**MR C2I 250 - 75 × 550** 280 M 4	52,1
	26,3	30670	1,18	**MR C2I 280 - 75 × 550** 280 M 4	53,1
	27,3	29606	1,6	**MR C2I 320 - 75 × 550** 280 M 4	51,3
	27,3	29606	2	**MR C2I 321 - 75 × 550** 280 M 4	51,3
	27,7	29121	2,36	**MR C2I 360 - 75 × 550** 280 M 4	50,5
	29,7	27198	1	**MR C2I 250 - 75 × 550** 280 M 4	47,1
	29,5	27405	1,32	**MR C2I 280 - 75 × 550** 280 M 4	47,5
	31,7	25481	1,8	**MR C2I 320 - 75 × 550** 280 M 4	44,2
	31,7	25481	2,24	**MR C2I 321 - 75 × 550** 280 M 4	44,2
	30,8	26209	2,65	**MR C2I 360 - 75 × 550** 280 M 4	45,4
	32,7	24718	1,18	**MR C2I 250 - 75 × 550** 280 M 4	42,8
	33,7	23979	1,5	MR **C2I 280 - 75 × 550** 280 M 4	41,6
	35,4	22811	2	**MR C2I 320 - 75 × 550** 280 M 4	39,5
	35,4	22811	2,5	**MR C2I 321 - 75 × 550** 280 M 4	39,5
	37,6	21495	1,25	**MR C2I 250 - 75 × 550** 280 M 4	37,2
	37,3	21659	1,6	**MR C2I 280 - 75 × 550** 280 M 4	37,5
	38,6	20931	2,12	**MR C2I 320 - 75 × 550** 280 M 4	36,3
	41,4	19535	1,32	**MR C2I 250 - 75 × 550** 280 M 4	33,9
	42,6	18951	1,7	**MR C2I 280 - 75 × 550** 280 M 4	32,8
	43,1	18738	2,36	**MR C2I 320 - 75 × 550** 280 M 4	32,5
	47,4	17039	1,5	**MR C2I 250 - 75 × 550** 280 M 4	29,5
	47,1	17169	2,12	**MR C2I 280 - 75 × 550** 280 M 4	29,8
	48,7	16591	2,65	**MR C2I 320 - 75 × 550** 280 M 4	28,8
	52,2	15485	1,7	**MR C2I 250 - 75 × 550** 280 M 4	26,8
	55,2	14961	1,32	**MR CI 250 - 75 × 550** 280 M 4	25,4
	53,8	15022	2,24	**MR C2I 280 - 75 × 550** 280 M 4	26
	54,4	14853	3	**MR C2I 320 - 75 × 550** 280 M 4	25,7
	62,7	13163	1,32	**MR CI 250 - 75 × 550** 280 M 4	22,3

1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and fs decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).

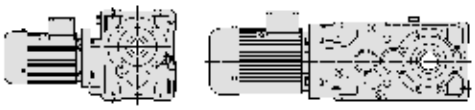


P_1 kW 1)	n_2 min^{-1}	M_2 N m	f_S	2)						i
90	**71,1**	11606	0,95	**MR CI 200 - 75 × 550**	280	M		4		19,7
	69	11956	1,12	**MR CI 225 - 75 × 550**	280	M		4		20,3
	68,9	11969	1,8	**MR CI 250 - 75 × 550**	280	M		4		20,3
	70	11787	2,24	**MR CI 280 - 75 × 550**	280	M		4		20
	77,8	10609	1	**MR CI 200 - 75 × 550**	280	M		4		18
	75	11002	1,12	**MR CI 225 - 75 × 550**	280	M		4		18,7
	78,4	10530	2	**MR CI 250 - 75 × 550**	280	M		4		17,9
	77,8	10609	2,24	**MR CI 280 - 75 × 550**	280	M		4		18
	84,7	9744	1	**MR CI 200 - 75 × 550**	280	M		4		16,5
	87,5	9427	1,5	**MR CI 225 - 75 × 550**	280	M		4		16
	87,5	9430	2	MR **CI 250 - 75 × 550**	280	M		4		16
	88,8	9294	3	**MR CI 280 - 75 × 550**	280	M		4		15,8
	98,6	8365	1,32	**MR CI 200 - 75 × 550**	280	M		4		14,2
	95,1	8674	1,7	**MR CI 225 - 75 × 550**	280	M		4		14,7
	99,4	8303	2,65	**MR CI 250 - 75 × 550**	280	M		4		14,1
	107	7683	1,5	**MR CI 200 - 75 × 550**	280	M		4		13
	109	7568	1,7	**MR CI 225 - 75 × 550**	280	M		4		12,8
	111	7435	3	**MR CI 250 - 75 × 550**	280	M		4		12,6
	124	6639	1,5	**MR CI 200 - 75 × 550**	280	M		4		11,3
	121	6816	1,7	**MR CI 225 - 75 × 550**	280	M		4		11,6
	123	6720	3	**MR CI 250 - 75 × 550**	280	M		4		11,4
	136	6072	1,5	MR **CI 200 - 75 × 550**	280	M		4		10,3
	140	5904	1,7	**MR CI 225 - 75 × 550**	280	M		4		10
	135	6107	3	**MR CI 250 - 75 × 550**	280	M		4		10,4
	174	4750	1,5	**MR CI 200 - 75 × 550**	280	M		4		8,06
	217	3806	1,5	**MR CI 200 - 75 × 550**	280	M		4		6,46
110	**13,8**	71619	1,06	**MR C2I 360 - 80 × 660**	315	S		4		102
	15,8	62666	0,9	MR **C2I 321 - 80 × 660**	315	S		4		88,8
	15,3	64457	1,12	**MR C2I 360 - 80 × 660**	315	S		4		91,4
	17	58250	1	**MR C2I 321 - 80 × 660**	315	S		4		82,6
	17,2	57295	1,32	**MR C2I 360 - 80 × 660**	315	S		4		81,2
	19,7	50133	0,9	**MR C2I 320 - 80 × 660**	315	S		4		71,1
	19,7	50133	1,12	**MR C2I 321 - 80 × 660**	315	S		4		71,1
	19,1	51565	1,4	**MR C2I 360 - 80 × 660**	315	S		4		73,1
	21,5	45928	1,06	**MR C2I 320 - 80 × 660**	315	S		4		65,1
	21,5	45928	1,32	**MR C2I 321 - 80 × 660**	315	S		4		65,1
	21,9	45175	1,6	**MR C2I 360 - 80 × 660**	315	S		4		64
	24,8	39895	1	**MR C2I 280 - 75 × 550**	315	S	*	4		56,6
	25	39528	1,12	MR **C2I 320 - 80 × 660**	315	S		4		56
	25	39528	1,4	**MR C2I 321 - 80 × 660**	315	S		4		56
	24,3	40657	1,7	**MR C2I 360 - 80 × 660**	315	S		4		57,6
	26,3	37486	0,95	**MR C2I 280 - 75 × 550**	315	S	*	4		53,1
	27,3	36186	1,32	**MR C2I 320 - 80 × 660**	315	S		4		51,3
	27,3	36186	1,6	**MR C2I 321 - 80 × 660**	315	S		4		51,3
	27,7	35592	1,9	**MR C2I 360 - 80 × 660**	315	S		4		50,5
	29,5	33495	1,06	**MR C2I 280 - 75 × 550**	315	S	*	4		47,5
	31,7	31143	1,4	**MR C2I 320 - 80 × 660**	315	S		4		44,2
	31,7	31143	1,8	**MR C2I 321 - 80 × 660**	315	S		4		44,2
	30,8	32033	2,24	**MR C2I 360 - 80 × 660**	315	S		4		45,4
	33,7	29308	1,18	**MR C2I 280 - 75 × 550**	315	S	*	4		41,6
	35,4	27881	1,6	**MR C2I 320 - 80 × 660**	315	S		4		39,5
	35,4	27881	2	**MR C2I 321 - 80 × 660**	315	S		4		39,5
	34,1	28919	2,5	**MR C2I 360 - 80 × 660**	315	S		4		41
	37,3	26472	1,32	**MR C2I 280 - 75 × 550**	315	S	*	4		37,5
	38,6	25582	1,8	MR **C2I 320 - 80 × 660**	315	S		4		36,3
	38,6	25582	2,24	**MR C2I 321 - 80 × 660**	315	S		4		36,3
	37,5	26313	2,65	**MR C2I 360 - 80 × 660**	315	S		4		37,3
	42,6	23163	1,32	**MR C2I 280 - 75 × 550**	315	S	*	4		32,8
	43,1	22902	2	**MR C2I 320 - 80 × 660**	315	S		4		32,5
	41,6	23755	2,65	**MR C2I 360 - 80 × 660**	315	S		4		33,7
	47,1	20984	1,7	**MR C2I 280 - 75 × 550**	315	S	*	4		29,8
	48,7	20278	2,24	**MR C2I 320 - 80 × 660**	315	S		4		28,8
	48,7	20278	2,8	**MR C2I 321 - 80 × 660**	315	S		4		28,8
	47,3	20858	3,35	**MR C2I 360 - 80 × 660**	315	S		4		29,6

P_1 kW 1)	n_2 min^{-1}	M_2 N m	f_S	2)						i
110	**55,2**	18286	1,06	**MR CI 250 - 80 × 660**	315	S		4		25,4
	53,8	18361	1,8	**MR C2I 280 - 75 × 550**	315	S	*	4		26
	54,4	18154	2,5	**MR C2I 320 - 80 × 660**	315	S		4		25,7
	54,4	18154	3,15	**MR C2I 321 - 80 × 660**	315	S		4		25,7
	52,4	18830	3,55	**MR C2I 360 - 80 × 660**	315	S		4		26,7
	62,7	16088	1,06	**MR CI 250 - 80 × 660**	315	S		4		22,3
	69	14613	0,95	**MR CI 225 - 75 × 550**	315	S	*	4		20,3
	68,9	14629	1,4	**MR CI 250 - 80 × 660**	315	S		4		20,3
	70	14407	1,9	**MR CI 280 - 80 × 660**	315	S		4		20
	75	13446	0,95	**MR CI 225 - 75 × 550**	315	S	*	4		18,7
	78,4	12870	1,7	**MR CI 250 - 80 × 660**	315	S		4		17,9
	77,8	12966	1,9	**MR CI 280 - 80 × 660**	315	S		4		18
	87,5	11522	1,25	**MR CI 225 - 75 × 550**	315	S	*	4		16
	87,5	11525	1,7	**MR CI 250 - 80 × 660**	315	S		4		16
	88,8	11359	2,5	**MR CI 280 - 80 × 660**	315	S		4		15,8
	95,1	10602	1,32	**MR CI 225 - 75 × 550**	315	S	*	4		14,7
	99,4	10148	2,24	**MR CI 250 - 80 × 660**	315	S		4		14,1
	109	9250	1,32	**MR CI 225 - 75 × 550**	315	S	*	4		12,8
	111	9087	2,36	**MR CI 250 - 80 × 660**	315	S		4		12,6
	121	8330	1,32	**MR CI 225 - 75 × 550**	315	S	*	4		11,6
	123	8214	2,36	**MR CI 250 - 80 × 660**	315	S		4		11,4
	140	7216	1,32	**MR CI 225 - 75 × 550**	315	S	*	4		10
	135	7465	2,36	**MR CI 250 - 80 × 660**	315	S		4		10,4
132	**15,3**	77348	0,9	MR **C2I 360 - 80 × 660**	315	M		4		91,4
	17,2	68754	1,06	**MR C2I 360 - 80 × 660**	315	M		4		81,2
	19,7	60160	0,95	**MR C2I 321 - 80 × 660**	315	M		4		71,1
	19,1	61879	1,12	**MR C2I 360 - 80 × 660**	315	M		4		73,1
	21,5	55113	1,06	**MR C2I 321 - 80 × 660**	315	M		4		65,1
	21,9	54210	1,32	**MR C2I 360 - 80 × 660**	315	M		4		64
	25	47434	0,95	MR **C2I 320 - 80 × 660**	315	M		4		56
	25	47434	1,18	**MR C2I 321 - 80 × 660**	315	M		4		56
	24,3	48789	1,5	**MR C2I 360 - 80 × 660**	315	M		4		57,6
	27,3	43423	1,06	**MR C2I 320 - 80 × 660**	315	M		4		51,3
	27,3	43423	1,32	**MR C2I 321 - 80 × 660**	315	M		4		51,3
	27,7	42711	1,6	**MR C2I 360 - 80 × 660**	315	M		4		50,5
	31,7	37372	1,18	**MR C2I 320 - 80 × 660**	315	M		4		44,2
	31,7	37372	1,5	**MR C2I 321 - 80 × 660**	315	M		4		44,2
	30,8	38440	1,8	**MR C2I 360 - 80 × 660**	315	M		4		45,4
	35,4	33457	1,32	**MR C2I 320 - 80 × 660**	315	M		4		39,5
	35,4	33457	1,7	**MR C2I 321 - 80 × 660**	315	M		4		39,5
	34,1	34703	2	**MR C2I 360 - 80 × 660**	315	M		4		41
	38,6	30698	1,5	**MR C2I 320 - 80 × 660**	315	M		4		36,3
	38,6	30698	1,8	**MR C2I 321 - 80 × 660**	315	M		4		36,3
	37,5	31575	2,24	**MR C2I 360 - 80 × 660**	315	M		4		37,3
	43,1	27482	1,6	**MR C2I 320 - 80 × 660**	315	M		4		32,5
	43,1	27482	2	**MR C2I 321 - 80 × 660**	315	M		4		32,5
	41,6	28506	2,24	**MR C2I 360 - 80 × 660**	315	M		4		33,7
	48,7	24334	1,8	**MR C2I 320 - 80 × 660**	315	M		4		28,8
	48,7	24334	2,36	**MR C2I 321 - 80 × 660**	315	M		4		28,8
	47,3	25029	2,8	**MR C2I 360 - 80 × 660**	315	M		4		29,6
	55,2	21943	0,9	**MR CI 250 - 80 × 660**	315	M		4		25,4
	54,4	21785	2,12	**MR C2I 320 - 80 × 660**	315	M		4		25,7
	54,4	21785	2,65	**MR C2I 321 - 80 × 660**	315	M		4		25,7
	52,4	22596	3	**MR C2I 360 - 80 × 660**	315	M		4		26,7
	62,7	19305	0,9	**MR CI 250 - 80 × 660**	315	M		4		22,3
	68,9	17554	1,18	**MR CI 250 - 80 × 660**	315	M		4		20,3
	70	17288	1,5	**MR CI 280 - 80 × 660**	315	M		4		20
	78,4	15444	1,4	**MR CI 250 - 80 × 660**	315	M		4		17,9
	77,8	15559	1,5	**MR CI 280 - 80 × 660**	315	M		4		18
	87,5	13831	1,4	**MR CI 250 - 80 × 660**	315	M		4		16
	88,8	13631	2,12	**MR CI 280 - 80 × 660**	315	M		4		15,8
	99,4	12177	1,9	**MR CI 250 - 80 × 660**	315	M		4		14,1
	98,6	12268	2,24	MR **CI 280 - 80 × 660**	315	M		4		14,2

1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and f_S decreases.
2) For complete designation when ordering see ch. 2.
* Mounting position **B5R** (see ch. 1.2).

13 - Bevel helical gearmotor selection tables



P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)	*i*
132	**111**	10905	2	**MR CI 250 - 80 × 660** 315 M 4	12,6
	109	11115	2,24	**MR CI 280 - 80 × 660** 315 M 4	12,9
	123	9856	2	**MR CI 250 - 80 × 660** 315 M 4	11,4
	122	9931	2,24	**MR CI 280 - 80 × 660** 315 M 4	11,5
	135	8958	2	**MR CI 250 - 80 × 660** 315 M 4	10,4
	139	8690	2,24	**MR CI 280 - 80 × 660** 315 M 4	10,1
160	**17,2**	83338	0,9	**MR C2I 360 - 80 × 660** 315 MC 4	81,2
	19,1	75004	0,95	**MR C2I 360 - 80 × 660** 315 MC 4	73,1
	21,9	65709	1,12	**MR C2I 360 - 80 × 660** 315 MC 4	64
	25	57495	0,95	**MR C2I 321 - 80 × 660** 315 MC 4	56
	24,3	59138	1,18	**MR C2I 360 - 80 × 660** 315 MC 4	57,6
	27,3	52633	0,9	MR **C2I 320 - 80 × 660** 315 MC 4	51,3
	27,3	52633	1,12	**MR C2I 321 - 80 × 660** 315 MC 4	51,3
	27,7	51771	1,32	**MR C2I 360 - 80 × 660** 315 MC 4	50,5
	31,7	45299	1	**MR C2I 320 - 80 × 660** 315 MC 4	44,2
	31,7	45299	1,25	**MR C2I 321 - 80 × 660** 315 MC 4	44,2
	30,8	46594	1,5	**MR C2I 360 - 80 × 660** 315 MC 4	45,4
	35,4	40554	1,12	**MR C2I 320 - 80 × 660** 315 MC 4	39,5
	35,4	40554	1,4	**MR C2I 321 - 80 × 660** 315 MC 4	39,5
	34,1	42064	1,7	**MR C2I 360 - 80 × 660** 315 MC 4	41

P_1 kW 1)	n_2 min^{-1}	M_2 N m	*f*s	2)	*i*
160	**38,6**	37210	1,18	**MR C2I 320 - 80 × 660** 315 MC 4	36,3
	38,6	37210	1,5	**MR C2I 321 - 80 × 660** 315 MC 4	36,3
	37,5	38273	1,9	**MR C2I 360 - 80 × 660** 315 MC 4	37,3
	43,1	33312	1,32	**MR C2I 320 - 80 × 660** 315 MC 4	32,5
	43,1	33312	1,7	**MR C2I 321 - 80 × 660** 315 MC 4	32,5
	41,6	34552	1,9	**MR C2I 360 - 80 × 660** 315 MC 4	33,7
	48,7	29496	1,5	**MR C2I 320 - 80 × 660** 315 MC 4	28,8
	48,7	29496	1,9	**MR C2I 321 - 80 × 660** 315 MC 4	28,8
	47,3	30339	2,36	**MR C2I 360 - 80 × 660** 315 MC 4	29,6
	54,4	26406	1,7	**MR C2I 320 - 80 × 660** 315 MC 4	25,7
	54,4	26406	2,12	**MR C2I 321 - 80 × 660** 315 MC 4	25,7
	52,4	27389	2,5	**MR C2I 360 - 80 × 660** 315 MC 4	26,7
	70	20955	1,25	**MR CI 280 - 80 × 660** 315 MC 4	20
	77,8	18860	1,25	**MR CI 280 - 80 × 660** 315 MC 4	18
	88,8	16523	1,7	**MR CI 280 - 80 × 660** 315 MC 4	15,8
	98,6	14870	1,9	**MR CI 280 - 80 × 660** 315 MC 4	14,2
	109	13472	1,9	**MR CI 280 - 80 × 660** 315 MC 4	12,9
	122	12038	1,9	**MR CI 280 - 80 × 660** 315 MC 4	11,5
	139	10533	1,9	**MR CI 280 - 80 × 660** 315 MC 4	10,1

1) Powers valid for continuous duty S1; **increase possible** for duty cycles S2 ... S10 (see ch. 1 «General specifications»): in which case M_2 increases and *f*s decreases.
2) For complete designation when ordering see ch. 2.

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14 - Dimensions, designs, mounting positions of bevel helical gearmotors

14.1 - Gearmotors MR CI 278

Dimensions 278
Designs (direction of rotation) 280
Mounting positions 281
Lubrication details 282

14.2 - Gearmotors MR ICI 283

Dimensions 283
Designs (direction of rotation) 284
Mounting positions 284
Lubrication details 285

14.3 - Gearmotors MR C3I 286

Dimensions 286
Designs (direction of rotation) 286
Mounting positions 287
Lubrication details 288

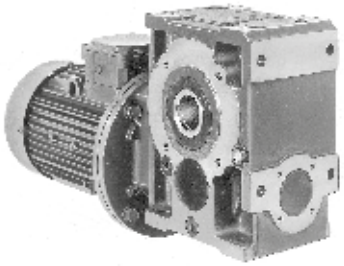
14.4 - Gearmotors MR C2I 289

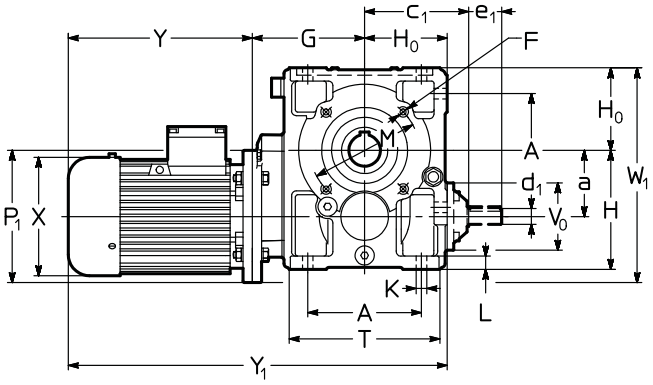
Dimensions 289
Designs (direction of rotation) 290
Mounting positions 291
Lubrication details 292

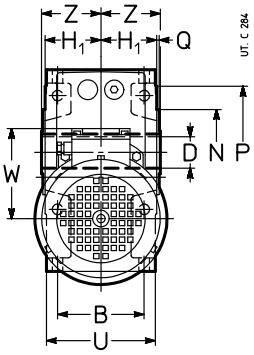
14.1 - Gearmotors MR CI

Dimensions

MR CI 40 ... 100





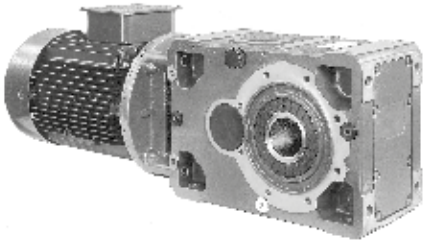


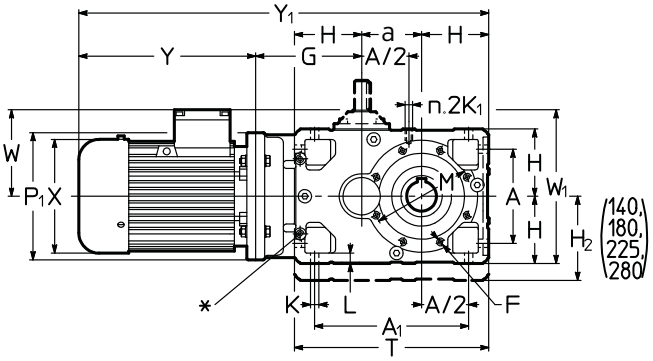
Red.	Mot.	a	A	c_1	D Ø	d_1 Ø	e_1	d_1 Ø	e_1	F	G	H	H_0	H_1	K	L	M Ø	N Ø	P Ø	Q	T	V_0 Ø	Z	P_1 Ø	X Ø ≈	Y ≈		Y_1 ≈		W ≈	W_1 ≈	kg	
	B5		B			$i_N \leq 12,5$		$i_N \geqslant 16$		1)											U						2)		2)				2)
40	63	41,5	73	74	19	11	23	11	23	M5	87	82	56	41,5	7	10	75	60	90	2,5	102	43	46	140	123	189	244	332	387	95	168	12	14
71			65																		80			160	138	216	278	359	421	112	192	14	17
50	63	50	86	94	24	16	30	14	30	M6	98	100	67	49	9,5	12	85	70	105	2,5	120	78	53	140	123	189	244	354	409	95	187	16	18
71			75																		95			160	138	216	278	381	443	112	197	18	21
80																								200[3]	156	233	302	398	467	121	221	23	27
63	71	63	102	108	30	16	30	14	30	M8	118	125	80	58,5	11,5	14	100	80	120	3	143	78	63	160	138	216	278	414	476	112	223	23	26
64	80		90		(63)																114			200	156	233	302	431	500	121	243	28	32
	90				32																			200	176	287	366	485	564	141	243	34	40
	100[4]				(64)																			200	194	337	432	535	630	151	251	38	45
80	80	80	132	131	38	19	40	16	30	M10	138	150	100	69,5	14	17	130	110	160	3,5	180	86	75	200	156	233	302	471	540	121	280	39	43
81	90		106		(80)																135			200	176	287	366	525	604	141	280	45	51
	100[5]				40						148													250	194	310	405	558	653	151	305	49	56
	112[5]				(81)																			250	218	336	435	584	683	163	305	62	71
100	90	100	172	157	48	24	50	19	40	M12	170	180	125	84,5	16	20	165	130	200	3,5	228	104	90	200	176	287	366	582	661	141	325	65	71
	100		131																		165			250	194	310	405	605	700	151	350	69	76
	112																							250	218	336	435	631	730	163	350	82	91
	132[5]										190													300	257	445	553	760	868	194	375	117	129

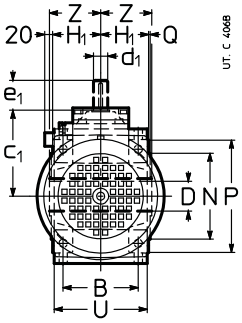
1) Working length of thread 2 · F.
2) Values valid for brake motor.
3) On request and with price addition, dimension P_1 = 160: consult us.
4) Mounting position **B5R** (see ch. 1.2).
5) On request for 100LB 4, 112M 4 and 132M 4 also mounting position **B5R** (see ch. 1.2; dimensions Y and Y_2 increase by 27 mm, 26 mm and 35 mm, respectively).

42

MR CI 125 ... 280





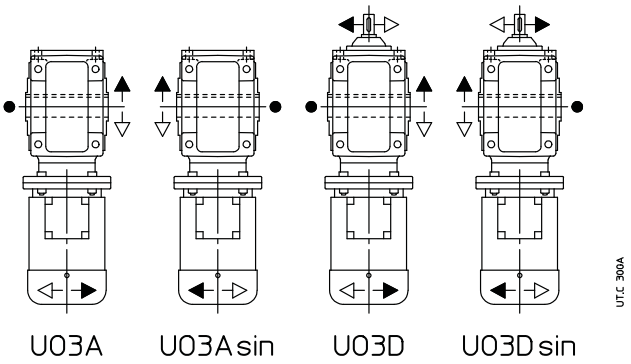


Red.	Mot.	a	A	A_1	c_1	D Ø H7	d_1 Ø	e_1	d_1 Ø	e_1	F	G	H h11	H_1 h12	H_2 h11	K Ø	K_1	M Ø	N Ø h6	P Ø	T	Z	P_1 Ø	X Ø ≈	Y ≈		Y_1 ≈		W ≈	W_1 ≈	kg	
	B5		B				$i_N \leq 14$		$i_N \geq 16$		1)					L	2)		Q		U					3)		3)				3)
125	**132** **160** **180**	125	212 162	337	188	60	28	60	24	50	4)	220 250	150	103,5	-	18 23	M12	215	180 4	250	425 201	110	300 350 350	257 315 354	445 539 613	553 640 734	940 1064 1138	1048 1165 1259	194 241 278	425 450 453	165 211 270	177 216 260
140	**132** **160** **180** **200**[6]	140	212 162	352	188	70	≤ 16 28	60	≥ 18 24	50	4)	220 250	150	103,5	180	18 23	M12	265	230 4	300	440 201	125	300 350 350 350	257 315 354 354	445 539 613 654	553 640 734 734	955 1079 1153 1194	1063 1180 1274 1274	194 241 278 278	470 495 495 495	178 224 283 309	190 229 273 297
160	**160** **180** **200** **225**	160	252 201	412	226	80	38	80	32	80	M16	282 312	180	128,5	-	22 28	M16	265	230 4	300	520 249	136	350 350 400 450	315 354 354 411	539 613 654 710	640 734 734 -	1161 1235 1276 1362	1262 1356 1356 -	241 278 278 298	515 515 540 565	280 339 365 456	285 329 353 -
180	**180** **200** **225** **250**[6]	180	252 201	432	226	90	≤ 16 38	80	≥ 18 32	80	M16	282 312	180	128,5	225	22 28	M16	300	250 5	350	540 249	150	350 400 450 450	354 354 411 411	613 654 710 710	734 734 - -	1255 1296 1382 1382	1376 1376 - -	278 278 298 298	580 605 630 630	362 388 479 502	352 376 - -
200	**180** **200** **225** **250** **280**	200	320 250	520	282	100	48	110	38	80	4)	325 355	225	158	-	27 34	M20	350	300 5	400	650 307	167	350 400 450 550 550	354 354 411 411 490	613 654 710 735 819	734 734 - - -	1363 1404 1490 1515 1599	1484 1484 - - -	278 278 298 298 360	600 625 650 700 700	463 489 580 603 789	453 477 - - -
225	**225** **250** **280** **315**[6]	225	320 250	545	282	110	≤ 16 48	110	≥ 18 38	80	M20	355	225	158	280	27 34	M20	400	350 5	450	675 307	180	450 550 550 550	411 411 490 490	710 735 819 820	- - - -	1515 1540 1624 1625	- - - -	298 298 360 360	730 780 780 780	622 645 831 792	- - - -
250	**225** **250** **280** **315**	250	396 310	646	357	125	55	110	48	110	4)	410 440	280	195	-	33 42	M24	500	450 5	550	810 380	206	450 550 550 660	411 411 490 604	710 735 819 962	- - - -	1650 1675 1759 1932	- - - -	298 298 360 445	755 805 805 860	853 816 1006 1254	- - - -
280	**280** **315**	280	396 310	676	357	140	≤ 16 55	110	≥ 18 48	110	M24	410 440	280	195	355	33 42	M24	500	450 5	550	840 380	222	550 660	490 604	819 962	- -	1789 1962	- -	360 445	870 925	1079 1327	- -

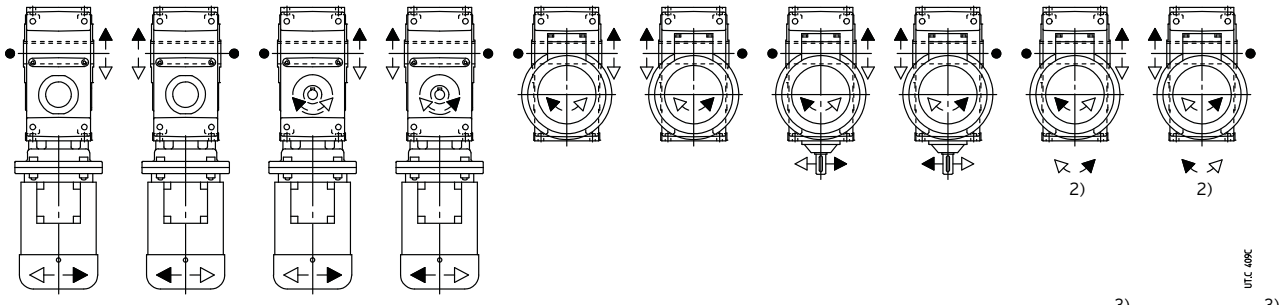
* Machined surface and N. 2 threaded holes (dimensions in ch. 6 «Gear reducer input face») on opposite side (not in view) too.
1) Working length of thread 2 · F.
2) Working length of thread 2 · K_1.
3) Values valid for brake motor.
4) For dimension, number and angular position see ch. 6.
6) Mounting position B5R (see ch. 1.2).

Designs[1] (direction of rotation)

MR CI 40 ... 100



MR CI 125 ... 280



● Position of reference groove (see ch. 6) for radial load verification.
1) For motor design see ch. 2.
2) Direction of rotation of high speed shaft extension not in view.
3) Design **not possible** for sizes 140, 180, 225 and 280.

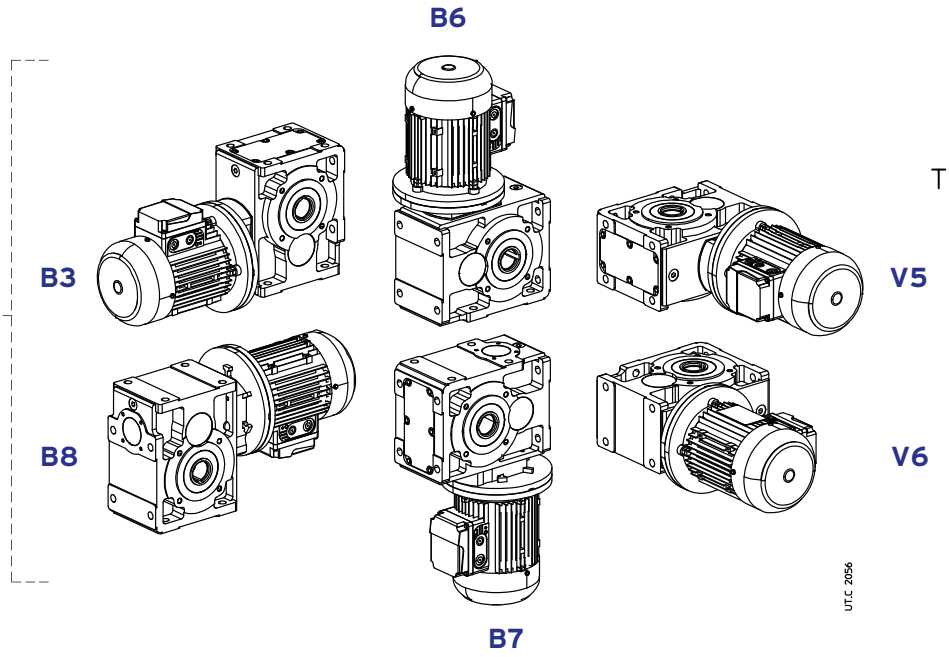
Mounting positions

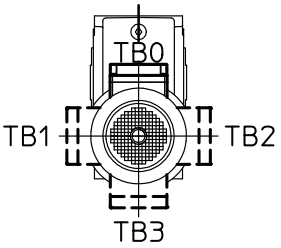
Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

MR CI 40 ... 100

Designs:

UO3A
UO3Asin
UO3D
UO3Dsin

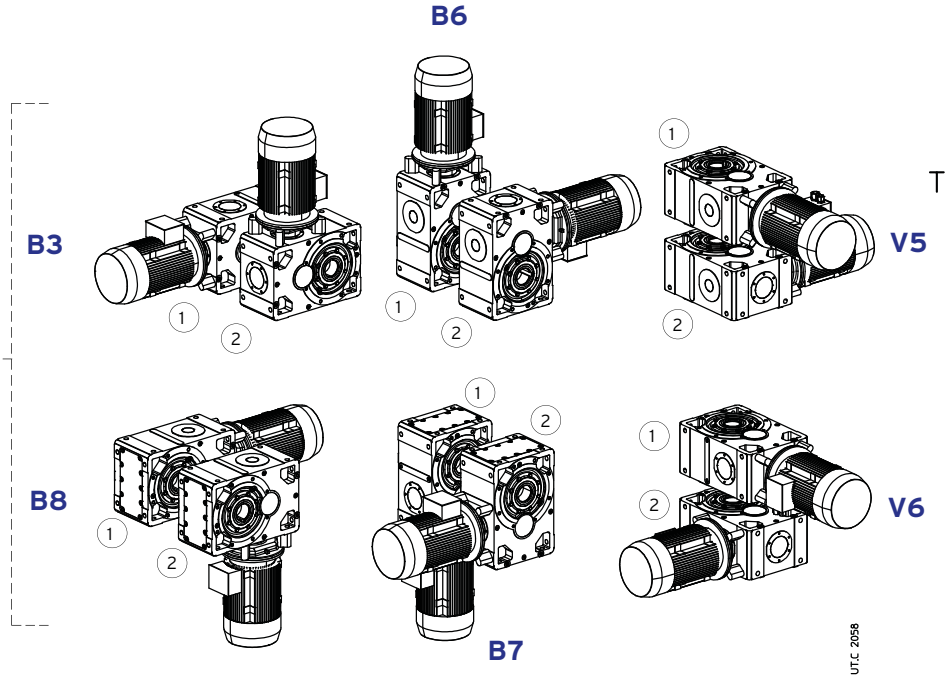


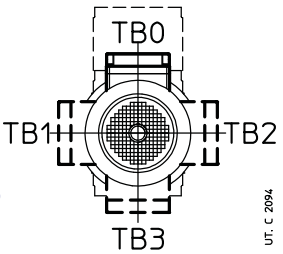


MR CI 125 ... 280

Designs:

(1)
UO2A
UO2Asin
UO2H
UO2Hsin
(2)
UO2V
UO2Vsin
UO2R
UO2R sin
UO2D
UO2Dsin





Oil quantity MR CI 40 ... 280

Lubricant quantities [l] stated are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

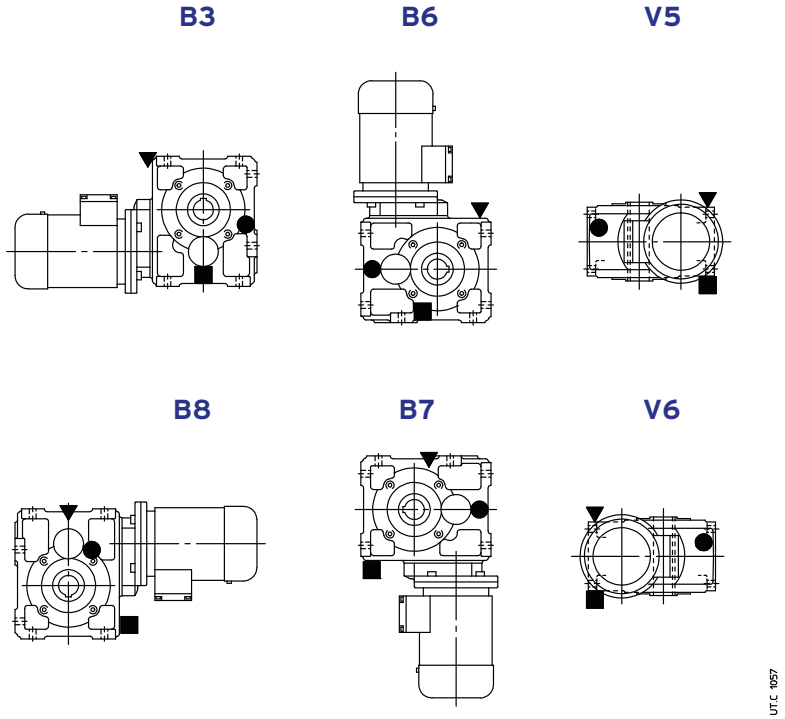
Mounting position	40	50	63, 64	80, 81	100	125	140	160	180	200	225	250	280
B3	0,26	0,4	0,8	1,3	2,6	5,3	8,2	10,5	16,1	20,5	31,5	40	61
B8	0,35	0,6	1	2	3,8	5,3	5,5	10,5	10,7	20,5	21	40	41
B6	0,26	0,4	0,8	1,3	2,9	7	8,7	13,7	17	26,7	33,3	52	65
B7	0,26	0,4	0,8	1,3	2,9	7,6	9,7	15	19	29	37	57	72
V5	0,3	0,45	0,95	1,8	3,5	8,9	10,3	17,5	20,1	34	39,3	67	77
V6	0,3	0,45	0,95	1,8	3,5	8,9	10,3	17,5	20,1	34	39,3	67	77

Lubrication details

MR CI 100

Designs:

UO3A
UO3Asin
UO3D
UO3Dsin

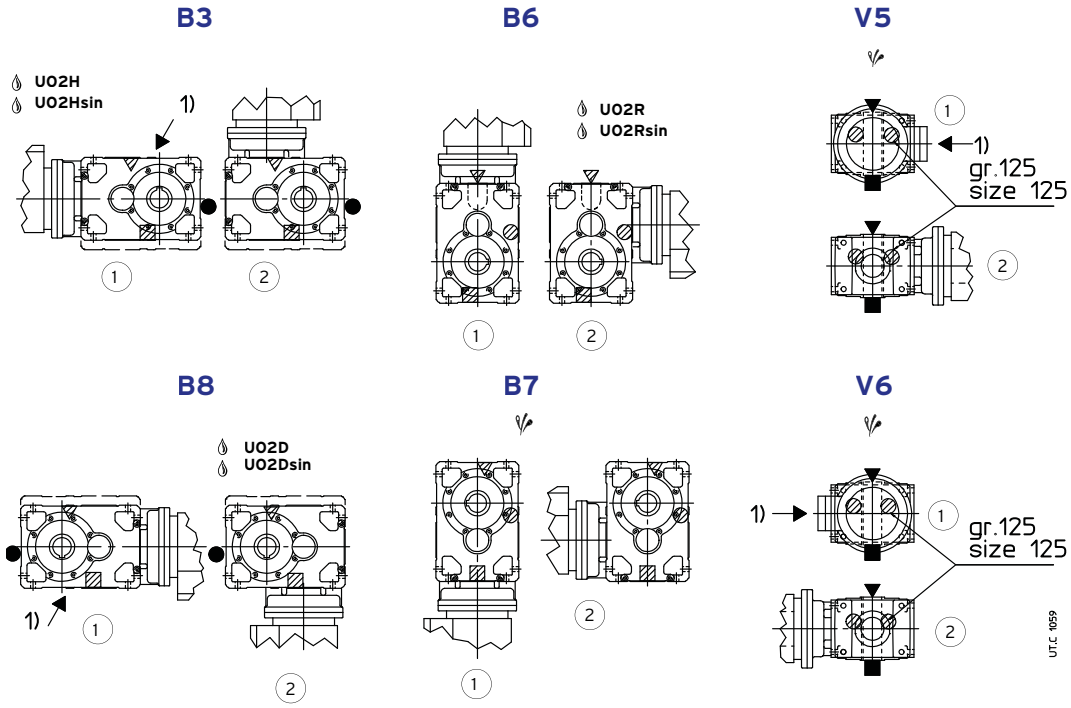


MR CI 125 ... 280

Designs:

(1)
UO2A
UO2Asin
UO2H
UO2Hsin

(2)
UO2V
UO2Vsin
UO2R
UO2R sin
UO2D
UO2D sin



Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.
Possible bearing lubrication pump (see ch. 17 (19)).
1) Threaded hole position for mounting position individuation.

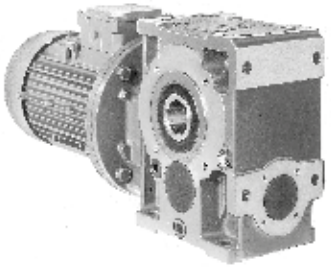
▼ oil filler plug
● oil level plug
■ oil drain plug

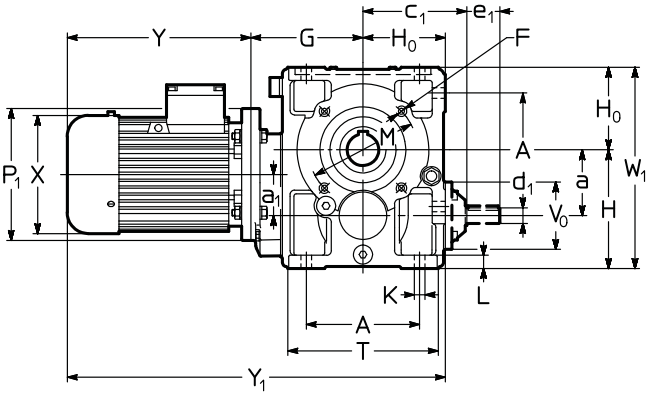
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

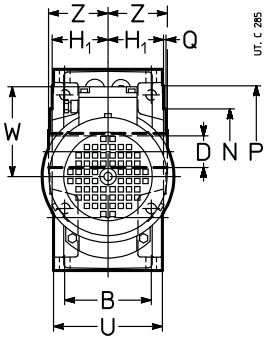
14.2 - Gearmotors MR ICI

Dimensions

MR ICI 40 ... 200







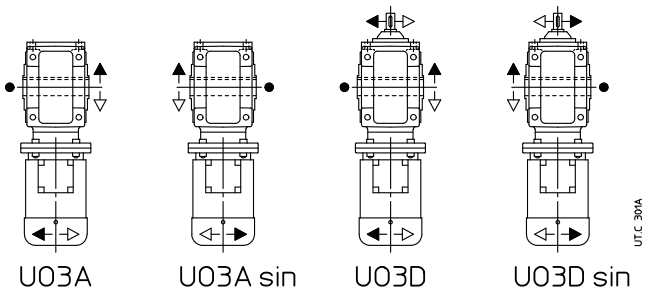
Red.	Mot.	a	A	c_1	D Ø H7	d_1 Ø	e_1	d_1 Ø 8)	e_1	F	G	H h11	H_0 h11	H_1 h12	K Ø	L	M Ø	N Ø h6	P Ø	Q	T	V_0 Ø	Z	P_1 Ø	X Ø ≈	Y ≈		Y_1 ≈		W ≈	W_1 ≈	kg	
	B5	a_1	B			$i_N \leq 25$		$i_N \geq 31,5$		1)											U					2)		2)				2)
40	**63** **71**	41,5 40	73 65	74	19	11	23	11	23	M5	87	82	56	41,5	7	10	75	60	90	2,5	102 80	43	46	140 160	123 138	189 216	244 278	332 359	387 421	95 112	176 193	12 14	14 17
50	**63** **71** **80**	50 40	86 75	94	24	16	30	14[5]	30[5]	M6	98	100	67	49	9,5	12	85	70	105	2,5	120 95	78	53	140 160 200[7]	123 138 156	189 216 233	244 278 302	354 381 398	409 443 467	95 112 121	185 202 221	16 18 23	18 21 27
63 **64**	**71** **80** **90**	63 50	102 90	108	30 **(63)** 32 **(64)**	16	30	14[5]	30[5]	M8	118	125	80	58,5	11,5	14	100	80	120	3	143 114	78	63	160 200 200	138 156 176	216 233 287	278 302 366	414 431 485	476 500 564	112 121 141	224 233 253	23 28 34	26 32 40
80 **81**	**71** **80** **90** **100**[6]	80 50	132 106	131	38 **(80)** 40 **(81)**	19	40	16[5]	30[5]	M10	138	150	100	69,5	14	17	130	110	160	3,5	180 135	86	75	160 200 200 200	138 156 176 194	216 233 287 337	278 302 366 432	454 471 525 575	516 540 604 670	112 121 141 151	250 250 261 271	35 40 46 50	38 44 52 57
100	**80** **90** **100** **112**	100 62,5	172 131	157	48	24	50	19[5]	40[5]	M12	170	180	125	84,5	16	20	165	130	200	3,5	228 165	104	90	200 200 250 250	156 176 194 218	233 287 310 336	302 366 405 435	528 582 605 631	597 661 700 730	121 141 151 163	305 305 305 306	61 67 71 84	65 73 78 93
125	**90** **100** **112** **132**	125 80	212 162	188	60	28	60	24[5]	50[5]	4)	205	225	150	103,5	18	23	215	180	250	4	274 201	122	110	200 250 250 300	176 194 218 257	287 310 336 445	366 405 435 553	642 665 691 800	721 760 790 908	141 151 163 194	375 375 375 375	106 110 123 158	112 117 132 170
140	**90** **100** **112** **132** **160**[6]	140 80	212 162	188	70	28	60	24[5]	50[5]	4)	205	240	150	103,5	18	23	265	230	300	4	274 201	122	125	200 250 250 300 300	176 194 218 257 315	287 310 336 445 539	366 405 435 553 640	642 665 691 800 894	721 760 790 908 995	141 151 163 194 241	390 390 390 390 421	120 124 137 172 215	126 131 146 184 220
160	**100** **112** **132** **160** **180**	160 100	252 201	226	80	38	80	32[5]	80[5]	4)	247 260	280	180	128,5	22	28	265	230	300	4	328 249	155	136	250 250 300 350 350	194 218 257 315 354	310 336 445 539 613	405 435 553 640 734	737 763 872 979 1053	832 862 980 1080 1174	151 163 194 241 278	460 460 460 461 498	183 196 231 277 336	190 205 243 282 326
180	**112** **132** **160** **180** **200**[6]	180 100	252 201	226	90	38	80	32[5]	80[5]	4)	247 260	300	180	128,5	22	28	300	250	350	5	328 249	155	150	250 300 350 350 350	218 257 315 354 354	336 445 539 613 654	435 553 640 734 734	763 872 979 1053 1094	862 980 1080 1174 1174	163 194 241 278 278	480 480 480 498 498	220 255 301 360 386	229 267 306 350 374
200	**132** **160** **180** **200** **225**	200 125	320 250	282	100	48	110	38[5]	80[5]	4)	305 315	355	225	158	27	34	350	300	400	5	410 307	190	167	300 350 350 400 450	257 315 354 354 411	445 539 613 654 710	553 640 734 734 -	975 1069 1143 1184 1250	1083 1170 1264 1264 -	194 241 278 278 298	580 580 580 580 580	362 408 467 493 584	374 413 457 481 -

1) Working length of thread 2 · F.
2) Values valid for brake motor.
4) For dimension, number and angular position, see ch. 6.
5) For the combined units - gear red. 50 with mot. 71, gear red. 63 ... 81 with mot. 80, gear red. 100 with mot. 90, gear red. 125 with mot. 100, 112, gear red. 140 with mot. 100, 112, 132, gear red. 160 with mot. 132, gear red. 180 with mot. 132 ... 180, gear red. 200 with mot. 160, 180 - having i_N = 31,5 (and i_N = 40 for gear red. 50 with mot. 63, for gear red. 140 with mot. 112 and for gear red. 180 with mot. 132) see column $i_N \leq 25$.
6) Mounting position **B5R** (see ch. 1.2).
7) On request and with price addition, dimension P_1 = 160: consult us.
8) For combined units with i_N final = 31,5 see column $i_N \leq 25$.

42

Designs[1] (direction of rotation)

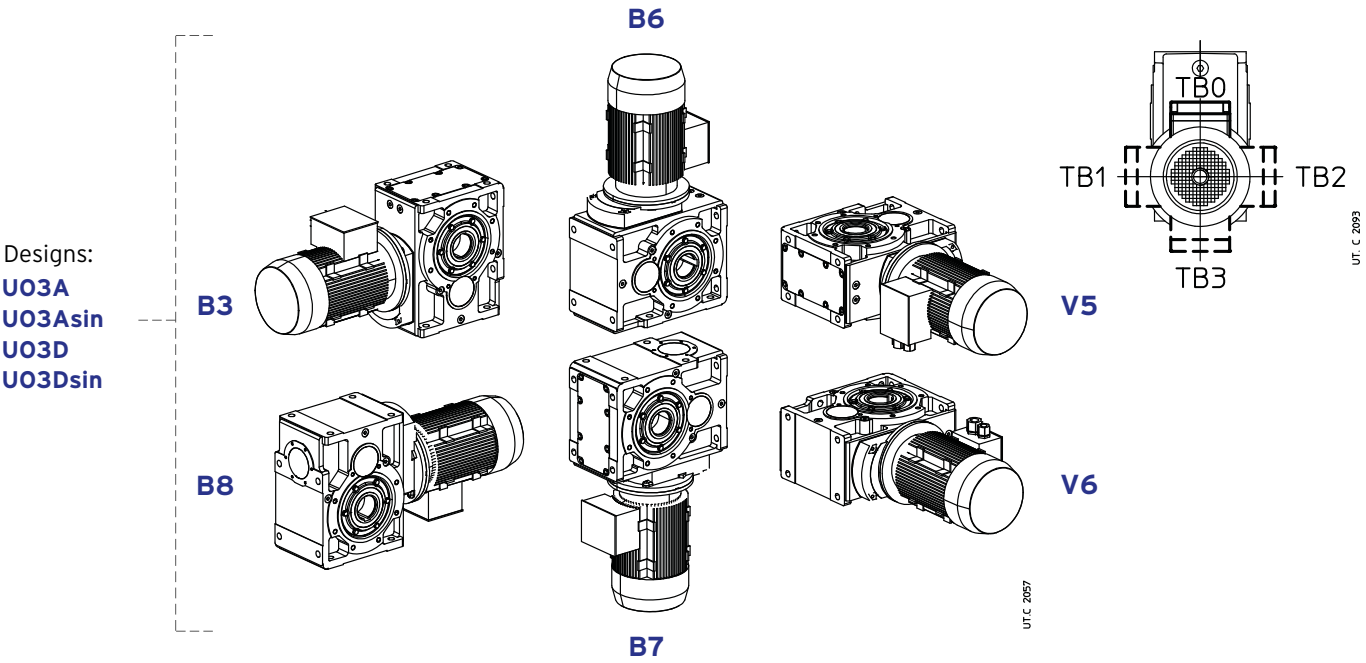
MR ICI 40 ... 200



Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

MR ICI 40 ... 200



Oil quantity MR ICI 40 ... 200

Lubricant quantities [l] stated are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	40	50	63, 64	80, 81	100	125	140	160	180	200
B3	0,31	0,45	1	1,6	3	6	6,8	10,6	11,9	20
B8	0,35	0,65	1,2	2,2	4,2	9	10,6	16	18,9	30
B7	0,31	0,45	1	1,6	3	6	6,8	10,6	11,9	20
B6	0,5	0,8	1,6	2,7	5,8	11,6	13,7	21	24,8	40
V5	0,3	0,5	1,15	2	3,8	7	8,3	13	15,3	24
V6	0,3	0,5	1,15	2	3,8	7	8,3	13	15,3	24

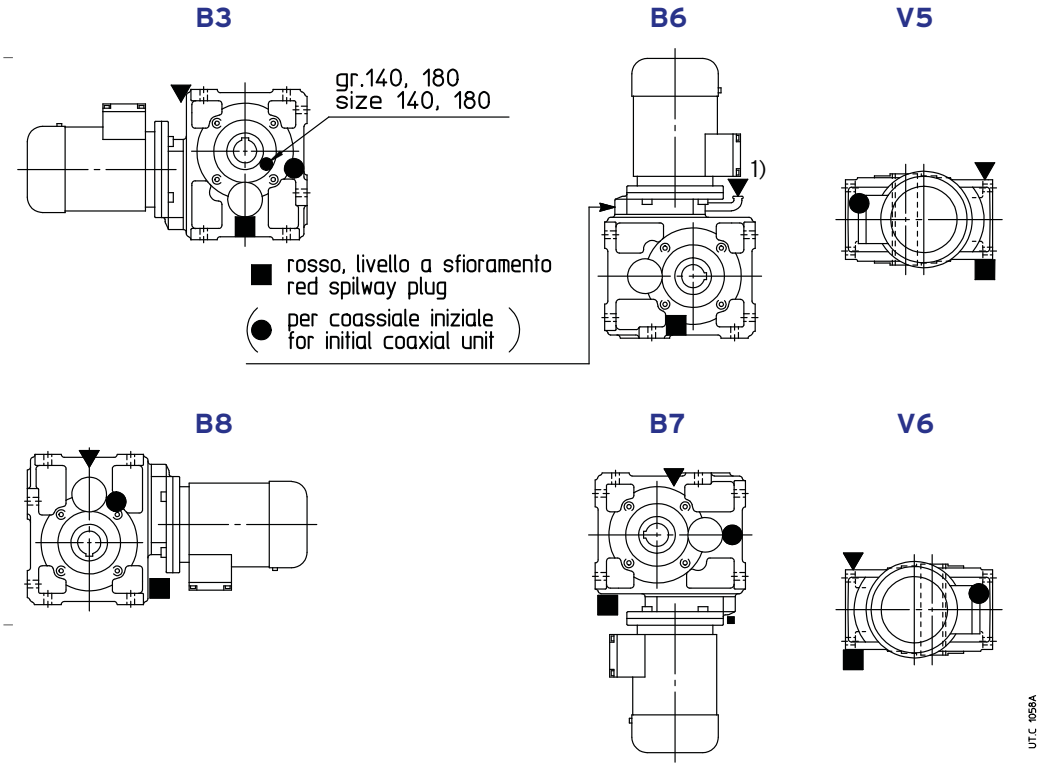
● Position of reference groove (see ch. 6) for radial load verification.
1) For motor design see ch. 2.

Lubrication details

MR ICI 100 ... 200

Designs:

UO3A
UO3Asin
UO3D
UO3Dsin



1) See also ch. 6 page 43.

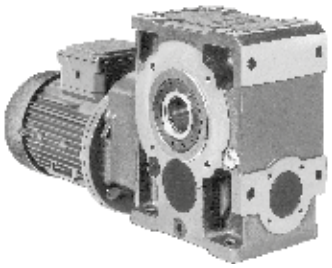
▼ oil filler plug
● oil level plug
■ oil drain plug

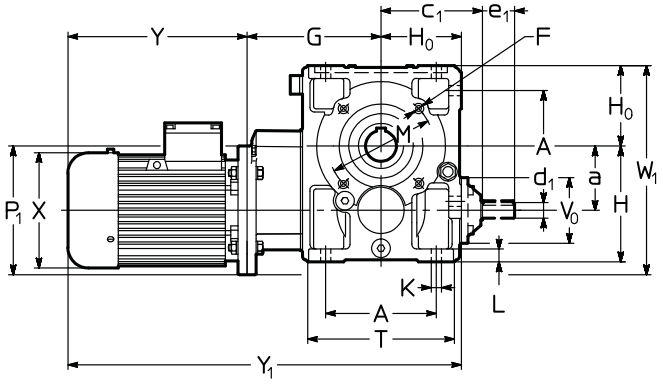
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

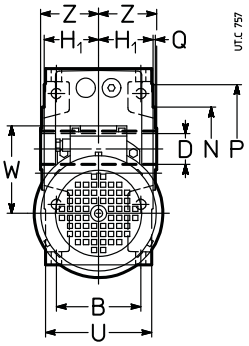
14.3 - Gearmotors MR C3I

Dimensions

MR C3I 50 ... 125



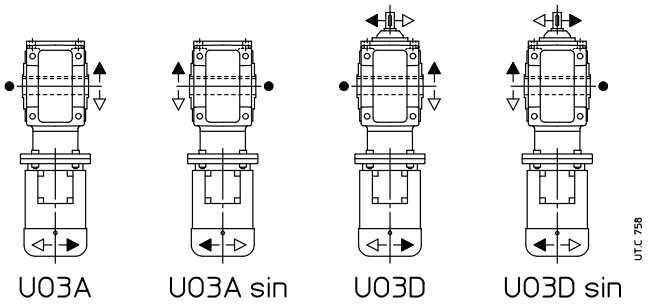




Red.	Mot.	a	A	c_1	D Ø H7	d_1 Ø	e_1	d_1 Ø	e_1	F	G	H h11	H_0 h11	H_1 h12	K	L	M Ø	N Ø h6	P Ø	Q	T	V_0 Ø	Z	P_1 Ø	X Ø ≈	Y ≈		Y_1 ≈		W ≈	W_1 ≈	kg	
	B5		**B**			$i_N \leq 125$		$i_N \geqslant 160$		1)											**U**						2)		2)				2)
50	**63** **71**	50	86 75	94	24	16 3)	30 3)	14	30	M6	117	100	67	49	9,5	12	85	70	105	2,5	120 95	78	53	140 160	123 138	189 216	244 278	373 400	428 462	95 112	187 197	17 19	19 22
63 **64**	**71** **80**	63	102 90	108	30 **(63)** 32 **(64)**	16 3)	30 3)	14	30	M8	145	125	80	58,5	11,5	14	100	80	120	3	143 114	78	63	160 200	138 156	216 233	278 302	441 458	503 527	112 121	223 243	24 29	27 33
80 **81**	**71** **80**	80	132 106	131	38 **(80)** 40 **(81)**	19 3)	40 3)	16	30	M10	165	150	100	69,5	14	17	130	110	160	3,5	180 135	86	75	160 200	138 156	216 233	278 302	481 498	543 567	112 121	260 280	36 41	39 45
100	**80** **90**	100	172 131	157	48	24 3)	50 3)	19	40	M12	203	180	125	84,5	16	20	165	130	200	3,5	228 165	104	90	200 200	156 176	233 287	302 366	561 615	630 694	121 141	325 325	63 69	67 75
125	**90** **100** **112**	125	212 162	188	60	28 3)	60 3)	24	50	4)	249	225	150	103,5	18	23	215	180	250	4	274 201	122	110	200 250 250	176 194 218	287 310 336	366 405 435	686 709 735	765 804 834	141 151 163	375 400 400	109 113 126	115 120 135

Designs[5] (direction of rotation)

MR C3I 50 ... 125



● Position of reference groove (see ch. 6) for radial load verification.
1) Working length for thread 2 · F.
2) Values valid for brake motor.
3) For gearmotor size 50 with motor 71, sizes 63, 64 with motor 80, sizes 80, 81 with motor 80, size 100 with motor 90, size 125 with motors 100, 112 and with i_N = 125, see d_1 for $i_N \geqslant 160$.
4) For dimension, number and angular position see ch. 6.
5) For motor design see ch. 2.

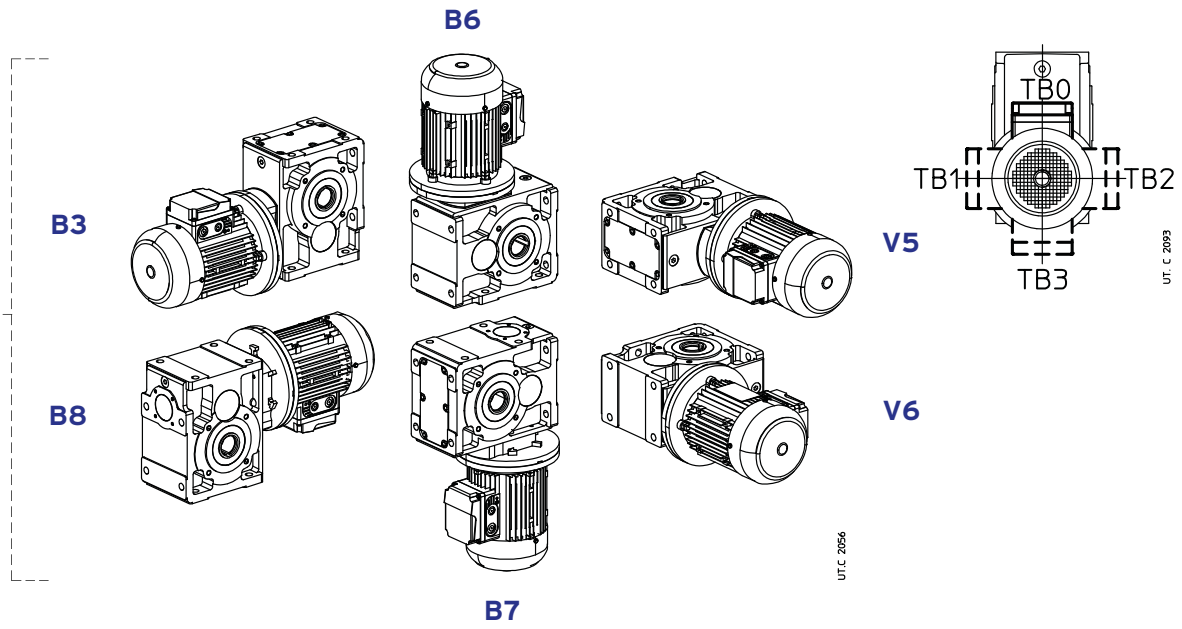
Mounting positions

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

MR C3I 50 ... 125

Designs:

UO3A
UO3Asin
UO3D
UO3Dsin



Oil quantity MR C3I 50 ... 125

Lubricant quantities [l] stated are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	50	63, 64	80, 81	100	125
B3	0,5	1,2	1,9	3,3	6,4
B8	0,7	1,4	2,5	4,5	9,5
B7	0,5	1,2	1,9	3,3	6,4
B6	0,9	1,8	3	6,3	12,8
V5	0,55	1,35	2,3	4,1	7,5
V6	0,55	1,35	2,3	4,1	7,5

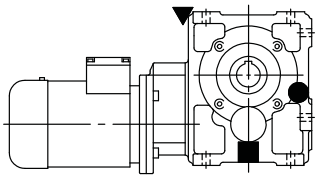
Lubrication details

MR C3I 100 ... 125

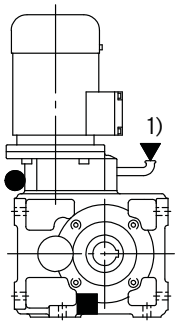
Designs:

UO3A
UO3Asin
UO3D
UO3Dsin

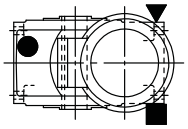
B3



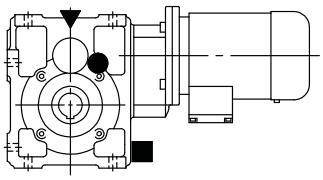
B6



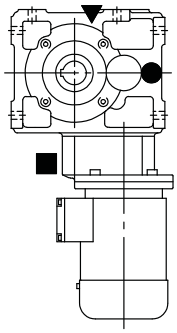
V5



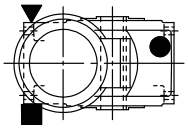
B8



B7



V6



UTC 1061A

1) See also ch. 6 page 43.

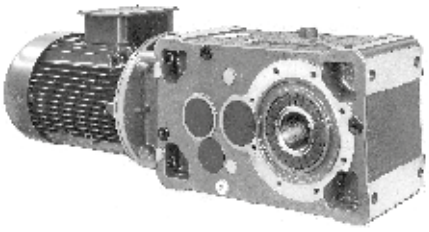
▼ oil filler plug
● oil level plug
■ oil drain plug

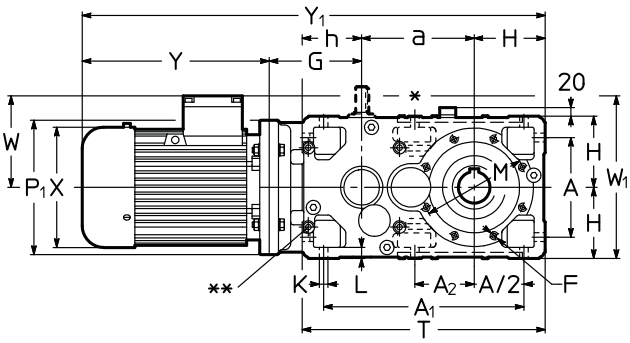
▽ oil filler plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

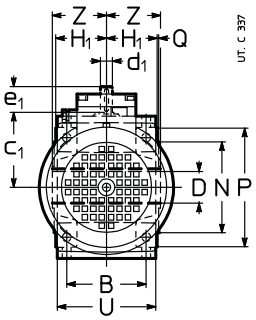
14.4 - Gearmotors MR C2I

Dimensions

MR C2I 140 ... 360







Red.	Mot.	a	A	A_1	A_2	c_1	D Ø H7	d_1 Ø	e_1	d_1 Ø	e_1	F	G	H	H_1	h	K Ø	L	M Ø	N Ø h6	P Ø	T	Z	P_1 Ø	X Ø ≈	Y ≈		Y_1 ≈		W ≈	W_1 ≈	kg	
	B5		B					$i_N \leq 63$		$i_N \geq 71$		1)	4)	h11	h12	h11				Q		U					2)		2)				2)
140	100	240	212	427	127	157	70	24	50	19	40	5)	170	150	103,5	125	18	23	265	230	300	515	125	250	194	310	405	870	965	151	301	140	147
	112		162																	4		201		250	218	336	435	896	995	163	313	153	162
	132												195											300	257	445	553	1030	1138	194	344	188	200
	160[3]																							300	315	539	640	1124	1225	241	391	231	236
160	100	285	252	507	150*	188	80	28	60	24	50	M16	205	180	128,5	150	22	28	265	230	300	615	136	250	194	310	405	980	1075	151	360	211	218
	112		201																	4		249		250	218	336	435	1006	1105	163	360	224	233
	132												220											300	257	445	553	1130	1238	194	374	259	271
	160												250											350	315	539	640	1254	1355	241	421	305	310
	180																							350	354	613	734	1328	1449	278	458	364	354
180	100	305	252	527	170	188	90	28	60	24	50	M16	205	180	128,5	150	22	28	300	250	350	635	150	250	194	310	405	1000	1095	151	360	229	236
	112		201																	5		249		250	218	336	435	1026	1125	163	360	242	251
	132												220											300	257	445	553	1150	1258	194	374	277	289
	160												250											350	315	539	640	1274	1375	241	421	323	328
	180																							350	354	613	734	1348	1469	278	458	382	372
	200[3]																							350	354	654	734	1389	1469	278	458	408	396
200	132	360	320	635	198*	226	100	38	80	32	80	5)	252	225	158	180	27	34	350	300	400	765	167	300	257	445	553	1282	1390	194	450	398	410
	160		250										282							5		307		350	315	539	640	1406	1507	241	466	444	449
	180																							350	354	613	734	1480	1601	278	503	503	493
	200																							400	354	654	734	1521	1601	278	503	529	517
	225												312											450	411	710	-	1607	-	298	523	620	-
225	132	385	320	660	223	226	110	38	80	32	80	M20	252	225	158	180	27	34	400	350	450	790	180	300	257	445	553	1307	1415	194	450	429	441
	160		250										282							5		307		350	315	539	640	1431	1532	241	466	475	480
	180																							350	354	613	734	1505	1626	278	503	534	524
	200																							400	354	654	734	1546	1626	278	503	560	548
	225												312											450	411	710	-	1632	-	298	523	651	-
	250[3]																							450	411	710	-	1632	-	298	523	674	-
250	160	450	396	791	247*	282	125	48	110	38	80	5)	325	280	195	225	33	42	500	450	550	955	206	350	315	539	640	1594	1695	241	560	686	691
	180		310																	5		380		350	354	613	734	1668	1789	278	560	745	735
	200																							400	354	654	734	1709	1789	278	560	771	759
	225												355											450	411	710	-	1795	-	298	578	862	-
	250																							550	411	735	-	1820	-	298	578	885	-
	280																							550	490	819	-	1904	-	360	640	1071	-
280	160	480	396	821	277	282	140	48	110	38	80	M24	325	280	195	225	33	42	500	450	550	985	222	350	315	539	640	1624	1725	241	560	740	745
	180		310																	5		380		350	354	613	734	1698	1819	278	560	799	789
	200																							400	354	654	734	1739	1819	278	560	825	813
	225												355											450	411	710	-	1825	-	298	578	916	-
	250																							550	411	735	-	1850	-	298	578	939	-
	280																							550	490	819	-	1934	-	360	640	1125	-
	315[3]																							550	490	820	-	1935	-	360	640	1086	-
320	200	570	510	1005	318*	357[6]	160	55[7]	110[7]	48	110	5)	380	355	241	280	39	52	600	550	660	1205	254	400	354	654	734	1959	2039	278	710	1199	1187
321	225		386			380[8]		70[8]	140[8]				410							6		470		450	411	710	-	2045	-	298	710	1290	-
	250																							550	411	735	-	2070	-	298	710	1313	-
	280																							550	490	819	-	2154	-	360	715	1499	-
	315												440											660	604	962	-	2327	-	445	800	1747	-
360	200	610	510	1045	358	357[6]	180	55[7]	110[7]	48	110	M30	380	355	241	280	39	52	600	550	660	1245	273	400	354	654	734	1999	2079	278	710	1294	1282
	225		386			380[8]		70[8]	140[8]				410							6		470		450	411	710	-	2085	-	298	710	1385	-
	250																							550	411	735	-	2110	-	298	710	1408	-
	280																							550	490	819	-	2194	-	360	715	1594	-
	315												440											660	604	962	-	2367	-	445	800	1842	-

* Only No. 2 holes M 16 32 (size 160), M 20 38 (size 200), M 24 46 (size 250) and M 30 58 (size 320) and not for design U02A.

** Machined surface and N. 4 threaded holes (dimensions in ch. 6 «Gear reducer input face») on opposite side (not in view) too.

1) Working length for thread 2 · F.

2) Values valid for brake motor.

3) Mounting position **B5R** (see ch. 1.2).

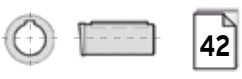
4) For designs **...V**, **...V sin**, **...R**, **...R sin**, sizes 140 ... 360, dimension **G** increases by maximum 10 mm.

5) For dimension, number and angular position see ch. 6.

6) Dimension valid for $i_N \geq 31,5$.

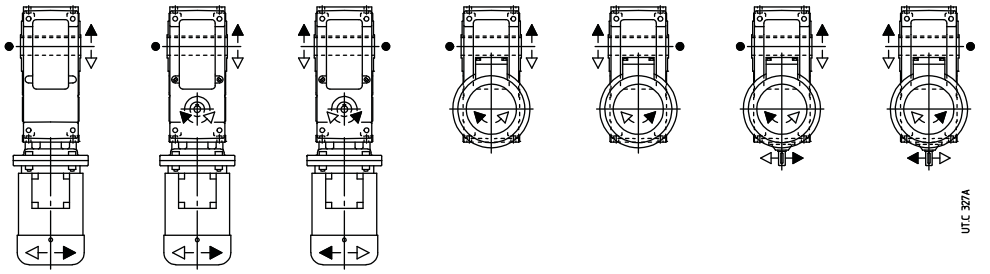
7) Dimension valid for $i_N = 31,5 \ldots 63$.

8) Dimension valid for $i_N \leq 28$.



Designs[1] (direction of rotation)

MR C2I 140 ... 360



U02A[2] U02H U02Hsin U02V U02Vsin U02R U02Rsin

● Position of reference groove (see ch. 6) for radial load verification.
1) For motor design see ch. 2.
2) The housing of this design is not pre-arranged for other designs.

Mounting positions

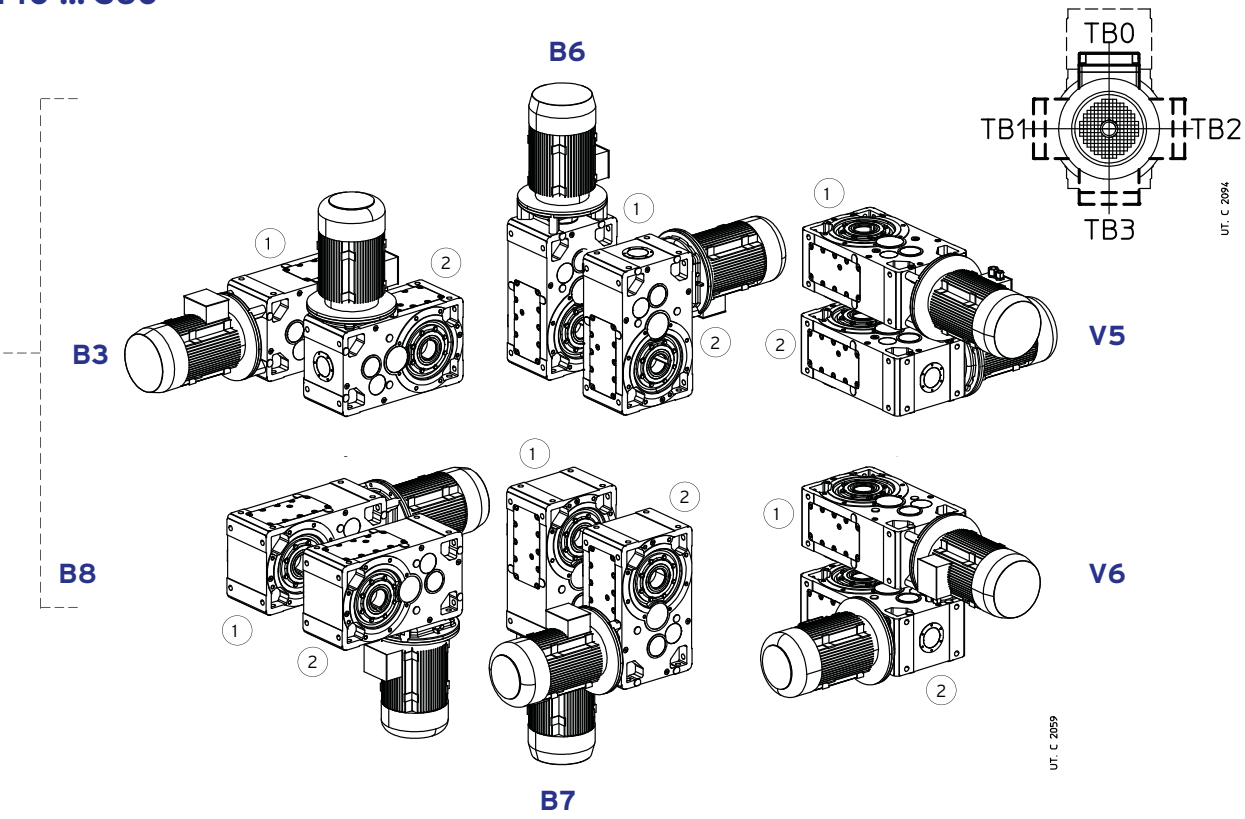
Unless otherwise stated, gear reducers are supplied in mounting position **B3** (see ch. 2).

MR C2I 140 ... 360

Designs:

① **U02A**
U02H
U02Hsin

② **U02V**
U02Vsin
U02R
U02Rsin



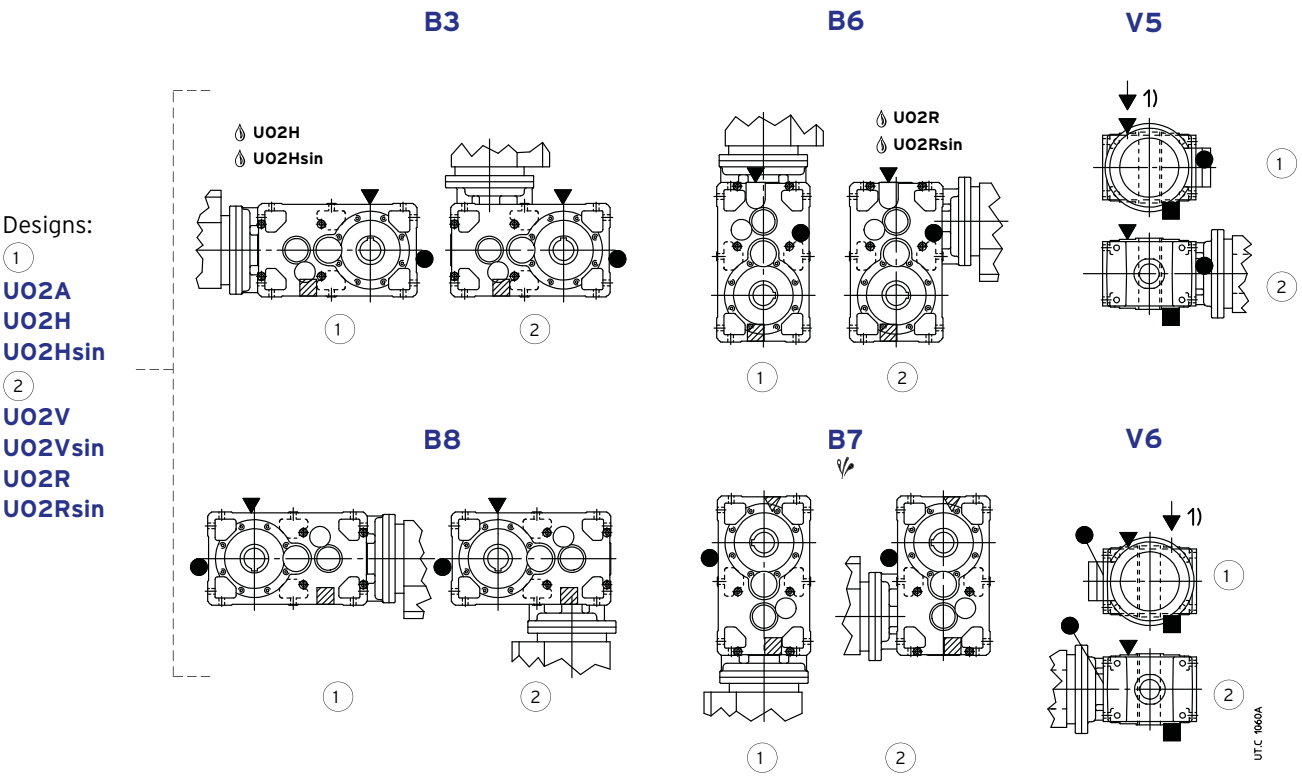
Oil quantity MR C2I 140 ... 360

Lubricant quantities [l] stated are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is defined by the level plug.

Mounting position	140	160	180	200	225	250	280	320, 321	360
B3	6,6	12	13	25	26	47	51	97	100
B8	6,6	12	13	25	26	47	51	97	100
B7	9,7	18	19	35	37	67	72	137	140
B6	10,8	20	21	39	41	75	80	152	156
V5	9,7	18	19	35	37	67	72	137	140
V6	9,7	18	19	35	37	67	72	137	140

Lubrication details

MR C2I 140 ... 360



Designs:
(1)
U02A
U02H
U02Hsin
(2)
U02V
U02Vsin
U02R
U02Rsin

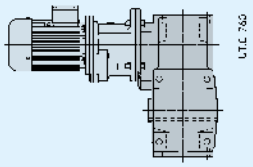
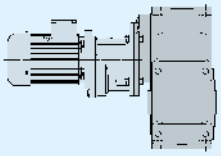
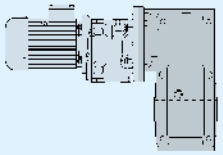
Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 4.
Possible bearing lubrication pump (see ch 17 (19)).
1) Position of intermediate hole for mounting position identification.

▼ oil filler plug
● oil level plug
■ oil drain plug

▽ oil drain plug on opposite side (not in view)
◍ oil level plug on opposite side (not in view)
▨ oil drain plug on opposite side (not in view)

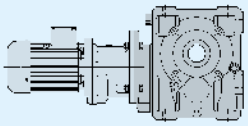
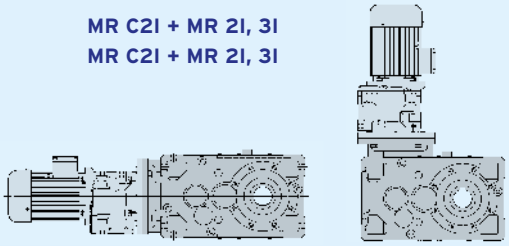
15 - Combined gear units

Final helical gear reducer

M_{N2} [N m] for $n_2 \leqslant$ **14** min^{-1} 1)	**MR 2I + R 2I, 3I** **MR 2I + MR 2I, 3I**  $i_N \approx$ 80 ... 2 500 η final = 0,96	**MR 3I + R 2I, 3I** **MR 3I + MR 2I, 3I**  $i_N \approx$ 160 ... 8 000 η final = 0,94	**MR 3I + R 2I, 3I** **MR 3I + MR 2I, 3I**  $i_N \approx$ 125 ... 12 500 η final = 0,94
315	**MR 2I 63 - 19×160 - 19,3** + **R 2I** or **MR 2I, 3I 40** i final = 19,3	**MR 3I 63 - 14×140 - 48,9** + **R 2I** or **MR 2I, 3I 32** i final = 48,9	
400	**MR 2I 64 - 19×160 - 20,1** + **R 2I** or **MR 2I, 3I 40** i final = 20,1	**MR 3I 64 - 14×140 - 50,9** + **R 2I** or **MR 2I, 3I 32** i final = 50,9	
670	**MR 2I 80 - 19×160 - 20,8** + **R 2I** or **MR 2I, 3I 40** i final = 20,8	**MR 3I 80 - 19×160 - 52,9** + **R 2I** or **MR 2I, 3I 40** i final = 52,9	
780	**MR 2I 81 - 19×160 - 20,8** + **R 2I** or **MR 2I, 3I 40** i final = 20,8	**MR 3I 81 - 19×160 - 52,9** + **R 2I** or **MR 2I, 3I 40** i final = 52,9	
1 600	**MR 2I 100 - 24×200 - 19,3** + **R 2I, 3I** or **MR 2I, 3I 50**[2)] i final = 19,3	**MR 3I 100 - 24×200 - 49** + **R 2I, 3I** or **MR 2I, 3I 50**[2)] i final = 49	
3 150	**MR 2I 125 - 28×250 - 19,3** + **R 2I, 3I** or **MR 2I, 3I 63**[2)] i final = 19,3	**MR 3I 125 - 24×200 - 60,2** + **R 2I, 3I** or **MR 2I, 3I 50**[2)] i final = 60,2	
4 750			**MR 3I 140 - 28×250 - 50,4** + **R** or **MR 2I, 3I 63**[2)] i final = 50,4
7 100			**MR 3I 160 - 38×300 - 31,6** + **R** or **MR 2I 80**[2)] i final = 31,6 **MR 3I 160 - 28×250 - 107** + **R** or **MR 2I, 3I 63**[2)] i final = 107 for $n_2 \leqslant$ 2,8 min^{-1}
9 500			**MR 3I 180 - 38×300 - 51** + **R** or **MR 2I 80**[2)] i final = 51 **MR 3I 180 - 28×250 - 108** + **R** or **MR 2I, 3I 63**[2)] i final = 108 for $n_2 \leqslant$ 2,8 min^{-1}
14 000			**MR 3I 200 - 48×350 - 31,5** + **R** or **MR 2I 100**[2)] i final = 31,5 **MR 3I 200 - 38×300 - 100** + **R** or **MR 2I, 3I 80**[2)] i final = 100 for $n_2 \leqslant$ 2,8 min^{-1}
20 000			**MR 3I 225 - 48×350 - 51,8** + **R** or **MR 2I 100**[2)] i final = 51,8 **MR 3I 225 - 38×300 - 98,5** + **R** or **MR 2I, 3I 80**[2)] i final = 98,5 for $n_2 \leqslant$ 2,8 min^{-1}
31 500			**MR 3I 250 - 60×450 - 33,5** + **R** or **MR 2I 125**[2)] i final = 33,5 **MR 3I 250 - 48×350 - 98,5** + **R** or **MR 2I, 3I 100**[2)] i final = 98,5 for $n_2 \leqslant$ 2,8 min^{-1}
37 500			**MR 3I 280 - 60×450 - 52,7** + **R** or **MR 2I 125**[2)] i final = 52,7 **MR 3I 280 - 48×350 - 100** + **R** or **MR 2I, 3I 100**[2)] i final =100 for $n_2 \leqslant$ 2,8 min^{-1}
47 500			**MR 3I 320 - 60×450 - 67,1** + **R** or **MR 2I 125**[2)] i final = 67,1 **MR 3I 320 - 60×450 - 105** + **R** or **MR 2I, 3I 125**[2)] i final = 105 for $n_2 \leqslant$ 2,8 min^{-1}
60 000			**MR 3I 321 - 60×450 - 67,1** + **R** or **MR 2I 125**[2)] i final = 67,1 **MR 3I 321 - 60×450 - 105** + **R** or **MR 2I, 3I 125**[2)] i final = 105 for $n_2 \leqslant$ 2,8 min^{-1}
77 500			**MR 3I 360 - 60×450 - 103** + **R** or **MR 2I, 3I 125**[2)] i final = 103

Initial gear reducer or gearmotor dimensions and performance: catalog E ch. 8, 9 and 10.
1) ***f*s** required may be reduced by **1,06** for n_2 = 2,8 ÷ 0,7 min^{-1}, by **1,12** for $n_2 \leqslant$ 0,71 min^{-1}, provided that it is always $\geqslant$ 0,8.
2) Initial gear reducer or gearmotor design «Oversized B5 flange»; size 63 has a low speed shaft reduced to 28 mm: «Oversized B5 flange - Ø 28».

Final bevel helical gear reducer

M_{N2} [N m] for $n_2 \leqslant$ **14** min^{-1} 1)	**MR ICI + R 2I, 3I** **MR ICI + MR 2I, 3I**  $i_N \approx$ 125 ... 8 000 η_{final} = 0,94	**MR C2I + MR 2I, 3I** **MR C2I + MR 2I, 3I**  $i_N \approx$ 125 ... 12 500 η_{final} = 0,94
315	**MR ICI 63 - 19×160 - 32** + **R** or **MR 2I, 3I 40** i_{final} = 32	
400	**MR ICI 64 - 19×160 - 32** + **R** or **MR 2I, 3I 40** i_{final} = 32	
670	**MR ICI 80 - 19×160 - 33,4** + **R** or **MR 2I, 3I 40** i_{final} = 33,4	
780	**MR ICI 81 - 19×160 - 33,4** + **R** or **MR 2I, 3I 40** i_{final} = 33,4	
1 600	**MR ICI 100 - 24×200 - 31,4** + **R** or **MR 2I, 3I 50**[2)] i_{final} = 31,4	
3 150	**MR ICI 125 - 28×250 - 32** + **R** or **MR 2I, 3I 63**[2)] i_{final} = 32 **MR ICI 125 - 24×200 - 62,5** + **R** or **MR 2I, 3I 50**[2)] i_{final} = 62,5 for $M_{N2} \leqslant$ 2650 N m	
4 750	**MR ICI 140 - 28×250 - 40** + **R** or **MR 2I, 3I 63**[2)] i_{final} = 40 for $M_{N2} \leqslant$ 3750 N m	**MR C2I 140 - 28×250 - 50,4** + **R** or **MR 2I, 3I 63**[2)] i_{final} = 50,4
7 100	**MR ICI 160 - 38×300 - 33,3** + **R** or **MR 2I, 3I 80**[2)] i_{final} = 33,3 **MR ICI 160 - 28×250 - 62,5** + **R** or **MR 2I, 3I 63**[2)] i_{final} = 62,5 for $M_{N2} \leqslant$ 6000 N m	**MR C2I 160 - 38×300 - 32,5** + **R** or **MR 2I 80**[2)] i_{final} = 32,5 **MR C2I 160 - 28×250 - 103** + **R** or **MR 2I, 3I 63**[2)] i_{final} = 103 for $n_2 \leqslant$ 2,8 min^{-1}
9 500	**MR ICI 180 - 38×300 - 40,9** + **R** or **MR 2I, 3I 80**[2)] i_{final} = 40,9 for $M_{N2} \leqslant$ 8500 N m	**MR C2I 180 - 38×300 - 52,4** + **R** or **MR 2I 80**[2)] i_{final} = 52,4 **MR C2I 180 - 28×250 - 104** + **R** or **MR 2I, 3I 63**[2)] i_{final} = 104 for $n_2 \leqslant$ 2,8 min^{-1}
14 000	**MR ICI 200 - 48×350 - 33,3** + **R** or **MR 2I, 3I 100**[2)] i_{final} = 33,3 **MR ICI 200 - 38×300 - 62,5** + **R** or **MR 2I, 3I 80**[2)] i_{final} = 62,5 for $M_{N2} \leqslant$ 11800 N m	**MR C2I 200 - 48×350 - 32,3** + **R** or **MR 2I 100**[2)] i_{final} = 32,3 **MR C2I 200 - 38×300 - 102** + **R** or **MR 2I, 3I 80**[2)] i_{final} =102 for $n_2 \leqslant$ 2,8 min^{-1}
20 000		**MR C2I 225 - 48×350 - 53,1** + **R** or **MR 2I 100**[2)] i_{final} = 53,1 **MR C2I 225 - 38×300 - 100** + **R** or **MR 2I, 3I 80**[2)] i_{final} = 100 for $n_2 \leqslant$ 2,8 min^{-1}
31 500		**MR C2I 250 - 60×450 - 33,9** + **R** or **MR 2I 125**[2)] i_{final} = 33,9 **MR C2I 250 - 48×350 - 98,5** + **R** or **MR 2I, 3I 100**[2)] i_{final} = 98,5 for $n_2 \leqslant$ 2,8 min^{-1}
37 500		**MR C2I 280 - 60×450 - 53,1** + **R** or **MR 2I 125**[2)] i_{final} = 53,1 **MR C2I 280 - 48×350 - 100** + **R** or **MR 2I, 3I 100**[2)] i_{final} = 100 for $n_2 \leqslant$ 2,8 min^{-1}
47 500		**MR C2I 320 - 60×450 - 65,1** + **R** or **MR 2I 125**[2)] i_{final} = 65,1 **MR C2I 320 - 60×450 - 103** + **R** or **MR 2I, 3I 125**[2)] i_{final} = 103 for $n_2 \leqslant$ 2,8 min^{-1}
60 000		**MR C2I 321 - 60×450 - 65,1** + **R** or **MR 2I 125**[2)] i_{final} = 65,1 **MR C2I 321 - 60×450 - 103** + **R** or **MR 2I, 3I 125**[2)] i_{final} = 103 for $n_2 \leqslant$ 2,8 min^{-1}
77 500		**MR C2I 360 - 60×450 - 102** + **R** or **MR 2I, 3I 125**[2)] i_{final} = 102

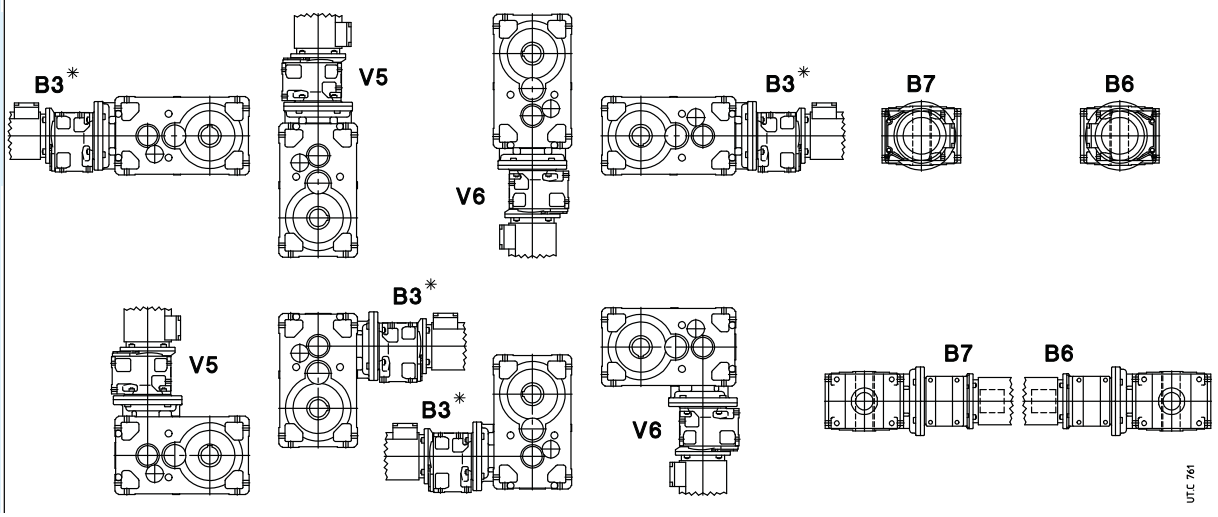
Initial gear reducer or gearmotor dimensions and performance: catalog E ch. 8, 9 and 10.
1) *f*s required may be reduced by **1,06** for n_2 = 2,8 ÷ 0,7 min^{-1}, by **1,12** for $n_2 \leqslant$ 0,71 min^{-1}, provided that it is always $\geqslant$ 0,8.
2) Initial gear reducer or gearmotor design «Oversized B5 flange»; size 63 has a low speed shaft reduced to 28 mm: «Oversized B5 flange - Ø 28».

Initial gear reducer or gearmotor mounting position

In order to make easier the individualization of the combined gearmotors mounting position refer to the following table where, according to the type, to the mounting position and to the final gear reducer, the mounting positions of the initial gear reducer or gearmotor are stated.

Initial **gear reducer or gearmotor** mounting position

	mounting position of initial gear reducer or gearmotor					
	B3	**B6**	**B7**	**B8**	**V5**	**V6**
MR 2I 63 ... 125 + R 2I, 3I od.r MR 2I, 3I	B5* =40 [1)] B7 ≥50	B5* =40 B3* ≥50	B5* =40 B3* ≥50	B5* =40 [1)] B6 ≥50	V1 =40 V5 ≥50	V3 =40 V6 ≥50
MR 3I 63 ... 125 + R 2I, 3I od.r MR 2I, 3I	B5* ≤40 [1)] B7 ≥50	B5* ≤40 B3* ≥50	B5* ≤40 B3* ≥50	B5* ≤40 [1)] B6 ≥50	V1 ≤40 V5 ≥50	V3 ≤40 V6 ≥50
MR 3I 140 ... 360 + R 2I, 3I od.r MR 2I, 3I	B7	B3*	B3*	B6	V5	V6
MR ICI 63 ... 200 + R 2I, 3I od.r MR 2I, 3I	B5* ≤40 B3* ≥50	V1 ≤40 V5 ≥50	V3 ≤40 V6 ≥50	B5* ≤40 B3* ≥50	B5* ≤40 [1)] B6 ≥50	B5* ≤40 [1)] B7 ≥50
MR C2I 140 ... 360 + R 2I, 3I od.r MR 2I, 3I	B3*	V5	V6	B3*	B7	B6
	V5	B3* B3*	V6	B7	B6	



* This mounting position, being standard, must not be stated in the designation.
1) Grease quantity is the same foreseen for B3 mounting position in cat. E.
On name plate there is a * in correspondence of mounting position.

16 - Radial loads

16.1 - Radial loads F_{r1} [N] on high speed shaft end

Radial loads generated on the shaft end by a drive connecting gear reducer and motor must be less than or equal to those given in the relevant table.

n_1 min^{-1}	50		63, 64				80, 81			100				125, 140				
	2I		I	2I	3I		I	2I	3I	I	2I	3I		I	2I	3I 140	3I 125	
	CI	ICI		CI		ICI		CI	ICI		CI	ICI			CI	C2I	ICI	
												$i_N \leq 80$	$i_N \geq 100$				$i_N \leq 80$	$i_N \geq 100$
1800	300	150	750	475	150	236	1180	750	375	1900	1180	600	375	3000	1900	1180	950	600
1400	355	170	850	530	170	265	1320	850	425	2120	1320	670	425	3350	2120	1320	1060	670
1120	355	180	900	560	180	280	1400	900	450	2240	1400	710	450	3550	2240	1400	1120	710
900	375	190	950	600	190	300	1500	950	475	2360	1500	750	475	3750	2360	1500	1180	750
710	425	212	1060	670	212	335	1700	1060	530	2650	1700	850	530	4250	2650	1700	1320	850
560	450	224	1120	710	224	355	1800	1120	560	2800	1800	900	560	4500	2800	1800	1400	900
450	475	236	1180	750	236	375	1900	1180	600	3000	1900	950	600	4750	3000	1900	1500	950
355	530	265	1320	850	265	425	2120	1320	670	3350	2120	1060	670	5300	3350	2120	1700	1060
F_{r1max}	**530**	**265**	**1320**	**850**	**265**	**425**	**2120**	**1320**	**670**	**3350**	**2120**	**1060**	**670**	**5300**	**3350**	**2120**	**1700**	**1060**

n_1 min^{-1}	160, 180				200, 225				250, 280			320 ... 360		
	I	2I	3I		I	2I	3I		I	2I	3I	I	2I	3I
		CI	C2I	ICI		CI	C2I	ICI		CI	C2I		CI	C2I
1800	4750	3000	1900	1500	7500	4750	3000	2360	11800	7500	4750	19000	11800	7500
1400	5300	3350	2120	1700	8500	5300	3350	2650	13200	8500	5300	21200	13200	8500
1120	5600	3550	2240	1800	9000	5600	3550	2800	14000	9000	5600	22400	14000	9000
900	6000	3750	2360	1900	9500	6000	3750	3000	15000	9500	6000	23600	15000	9500
710	6700	4250	2650	2120	10600	6700	4250	3350	17000	10600	6700	26500	17000	10600
560	7100	4500	2800	2240	11200	7100	4500	3550	18000	11200	7100	28000	18000	11200
450	7500	4750	3000	2360	11800	7500	4750	3750	19000	11800	7500	30000	19000	11800
355	8500	5300	3350	2650	13200	8500	5300	4250	21200	13200	8500	33500	21200	13200
F_{r1max}	**8500**	**5300**	**3350**	**2650**	**13200**	**8500**	**5300**	**4250**	**21200**	**13200**	**8500**	**33500**	**21200**	**13200**

The radial load ***F***r1 given by the following formula refers to most common:

$$F_{r1} = \frac{28650 \cdot P_1}{d \cdot n_1}$$ [N] for timing belt drive

$$F_{r1} = \frac{47750 \cdot P_1}{d \cdot n_1}$$ [N] for V-belt drive

where:

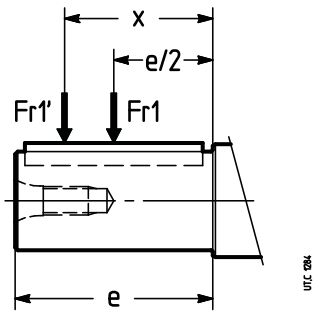
P_1 [kW] is the power required at the input side of gear reducer;

n_1 [min-1] is the speed;

d [m] is the pitch diameter.

Radial loads given in the table are valid for overhung loads on centre line of high speed shaft end, i.e. operating at a distance of 0,5 · e (e = shaft end length) from the shoulder. If radial loads are in a different position, i.e. at a distance differing from 0,5 · e from shoulder, re-calculate the permissible value of radial load according to the following formula, trying not to exceed the maximum value F_{r1max}, stated in the table:

$$F_{r1}' = F_{r1} \cdot \frac{e/2 + y}{x + y}$$ [N]



where:

F_{r1}' [N] is the permissible radial load acting at the distance x from shaft shoulder;

F_{r1} [N] is the permissible radial load acting on centre line of high speed shaft end (see table above);

e [mm] is shaft end length (see ch. 8, 10);

y [mm] is given in the table;

x [mm] is the distance between the shaft shoulder and the load application point.

16.1 - Radial loads F_{r1} [N] on high speed shaft end

	y [mm]											
	R 1		**R 2I**	**R 3I**	**R CI**			**R ICI**	**R C2I**			
40	-		-	-	-		-		-			
50	-		92	-	62 54	$i \leq 7,85$ $i \geq 10,3$		44	-			
63, 64	92		98	37,5	75 60	$i \leq 8$ $i \geq 10$		52,5	-			
80, 81	110		112	52,5	88 74	$i \leq 8,33$ $i \geq 10,4$		52,5	-			
100	142 136	$i \leq 3,27$ $i \geq 3,92$	137	63	99 87	$i \leq 7,85$ $i \geq 9,81$		63	-			
125	170 167	$i \leq 3,62$ $i \geq 4$	166	74	134 94	$i \leq 8$ $i \geq 10$		74	-			
140	166 173	$i \leq 4,08$ $i \geq 4,5$	166	98	134 94	$i \leq 9$ $i \geq 10,2$		74	99 87	$i \leq 32$ $i \geq 37,5$		
160	210		207	121	135 110	$i \leq 8,27$ $i \geq 9,04$		87	134 94	$i \leq 33,1$ $i \geq 37,5$		
180	214		207	121	135 110	$i \leq 9,33$ $i \geq 10,4$		87	134 94	$i \leq 33,2$ $i \geq 37,3$		
200	265		256	146	163 139	$i \leq 8,27$ $i \geq 8,93$		102	135 110	$i \leq 34,2$ $i \geq 35,3$		
225	265		256	146	163 139	$i \leq 9,33$ $i \geq 10,2$		-	135 110	$i \leq 33,7$ $i \geq 36,2$		
250	356 332	$i \leq 3,62$ $i \geq 4$	317	182	200 174	$i \leq 10$ $i \geq 11,4$		-	163 139	$i \leq 33,1$ $i \geq 37,2$		
280	356 332	$i \leq 4,08$ $i \geq 4,5$	317	182	200 174	$i \leq 11,3$ $i \geq 12,9$		-	163 139	$i \leq 33,7$ $i \geq 37,5$		
320, 321	417		390	222	256 250	$i \leq 6,27$ $i \geq 7,83$		-	204 174	$i \leq 31,3$ $i \geq 36,3$		
360	417		390	222	256 250	$i \leq 9,2$ $i \geq 10$		-	204 174	$i \leq 32,5$ $i \geq 37,3$		

It is always advisable **to mount the pulley against the shaft shoulder** and in any case to avoid that the pulley exceeds the shaft end.

An **axial load** of up to 0,2 times the value in the table is permissible, simultaneously with the radial load.

In absence of the radial load, an axial load may be acting on center line, not higher than 0,5 times the stated radial load.

IMPORTANT: tabulated values for radial load *F*r1 can increase considerably in certain instances (direction of rotation, angular position of load, etc.). If necessary and/or in presence of **misaligned** axial loads, consult us.

16.1 - Radial loads F_{r1} [N] on high speed shaft end

V-belt drives

In the table the motor pulleys are given for the several power and motor polarity, together with radial loads present on motor and gear reducer motor shaft.

The drives have been calculated with a service factor ⩾1,4; in order to increase the service factor with same ***d*** value and number of belts, replace section SPA with SPB, section SPB with SPC, section SPC with 8V.

The radial loads have been calculated according to the formula $\frac{47\,750 \cdot P_1}{d \cdot n_1}$.

Radial load F_{r1}, relevant to the motor pulley selected, must be less than or equal to the one permitted by gear reducer.

IMPORTANT: for the good drive running and in order not to overload the motor and gear reducer bearings, reduce the overhang to a minimum and do not stress the belts excessively. The pulleys with ***d*** ⩾ 400 must be dynamically balanced.

Motor			Motor pulley: belt number and section, pitch diameter ***d*** [mm], radial load F_{r1} [N]														
P_1 kW	Size and pole n.			***d***	F_{r1} ≈		***d***	F_{r1} ≈		***d***	F_{r1} ≈		***d***	F_{r1} ≈		***d***	F_{r1} ≈
1,1	80B	2	2 Z	**71**	265	2 Z	**80**	236	2 Z	**90**	212	1 Z	**100**	190	1 Z	**112**	170
	90S	4	2 A	**90**	425	2 A	**100**	375	2 A	**112**	335	1 A	**125**	300	1 A	**140**	265
	90L	6	2 A	**90**	670	2 A	**100**	600	2 A	**112**	530	2 A	**125**	475	1 A	**140**	425
1,5	90S	2	2 A	**90**	280	2 A	**100**	250	1 A	**112**	224	1 A	**125**	200	1 A	**140**	180
	90L	4	2 A	**90**	560	2 A	**100**	500	2 A	**112**	450	2 A	**125**	400	1 A	**140**	355
	100LA	6	3 A	**90**	900	3 A	**100**	800	2 A	**112**	710	2 A	**125**	630	2 A	**140**	560
2,2	90LA	2	2 A	**90**	425	2 A	**100**	375	2 A	**112**	335	2 A	**125**	300	1 A	**140**	265
	100LA	4	3 A	**90**	850	3 A	**100**	750	3 A	**112**	670	2 A	**125**	600	2 A	**140**	530
	112M	6	3 A	**112**	1060	3 A	**125**	950	3 A	**140**	850	2 A	**160**	750	2 A	**180**	670
3	100LA	2	3 A	**90**	560	3 A	**100**	500	2 A	**112**	450	2 A	**125**	400	2 A	**140**	355
	100LB	4	3 A	**112**	900	3 A	**125**	800	2 A	**140**	710	2 A	**160**	630	2 A	**180**	560
	132S	6	3 SPA	**100**	1600	3 SPA	**112**	1400	2 SPA	**125**	1250	2 SPA	**140**	1120	2 SPA	**160**	1000
4	112M	2	3 A	**100**	670	3 A	**112**	600	2 A	**125**	530	2 A	**140**	475	2 A	**160**	425
	112M	4	3 A	**125**	1060	3 A	**140**	950	3 A	**160**	850	2 A	**180**	750	2 A	**200**	670
	132M	6	3 SPA	**112**	1900	3 SPA	**125**	1700	2 SPA	**140**	1500	2 SPA	**160**	1320	2 SPA	**180**	1180
5,5	132S	2	3 SPA	**100**	950	3 SPA	**112**	850	2 SPA	**125**	750	2 SPA	**140**	670	2 SPA	**160**	600
	132S	4	3 SPA	**112**	1700	3 SPA	**125**	1500	2 SPA	**140**	1320	2 SPA	**160**	1180	2 SPA	**180**	1060
	132MB	6	3 SPA	**140**	2120	3 SPA	**160**	1900	2 SPA	**180**	1700	2 SPA	**200**	1500	2 SPA	**224**	1320
7,5 (9,2)	132SB (SC)	2	3 SPA	**112**	1120	3 SPA	**125**	1000	2 SPA	**140**	900	2 SPA	**160**	800	2 SPA	**180**	710
	132M (MB)	4	3 SPA	**125**[1)]	2000	3 SPA	**140**	1800	2 SPA	**160**	1600	2 SPA	**180**	1400	2 SPA	**200**	1250
	160M	6	3 SPA	**160**	2500	3 SPA	**180**	2240	3 SPA	**200**	2000	2 SPA	**224**	1800	2 SPA	**250**	1600
11	160MR	2	3 SPA	**125**	1500	3 SPA	**140**	1320	2 SPA	**160**	1180	2 SPA	**180**	1060	2 SPA	**200**	950
	160M	4	3 SPA	**160**	2360	3 SPA	**180**	2120	3 SPA	**200**	1900	2 SPA	**224**	1700	2 SPA	**250**	1500
	160L	6	3 SPA	**200**	3000	3 SPA	**224**	2650	3 SPA	**250**	2360	2 SPA	**280**	2120	2 SPA	**315**	1900
15	160M	2	3 SPA	**140**	1800	3 SPA	**160**	1600	3 SPA	**180**	1400	2 SPA	**200**	1250	2 SPA	**224**	1120
	160L	4	3 SPA	**180**	2800	3 SPA	**200**	2500	3 SPA	**224**	2240	3 SPA	**250**	2000	2 SPA	**280**	1800
	180L	6	4 SPA	**200**	4000	4 SPA	**224**	3550	4 SPA	**250**	3150	3 SPA	**280**	2800	3 SPA	**315**	2500
18,5	160L	2	3 SPA	**160**	2000	3 SPA	**180**	1800	3 SPA	**200**	1600	3 SPA	**224**	1400	2 SPA	**250**	1250
	180M	4	4 SPA	**180**	3550	4 SPA	**200**	3150	4 SPA	**224**	2800	3 SPA	**250**	2500	3 SPA	**280**	2240
	200LR	6	4 SPB	**200**	5000	4 SPB	**224**	4500	3 SPB	**250**	4000	3 SPB	**280**	3550	3 SPB	**315**	3150
22	180L	4	4 SPA	**200**	3750	4 SPA	**224**	3550	4 SPA	**250**	3000	3 SPA	**280**	2650	3 SPA	**315**	2360
	200L	6	4 SPB	**224**	5300	4 SPB	**250**	4750	3 SPB	**280**	4250	3 SPB	**315**	3750	3 SPB	**355**	3550
30	200L	4	4 SPB	**224**	4500	4 SPB	**250**	4000	3 SPB	**280**	3550	3 SPB	**315**	3150	3 SPB	**355**	2800
	225M	6	5 SPB	**250**	6300	5 SPB	**280**	5600	4 SPB	**315**	5000	4 SPB	**355**	4500	4 SPB	**400**	4000
37	225S	4	5 SPB	**224**	5600	5 SPB	**250**	5000	4 SPB	**280**	4500	4 SPB	**315**	4000	4 SPB	**355**	3550
	250M	6	6 SPB	**250**	8000	6 SPB	**280**	7100	5 SPB	**315**	6300	5 SPB	**355**	5600	5 SPB	**400**	5000
45	225M	4	5 SPB	**250**	6000	5 SPB	**280**	5300	4 SPB	**315**	4750	4 SPB	**355**	4250	4 SPB	**400**	3750
55	250M	4	6 SPB	**250**	7500	6 SPB	**280**	6700	5 SPB	**315**	6000	5 SPB	**355**	5300	5 SPB	**400**	4750
75	280S	4	6 SPB	**280**	9000	5 SPB	**315**	8000	5 SPB	**355**	7100	5 SPB	**400**	6400	-	-	-
90	280M	4	6 SPB	**315**	9000	5 SPC	**315**	9000	5 SPC	**355**	8000	4 SPC	**400**	7100	-	-	-
110	315S	4	6 SPC	**315**	11000	5 SPC	**355**	10000	4 SPC	**400**	8800	-	-	-	-	-	-
132	315M	4	6 SPC	**355**	12000	5 SPC	**400**	10600	4 SPC	**450**	10600	-	-	-	-	-	-
160	315MC	4	6 SPC	**400**	13000	6 SPC	**450**	11500	5 8V	**450**	11500	-	-	-	-	-	-

1) Not valid for power 9,2 kW: d ⩾ 140 mm.

Note: Pulley band width: **1 Z** 16, **2 Z** 28, **1A** 20, **2 A-2 SPA** 35, **3 A-3 SPA** 50, **4 SPA** 65, **3 SPB** 63, **4 SPB** 82, **5 SPB** 101, **6 SPB** 120, **4 SPC** 110, **5 SPC** 136, **6 SPC** 162, **5 8V** 152.

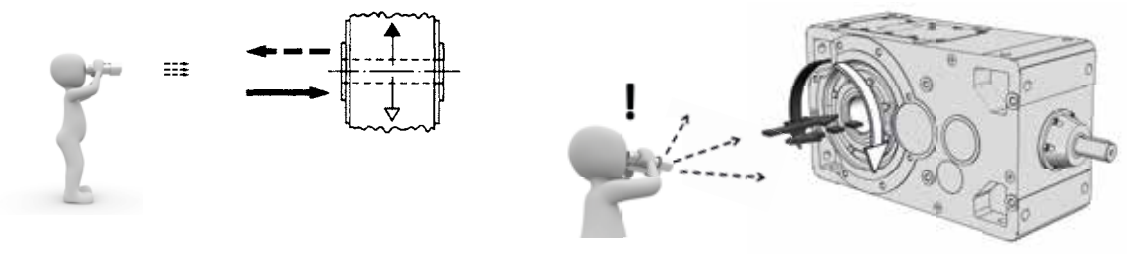
16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Axial loads F_{a2}

Permissible ***F***a2 is shown in the column where direction of rotation of low speed shaft (black or white arrow) and direction of the axial force (solid or broken arrow) correspond to those of the gear reducer in question. Direction of rotation and direction of force may be established viewing the gear reducer from any point (from groove side or from opposite side to groove, indifferently), providing the same point is adopted for rotation and axial load (see fig. below).

Notes:

- White and black arrows of present chapter do not refer to the ones stating the correspondence of direction of rotation for the different designs (see ch. 8, 10, 12, 14);
- Wherever possible, choose the load conditions corresponding to the column with the highest admissible values.
- The values stated in the table are valid for the center line axial load; in the event of a misaligned axial load, consult us.



Radial loads F_{r2}

Radial loads generated on the shaft end by a drive connecting gear reducer and machine must be less than or equal to those given in the following pages.

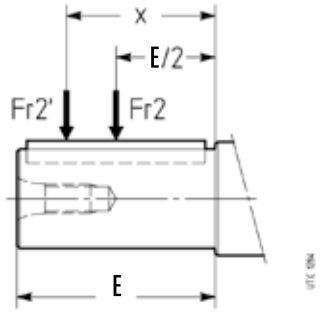
Normally, radial loads on low speed shaft ends are considerable: in fact there is a tendency to connect the gear reducer to the machine by means of a transmission with high transmission ratio (economizing on the gear reducer) and with small diameters (economizing on the drive, and for requirements dictated by overall dimensions).

Bearing life and wear (which also affect gears unfavourably) and low speed shaft strength, clearly impose limits on permissible radial load.

The permissible radial loads stated in the tables are according to: low speed shaft end where the radial load is applied according to reference groove (see ch. 6) of the product of angular speed n_2 [min^{-1}] multiplied by the bearing life required L_h [h], of direction of rotation, of angular position φ [°] of load and of torque required M_2 [N m].

The radial loads given in the tables are valid for loads on shaft center line of low speed shaft, i.e. at a distance from shoulder of 0,5 · E (E = shaft end length); in the event of radial load acting in a different position (not center line), i.e. at a distance from shoulder different from 0,5 · E, re-calculate the permissible value of radial load according to the following formula, verifying simultaneously not to exceed the maximum value F_{r2max}, given in the tables.

$$F_{r2}' = F_{r2} \cdot \frac{E/2 + y}{x + y} \quad [N]$$



where:

F_{r2}' [N] is the permissible radial load acting at distance x from the shoulder;
F_{r2} [N] is the permissible radial load acting on center line of high speed shaft end (see table on following pages);
E [mm] is the shaft end length (see ch. 17);
y [mm] is given in the table;
x [mm] is the distance of load application starting from shaft shoulder.

	40	**50**	**63, 64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225** 1)	**250**	**280** 1)	**320, 321**	**360** 1)
y	86	88	95	111	116	134	166	189	205	228	258	287 (279)	318	351 (344)	398	432 (424)
E	30	36	58	58	58	82	97	105	130	130	165	165	200	200	240	240

1) Values in brackets are valid for solid low speed shaft (see ch. 17(2)).

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Chain drives

This drive is usually advised for low tip speeds (v ⩽ 0,5 m/s with periodical lubrication, v ⩽ 1,5 m/s with drop lubrication) and for this reason it is usually placed between gear reducer and machine. Compared with gear transmissions it offers the advantage of a high flexibility, allowing larger misalignements and higher distances among the shaft to be connected.

On the other hand, it is less suitable with alternate shock operations, in particular with high tip speed (shocks, noise, clearance worsening) and requires a specific maintenance as it is subjected to wear and periodic clearance taking up.

For the correct belt drive dimensioning refer to specific manufacturer's literature; as a rough guide, we can assume:

$$p \approx 0{,}5 \cdot D$$

$$d = p \cdot z / \pi$$

where:

p chain pitch

D diameter of gear reducer shaft end

d pinion pitch diameter

z pinion number of teeth

Keep in mind that the number of pinion teeth ***z***, except some particular cases, should be at least **17** (the numbers of teeth classically adopted are: 17, 19, 21, 23) and that the smaller the pitch, the quieter the chain;

As a rough guide, for a rapid evaluation of the radial load generated on the low speed shaft end of gear reducer by a chain drive, see the table including:

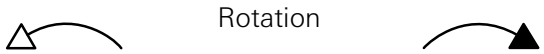
- the **pitch diameter** values ***d*** of pinion and the **maximum transmissible power**, for two pinion speeds, according to pitch ***p*** and teeth number ***z***
- the **maximum pinion width** b_{max}, the **mass** and the **maximum breaking load** R_R of chain, according to the pitch and to the chain (simple, double or triple).

No. teeth	Pitch ***p***																							
	1/2" (12,7)			**5/8"** (15,875)			**3/4"** (19,05)			**1"** (25,4)			**1 1/4"** (31,75)			**1 1/2"** (38,1)			**1 3/4"** (44,45)			**2"** (50,8)		
	d	P_{max} kW		*d*	P_{max} kW		*d*	P_{max} kW		*d*	P_{max} kW		*d*	P_{max} kW		*d*	P_{max} kW		*d*	P_{max} kW		*d*	P_{max} kW	
z	mm	50 min^{-1}	100 min^{-1}	mm	50 min^{-1}	100 min^{-1}	mm	50 min^{-1}	100 min^{-1}	mm	50 min^{-1}	100 min^{-1}	mm	50 min^{-1}	100 min^{-1}	mm	50 min^{-1}	100 min^{-1}	mm	50 min^{-1}	100 min^{-1}	mm	50 min^{-1}	100 min^{-1}
15	60,7	0,27	0,91	75,8	0,4	0,7	91	0,6	1,2	121,3	1,8	3,4	151,7	3,2	6	182	5,1	9,5	212,3	8	15	242,7	12	21
16	64,7	0,29	1	80,9	0,4	0,8	97,1	0,7	1,4	129,4	1,9	3,5	161,8	3,4	6,3	194,1	5,5	10	226,5	8,5	16	258,9	12	23
17	68,8	0,32	1,05	85,9	0,5	0,8	103,1	0,8	1,5	137,5	2	3,7	171,9	3,6	6,8	206,3	5,8	11	240,7	9,1	17	275	13	24
18	72,8	0,34	1,12	91	0,5	0,9	109,2	0,8	1,5	145,6	2,2	4	182	3,8	7,2	218,4	6,2	12	254,8	9,6	18	291,2	14	26
19	76,8	0,36	1,18	96,1	0,5	0,9	115,3	0,9	1,6	153,7	2,3	4,2	192,1	4,1	7,6	230,5	6,6	12	269	10	19	307,4	15	28
20	80,9	0,37	1,26	101,1	0,6	0,9	121,3	0,9	1,7	161,8	2,4	4,4	202,2	4,3	8	242,7	6,9	13	283,1	11	20	323,6	16	29
21	84,9	0,38	1,33	106,2	0,6	1	127,4	1	1,8	169,9	2,5	4,7	212,3	4,6	8,5	254,8	7,3	14	297,3	11	21	339,7	17	36
22	89	0,4	1,41	111,2	0,6	1	133,5	1	1,9	178	2,7	4,9	222,5	4,8	8,9	266,9	7,7	14	311,4	12	22	355,9	17	32
23	93	0,41	1,5	116,3	0,6	1,1	139,5	1,1	2	186,1	2,8	5,2	232,6	5	9,3	279,1	8,1	15	325,6	13	24	372,1	18	34
24	97,1	0,43	1,58	121,3	0,6	1,1	145,6	1,1	2,1	194,1	2,9	5,4	242,7	5,3	9,8	291,2	8,5	16	339,7	13	25	388,3	19	35
25	101,1	0,45	1,65	126,4	0,7	1,1	151,7	1,2	2,2	202,2	3,1	5,7	252,8	5,5	10	303,3	8,8	17	353,9	14	26	404,5	20	37
26	105,2	0,47	1,71	131,4	0,73	1,14	157,7	1,25	2,29	210,3	3,18	5,8	262,9	5,65	10,3	315,5	9,1	17,8	368,1	14,5	27	420,6	20,6	38,5
27	109,2	0,49	1,78	136,5	0,76	1,19	163,8	1,30	2,38	218,4	3,25	5,9	273	5,75	10,6	327,6	9,6	18,5	382,2	15,5	28	436,8	21,2	39,2
28	113,2	0,51	1,9	141,6	0,8	1,3	169,9	1,4	2,6	226,5	3,3	6	283,1	5,9	11	339,7	10	19	396,4	16	29	453	22	42
29	117,3	0,53	1,97	146,6	0,83	1,35	175,9	1,45	2,7	234,6	3,4	6,21	293,2	6,1	11,6	351,9	10,6	19,6	410,5	16,6	29,6	469,2	23	43,5
30	121,3	0,55	2	151,7	0,9	1,4	182	1,5	2,8	242,7	3,5	6,5	303,3	6,3	12	364	11	20	424,7	17	31	485,4	24	45

Pitch ***p***		Chain type								
		simple			**double**			**tripla**		
inch	(mm)	b_{max} mm	mass kg/m	R_R N	b_{max} mm	mass kg/m	R_R N	b_{max} mm	mass kg/m	R_R N
1/2"	(12,7)	**24**	0,4	14 100	**39**	1,4	28 200	**53**	2	42 300
5/8"	(15,875)	**27**	0,9	22 200	**44**	1,7	44 400	**61**	2,5	66 600
3/4"	(19,05)	**30**	1,2	31 800	**52**	2,4	63 600	**71**	3,7	95 400
1"	(25,4)	**46**	2,7	56 700	**79**	5,2	113 400	**111**	8	170 100
1 1/4"	(31,75)	**50**	3,6	88 500	**91**	7,2	177 000	**128**	11	265 500
1 1/2"	(38,1)	**65**	6,7	127 000	**115**	13,5	254 000	**164**	21	381 000
1 3/4"	(44,45	**78**	8,3	172 400	**140**	17	344 800	**200**	25	517 200
2"	(50,8)	**78**	10,5	226 800	**141**	21	453 600	**200**	32	680 400

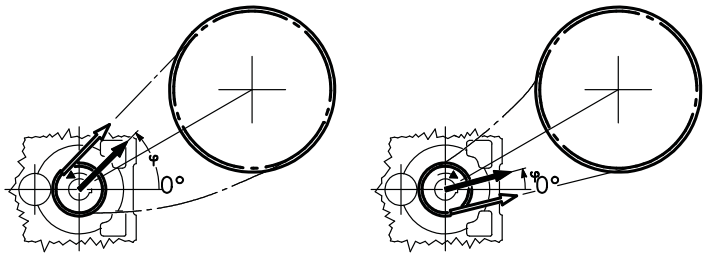
16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load F_{r2} for most common drives has the following value and angular position:



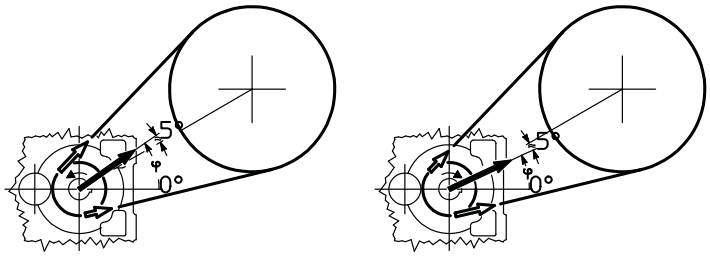
$$F_{r2} = \frac{19\,100 \cdot P_2}{d \cdot n_2} \text{ [N]}$$

for chain drive (lifting in general); for timing belt drive replace 19100 with 28650



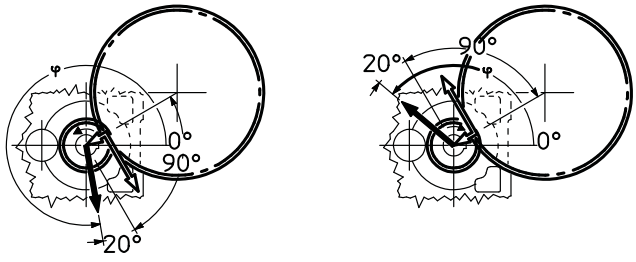
$$F_{r2} = \frac{47\,750 \cdot P_2}{d \cdot n_2} \text{ [N]}$$

for V-belt drive



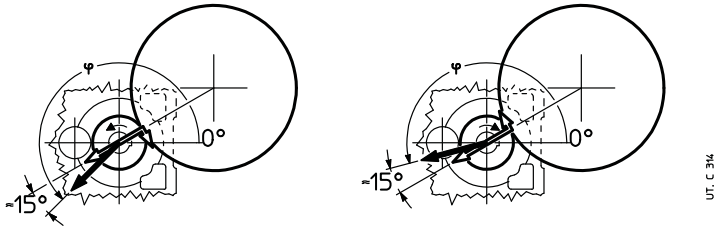
$$F_{r2} = \frac{20\,320 \cdot P_2}{d \cdot n_2} \text{ [N]}$$

for spur gear pair drive



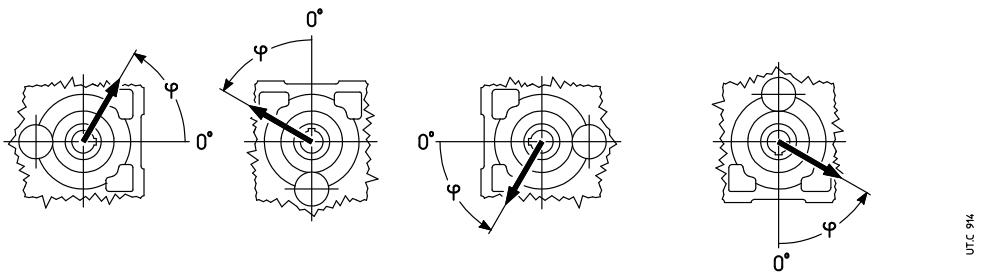
$$F_{r2} = \frac{67\,810 \cdot P_2}{d \cdot n_2} \text{ [N]}$$

for friction wheel drive (rubber-on-metal)



where: P_2 [kW] is power required at the output side of the gear reducer, n_2 [min^{-1}] is the speed, d [m] is the pitch diameter.

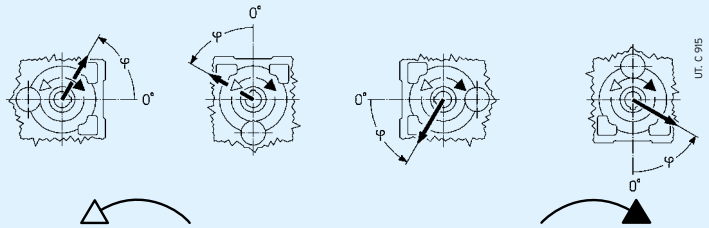
IMPORTANT: 0° coincides with a straight line concurrent with the axis of the last reduction and orientated as shown above, and therefore it follows the rotation of the housing, as shown below.



16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Size **40**

$n_2 \cdot L_h$		F_{r2} [1) 2)]																F_{a2} [1)]	
																			
min⁻¹·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
355 000	80	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	800	1600
	56	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	800	1600
	40	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	800	1600
450 000	80	2240	2240	2240	2240	2240	2240	2240	2240	2240	2120	2240	2240	2240	2240	2240	2240	800	1600
	56	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	800	1600
	40	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	800	1600
560 000	80	2240	2240	2240	2240	2240	2120	2120	2240	2120	2000	2120	2240	2240	2240	2240	2240	800	1600
	56	2240	2240	2240	2240	2240	2240	2240	2240	2240	2120	2240	2240	2240	2240	2240	2240	800	1600
	40	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	800	1600
710 000	80	2240	2240	2240	2240	2240	2000	1900	2000	1900	1800	1900	2240	2240	2240	2240	2240	710	1500
	56	2240	2240	2240	2240	2240	2000	2000	2120	2000	1900	2000	2240	2240	2240	2240	2240	800	1600
	40	2240	2240	2240	2240	2240	2120	2120	2240	2120	2000	2120	2240	2240	2240	2240	2240	800	1600
900 000	80	2120	2240	2000	1900	2000	1800	1700	1900	1700	1600	1700	2000	2240	2240	2240	2120	530	1320
	56	2120	2240	2240	2240	2000	1900	1900	2000	1800	1700	1800	2120	2240	2240	2240	2120	800	1400
	40	2120	2240	2240	2240	2120	2000	1900	2000	1900	1900	1900	2120	2240	2240	2240	2120	800	1500
1 120 000	80	2000	2240	1500	1400	1900	1600	1600	1700	1600	1400	1500	1900	2240	2000	1900	1900	400	1180
	56	2000	2240	2240	2120	1900	1700	1700	1800	1700	1600	1700	1900	2240	2240	2240	2000	710	1250
	40	2000	2120	2120	2120	1900	1800	1800	1900	1800	1700	1800	2000	2120	2240	2120	2000	800	1320
1 400 000	56	1900	2120	2120	2000	1800	1600	1600	1700	1600	1500	1500	1800	2120	2240	2120	1800	560	1180
	40	1900	2000	2000	1900	1800	1700	1600	1700	1600	1600	1600	1800	2000	2120	2000	1800	800	1180
	28	1900	2000	2000	1900	1800	1700	1700	1800	1700	1600	1700	1800	2000	2000	2000	1800	800	1320
1 800 000	56	1700	1900	2000	1800	1600	1400	1400	1500	1400	1320	1400	1600	1900	2120	1900	1700	480	1000
	40	1700	1900	1900	1800	1600	1500	1500	1600	1500	1400	1500	1700	1900	2000	1900	1700	670	1120
	28	1700	1800	1800	1800	1700	1600	1600	1600	1600	1500	1500	1700	1800	1900	1800	1700	800	1120
2 240 000	56	1600	1800	1600	1500	1500	1320	1320	1400	1320	1180	1250	1500	1800	1900	1800	1500	360	900
	40	1600	1700	1800	1700	1500	1400	1400	1500	1400	1320	1400	1500	1700	1800	1800	1600	560	950
	28	1600	1700	1700	1600	1500	1500	1400	1500	1400	1400	1400	1600	1700	1800	1700	1600	710	1060
2 800 000	40	1500	1600	1700	1600	1400	1320	1250	1320	1250	1180	1250	1400	1600	1700	1600	1400	500	850
	28	1500	1600	1600	1500	1400	1320	1320	1400	1320	1250	1320	1400	1600	1700	1600	1500	630	900
								max **2 240**										max **80**	max **160**

Size **50**

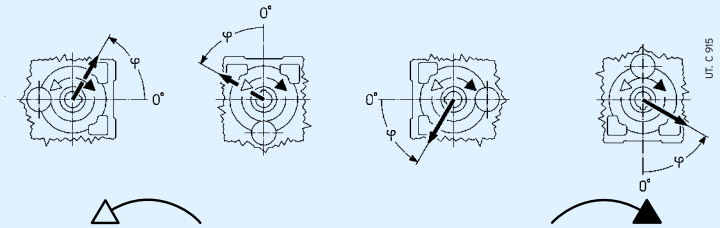
355 000	160	3000	3150	3150	3150	3150	3150	2800	2500	3150	3150	2800	3000	3150	3150	3150	3150	2240	1120
	112	3150	3150	3150	3150	3150	3150	3150	3000	3150	3150	3150	3150	3150	3150	3150	3150	2240	1120
	80	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	3150	2240	1120
450 000	160	2650	3150	3150	3150	3150	3150	2500	2400	3150	2800	2500	2800	3150	3150	3150	3150	2240	900
	112	3000	3150	3150	3150	3150	3150	2800	2650	3150	3000	2800	3000	3150	3150	3150	3150	2240	1120
	80	3150	3150	3150	3150	3150	3150	3000	3000	3150	3150	3000	3150	3150	3150	3150	3150	2240	1120
560 000	160	2360	3150	3150	3150	3150	3000	2240	2000	3150	2500	2240	2500	3150	3150	3150	3150	2000	710
	112	2650	3150	3150	3150	3150	3150	2500	2360	3150	2800	2650	2800	3150	3150	3150	3150	2120	1120
	80	2800	3150	3150	3150	3150	3150	2800	2650	3150	3000	2800	3000	3150	3150	3150	3150	2240	1120
710 000	160	2000	3000	3150	3150	3150	2650	1900	1700	3000	2240	2000	2240	2800	2800	3000	3150	1800	500
	112	2360	3000	3150	3150	3150	2800	2240	2120	3000	2500	2360	2500	3000	3150	3150	3150	1900	1000
	80	2650	3000	3150	3150	3150	3000	2500	2360	3000	2650	2500	2650	3000	3150	3150	3150	2000	1120
900 000	160	1800	2650	3000	3150	3150	2360	1700	1500	2650	2000	1800	2000	2650	2000	2240	3150	1600	335
	112	2120	2800	3150	3150	3150	2650	2000	1900	2800	2360	2120	2240	2650	3150	3150	3150	1700	800
	80	2360	2800	3150	3150	3150	2650	2240	2240	2800	2500	2360	2500	2800	3150	3150	3150	1800	1120
1 120 000	160	1600	2360	2360	2650	3150	2120	1400	1250	2500	1800	1600	1800	2120	1320	1500	3150	1500	180
	112	1900	2500	3150	3150	3000	2360	1900	1800	2650	2120	1900	2120	2500	3150	3150	3150	1700	630
	80	2120	2650	3150	3150	3000	2500	2120	2000	2650	2240	2120	2240	2500	3000	3150	3000	1600	950
1 400 000	112	1800	2360	3150	3150	3000	2120	1700	1500	2360	1900	1700	1900	2360	2800	3000	3000	1400	500
	80	2000	2500	3000	3150	2800	2240	1900	1800	2360	2120	1900	2000	2360	2800	3000	2800	1500	800
	56	2120	2500	2800	3000	2650	2360	2120	2000	2500	2240	2120	2240	2360	2650	2800	2650	1500	1120
1 800 000	112	1600	2120	2800	3150	2800	1900	1500	1320	2120	1700	1500	1700	2120	2240	2500	2800	1250	355
	80	1800	2240	2800	3000	2650	2120	1700	1600	2240	1900	1700	1800	2120	2650	2800	2650	1320	670
	56	1900	2240	2650	2800	2500	2120	1900	1800	2240	2000	1900	2000	2240	2500	2650	2500	1320	900
2 240 000	112	1400	2000	2360	2650	2500	1800	1250	1180	2000	1500	1400	1500	1900	1800	1900	2650	1120	236
	80	1600	2120	2650	2800	2500	1900	1500	1400	2120	1700	1600	1700	2000	2360	2650	2500	1180	530
	56	1800	2120	2500	2500	2360	2000	1700	1600	2120	1800	1700	1800	2000	2360	2500	2360	1250	800
2 800 000	80	1500	2000	2500	2650	2360	1800	1400	1320	2000	1600	1500	1600	1900	2240	2500	2360	1060	450
	56	1700	2000	2360	2500	2240	1900	1600	1500	2000	1700	1600	1700	1900	2240	2360	2240	1120	710
								max **3 150**										max **2 240**	max **1 120**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Size **40**

$n_2 \cdot L_h$		F_{r2} [1) 2)]								F_{a2} [1)]									
																			
min⁻¹·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
355 000	80	1900	2240	2240	2240	2240	2120	1500	1400	2240	1700	1600	1900	2240	2240	2240	2240	800	1600
	56	2240	2240	2240	2240	2240	2240	1900	1900	2240	2120	2000	2240	2240	2240	2240	2240	800	1600
	40	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	800	1600
450 000	80	1600	2240	2240	2240	2240	1900	1320	1250	2120	1500	1400	1700	2240	2240	2240	2240	800	1600
	56	2000	2240	2240	2240	2240	2240	1700	1700	2240	1900	1800	2000	2240	2240	2240	2240	800	1600
	40	2240	2240	2240	2240	2240	2240	2000	2000	2240	2120	2000	2240	2240	2240	2240	2240	800	1600
560 000	80	1400	2240	2240	2240	2240	1600	1060	1060	1900	1250	1180	1500	2240	2240	2240	2240	800	1600
	56	1800	2240	2240	2240	2240	2000	1500	1500	2120	1700	1600	1900	2240	2240	2240	2240	800	1600
	40	2000	2240	2240	2240	2240	2240	1800	1800	2240	1900	1800	2120	2240	2240	2240	2240	800	1600
710 000	80	1180	2240	2240	2240	2240	1400	900	850	1600	1060	1000	1320	2120	2240	2240	2240	710	1500
	56	1600	2240	2240	2240	2240	1800	1320	1320	1900	1500	1400	1700	2240	2240	2240	2240	800	1600
	40	1900	2240	2240	2240	2240	2000	1600	1600	2120	1700	1700	1900	2240	2240	2240	2240	800	1600
900 000	80	950	2000	2240	2240	2240	1180	710	670	1400	900	800	1060	1900	2240	2240	2240	530	1320
	56	1400	2120	2240	2240	2240	1600	1180	1120	1700	1320	1180	1500	2120	2240	2240	2240	800	1400
	40	1700	2240	2240	2240	2240	1800	1400	1400	1900	1500	1500	1700	2120	2240	2240	2240	800	1500
1 120 000	80	750	1800	2240	2240	2240	950	530	500	1250	750	670	900	1800	2240	2240	2240	400	1180
	56	1250	2000	2240	2240	2240	1400	1000	950	1600	1120	1060	1320	1900	2240	2240	2240	710	1250
	40	1500	2000	2240	2240	2240	1600	1320	1250	1700	1400	1320	1500	2000	2240	2240	2240	800	1320
1 400 000	56	1120	1800	2240	2240	2120	1250	850	800	1400	1000	900	1180	1800	2240	2240	2240	560	1180
	40	1400	1900	2240	2240	2120	1500	1180	1120	1600	1250	1180	1400	1900	2240	2240	2120	800	1180
	28	1500	1900	2240	1320	2000	1600	1400	1320	1700	1400	1400	1500	1900	2240	2240	2000	800	1320
1 800 000	56	900	1700	2240	2240	1900	1060	710	670	1250	850	750	1000	1600	2240	2240	2000	480	1000
	40	1180	1700	2240	2240	1900	1320	1000	950	1400	1120	1060	1250	1700	2240	2240	2000	670	1120
	28	1400	1800	2120	2240	1900	1500	1180	1180	1500	1320	1250	1400	1700	2000	2120	1900	800	1120
2 240 000	56	750	1500	2240	2240	1800	900	560	530	1120	710	630	850	1500	2240	2240	1900	360	900
	40	1060	1600	2240	2240	1800	1180	850	850	1250	950	900	1120	1600	2120	2240	1800	560	950
	28	1250	1600	2000	2120	1800	1320	1120	1060	1400	1180	1120	1250	1600	1900	2000	1800	710	1060
2 800 000	40	950	1500	2120	2120	1700	1060	800	710	1180	850	800	1000	1400	2000	2120	1700	500	850
	28	1120	1500	1900	2000	1600	1250	1000	950	1320	1060	1000	1120	1500	1800	1900	1700	630	900
								max **2 240**										max **800**	max **1 600**

Size **50**

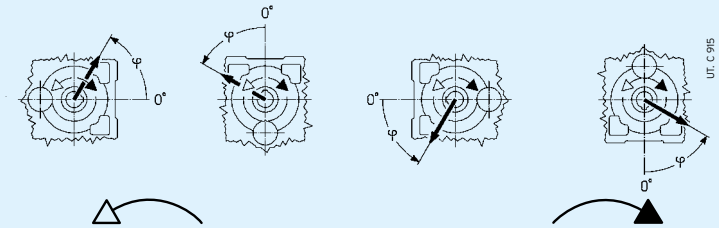
355 000	160	2240	3150	3150	3150	3150	2800	1900	1700	3150	2240	2000	2500	3150	3150	3150	3150	2240	1120
	112	2800	3150	3150	3150	3150	3150	2500	2360	3150	2800	2650	3000	3150	3150	3150	3150	2240	1120
	80	3150	3150	3150	3150	3150	3150	3000	2800	3150	3150	3000	3150	3150	3150	3150	3150	2240	1120
450 000	160	1900	3150	3150	3150	3150	2360	1600	1500	2800	1900	1800	2120	3150	3150	3150	3150	2240	1060
	112	2500	3150	3150	3150	3150	3000	2240	2120	3150	2500	2360	2650	3150	3150	3150	3150	2240	1120
	80	3000	3150	3150	3150	3150	3150	2650	2500	3150	2800	2650	3000	3150	3150	3150	3150	2240	1120
560 000	160	1600	3000	3150	3150	3150	2120	1320	1180	2500	1700	1500	1900	3000	3150	3150	3150	2120	850
	112	2240	3150	3150	3150	3150	2650	2000	1800	3000	2240	2000	2360	3150	3150	3150	3150	2240	1120
	80	2650	3150	3150	3150	3150	3000	2360	2240	3000	2500	2360	2650	3150	3150	3150	3150	2240	1120
710 000	160	1320	2800	3150	3150	3150	1800	1000	950	2240	1400	1250	1600	2650	3150	3150	3150	1900	670
	112	2000	3000	3150	3150	3150	2360	1700	1600	2650	2000	1800	2120	3000	3150	3150	3150	2000	1120
	80	2360	3150	3150	3150	3150	2650	2120	2000	2800	2240	2120	2500	3000	3150	3150	3150	2000	1120
900 000	160	1060	2360	3150	3150	3150	1400	800	710	1900	1120	1000	1320	2360	3150	3150	3150	1700	450
	112	1700	2800	3150	3150	3150	2120	1500	1320	2360	1700	1600	1900	2650	3150	3150	3150	1800	900
	80	2120	3000	3150	3150	3150	2360	1900	1800	2650	2120	1900	2240	2800	3150	3150	3150	1800	1120
1 120 000	160	710	2000	3150	3150	3000	1060	500	450	1700	950	800	1060	2120	3150	3150	3150	1600	315
	112	1500	2500	3150	3150	3150	1900	1250	1180	2120	1500	1400	1700	2500	3150	3150	3150	1600	750
	80	1900	2650	3150	3150	3000	2240	1700	1600	2360	1900	1700	2000	2650	3150	3150	3150	1700	1060
1 400 000	112	1320	2240	3150	3150	3000	1600	1060	950	1900	1320	1180	1500	2240	3150	3150	3000	1500	600
	80	1700	2500	3150	3150	2800	2000	1500	1400	2120	1700	1500	1800	2360	3150	3150	3000	1500	900
	56	2000	2500	3000	3150	2800	2240	1800	1800	2240	2000	1900	2000	2500	3000	3000	2800	1600	1120
1 800 000	112	1060	2000	3150	3150	2650	1400	800	750	1700	1120	950	1250	2000	3150	3150	2800	1320	450
	80	1500	2240	3150	3150	2650	1800	1250	1180	1900	1500	1320	1600	2240	3000	3150	2650	1400	710
	56	1800	2360	2800	3000	2500	2000	1600	1500	2120	1700	1600	1800	2240	2800	3000	2650	1400	950
2 240 000	112	850	1800	3150	3150	2500	1120	670	600	1500	900	800	1060	1800	3000	3150	2650	1250	335
	80	1320	2120	3000	3150	2500	1600	1120	1060	1800	1320	1180	1400	2000	2800	3000	2500	1250	600
	56	1600	2120	2650	2800	2360	1800	1400	1400	1900	1600	1500	1700	2120	2650	2800	2500	1250	800
2 800 000	80	1180	2000	3000	3000	2360	1400	1000	85	1600	1120	1060	1250	1900	2650	2800	2500	1120	500
	56	1500	2000	2500	2650	2240	1700	1320	1250	1800	1500	1320	1500	2000	2500	2650	2360	1180	710
								max **3 150**										max **2 240**	max **1 120**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Sizes **63, 64**

$n_2 \cdot L_h$		F_{r2} [1) 2)]																F_{a2} [1)]	
																			
min^{-1}·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
1 120 000	315	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	224	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	160	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
1 400 000	224	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	160	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
1 800 000	224	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	160	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
2 240 000	224	5000	5000	5000	5000	5000	5000	5000	5000	4750	4500	5000	5000	5000	5000	5000	5000	1800	3350
	160	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3350
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3350
2 800 000	160	5000	5000	5000	5000	5000	4750	4750	5000	4750	4500	4750	5000	5000	5000	5000	5000	1800	3150
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	4750	5000	5000	5000	5000	5000	5000	1800	3150
3 550 000	160	5000	5000	5000	5000	4750	4500	4500	4750	4250	4250	4250	5000	5000	5000	5000	4750	1800	3000
	112	5000	5000	5000	5000	4750	4500	4500	4750	4500	4500	4500	5000	5000	5000	5000	5000	1800	3000
4 500 000	160	4750	5000	5000	4750	4500	4000	4000	4250	4000	3750	4000	4500	5000	5000	5000	4500	1800	2800
	112	4750	5000	5000	4750	4500	4250	4250	4500	4250	4000	4250	4500	5000	5000	5000	4500	1800	2800
5 600 000	160	4500	4750	4750	4500	4000	3750	3750	4000	3750	3550	3750	4250	4750	5000	4750	4250	1600	2650
	112	4500	4750	4750	4500	4250	4000	4000	4000	3750	3750	4000	4250	4750	4750	4750	4250	1800	2650
7 100 000	160	4000	4500	4250	4000	3750	3550	3550	3750	3350	3150	3350	4000	4500	4750	4500	3750	1400	2360
	112	4000	4250	4250	4250	3750	3750	3550	3750	3550	3550	3550	4000	4250	4500	4250	4000	1800	2360
								max **5 000**										max **1 800**	max **3 550**

Sizes **80, 81**

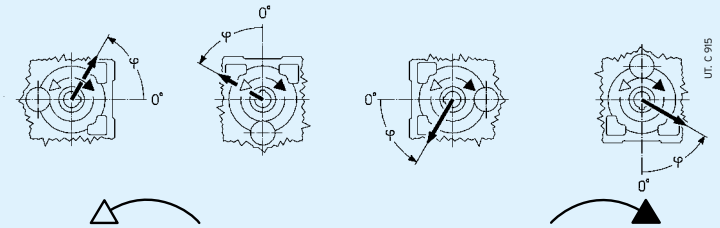
355 000	630	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	450	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
450 000	630	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	450	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
560 000	630	8000	8000	8000	8000	8000	8000	8000	7500	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	450	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
710 000	630	7500	8000	8000	8000	8000	8000	7500	7100	8000	8000	7500	7500	8000	8000	8000	8000	5600	2800
	450	8000	8000	8000	8000	8000	8000	8000	7500	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
900 000	630	6700	8000	8000	8000	8000	8000	6700	6300	8000	7500	7100	7100	7100	7500	8000	8000	5300	2650
	450	7500	8000	8000	8000	8000	8000	7500	7100	8000	8000	7500	7500	8000	8000	8000	8000	5600	2800
	315	7500	8000	8000	8000	8000	8000	8000	7500	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
1 120 000	630	6300	7100	7500	8000	8000	8000	6300	5600	8000	7100	6300	6700	6300	6700	7500	8000	5000	2360
	450	6700	8000	8000	8000	8000	8000	6700	6300	8000	7500	7100	7100	7500	8000	8000	8000	5000	2800
	315	7100	8000	8000	8000	8000	8000	7100	7100	8000	7500	7500	7500	8000	8000	8000	8000	5300	2800
	224	7500	8000	8000	8000	8000	8000	7500	7100	8000	8000	7500	7500	8000	8000	8000	8000	5300	2800
1 400 000	450	6300	7500	8000	8000	8000	7500	6300	6000	8000	7100	6300	6300	7100	7500	8000	8000	4750	2800
	315	6700	7500	8000	8000	8000	7500	6700	6300	8000	7100	6700	6700	7100	8000	8000	8000	5000	2800
	224	7100	7500	8000	8000	8000	7500	7100	6700	7500	7100	7100	7100	7500	8000	8000	8000	5000	2800
1 800 000	450	5600	6700	7500	8000	8000	6700	5600	5300	7500	6300	6000	6000	6300	6700	7100	8000	4250	2500
	315	6000	6700	7500	8000	8000	7100	6300	6000	7100	6700	6300	6300	6700	7500	8000	7500	4500	2800
	224	6300	7100	7500	8000	7500	7100	6300	6300	7100	6700	6300	6300	6700	7100	7500	7500	4500	2800
2 240 000	450	5300	6300	6700	7500	7500	6300	5300	5000	6700	6000	5300	5600	5600	6000	6700	7100	4000	2240
	315	5600	6300	7500	7500	7500	6300	5600	5300	6700	6300	5600	5600	6300	7100	7500	7500	4250	2800
	224	6000	6300	7100	7500	7100	6700	6000	5600	6700	6300	6000	6000	6300	6700	7100	7100	4250	2800
2 800 000	315	5300	6000	6700	7500	7100	6000	5300	5000	6300	5600	5300	5300	6000	6300	6700	6700	4000	2650
	224	5600	6000	6700	7100	6700	6000	5600	5300	6300	6000	5600	5600	6000	6300	6700	6700	4000	2800
3 550 000	315	4750	5600	6300	6700	6700	5600	5000	4500	6000	5300	5000	5000	5300	5600	6300	6300	3550	2360
	224	5000	5600	6300	6700	6300	5600	5000	5000	6000	5300	5300	5300	5600	6000	6300	6300	3750	2800
4 500 000	315	4500	5300	5600	6300	6300	5300	4500	4250	5600	5000	4500	4500	5000	5300	5600	6000	3350	2000
	224	4750	5300	6000	6300	6000	5300	4750	4500	5600	5000	4750	4750	5000	5600	6000	6000	3350	2500
5 600 000	315	4000	4750	5300	5600	5600	5000	4000	3750	5300	4500	4250	4250	4500	4750	5300	5600	3150	1800
	224	4250	5000	5600	5600	5600	5000	4500	4250	5000	4750	4500	4500	4750	5300	5600	5600	3150	2240
7 100 000	315	3750	4500	4750	5300	5300	4500	3750	3550	4750	4250	3750	4000	4000	4250	4750	5300	2800	1600
	224	4000	4500	5300	5600	5300	4500	4000	3750	4750	4250	4000	4000	4500	5000	5300	5300	3000	2000
								max **8 000**										max **5 600**	max **2 800**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Sizes **63, 64**

$n_2 \cdot L_h$		F_{r2} [1) 2)]								F_{a2} [1)]									
																			
min⁻¹·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
1 120 000	315	5000	5000	5000	5000	5000	5000	4750	5000	5000	4250	4500	5000	5000	5000	5000	5000	1800	3550
	224	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	160	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
1 400 000	224	5000	5000	5000	5000	5000	5000	5000	5000	5000	4500	4750	5000	5000	5000	5000	5000	1800	3550
	160	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
1 800 000	224	5000	5000	5000	5000	5000	4750	4500	4750	4750	4000	4250	5000	5000	5000	5000	5000	1800	3550
	160	5000	5000	5000	5000	5000	5000	5000	5000	5000	4750	4750	5000	5000	5000	5000	5000	1800	3550
	112	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	1800	3550
2 240 000	224	5000	5000	5000	5000	5000	4500	4000	4250	4250	3750	4000	5000	5000	5000	5000	5000	1800	3350
	160	5000	5000	5000	5000	5000	4750	4500	4750	4750	4250	4500	5000	5000	5000	5000	5000	1800	3350
	112	5000	5000	5000	5000	5000	5000	4750	5000	5000	4750	4750	5000	5000	5000	5000	5000	1800	3350
2 800 000	160	5000	5000	5000	5000	5000	4500	4000	4250	4250	4000	4000	4750	5000	5000	5000	5000	1800	3150
	112	5000	5000	5000	5000	5000	4750	4500	4750	4750	4250	4500	5000	5000	5000	5000	5000	1800	3150
3 550 000	160	4750	5000	5000	5000	4750	4000	3750	4000	4000	3550	3750	4500	5000	5000	5000	5000	1800	3000
	112	4750	5000	5000	5000	5000	4250	4000	4250	4250	4000	4000	4750	5000	5000	5000	5000	1800	3000
4 500 000	160	4250	5000	5000	5000	4500	3750	3350	3750	3550	3150	3350	4000	5000	5000	5000	4500	1800	2800
	112	4500	5000	5000	5000	4500	4000	3750	4000	4000	3550	3750	4250	5000	5000	5000	4750	1800	2800
5 600 000	160	4000	5000	5000	5000	4250	3350	3150	3350	3350	2800	3000	3750	5000	5000	5000	4250	1600	2650
	112	4250	4750	5000	4750	4250	3750	3550	3750	3750	3350	3350	4000	4750	5000	5000	4250	1800	2650
7 100 000	160	3750	4750	5000	4750	4000	3150	2800	3000	3000	2650	2800	3550	4750	5000	5000	4000	1400	2360
	112	3750	4500	4750	4500	4000	3350	3150	3350	3350	3000	3150	3750	4500	5000	4750	4000	1800	2360
								max **5 000**										max **1 800**	max **3 550**

Sizes **80, 81**

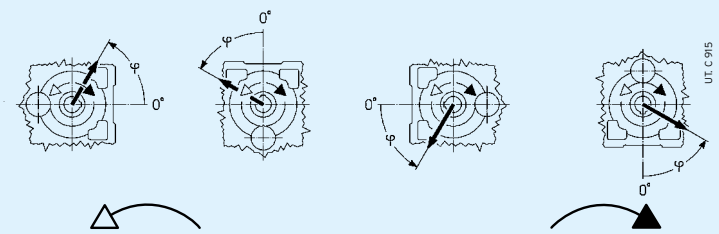
355 000	630	8000	8000	8000	8000	8000	8000	7500	7100	8000	8000	7500	8000	8000	8000	8000	8000	5600	2800
	450	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
450 000	630	7500	8000	8000	8000	8000	8000	6700	6300	8000	7500	6700	8000	8000	8000	8000	8000	5600	2800
	450	8000	8000	8000	8000	8000	8000	8000	7500	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
560 000	630	6700	8000	8000	8000	8000	8000	6000	5600	8000	6700	6300	7100	8000	8000	8000	8000	5600	2800
	450	8000	8000	8000	8000	8000	8000	7100	6700	8000	7500	7100	8000	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	8000	7500	8000	8000	8000	8000	8000	8000	8000	8000	5600	2800
710 000	630	6000	8000	8000	8000	8000	7100	5300	4750	8000	6000	5600	6300	8000	8000	8000	8000	5600	2800
	450	7100	8000	8000	8000	8000	8000	6300	6000	8000	7100	6700	7500	8000	8000	8000	8000	5600	2800
	315	8000	8000	8000	8000	8000	8000	7500	7100	8000	7500	7500	8000	8000	8000	8000	8000	5600	2800
900 000	630	5300	8000	8000	8000	8000	6700	4500	4250	7500	5300	5000	5600	8000	8000	8000	8000	5300	2650
	450	6300	8000	8000	8000	8000	7500	5600	5600	8000	6300	6000	6700	8000	8000	8000	8000	5600	2800
	315	7100	8000	8000	8000	8000	8000	6700	6300	8000	7100	6700	7500	8000	8000	8000	8000	5600	2800
1 120 000	630	4750	7500	8000	8000	8000	6000	4000	3550	6700	4750	4250	5000	7500	8000	8000	8000	5000	2360
	450	6000	8000	8000	8000	8000	6700	5300	5000	7500	6000	5300	6000	8000	8000	8000	8000	5000	2800
	315	6700	8000	8000	8000	8000	7500	6000	6000	7500	6700	6300	6700	8000	8000	8000	8000	5300	2800
	224	7100	8000	8000	8000	8000	7500	6700	6700	8000	7100	6700	7100	8000	8000	8000	8000	5300	2800
1 400 000	450	5300	7500	8000	8000	8000	6300	4750	4500	6700	5300	5000	5600	7500	8000	8000	8000	4750	2800
	315	6000	7500	8000	8000	8000	6700	5600	5300	7100	6000	5600	6300	7500	8000	8000	8000	5000	2800
	224	6700	7500	8000	8000	8000	7100	6300	6000	7500	6300	6300	6700	7500	8000	8000	8000	5000	2800
1 800 000	450	4750	6700	8000	8000	8000	5600	4000	3750	6300	4750	4250	5000	6700	8000	8000	8000	4250	2500
	315	5600	7100	8000	8000	8000	6300	5000	4750	6700	5600	5000	5600	7100	8000	8000	8000	4500	2800
	224	6000	7100	8000	8000	8000	6700	5600	5300	6700	6000	5600	6000	7100	8000	8000	8000	4500	2800
2 240 000	450	4250	6300	8000	8000	8000	5000	3750	3350	5600	4250	4000	4500	6300	8000	8000	8000	4000	2240
	315	5000	6700	8000	8000	7500	5600	4500	4250	6300	5000	4750	5300	6300	8000	8000	7500	4250	2800
	224	5600	6700	8000	8000	7500	6000	5300	5000	6300	5600	5300	5600	6700	7500	8000	7500	4250	2800
2 800 000	315	4500	6300	8000	8000	7100	5300	4250	4000	5600	4500	4250	4750	6000	7500	8000	7100	4000	2650
	224	5000	6300	7500	7500	6700	5600	4750	4500	6000	5000	4750	5300	6000	7100	7500	7100	4000	2800
3 550 000	315	4250	5600	7500	8000	6700	4750	3750	3550	5300	4250	3750	4250	5600	7100	7500	6700	3550	2360
	224	4750	5600	7100	7100	6300	5300	4250	4250	5600	4750	4500	4750	5600	6700	7100	6300	3750	2800
4 500 000	315	3750	5300	7100	7500	6300	4500	3350	3150	4750	3750	3550	4000	5000	6700	7100	6300	3350	2000
	224	4250	5300	6700	6700	6000	4750	4000	3750	5000	4250	4000	4250	5300	6300	6700	6000	3350	2500
5 600 000	315	3350	5000	6700	7100	6000	4000	3000	2800	4500	3350	3150	3550	4750	6000	6700	6000	3150	1800
	224	4000	5000	6300	6700	5600	4500	3550	3350	4750	4000	3750	4000	5000	6000	6300	5600	3150	2240
7 100 000	315	3000	4500	6300	6700	5600	3750	2650	2360	4000	3000	2800	3150	4500	5600	6300	5600	2800	1600
	224	3550	4750	6000	6300	5300	4000	3150	3150	4250	3550	3350	3750	4500	5600	6000	5300	3000	2000
								max **8 000**										max **5 600**	max **2 800**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Size **100**

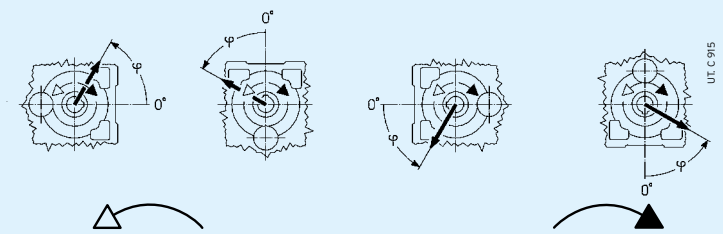
$n_2 \cdot L_h$		F_{r2} [1) 2)]								F_{a2} [1)]									
																			
min^{-1}·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
355 000	1 250	12500	12500	12500	12500	12500	12500	12500	12500	11800	11200	12500	12500	12500	12500	12500	12500	4500	9000
	900	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	4500	9000
	630	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	4500	9000
450 000	1 250	12500	12500	12500	11800	11800	11800	11800	12500	11200	10600	11200	12500	12500	12500	12500	12500	4500	9000
	900	12500	12500	12500	12500	12500	12500	12500	12500	11800	11200	12500	12500	12500	12500	12500	12500	4500	9000
	630	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500	4500	9000
560 000	1 250	12500	12500	12500	10600	10000	10600	10600	11800	10000	9500	10600	12500	12500	12500	12500	11200	4500	9000
	900	12500	12500	12500	12500	12500	11200	11800	12500	11200	10600	11200	12500	12500	12500	12500	12500	4500	9000
	630	12500	12500	12500	12500	12500	11800	11800	12500	11800	11200	11800	12500	12500	12500	12500	12500	4500	9000
710 000	1 250	12500	12500	11200	9500	9000	9500	10000	11200	9000	8500	9500	11800	12500	12500	10600	10000	3750	8500
	900	12500	12500	12500	11800	11200	10600	10600	11800	10000	9500	10600	12500	12500	12500	12500	11800	4500	8500
	630	12500	12500	12500	12500	11800	11200	11200	11800	10600	10600	11200	12500	12500	12500	12500	11800	4500	9000
900 000	1 250	12500	11200	10000	8000	7500	8000	9000	10600	8500	7500	8500	11200	12500	11200	9500	8500	3150	7500
	900	11800	12500	11800	10600	10000	9500	10000	10600	9000	9000	9500	11200	12500	12500	11800	10600	4500	8000
	630	11800	12500	12500	11800	10600	10000	10000	11200	10000	9500	10000	11800	12500	12500	12500	11200	4500	8500
1 120 000	1 250	11200	10000	8000	7100	6300	6700	8500	9500	7500	7100	8000	10600	11200	10000	8500	7100	2500	7100
	900	11200	11800	10600	9500	9000	9000	9000	10000	8500	8000	9000	10600	12500	11800	10600	10000	4000	7500
	630	11200	11800	11800	11200	10000	9500	9500	10000	9000	9000	9500	10600	11800	12500	11800	10600	4500	7500
	450	11200	11800	11800	11200	10000	10000	10000	10600	9500	9500	10000	10600	11800	11800	11800	10600	4500	8000
1 400 000	900	10600	11200	9500	8500	8000	8000	8500	9500	8000	7500	8000	10000	11800	11200	9500	9000	3550	7100
	630	10600	11200	11200	10600	9500	9000	9000	9500	8500	8000	8500	10000	11200	11800	11200	9500	4500	7100
	450	10600	11200	10600	10000	9500	9000	9000	9500	9000	8500	9000	10000	11200	11200	10600	10000	4500	7500
1 800 000	900	10000	10000	8500	7500	7100	7500	7500	8500	7100	6700	7500	9000	11200	10000	8500	7500	3000	6300
	630	10000	10600	10000	9500	8500	8000	8000	9000	7500	7500	8000	9500	10600	11200	10600	9000	4250	6700
	450	9500	10000	10000	9500	9000	8500	8500	9000	8000	8000	8500	9500	10000	10600	10000	9000	4500	6700
2 240 000	900	9500	9000	7500	6700	6000	6700	7100	8000	6300	6000	6700	8500	10000	9000	7500	6700	2500	6000
	630	9000	10000	9000	8500	8000	7500	7500	8000	7100	6700	7500	8500	10000	10600	9500	8500	3750	6300
	450	9000	9500	9500	9000	8000	8000	8000	8500	7500	7500	8000	9000	9500	10000	9500	8500	4500	6300
2 800 000	630	8500	9500	8500	7500	7500	6700	7100	7500	6700	6300	6700	8000	9500	9500	8500	7500	3350	5600
	450	8500	9000	9000	8500	7500	7100	7500	8000	7100	6700	7100	8000	9000	9500	9000	8000	4250	6000
3 550 000	630	8000	8500	7500	6700	6300	6300	6300	7100	6000	5600	6300	7500	9000	8500	7500	7100	3000	5300
	450	8000	8500	8500	8000	7100	6700	6700	7100	6300	6300	6700	7500	8500	9000	8500	7500	3750	5600
4 500 000	630	7500	7500	6700	6000	5600	5600	6000	6700	5600	5300	5600	7100	8500	7500	6700	6300	2500	5000
	450	7500	8000	8000	7100	6700	6300	6300	6700	6000	5600	6300	7100	8000	8500	8000	6700	3350	5000
5 600 000	630	7100	7100	6300	5300	5000	5300	5300	6000	5000	4750	5300	6700	8000	7100	6300	5600	2240	4500
	450	7100	7500	7100	6700	6300	5600	5600	6300	5600	5300	5600	6700	7500	8000	7500	6300	3000	4750
7 100 000	630	6700	6300	5600	4750	4250	4750	5000	5600	4500	4250	4750	6000	7100	6300	5300	5000	1900	4250
	450	6300	7100	6300	6000	5600	5300	5300	5600	5000	4750	5300	6300	7100	7100	6700	6000	2650	4250
		max **12 500**																max **4 500**	max **9 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Size **100**

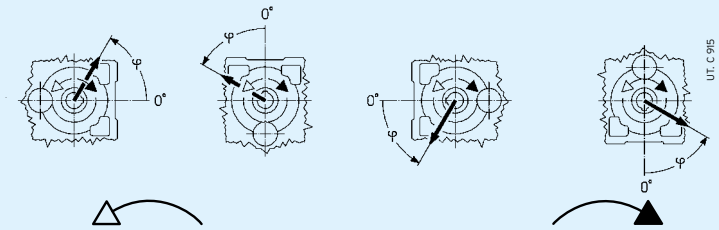
$n_2 \cdot L_h$		F_{r2} [1) 2)]																F_{a2} [1)]	
																			
min⁻¹·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
355 000	1 250	12500	12500	12500	12500	12500	10600	9500	10600	10000	8000	9000	12500	12500	12500	12500	12500	4500	9000
	900	12500	12500	12500	12500	12500	11800	11200	11800	11800	10000	10600	12500	12500	12500	12500	12500	4500	9000
	630	12500	12500	12500	12500	12500	12500	12500	12500	12500	11800	11800	12500	12500	12500	12500	12500	4500	9000
450 000	1 250	12500	12500	12500	12500	12500	9500	8500	9500	8500	7100	7500	11200	12500	12500	12500	12500	4500	9000
	900	12500	12500	12500	12500	12500	11200	10000	10600	10600	9000	9500	12500	12500	12500	12500	12500	4500	9000
	630	12500	12500	12500	12500	12500	11800	11200	11800	11800	10600	11200	12500	12500	12500	12500	12500	4500	9000
560 000	1 250	11800	12500	12500	12500	11800	8500	7500	8500	7500	6000	6700	10000	12500	12500	12500	12500	4500	9000
	900	12500	12500	12500	12500	12500	10000	9000	10000	9500	8000	8500	11200	12500	12500	12500	12500	4500	9000
	630	12500	12500	12500	12500	12500	11200	10000	11200	10600	9500	10000	11800	12500	12500	12500	12500	4500	9000
710 000	1 250	10600	12500	12500	12500	10600	7500	6700	7500	6700	5300	5600	9000	12500	12500	12500	11200	3750	8500
	900	11200	12500	12500	12500	11800	9000	8000	9000	8500	7100	7500	10600	12500	12500	12500	11800	4500	8500
	630	11800	12500	12500	12500	11800	10000	9500	10000	10000	8500	9000	11200	12500	12500	12500	12500	4500	9000
900 000	1 250	10000	12500	12500	12500	9000	6700	5600	6700	5600	4250	5000	8000	12500	12500	12500	10000	3150	7500
	900	10600	12500	12500	12500	10600	8000	7500	8000	7500	6300	6700	9500	12500	12500	12500	11200	4500	8000
	630	11200	12500	12500	12500	11200	9500	8500	9000	9000	8000	8500	10600	12500	12500	12500	11200	4500	8500
1 120 000	1 250	9000	12500	12500	11200	8000	6000	5000	5600	4750	3550	4000	7100	12500	12500	12500	9000	2500	7100
	900	10000	12500	12500	12500	10000	7500	6700	7500	6700	5600	6300	8500	12500	12500	12500	10000	4000	7500
	630	10000	12500	12500	12500	10600	8500	8000	8500	8000	7100	7500	9500	12500	12500	12500	10600	4500	7500
	450	10600	11800	12500	11800	10600	9000	8500	9000	9000	8000	8500	10000	11800	12500	12500	10600	4500	8000
1 400 000	900	9000	12500	12500	11200	9500	6700	6000	6700	6000	5000	5300	8000	11800	12500	12500	9500	3550	7100
	630	9500	11800	12500	11800	9500	8000	7100	7500	7500	6300	6700	9000	11800	12500	12500	10000	4500	7100
	450	10000	11200	11800	11200	10000	8500	8000	8500	8500	7500	8000	9500	11200	12500	11800	10000	4500	7500
1 800 000	900	8000	11800	11800	10600	8000	6000	5000	5600	5300	4250	4750	7100	11200	12500	11800	8500	3000	6300
	630	8500	11200	12500	11200	9000	7100	6300	7100	6700	5600	6300	8000	11200	12500	11800	9000	4250	6700
	450	9000	10600	11200	10600	9000	7500	7100	7500	7500	6700	7100	8500	10600	11800	11200	9500	4500	6700
2 240 000	900	7500	10600	11200	9500	7100	5300	4500	5300	4750	3550	4000	6300	10600	12500	10600	8000	2500	6000
	630	8000	10600	11800	10600	8500	6300	5600	6300	6000	5000	5600	7500	10600	12500	11200	8500	3750	6300
	450	8500	10000	10600	10000	8500	7100	6700	7100	7100	6300	6300	8000	10000	11200	10600	8500	4500	6300
2 800 000	630	7500	10000	10600	9500	7500	6000	5300	5600	5600	4500	5000	6700	9500	11800	10600	8000	3350	5600
	450	8000	9500	10000	9500	8000	6700	6000	6300	6300	5600	6000	7500	9500	10600	10000	8000	4250	6000
3 550 000	630	7100	9500	10000	9000	7100	5300	4750	5300	5000	4000	4500	6300	9000	11200	10000	7100	3000	5300
	450	7100	9000	9500	9000	7500	6000	5600	6000	5600	5000	5300	6700	9000	10000	9500	7500	3750	5600
4 500 000	630	6300	8500	9000	8000	6700	4750	4250	4750	4250	3550	3750	5600	8500	10000	9000	6700	2500	5000
	450	6700	8500	9000	8500	6700	5600	5000	5300	5300	4500	4750	6300	8000	9500	9000	7100	3350	5000
5 600 000	630	6000	8000	8500	7500	6000	4250	3750	4250	3750	3000	3350	5000	8000	9500	8500	6300	2240	4500
	450	6300	8000	8500	8000	6300	5000	4500	5000	4750	4000	4250	5600	8000	9000	8500	6300	3000	4750
7 100 000	630	5300	7500	8000	6700	5000	3750	3150	3750	3350	2500	2800	4500	7500	9000	7500	5600	1900	4250
	450	5600	7500	8000	7500	6000	4500	4000	4500	4250	3550	4000	5300	7500	8500	8000	6000	2650	4250
									max **12 500**									max **4 500**	max **9 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Size **125**



$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]								F_{a2} [1)]	
min⁻¹·h	N m	0	45	90	135	180	225	270	315		
355 000	2 500	20000	20000	20000	20000	20000	20000	20000	19000	14000	7100
	1 800	20000	20000	20000	20000	20000	20000	20000	20000	14000	7100
450 000	2 500	19000	20000	20000	20000	20000	20000	19000	18000	14000	7100
	1 800	20000	20000	20000	20000	20000	20000	20000	19000	14000	7100
560 000	2 500	17000	19000	20000	20000	20000	20000	18000	16000	14000	6700
	1 800	19000	20000	20000	20000	20000	20000	19000	18000	14000	7100
710 000	2 500	15000	16000	18000	20000	20000	20000	16000	14000	13200	5600
	1 800	17000	20000	20000	20000	20000	20000	18000	16000	13200	7100
900 000	2 500	14000	14000	16000	19000	20000	19000	15000	13200	11800	4750
	1 800	16000	18000	20000	20000	20000	19000	16000	15000	12500	7100
	1 250	17000	19000	20000	20000	20000	19000	17000	16000	12500	7100
1 120 000	2 500	12500	11800	14000	17000	19000	18000	13200	11800	11200	3750
	1 800	14000	17000	18000	20000	20000	18000	15000	13200	11800	6300
	1 250	15000	17000	20000	20000	20000	18000	16000	15000	11800	7100
1 400 000	1 800	13200	15000	16000	18000	20000	17000	14000	12500	10600	5300
	1 250	14000	16000	19000	20000	19000	17000	15000	14000	11200	7100
1 800 000	1 800	11800	13200	14000	16000	18000	15000	12500	11200	10000	4500
	1 250	13200	15000	17000	19000	18000	16000	13200	12500	10000	6300
2 240 000	1 800	11200	11800	12500	15000	17000	14000	11200	10000	9500	4000
	1 250	11800	14000	16000	17000	17000	14000	12500	11800	9500	5600
2 800 000	1 250	11200	13200	14000	16000	16000	13200	11800	10600	9000	5000
	900	11800	13200	15000	16000	15000	14000	11800	11200	9000	6300
3 550 000	1 250	10000	11800	13200	14000	15000	12500	10600	9500	8000	4500
	900	11200	12500	14000	15000	14000	12500	11200	10600	8500	5600
4 500 000	1 250	9500	10600	11800	13200	14000	11800	9500	9000	7500	4000
	900	10000	11200	13200	14000	13200	11800	10600	9500	7500	5000
5 600 000	1 250	8500	9500	10600	11800	13200	11200	9000	8000	7100	3350
	900	9500	10600	12500	13200	12500	11200	9500	9000	7100	4500
7 100 000	1 250	8000	8500	9000	10600	11800	10000	8000	7500	6700	2800
	900	8500	10000	11200	12500	11800	10000	9000	8000	6700	4000
		max **20 000**								max **14 000**	max **7 100**

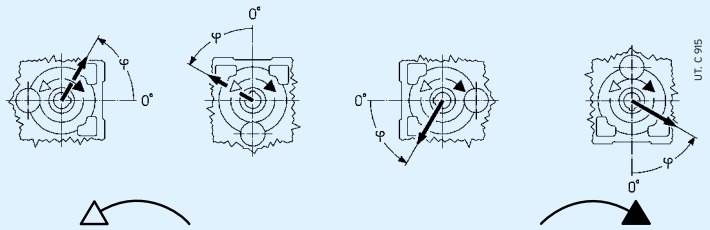
$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]								F_{a2} [1)]	
min⁻¹·h	N m	0	45	90	135	180	225	270	315		
280 000	3 750	28000	28000	28000	28000	28000	28000	28000	26500	18000	9000
	2 650	28000	28000	28000	28000	28000	28000	28000	28000	18000	9000
355 000	3 750	25000	28000	28000	28000	28000	28000	26500	23600	18000	9000
	2 650	28000	28000	28000	28000	28000	28000	28000	26500	18000	9000
450 000	3 750	23600	28000	28000	28000	28000	28000	23600	21200	18000	9000
	2 650	25000	28000	28000	28000	28000	28000	26500	23600	18000	9000
560 000	3 750	21200	23600	26500	28000	28000	28000	22400	20000	17000	7500
	2 650	23600	26500	28000	28000	28000	28000	23600	22400	18000	9000
710 000	3 750	19000	21200	23600	28000	28000	25000	20000	18000	16000	6300
	2 650	21200	25000	28000	28000	28000	26500	22400	20000	16000	9000
	1 900	22400	25000	28000	28000	28000	26500	23600	22400	17000	9000
900 000	3 750	18000	18000	21200	25000	26500	23600	18000	16000	15000	5000
	2 650	20000	23600	26500	28000	28000	23600	20000	19000	15000	8500
	1 900	21200	23600	26500	28000	28000	25000	21200	20000	15000	9000
1 120 000	2 650	18000	22400	23600	26500	26500	22400	19000	17000	14000	7500
	1 900	20000	22400	25000	26500	26500	22400	20000	19000	14000	9000
1 400 000	2 650	16000	19000	21200	23600	25000	21200	17000	15000	13200	6300
	1 900	18000	21200	23600	25000	23600	21200	18000	17000	13200	8500
1 800 000	2 650	15000	17000	19000	21200	23600	19000	15000	14000	11800	5300
	1 900	16000	19000	22400	23600	22400	20000	17000	16000	12500	7500
2 240 000	1 900	15000	18000	20000	22400	21200	18000	15000	14000	11800	6700
	1 320	16000	18000	20000	21200	21200	19000	16000	16000	11800	8500
2 800 000	1 900	14000	17000	19000	20000	20000	17000	14000	13200	10600	6000
	1 320	15000	17000	19000	20000	19000	17000	15000	14000	11200	7500
3 550 000	1 900	12500	15000	17000	19000	19000	16000	13200	11800	10000	5000
	1 320	14000	16000	18000	19000	18000	16000	14000	13200	10000	6700
4 500 000	1 900	11800	14000	15000	17000	18000	15000	11800	10600	9000	4500
	1 320	12500	15000	17000	18000	17000	15000	13200	12500	9500	6300
5 600 000	1 900	10600	11800	13200	15000	17000	14000	10600	10000	8500	3750
	1 320	11800	13200	16000	17000	16000	14000	11800	11200	9000	5300
		max **28 000** (**16 000** for «short side»								max **18 000**	max **9 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to 0,9 · F_{r2max}.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Size **125**

$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]																F_{a2} [1)]	
																			
min^{-1}·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
355 000	2 500	17000	20000	20000	20000	20000	20000	15000	14000	20000	18000	16000	18000	20000	20000	20000	20000	14000	7100
	1 800	20000	20000	20000	20000	20000	20000	18000	17000	20000	20000	19000	20000	20000	20000	20000	20000	14000	7100
450 000	2 500	15000	20000	20000	20000	20000	19000	13200	12500	20000	16000	14000	16000	20000	20000	20000	20000	14000	7100
	1 800	18000	20000	20000	20000	20000	20000	16000	15000	20000	18000	17000	19000	20000	20000	20000	20000	14000	7100
560 000	2 500	13200	20000	20000	20000	20000	17000	11800	10600	20000	14000	13200	15000	20000	20000	20000	20000	14000	6700
	1 800	16000	20000	20000	20000	20000	19000	15000	14000	20000	17000	15000	17000	20000	20000	20000	20000	14000	7100
710 000	2 500	11800	19000	20000	20000	20000	15000	10000	9000	18000	13200	11200	13200	17000	20000	20000	20000	13200	5600
	1 800	15000	20000	20000	20000	20000	18000	13200	12500	19000	15000	14000	15000	20000	20000	20000	20000	13200	7100
900 000	2 500	10000	17000	20000	20000	20000	14000	8500	8000	16000	11200	10000	11800	15000	20000	20000	20000	11800	4750
	1 800	13200	19000	20000	20000	20000	16000	11800	11200	18000	14000	12500	14000	18000	20000	20000	20000	12500	7100
	1 250	15000	19000	20000	20000	20000	17000	14000	13200	18000	15000	14000	16000	19000	20000	20000	20000	12500	7100
1 120 000	2 500	8500	15000	20000	20000	20000	12500	7500	6700	15000	10000	8500	10600	13200	18000	20000	20000	11200	3750
	1 800	11800	17000	20000	20000	20000	15000	10600	10000	16000	12500	11200	12500	17000	20000	20000	20000	11800	6300
	1 250	14000	18000	20000	20000	20000	16000	13200	12500	17000	14000	13200	14000	17000	20000	20000	20000	11800	7100
1 400 000	1 800	10600	16000	20000	20000	20000	13200	9500	8500	15000	11200	10000	11800	16000	19000	20000	20000	10600	5300
	1 250	12500	17000	20000	20000	20000	15000	11800	11200	16000	13200	12500	13200	16000	20000	20000	20000	11200	7100
1 800 000	1 800	9000	14000	20000	20000	19000	11800	8000	7500	14000	10000	9000	10000	14000	17000	20000	19000	10000	4500
	1 250	11800	15000	20000	20000	18000	14000	10600	10000	15000	11800	11200	11800	15000	19000	20000	18000	10000	6300
2 240 000	1 800	8000	13200	18000	20000	18000	10600	7100	6300	12500	9000	8000	9000	11800	16000	18000	18000	9500	4000
	1 250	10600	14000	19000	20000	17000	12500	9500	9000	14000	10600	10000	11200	14000	18000	19000	17000	9500	5600
2 800 000	1 250	9500	13200	18000	19000	16000	11800	8500	8000	12500	10000	9000	10000	13200	16000	18000	16000	9000	5000
	900	10600	14000	17000	18000	16000	12500	10000	9500	13200	11200	10600	11200	13200	16000	17000	16000	9000	6300
3 550 000	1 250	8500	12500	17000	18000	15000	10600	7500	7100	11800	9000	8000	9000	11800	15000	16000	15000	8000	4500
	900	10000	12500	16000	17000	15000	11200	9000	8500	11800	10000	9500	10000	12500	15000	16000	15000	8500	5600
4 500 000	1 250	7500	11200	15000	17000	14000	9500	6700	6300	10600	8000	7100	8000	11200	13200	15000	14000	7500	4000
	900	9000	11800	15000	16000	14000	10600	8000	7500	11200	9000	8500	9500	11200	14000	15000	14000	7500	5000
5 600 000	1 250	6700	10600	14000	16000	13200	8500	6000	5300	10000	7100	6300	7500	10000	12500	14000	14000	7100	3350
	900	8000	11200	14000	15000	13200	9500	7500	7100	10600	8500	7500	8500	10600	13200	14000	13200	7100	4500
7 100 000	1 250	6000	9500	12500	14000	12500	7500	5000	4750	9000	6300	5600	6700	8500	11200	13200	12500	6700	2800
	900	7500	10000	13200	14000	12500	9000	6700	6300	9500	7500	7100	7500	10000	12500	13200	12500	6700	4000
		max **20 000**																max **14 000**	max **7 100**

Size **140**

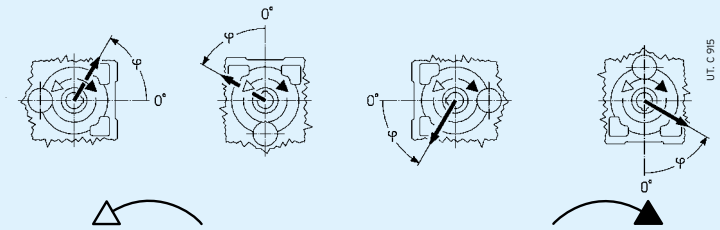
280 000	3 750	23600	28000	28000	28000	28000	28000	22400	20000	28000	25000	22400	25000	28000	28000	28000	28000	18000	9000
	2 650	28000	28000	28000	28000	28000	28000	25000	25000	28000	28000	26500	28000	28000	28000	28000	28000	18000	9000
355 000	3 750	21200	28000	28000	28000	28000	26500	19000	18000	28000	22400	20000	23600	28000	28000	28000	28000	18000	9000
	2 650	25000	28000	28000	28000	28000	28000	23600	22400	28000	26500	23600	26500	28000	28000	28000	28000	18000	9000
450 000	3 750	19000	28000	28000	28000	28000	25000	17000	16000	28000	21200	19000	21200	28000	28000	28000	28000	18000	9000
	2 650	23600	28000	28000	28000	28000	26500	21200	20000	28000	23600	22400	23600	28000	28000	28000	28000	18000	9000
560 000	3 750	17000	26500	28000	28000	28000	22400	15000	14000	25000	19000	16000	19000	25000	28000	28000	28000	17000	7500
	2 650	21200	28000	28000	28000	28000	25000	19000	18000	26500	20000	20000	21200	26500	28000	28000	28000	18000	9000
710 000	3 750	15000	23600	28000	28000	28000	20000	13200	11800	23600	16000	14000	17000	21200	28000	28000	28000	16000	6300
	2 650	19000	25000	28000	28000	28000	22400	17000	16000	25000	20000	18000	20000	25000	28000	28000	28000	16000	9000
	1 900	21200	26500	28000	28000	28000	23600	20000	19000	25000	21200	20000	21200	25000	28000	28000	28000	17000	9000
900 000	3 750	13200	21200	28000	28000	28000	18000	11200	10000	21200	15000	13200	15000	19000	25000	28000	28000	15000	5000
	2 650	17000	23600	28000	28000	28000	21200	15000	14000	22400	18000	16000	18000	23600	28000	28000	28000	15000	8500
	1 900	19000	25000	28000	28000	28000	22400	18000	17000	23600	20000	19000	20000	23600	28000	28000	28000	15000	9000
1 120 000	2 650	15000	22400	28000	28000	28000	19000	14000	12500	21200	16000	15000	16000	21200	26500	28000	28000	14000	7500
	1 900	18000	22400	28000	28000	26500	21200	17000	16000	22400	18000	17000	18000	22400	26500	28000	26500	14000	9000
1 400 000	2 650	13200	20000	26500	28000	25000	17000	12500	11200	19000	14000	13200	15000	20000	23600	26500	26500	13200	6300
	1 900	16000	21200	26500	28000	25000	19000	15000	14000	20000	17000	15000	17000	20000	25000	26500	25000	13200	8500
1 800 000	2 650	11800	19000	25000	28000	23600	16000	10600	10000	18000	13200	11800	13200	17000	21200	25000	25000	11800	5300
	1 900	15000	20000	25000	26500	23600	17000	13200	12500	19000	15000	14000	15000	19000	23600	26500	23600	12500	7500
2 240 000	1 900	13200	18000	23600	26500	22400	16000	12500	11200	18000	14000	12500	14000	18000	22400	23600	22400	11800	6700
	1 320	15000	19000	22400	23600	21200	17000	14000	13200	18000	15000	14000	15000	18000	21200	22400	21200	11800	8500
2 800 000	1 900	11800	17000	22400	25000	21200	15000	10600	10000	16000	12500	11200	13000	16000	20000	22400	21200	10600	6000
	1 320	14000	17000	21200	22400	20000	16000	13200	12500	17000	14000	13200	14000	17000	20000	21200	20000	11200	7500
3 550 000	1 900	10600	15000	21200	23600	19000	13200	9500	9000	15000	11200	10000	11800	15000	18000	21200	20000	10000	5000
	1 320	12500	16000	20000	21200	19000	14000	11800	11200	15000	13200	11800	13200	15000	19000	20000	19000	10000	6700
4 500 000	1 900	9500	14000	19000	21200	18000	12500	8500	8000	14000	10000	9000	10600	14000	17000	19000	19000	9000	4500
	1 320	11800	15000	19000	20000	18000	13200	10600	10000	14000	11800	11200	11800	15000	18000	19000	18000	9500	6300
5 600 000	1 900	8500	13200	17000	20000	17000	11200	7500	6700	12500	9000	8000	9500	12500	15000	18000	17000	8500	3750
	1 320	10000	14000	18000	19000	16000	12500	9500	9000	13200	10600	10000	11200	13200	17000	18000	17000	9000	5300
		max **28 000** (**16 000** for «short side»)																max **18 000**	max **9 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to $0,9 \cdot F_{r2max}$.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Size **160**

$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]															F_{a2} [1)]	
																		
min^{-1}·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
280 000	5 600	35500	35500	35500	33500	33500	31500	31500	33500	30000	28000	30000	35500	35500	35500	35500	35500	11200	22400
	4 000	35500	35500	35500	35500	35500	33500	33500	35500	31500	30000	31500	35500	35500	35500	35500	35500	11200	22400
355 000	5 600	35500	35500	33500	30000	28000	28000	28000	31500	26500	25000	28000	33500	35500	35500	33500	31500	11200	22400
	4 000	35500	35500	35500	35500	31500	30000	30000	31500	30000	28000	30000	33500	35500	35500	35500	33500	11200	22400
450 000	5 600	33500	33500	30000	26500	25000	26500	26500	28000	25000	23600	25000	31500	35500	33500	30000	28000	10600	21200
	4 000	33500	35500	35500	33500	30000	28000	28000	30000	26500	26500	28000	35500	35500	35500	31500	31500	11200	21200
560 000	5 600	31500	31500	26500	23600	22400	23600	23600	26500	22400	21200	23600	28000	33500	31500	26500	23600	9000	19000
	4 000	31500	33500	31500	30000	28000	25000	25000	28000	25000	23600	25000	30000	33500	35500	31500	28000	11200	20000
710 000	5 600	30000	28000	22400	20000	19000	20000	22400	25000	20000	19000	21200	26500	30000	28000	23600	21200	7500	18000
	4 000	28000	31500	28000	26500	25000	23600	23600	25000	22400	21200	23600	28000	31500	31500	30000	26500	11200	19000
	2 800	28000	31500	31500	28000	26500	25000	25000	26500	25000	23600	25000	28000	31500	31500	30000	26500	11200	19000
900 000	5 600	28000	25000	19000	17000	16000	17000	20000	22400	19000	17000	19000	25000	28000	25000	20000	18000	6000	16000
	4 000	28000	30000	26500	23600	23600	22400	22400	23600	21200	20000	21200	25000	30000	30000	26500	25000	10000	17000
	2 800	26500	28000	28000	26500	25000	23600	23600	25000	22400	21200	22400	26500	30000	30000	28000	25000	11200	18000
1 120 000	4 000	25000	26500	23600	21200	20000	20000	20000	22400	19000	18000	20000	23600	28000	26500	23600	22400	8500	16000
	2 800	25000	26500	28000	25000	23600	21200	21200	23600	21200	20000	21200	23600	28000	28000	26500	23600	11200	17000
1 400 000	4 000	23600	23600	21200	19000	18000	18000	18000	20000	17000	16000	18000	22400	26500	23600	21200	20000	7500	15000
	2 800	23600	25000	25000	22400	21200	20000	20000	21200	19000	18000	19000	22400	25000	26500	25000	22400	10000	15000
1 800 000	4 000	22400	22400	19000	17000	16000	17000	17000	19000	16000	15000	16000	21200	23600	21200	19000	17000	6300	14000
	2 800	22400	23600	22400	21200	20000	18000	18000	20000	18000	17000	18000	21200	25000	25000	23600	20000	9000	14000
2 240 000	2 800	21200	22400	21200	19000	18000	17000	17000	18000	16000	15000	17000	20000	22400	22400	21200	19000	8000	13200
	2 000	20000	22400	22400	20000	19000	18000	18000	19000	17000	17000	18000	20000	22400	23600	21200	19000	10000	14000
2 800 000	2 800	19000	21200	19000	17000	16000	15000	15000	17000	15000	14000	15000	18000	21200	21200	19000	18000	7100	12500
	2 000	19000	20000	20000	19000	17000	16000	16000	17000	16000	15000	16000	18000	21200	21200	20000	18000	9000	12500
3 550 000	2 800	18000	19000	17000	15000	14000	14000	14000	16000	13200	12500	14000	17000	20000	19000	17000	16000	6000	11200
	2 000	18000	19000	19000	18000	16000	15000	15000	16000	15000	14000	15000	17000	19000	20000	19000	17000	8000	11800
4 500 000	2 800	17000	17000	15000	13200	12500	13200	13200	14000	12500	11800	12500	16000	19000	17000	15000	14000	5300	10600
	2 000	17000	18000	18000	16000	15000	14000	14000	15000	13200	13200	14000	16000	18000	19000	18000	15000	7100	11200
5 600 000	2 800	16000	15000	13200	11800	11200	11800	11800	13200	11200	10600	11800	15000	17000	15000	13200	12500	4500	9500
	2 000	16000	17000	16000	15000	14000	13200	13200	14000	12500	11800	12500	15000	17000	18000	16000	14000	6300	10000
		max **35 500**																max **11 200**	max **22 400**

Size **180**

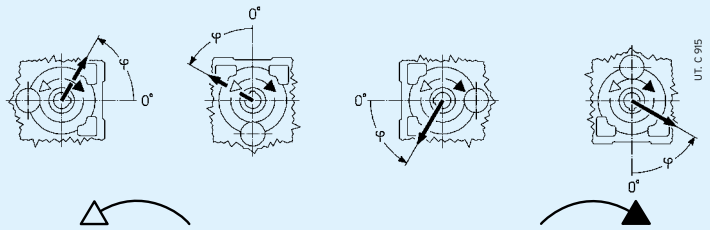
280 000	8 000	45000	45000	45000	45000	45000	42500	40000	45000	40000	37500	40000	45000	45000	45000	45000	45000	14000	28000
	5 600	45000	45000	45000	45000	45000	45000	42500	45000	42500	40000	42500	45000	45000	45000	45000	45000	14000	28000
355 000	8 000	45000	45000	45000	42500	40000	37500	37500	42500	35500	33500	35500	45000	45000	45000	45000	45000	14000	28000
	5 600	45000	45000	45000	45000	45000	40000	40000	42500	40000	35500	40000	45000	45000	45000	45000	45000	14000	28000
450 000	8 000	45000	45000	45000	40000	35500	35500	35500	37500	33500	31500	33500	42500	45000	45000	45000	40000	14000	28000
	5 600	45000	45000	45000	45000	40000	37500	37500	40000	37500	35500	37500	42500	45000	45000	45000	42500	14000	28000
560 000	8 000	42500	45000	40000	35500	31500	31500	31500	35500	30000	28000	31500	37500	45000	45000	40000	35500	11800	25000
	5 600	42500	45000	45000	42500	37500	35500	33500	37500	33500	31500	33500	40000	45000	45000	45000	40000	14000	26500
710 000	8 000	40000	40000	35500	30000	28000	28000	28000	33500	28000	25000	28000	35500	42500	40000	35500	30000	10000	23600
	5 600	40000	42500	42500	37500	35500	31500	31500	33500	31500	28000	31500	37500	45000	45000	42500	35500	14000	25000
	4 000	40000	42500	42500	40000	35500	33500	33500	35500	33500	31500	33500	37500	42500	45000	42500	37500	14000	25000
900 000	8 000	37500	35500	30000	26500	23600	25000	26500	30000	25000	22400	25000	33500	40000	35500	31500	26500	8500	21200
	5 600	37500	40000	37500	33500	33500	30000	28000	31500	28000	26500	28000	33500	42500	42500	37500	33500	13200	22400
	4 000	37500	40000	40000	37500	33500	31500	31500	33500	30000	28000	31500	35500	40000	42500	40000	35500	14000	23600
1 120 000	5 600	33500	37500	35500	31500	30000	26500	26500	30000	26500	23600	26500	31500	40000	37500	35500	31500	11800	21200
	4 000	33500	37500	37500	35500	31500	28000	28000	31500	28000	26500	28000	33500	37500	40000	37500	31500	14000	22400
1 400 000	5 600	31500	33500	31500	28000	25000	25000	25000	26500	23600	21200	23600	30000	37500	35500	31500	28000	10000	19000
	4 000	31500	35500	35500	33500	28000	26500	26500	28000	25000	23600	26500	30000	35500	37500	35500	30000	13200	20000
1 800 000	5 600	30000	31500	28000	25000	22400	22400	22400	25000	21200	20000	22400	28000	35500	31500	28000	25000	8500	18000
	4 000	30000	33500	31500	30000	26500	25000	25000	26500	23600	22400	23600	28000	33500	35500	33500	28000	11800	19000
2 240 000	4 000	28000	31500	30000	26500	25000	22400	22400	25000	22400	20000	22400	26500	31500	33500	30000	26500	10600	17000
	2 800	28000	30000	30000	28000	25000	23600	23600	25000	23600	22400	23600	26500	30000	31500	30000	26500	13200	18000
2 800 000	4 000	26500	28000	26500	25000	23600	21200	20000	22400	20000	19000	20000	25000	30000	30000	26500	23600	9500	16000
	2 800	26500	28000	28000	26500	23600	22400	22400	23600	21200	20000	21200	25000	28000	30000	28000	25000	11800	17000
3 550 000	4 000	23600	26500	23600	22400	20000	19000	19000	21200	18000	17000	18000	22400	28000	26500	25000	22400	8000	15000
	2 800	23600	26500	26500	25000	22400	20000	20000	21200	20000	19000	20000	23600	26500	28000	26500	22400	10600	15000
4 500 000	4 000	22400	25000	22400	20000	18000	18000	17000	19000	17000	15000	17000	21200	26500	25000	22400	20000	7100	14000
	2 800	22400	25000	25000	23600	21200	19000	19000	20000	18000	17000	19000	21200	25000	26500	25000	21200	9500	14000
5 600 000	4 000	21200	22400	20000	17000	16000	16000	16000	18000	15000	14000	15000	20000	25000	22400	20000	18000	6000	12500
	2 800	21200	23600	22400	21200	19000	17000	17000	19000	17000	16000	17000	20000	23600	25000	23600	20000	8500	13200
		max **45 000** (**25 000** for «short side»)																max **14 000**	max **28 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to 0,9 · F_{r2max}.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Size **160**

$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]															F_{a2} [1)]	
																		
min⁻¹·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
280 000	5 600	33500	35500	35500	35500	35500	25000	22400	25000	23600	19000	21200	28000	35500	35500	35500	35500	11200	22400
	4 000	35500	35500	35500	35500	35500	28000	26500	28000	28000	23600	25000	31500	35500	35500	35500	35500	11200	22400
355 000	5 600	30000	35500	35500	35500	31500	22400	20000	21200	21200	17000	18000	26500	35500	35500	35500	33500	11200	22400
	4 000	31500	35500	35500	35500	33500	26500	23600	25000	25000	21200	23600	30000	35500	35500	35500	33500	11200	22400
450 000	5 600	28000	35500	35500	35500	30000	20000	17000	19000	18000	14000	16000	23600	35500	35500	35500	30000	10600	21200
	4 000	30000	35500	35500	35500	31500	23600	21200	23600	23600	20000	21200	26500	35500	35500	35500	31500	11200	21200
560 000	5 600	25000	35500	35500	33500	26500	18000	15000	17000	16000	12500	13200	21200	35500	35500	35500	28000	9000	19000
	4 000	28000	35500	35500	35500	28000	22400	19000	21200	21200	17000	19000	25000	35500	35500	35500	30000	11200	20000
710 000	5 600	22400	33500	35500	31500	22400	16000	13200	15000	13200	10000	11200	18000	33500	35500	35500	25000	7500	18000
	4 000	25000	33500	35500	33500	26500	20000	17000	19000	19000	15000	16000	22400	33500	35500	35500	28000	11200	19000
	2 800	26500	31500	35500	33500	28000	22400	20000	22400	22400	19000	20000	25000	31500	35500	35500	28000	11200	19000
900 000	5 600	20000	31500	33500	28000	20000	14000	11200	13200	11200	8500	9500	16000	31500	35500	31500	22400	6000	16000
	4 000	23600	31500	35500	31500	25000	18000	16000	17000	17000	13200	15000	20000	31500	35500	35500	25000	10000	17000
	2 800	25000	30000	33500	31500	25000	20000	19000	20000	20000	17000	18000	22400	30000	35500	33500	26500	11200	18000
1 120 000	4 000	21200	30000	31500	28000	22400	16000	14000	15000	15000	11800	13200	19000	28000	35500	31500	23600	8500	16000
	2 800	22400	28000	31500	30000	23600	19000	17000	18000	18000	15000	16000	21200	28000	33500	31500	25000	11200	17000
1 400 000	4 000	19000	28000	30000	26500	21200	14000	11800	14000	13200	10000	11200	16000	26500	33500	30000	21200	7500	15000
	2 800	21200	26500	30000	28000	22400	17000	15000	16000	16000	14000	15000	19000	26500	31500	30000	22400	10000	15000
1 800 000	4 000	18000	26500	28000	23600	19000	12500	10600	11800	11200	8500	9500	15000	25000	31500	26500	20000	6300	14000
	2 800	19000	25000	28000	26500	20000	16000	14000	15000	15000	12500	13200	18000	25000	30000	28000	21200	9000	14000
2 240 000	2 800	18000	23600	26500	23600	19000	14000	12500	14000	13200	11200	11800	16000	23600	28000	26500	19000	8000	13200
	2 000	19000	22400	25000	23600	19000	16000	14000	15000	15000	13200	14000	18000	22400	26500	25000	20000	10000	14000
2 800 000	2 800	16000	22400	25000	22400	17000	12500	11200	12500	11800	9500	10600	14000	22400	26500	25000	18000	7100	12500
	2 000	17000	21200	23600	22400	18000	14000	13200	14000	14000	11800	12500	16000	21200	25000	23600	19000	9000	12500
3 550 000	2 800	15000	21200	22400	20000	16000	11200	10000	11200	10600	8500	9000	13200	20000	25000	22400	16000	6000	11200
	2 000	16000	20000	22400	21200	17000	13200	11800	12500	12500	10600	11800	15000	20000	23600	22400	17000	8000	11800
4 500 000	2 800	14000	20000	21200	19000	15000	10000	8500	10000	9500	7100	8000	11800	19000	23600	21200	15000	5300	10600
	2 000	15000	19000	21200	20000	15000	11800	10600	11800	11800	10000	10600	13200	19000	22400	21200	16000	7100	11200
5 600 000	2 800	12500	19000	20000	17000	13200	9000	7500	8500	8000	6000	6700	10600	18000	21200	19000	14000	4500	9500
	2 000	14000	18000	20000	19000	14000	11200	9500	10600	10600	8500	9000	12500	18000	21200	20000	15000	6300	10000
		max **35 500**																max **11 200**	max **22 400**

Size **180**

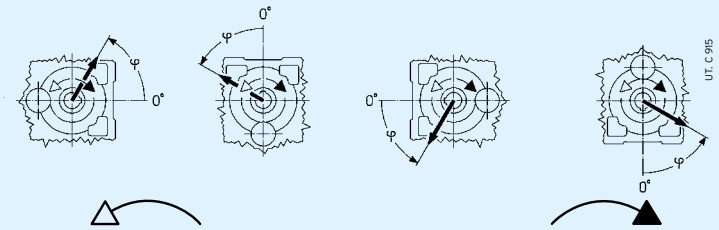
280 000	8 000	45000	45000	45000	45000	45000	35500	31500	33500	33500	26500	30000	40000	45000	45000	45000	45000	14000	28000
	5 600	45000	45000	45000	45000	45000	40000	37500	40000	40000	33500	35500	45000	45000	45000	45000	45000	14000	28000
355 000	8 000	42500	45000	45000	45000	42500	31500	28000	31500	30000	23600	25000	37500	45000	45000	45000	45000	14000	28000
	5 600	45000	45000	45000	45000	45000	37500	33500	35500	35500	30000	31500	40000	45000	45000	45000	45000	14000	28000
450 000	8 000	37500	45000	45000	45000	40000	28000	25000	28000	26500	21200	22400	33500	45000	45000	45000	40000	14000	28000
	5 600	40000	45000	45000	45000	42500	33500	30000	33500	31500	28000	30000	37500	45000	45000	45000	42500	14000	28000
560 000	8 000	35500	45000	45000	45000	37500	25000	21200	25000	22400	18000	20000	30000	45000	45000	45000	37500	11800	25000
	5 600	37500	45000	45000	45000	40000	30000	28000	30000	28000	25000	26500	33500	45000	45000	45000	40000	14000	26500
710 000	8 000	31500	45000	45000	42500	31500	22400	19000	21200	20000	15000	17000	26500	45000	45000	45000	33500	10000	23600
	5 600	35500	45000	45000	45000	35500	28000	25000	26500	26500	21200	23600	31500	45000	45000	45000	37500	14000	25000
	4 000	35500	42500	45000	45000	37500	31500	28000	30000	30000	26500	28000	33500	42500	45000	45000	37500	14000	25000
900 000	8 000	28000	42500	45000	37500	28000	20000	16000	19000	17000	12500	14000	23600	42500	45000	45000	31500	8500	21200
	5 600	31500	42500	45000	42500	33500	25000	22400	25000	23600	19000	21200	28000	42500	45000	45000	33500	13200	22400
	4 000	33500	40000	45000	42500	35500	28000	26500	28000	28000	23600	25000	31500	40000	45000	45000	35500	14000	23600
1 120 000	5 600	30000	40000	45000	40000	31500	22400	20000	22400	21200	17000	19000	26500	40000	45000	45000	31500	11800	21200
	4 000	31500	37500	42500	40000	31500	26500	23600	25000	25000	21200	23600	28000	37500	45000	42500	33500	14000	22400
1 400 000	5 600	26500	37500	40000	35500	28000	20000	17000	20000	18000	15000	16000	23600	37500	45000	40000	28000	10000	19000
	4 000	28000	35500	40000	37500	30000	23600	21200	23600	22400	19000	20000	26500	35500	42500	40000	30000	13200	20000
1 800 000	5 600	25000	35500	37500	33500	26500	18000	15000	17000	16000	12500	14000	21200	35500	42500	37500	26500	8500	18000
	4 000	26500	33500	37500	35500	28000	21200	19000	21200	20000	17000	19000	25000	33500	40000	37500	28000	11800	19000
2 240 000	4 000	25000	31500	35500	33500	25000	20000	17000	19000	19000	15000	17000	22400	31500	37500	35500	26500	10600	17000
	2 800	25000	31500	33500	31500	26500	22400	20000	21200	21200	19000	20000	23600	31500	35500	33500	26500	13200	18000
2 800 000	4 000	22400	30000	33500	30000	23600	18000	16000	17000	17000	14000	15000	20000	30000	35500	33500	25000	9500	16000
	2 800	23600	28000	31500	30000	25000	20000	18000	20000	20000	17000	18000	22400	28000	33500	31500	25000	11800	17000
3 550 000	4 000	21200	28000	31500	28000	22400	16000	14000	15000	15000	11800	13200	18000	28000	33500	31500	22400	8000	15000
	2 800	22400	28000	30000	28000	22400	18000	17000	18000	18000	15000	16000	20000	26500	31500	30000	23600	10600	15000
4 500 000	4 000	19000	26500	28000	25000	20000	14000	12500	14000	13200	10600	11200	17000	26500	31500	28000	21200	7100	14000
	2 800	20000	25000	28000	26500	21200	17000	15000	16000	16000	14000	15000	19000	25000	30000	28000	21200	9500	14000
5 600 000	4 000	17000	25000	26500	23600	18000	12500	11200	12500	11200	9000	10000	15000	25000	30000	26500	19000	6000	12500
	2 800	19000	23600	26500	25000	20000	15000	14000	15000	15000	12500	13200	17000	23600	28000	26500	20000	8500	13200
		max **45 000** (**25 000** for «short side»)																max **14 000**	max **28 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to $0,9 \cdot F_{r2max}$.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Size **200**



$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]								F_{a2} [1)]	
min⁻¹·h	N m	0	45	90	135	180	225	270	315		
280 000	11 200	47500	56000	56000	56000	56000	56000	50000	45000	35500	18000
	8 000	53000	56000	56000	56000	56000	56000	53000	50000	35500	18000
355 000	11 200	45000	50000	56000	56000	56000	56000	45000	40000	35500	17000
	8 000	47500	56000	56000	56000	56000	56000	50000	45000	35500	18000
450 000	11 200	40000	42500	50000	56000	56000	53000	42500	37500	33500	14000
	8 000	45000	50000	56000	56000	56000	53000	45000	42500	33500	18000
560 000	11 200	35500	37500	42500	50000	56000	47500	37500	33500	31500	11800
	8 000	40000	47500	53000	56000	56000	50000	42500	37500	31500	18000
710 000	11 200	33500	31500	37500	45000	50000	45000	33500	30000	28000	9500
	8 000	37500	45000	47500	53000	53000	45000	37500	35500	30000	16000
	5 600	40000	45000	50000	53000	53000	47500	40000	37500	30000	18000
900 000	11 200	26500	26500	31500	40000	45000	42500	31500	28000	26500	7500
	8 000	33500	40000	42500	47500	50000	42500	35500	31500	28000	14000
	5 600	37500	42500	47500	50000	50000	42500	37500	35500	28000	18000
1 120 000	8 000	31500	35500	37500	45000	47500	40000	31500	30000	25000	11800
	5 600	33500	40000	45000	47500	47500	40000	35500	33500	26500	17000
1 400 000	8 000	28000	30000	33500	40000	42500	37500	30000	26500	23600	10000
	5 600	31500	35500	42500	45000	42500	37500	31500	30000	23600	15000
1 800 000	8 000	26500	26500	30000	35500	40000	33500	26500	23600	22400	8500
	5 600	28000	33500	37500	42500	40000	35500	30000	28000	22400	13200
2 240 000	5 600	26500	31500	33500	37500	37500	33500	26500	25000	21200	11800
	4 000	28000	31500	35500	37500	37500	33500	28000	26500	21200	14000
2 800 000	5 600	23600	28000	31500	33500	35500	30000	25000	22400	19000	10000
	4 000	26500	30000	33500	35500	35500	30000	26500	25000	20000	13200
3 550 000	5 600	22400	25000	28000	31500	33500	28000	22400	21200	18000	8500
	4 000	23600	28000	31500	33500	33500	28000	25000	22400	18000	11800
4 500 000	5 600	20000	22400	25000	28000	31500	26500	21200	19000	17000	7100
	4 000	22400	25000	30000	31500	31500	26500	22400	21200	17000	10600
5 600 000	5 600	18000	19000	21200	25000	28000	23600	19000	17000	15000	6000
	4 000	20000	23600	26500	30000	28000	25000	21200	19000	16000	9000
		max **56 000**								max **35 500**	max **18 000**

Values valid for solid low speed shaft[4)] (see ch. 17).

Size **225**

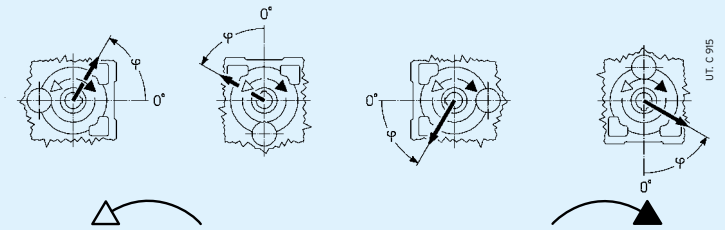
280 000	16 000	67000	71000	71000	71000	71000	71000	71000	63000	45000	22400
	11 200	71000	71000	71000	71000	71000	71000	71000	71000	45000	22400
355 000	16 000	63000	71000	71000	71000	71000	71000	63000	56000	45000	22400
	11 200	67000	71000	71000	71000	71000	71000	67000	63000	45000	22400
450 000	16 000	56000	67000	71000	71000	71000	71000	60000	53000	42500	20000
	11 200	63000	71000	71000	71000	71000	71000	63000	60000	45000	22400
560 000	16 000	53000	56000	63000	71000	71000	67000	53000	47500	40000	17000
	11 200	56000	67000	71000	71000	71000	67000	60000	53000	42500	22400
710 000	16 000	47500	50000	56000	67000	71000	63000	47500	42500	37500	13200
	11 200	53000	63000	71000	71000	71000	63000	53000	50000	37500	21200
	8 000	56000	63000	71000	71000	71000	63000	56000	53000	40000	22400
900 000	16 000	42500	42500	50000	60000	67000	56000	45000	40000	35500	11200
	11 200	47500	56000	63000	71000	71000	60000	50000	45000	35500	19000
	8 000	53000	60000	67000	71000	67000	60000	53000	50000	37500	22400
1 120 000	11 200	45000	53000	56000	63000	67000	56000	45000	40000	33500	16000
	8 000	47500	56000	63000	67000	63000	56000	50000	45000	33500	22400
1 400 000	11 200	40000	45000	50000	56000	63000	50000	40000	37500	31500	14000
	8 000	45000	50000	60000	63000	60000	53000	45000	42500	33500	20000
1 800 000	11 200	37500	40000	45000	53000	56000	47500	37500	33500	28000	11800
	8 000	40000	47500	56000	60000	56000	50000	42500	37500	30000	17000
2 240 000	8 000	37500	45000	50000	56000	53000	45000	37500	35500	28000	15000
	5 600	40000	45000	50000	53000	53000	45000	40000	37500	28000	20000
2 800 000	8 000	33500	40000	45000	50000	50000	42500	35500	31500	25000	13200
	5 600	37500	42500	47500	50000	47500	42500	37500	35500	26500	17000
3 550 000	8 000	31500	37500	40000	45000	47500	40000	31500	28000	23600	11200
	5 600	33500	37500	45000	47500	45000	40000	33500	31500	23600	16000
4 500 000	8 000	28000	33500	35500	42500	45000	37500	30000	26500	22400	10000
	5 600	31500	35500	42500	45000	42500	37500	31500	30000	22400	14000
5 600 000	8 000	26500	28000	31500	37500	40000	33500	26500	23600	20000	8000
	5 600	28000	33500	40000	42500	40000	33500	30000	26500	21200	12500
		max **71 000** (**40 000** for «short side»)								max **45 000**	max **22 400**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to 0,9 · F_{r2max}.
4) With hollow low speed shaft F_{r2} and F_{a2} permissible is 0,4 times the one stated in the table.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Size **200**

$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]														F_{a2} [1)]	
																	
min^{-1}·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
280 000	11 200	37500	56000	56000	56000	56000	50000	33500	31500	56000	40000	37500	42500	56000	56000	56000	56000	35500	18000
	8 000	47500	56000	56000	56000	56000	53000	42500	40000	56000	47500	45000	47500	56000	56000	56000	56000	35500	18000
355 000	11 200	33500	53000	56000	56000	56000	45000	30000	28000	50000	37500	33500	37500	53000	56000	56000	56000	35500	17000
	8 000	42500	56000	56000	56000	56000	50000	37500	35500	53000	42500	40000	45000	56000	56000	56000	56000	35500	18000
450 000	11 200	30000	50000	56000	56000	56000	40000	26500	23600	47500	33500	30000	33500	45000	56000	56000	56000	33500	14000
	8 000	37500	53000	56000	56000	56000	45000	35500	31500	50000	40000	35500	40000	50000	56000	56000	56000	33500	18000
560 000	11 200	26500	45000	56000	56000	56000	35500	22400	20000	42500	30000	25000	30000	40000	53000	56000	56000	31500	11800
	8 000	33500	47500	56000	56000	56000	42500	31500	28000	45000	35500	31500	35500	47500	56000	56000	56000	31500	18000
710 000	11 200	22400	40000	56000	56000	56000	31500	19000	17000	37500	25000	22400	26500	33500	47500	56000	56000	28000	9500
	8 000	30000	45000	56000	56000	56000	37500	28000	25000	42500	31500	28000	33500	42500	56000	56000	56000	30000	16000
	5 600	35500	47500	56000	56000	53000	42500	33500	31500	45000	37500	33500	37500	45000	56000	56000	53000	30000	18000
900 000	11 200	19000	33500	50000	56000	53000	26500	16000	14000	35500	22400	19000	23600	28000	42500	53000	50000	26500	7500
	8 000	28000	42500	56000	56000	53000	35500	25000	22400	40000	30000	26500	30000	40000	50000	56000	53000	28000	14000
	5 600	33500	42500	56000	56000	50000	37500	30000	28000	40000	33500	31500	33500	42500	50000	56000	50000	28000	18000
1 120 000	8 000	25000	37500	53000	56000	50000	31500	21200	20000	35500	26500	23600	26500	37500	45000	53000	50000	25000	11800
	5 600	30000	40000	53000	56000	47500	35500	28000	26500	37500	31500	28000	31500	40000	47500	53000	47500	26500	17000
1 400 000	8 000	21200	35500	47500	53000	45000	28000	18000	17000	33500	23600	20000	23600	31500	42500	47500	47500	23600	10000
	5 600	26500	37500	47500	53000	45000	31500	25000	22400	35500	28000	25000	28000	35500	45000	50000	45000	23600	15000
1 800 000	8 000	18000	31500	42500	50000	42500	25000	16000	14000	30000	21200	18000	21200	28000	37500	45000	42500	22400	8500
	5 600	25000	33500	45000	50000	42500	30000	22400	20000	33500	25000	23600	26500	33500	42500	47500	42500	22400	13200
2 240 000	5 600	22400	31500	42500	47500	40000	26500	20000	18000	30000	23600	21200	23600	31500	37500	42500	40000	21200	11800
	4 000	25000	33500	40000	42500	37500	30000	23600	22400	31500	26500	23600	26500	31500	37500	42500	37500	21200	14000
2 800 000	5 600	20000	30000	40000	45000	37500	25000	17000	16000	28000	21200	19000	21200	28000	35500	40000	37500	19000	10000
	4 000	23600	30000	37500	40000	35500	26500	21200	20000	28000	23600	22400	23600	30000	35500	40000	35500	20000	13200
3 550 000	5 600	17000	26500	37500	40000	35500	22400	15000	14000	25000	19000	16000	19000	26500	31500	37500	35500	18000	8500
	4 000	21200	28000	37500	40000	33500	25000	19000	18000	26500	21200	20000	22400	28000	33500	37500	33500	18000	11800
4 500 000	5 600	15000	25000	33500	37500	31500	20000	13200	11800	23600	17000	15000	17000	23600	30000	33500	33500	17000	7100
	4 000	19000	26500	35500	37500	31500	22400	17000	16000	25000	20000	18000	20000	25000	31500	35500	31500	17000	10600
5 600 000	5 600	13200	22400	30000	35500	30000	18000	11200	10000	21200	15000	12500	15000	20000	26500	31500	30000	15000	6000
	4 000	17000	23600	33500	35500	30000	21200	15000	14000	23600	18000	16000	18000	23600	30000	33500	30000	16000	9000
								max **56 000**										max **35 500**	max **18 000**

Values valid for solid low speed shaft[4] (see ch. 17).

Size **225**

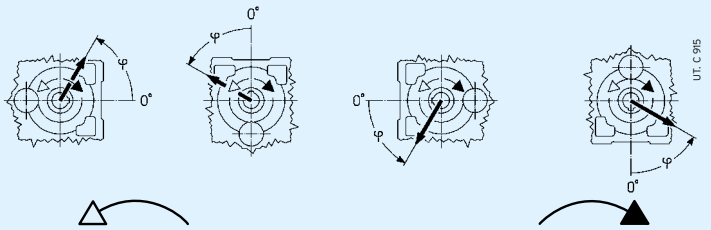
280 000	16 000	56000	71000	71000	71000	71000	71000	53000	47500	71000	60000	56000	63000	71000	71000	71000	71000	45000	22400
	11 200	67000	71000	71000	71000	71000	71000	63000	60000	71000	67000	63000	67000	71000	71000	71000	71000	45000	22400
355 000	16 000	50000	71000	71000	71000	71000	63000	45000	42500	71000	56000	50000	56000	71000	71000	71000	71000	45000	22400
	11 200	60000	71000	71000	71000	71000	71000	56000	53000	71000	63000	56000	63000	71000	71000	71000	71000	45000	22400
450 000	16 000	45000	71000	71000	71000	71000	60000	40000	37500	67000	50000	45000	50000	67000	71000	71000	71000	42500	20000
	11 200	56000	71000	71000	71000	71000	67000	50000	47500	71000	56000	53000	56000	71000	71000	71000	71000	45000	22400
560 000	16 000	40000	63000	71000	71000	71000	53000	35500	31500	63000	45000	40000	45000	60000	71000	71000	71000	40000	17000
	11 200	50000	67000	71000	71000	71000	60000	45000	42500	67000	53000	47500	53000	67000	71000	71000	71000	42500	22400
710 000	16 000	35500	56000	71000	71000	71000	47500	30000	26500	56000	40000	33500	40000	50000	67000	71000	71000	37500	13200
	11 200	45000	63000	71000	71000	71000	56000	40000	37500	60000	47500	42500	47500	63000	71000	71000	71000	37500	21200
	8 000	50000	63000	71000	71000	71000	60000	47500	45000	63000	53000	50000	53000	63000	71000	71000	71000	40000	22400
900 000	16 000	30000	50000	71000	71000	71000	42500	26500	23600	53000	35500	30000	35500	45000	60000	71000	71000	35500	11200
	11 200	40000	60000	71000	71000	71000	50000	37500	33500	56000	42500	40000	42500	56000	71000	71000	71000	35500	19000
	8 000	47500	60000	71000	71000	71000	56000	45000	42500	56000	47500	45000	50000	60000	71000	71000	71000	37500	22400
1 120 000	11 200	35500	53000	71000	71000	67000	45000	33500	30000	53000	40000	35500	40000	53000	63000	71000	71000	33500	16000
	8 000	42500	56000	71000	71000	67000	50000	40000	37500	53000	45000	40000	45000	56000	67000	71000	67000	33500	22400
1 400 000	11 200	31500	50000	67000	71000	63000	40000	28000	25000	47500	35500	31500	35500	47500	56000	67000	67000	31500	14000
	8 000	37500	53000	67000	71000	63000	47500	35500	33500	50000	40000	37500	40000	50000	63000	67000	63000	33500	20000
1 800 000	11 200	28000	45000	60000	71000	60000	37500	25000	22400	45000	31500	28000	31500	40000	53000	63000	60000	28000	11800
	8 000	35500	47500	63000	67000	56000	42500	31500	30000	45000	37500	33500	37500	47500	60000	63000	60000	30000	17000
2 240 000	8 000	31500	45000	60000	63000	56000	40000	30000	26500	42500	33500	31500	33500	42500	56000	60000	56000	28000	15000
	5 600	37500	45000	56000	60000	53000	42500	33500	33500	45000	37500	35500	37500	45000	53000	56000	53000	28000	20000
2 800 000	8 000	28000	40000	56000	63000	50000	35500	26500	23600	40000	30000	28000	31500	40000	50000	56000	53000	25000	13200
	5 600	33500	42500	53000	56000	50000	37500	31500	30000	40000	33500	31500	35500	42500	50000	53000	50000	26500	17000
3 550 000	8 000	25000	37500	53000	56000	47500	31500	22400	21200	37500	28000	25000	28000	37500	45000	50000	50000	23600	11200
	5 600	30000	40000	50000	53000	47500	35500	28000	26500	37500	31500	28000	31500	37500	47500	50000	47500	23600	16000
4 500 000	8 000	22400	35500	47500	53000	45000	30000	20000	18000	33500	25000	22400	25000	33500	42500	47500	47500	22400	10000
	5 600	28000	37500	47500	50000	45000	33500	25000	23600	35500	28000	26500	28000	35500	45000	47500	45000	22400	14000
5 600 000	8 000	20000	31500	42500	50000	42500	26500	18000	16000	31500	22400	19000	22400	28000	37500	42500	42500	20000	8000
	5 600	25000	33500	45000	47500	40000	30000	23600	21200	33500	26500	23600	26500	33500	42500	45000	42500	21200	12500
								max **71 000** (**40 000**for «short side»)										max **45 000**	max **22 400**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to $0{,}9 \cdot F_{r2max}$.
4) With hollow low speed shaft F_{r2} and F_{a2} permissible is 0,4 times the one stated in the table.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Size **250**



$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]								F_{a2} [1)]	
min⁻¹·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
280 000	22 400	90000	90000	90000	90000	90000	90000	90000	90000	85000	80000	85000	90000	90000	90000	90000	90000	28000	56000
	16 000	90000	90000	90000	90000	90000	90000	90000	90000	90000	85000	90000	90000	90000	90000	90000	90000	28000	56000
355 000	22 400	90000	90000	90000	90000	85000	80000	80000	90000	75000	71000	80000	90000	90000	90000	90000	90000	28000	56000
	16 000	90000	90000	90000	90000	90000	85000	85000	90000	85000	80000	85000	90000	90000	90000	90000	90000	28000	56000
450 000	22 400	90000	90000	90000	80000	75000	75000	75000	85000	71000	67000	71000	90000	90000	90000	90000	85000	28000	56000
	16 000	90000	90000	90000	90000	85000	80000	80000	85000	75000	71000	80000	90000	90000	90000	90000	90000	28000	56000
560 000	22 400	90000	90000	80000	71000	63000	67000	67000	75000	63000	60000	67000	85000	90000	90000	80000	71000	25000	53000
	16 000	90000	90000	90000	85000	80000	71000	71000	80000	71000	67000	71000	85000	90000	90000	90000	80000	28000	56000
710 000	22 400	85000	80000	71000	60000	56000	60000	63000	71000	60000	53000	60000	75000	90000	80000	71000	63000	21200	50000
	16 000	85000	90000	85000	75000	71000	67000	67000	75000	63000	63000	67000	80000	90000	90000	85000	75000	28000	53000
	11 200	80000	85000	85000	80000	75000	71000	71000	75000	67000	67000	71000	80000	90000	90000	85000	75000	28000	53000
900 000	22 400	80000	71000	63000	53000	47500	50000	56000	67000	53000	50000	56000	71000	80000	75000	63000	50000	17000	47500
	16 000	75000	85000	75000	71000	67000	63000	63000	67000	60000	56000	60000	71000	85000	85000	80000	71000	26500	47500
	11 200	75000	80000	80000	75000	71000	67000	67000	71000	63000	60000	63000	75000	85000	85000	80000	71000	28000	47500
1 120 000	16 000	71000	75000	71000	63000	60000	56000	56000	63000	53000	53000	56000	67000	80000	80000	71000	63000	23600	45000
	11 200	71000	75000	75000	71000	63000	60000	60000	63000	60000	56000	60000	67000	75000	80000	75000	67000	28000	45000
1 400 000	16 000	67000	71000	63000	56000	53000	53000	53000	60000	50000	47500	53000	63000	75000	71000	63000	60000	21200	40000
	11 200	67000	71000	71000	67000	60000	56000	56000	60000	53000	53000	56000	63000	71000	75000	71000	60000	26500	42500
1 800 000	16 000	63000	63000	56000	50000	47500	47500	50000	53000	45000	42500	47500	60000	71000	63000	56000	53000	18000	37500
	11 200	63000	67000	67000	60000	56000	53000	53000	56000	50000	47500	50000	60000	67000	71000	67000	56000	25000	40000
2 240 000	11 200	60000	63000	60000	53000	53000	47500	47500	53000	47500	45000	47500	56000	63000	67000	63000	53000	22400	35500
	8 000	60000	60000	60000	56000	53000	50000	50000	53000	50000	47500	50000	56000	63000	63000	60000	53000	26500	37500
2 800 000	11 200	53000	60000	53000	50000	47500	45000	45000	47500	42500	40000	42500	53000	60000	60000	56000	50000	19000	33500
	8 000	53000	56000	56000	53000	50000	47500	47500	50000	45000	42500	47500	53000	60000	60000	56000	50000	23600	35500
3 550 000	11 200	50000	53000	50000	45000	42500	40000	40000	45000	37500	35500	40000	47500	56000	56000	50000	45000	17000	31500
	8 000	50000	53000	53000	50000	45000	42500	42500	47500	42500	40000	42500	47500	53000	56000	53000	47500	22400	31500
4 500 000	11 200	47500	50000	45000	40000	37500	37500	37500	42500	35500	33500	35500	45000	53000	50000	45000	42500	15000	30000
	8 000	47500	50000	50000	47500	42500	40000	40000	42500	37500	37500	40000	45000	53000	53000	50000	45000	20000	30000
5 600 000	11 200	45000	45000	40000	35500	31500	33500	33500	37500	31500	30000	33500	42500	50000	45000	40000	35500	12500	26500
	8 000	45000	47500	47500	42500	40000	35500	35500	40000	35500	33500	35500	42500	47500	50000	47500	40000	18000	28000
		max **90 000**																max **28 000**	max **56 000**

Values valid for solid low speed shaft[4)] (see ch. 17).

Size **280**

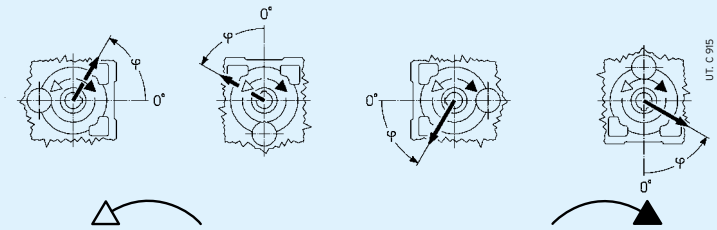
280 000	31 500	112000	112000	112000	112000	112000	112000	112000	112000	112000	106000	112000	112000	112000	112000	112000	112000	35500	71000
	22 400	112000	112000	112000	112000	112000	112000	112000	112000	112000	112000	112000	112000	112000	112000	112000	112000	35500	71000
355 000	31 500	112000	112000	112000	112000	112000	106000	106000	112000	100000	95000	106000	112000	112000	112000	112000	112000	35500	71000
	22 400	112000	112000	112000	112000	112000	112000	112000	112000	112000	106000	112000	112000	112000	112000	112000	112000	35500	71000
450 000	31 500	112000	112000	112000	112000	106000	100000	100000	106000	95000	90000	95000	112000	112000	112000	112000	112000	35500	71000
	22 400	112000	112000	112000	112000	112000	106000	106000	112000	100000	95000	106000	112000	112000	112000	112000	112000	35500	71000
560 000	31 500	112000	112000	112000	100000	95000	90000	90000	100000	85000	80000	85000	106000	112000	112000	112000	100000	33500	67000
	22 400	112000	112000	112000	112000	106000	95000	95000	106000	95000	90000	95000	112000	112000	112000	112000	106000	35500	67000
710 000	31 500	112000	112000	100000	90000	80000	85000	80000	90000	80000	71000	80000	100000	112000	112000	100000	90000	28000	60000
	22 400	106000	112000	112000	106000	100000	90000	90000	95000	85000	80000	85000	100000	112000	112000	112000	100000	35500	63000
	16 000	106000	112000	112000	112000	100000	95000	95000	100000	90000	90000	95000	106000	112000	112000	112000	100000	35500	63000
900 000	31 500	100000	100000	90000	75000	71000	75000	75000	85000	71000	63000	71000	95000	112000	106000	90000	80000	23600	56000
	22 400	100000	112000	106000	100000	90000	80000	80000	90000	80000	75000	80000	95000	112000	112000	112000	95000	35500	60000
	16 000	100000	106000	106000	100000	95000	85000	85000	90000	85000	80000	85000	95000	112000	112000	106000	95000	35500	60000
1 120 000	22 400	95000	106000	95000	90000	85000	75000	75000	80000	71000	67000	75000	90000	106000	112000	100000	85000	31500	56000
	16 000	95000	100000	100000	95000	85000	80000	80000	85000	80000	75000	80000	90000	100000	106000	100000	90000	35500	56000
1 400 000	22 400	90000	95000	85000	80000	75000	71000	67000	75000	67000	63000	67000	80000	100000	100000	90000	80000	26500	50000
	16 000	90000	100000	90000	85000	80000	71000	71000	75000	71000	67000	71000	85000	95000	100000	95000	80000	35500	53000
1 800 000	22 400	85000	85000	80000	71000	63000	63000	63000	71000	60000	56000	63000	75000	95000	90000	80000	71000	23600	47500
	16 000	80000	90000	90000	85000	75000	67000	67000	75000	67000	63000	67000	80000	90000	95000	90000	75000	31500	47500
2 240 000	16 000	75000	85000	85000	75000	71000	63000	63000	67000	63000	56000	63000	75000	85000	90000	85000	71000	28000	45000
	11 200	75000	80000	80000	75000	71000	67000	67000	71000	67000	63000	67000	75000	80000	85000	80000	71000	33500	45000
2 800 000	16 000	71000	80000	75000	67000	63000	56000	56000	63000	56000	53000	56000	67000	80000	85000	75000	67000	25000	42500
	11 200	71000	75000	75000	71000	67000	60000	60000	63000	60000	56000	60000	67000	75000	80000	75000	67000	31500	42500
3 550 000	16 000	67000	75000	67000	63000	60000	53000	53000	56000	50000	47500	53000	63000	75000	75000	71000	63000	22400	37500
	11 200	67000	71000	71000	67000	60000	56000	56000	60000	56000	53000	56000	63000	71000	75000	71000	63000	28000	40000
4 500 000	16 000	63000	67000	63000	56000	53000	50000	50000	53000	47500	45000	47500	60000	71000	71000	63000	56000	19000	35500
	11 200	63000	67000	67000	63000	56000	53000	53000	56000	50000	50000	53000	60000	67000	71000	67000	60000	25000	37500
5 600 000	16 000	60000	63000	56000	50000	47500	45000	45000	50000	42500	40000	45000	53000	67000	63000	56000	53000	17000	33500
	11 200	56000	63000	63000	60000	53000	47500	47500	53000	47500	45000	47500	56000	63000	67000	63000	56000	22400	33500
		max **112 000** (**63 000** for «short side»)																max **35 500**	max **71 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to $0,9 \cdot F_{r2max}$.
4) With hollow low speed shaft F_{r2} and F_{a2} permissible is 0,4 times the one stated in the table.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Size **250**

$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]																F_{a2} [1)]	
																			
min^{-1}·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
280 000	22 400	90000	90000	90000	90000	90000	75000	67000	75000	71000	60000	63000	85000	90000	90000	90000	90000	28000	56000
	16 000	90000	90000	90000	90000	90000	85000	75000	85000	80000	71000	75000	90000	90000	90000	90000	90000	28000	56000
355 000	22 400	90000	90000	90000	90000	90000	67000	60000	67000	63000	50000	56000	75000	90000	90000	90000	90000	28000	56000
	16 000	90000	90000	90000	90000	90000	75000	71000	75000	75000	63000	67000	85000	90000	90000	90000	90000	28000	56000
450 000	22 400	80000	90000	90000	90000	85000	60000	53000	60000	56000	45000	50000	71000	90000	90000	90000	85000	28000	56000
	16 000	85000	90000	90000	90000	90000	71000	63000	71000	67000	60000	63000	80000	90000	90000	90000	90000	28000	56000
560 000	22 400	75000	90000	90000	90000	75000	53000	47500	53000	50000	37500	42500	63000	90000	90000	90000	80000	25000	53000
	16 000	80000	90000	90000	90000	80000	63000	60000	63000	60000	53000	56000	71000	90000	90000	90000	85000	28000	56000
710 000	22 400	67000	90000	90000	85000	67000	47500	42500	47500	42500	33500	35500	56000	90000	90000	90000	71000	21200	50000
	16 000	71000	90000	90000	90000	75000	60000	53000	56000	56000	47500	50000	67000	90000	90000	90000	75000	28000	53000
	11 200	75000	90000	90000	90000	75000	63000	60000	63000	63000	56000	60000	71000	90000	90000	90000	80000	28000	53000
900 000	22 400	63000	90000	90000	80000	56000	42500	35500	42500	35500	28000	31500	50000	90000	90000	90000	63000	17000	47500
	16 000	67000	90000	90000	90000	71000	53000	47500	53000	50000	42500	45000	60000	90000	90000	90000	71000	26500	47500
	11 200	71000	85000	90000	85000	71000	60000	53000	60000	56000	50000	53000	67000	85000	90000	90000	71000	28000	47500
1 120 000	16 000	63000	85000	90000	80000	63000	47500	42500	47500	45000	37500	40000	56000	85000	90000	90000	67000	23600	45000
	11 200	67000	80000	90000	80000	67000	53000	50000	53000	53000	47500	50000	60000	80000	90000	85000	67000	28000	45000
1 400 000	16 000	56000	80000	85000	75000	60000	42500	37500	42500	40000	31500	35500	50000	75000	90000	85000	60000	21200	40000
	11 200	60000	75000	80000	75000	63000	50000	45000	50000	47500	40000	45000	56000	75000	85000	80000	63000	26500	42500
1 800 000	16 000	53000	75000	75000	67000	53000	37500	33500	37500	35500	28000	30000	45000	71000	85000	75000	56000	18000	37500
	11 200	56000	71000	75000	71000	56000	47500	40000	45000	42500	37500	40000	53000	71000	80000	75000	60000	25000	40000
2 240 000	11 200	53000	67000	75000	67000	53000	42500	37500	40000	40000	33500	35500	47500	67000	80000	71000	53000	22400	35500
	8 000	53000	63000	67000	63000	53000	47500	42500	45000	45000	40000	42500	50000	63000	71000	67000	56000	26500	37500
2 800 000	11 200	47500	63000	71000	63000	50000	37500	33500	37500	35500	30000	31500	42500	63000	75000	67000	50000	19000	33500
	8 000	50000	60000	63000	60000	50000	42500	37500	42500	40000	37500	37500	47500	60000	67000	63000	53000	23600	35500
3 550 000	11 200	45000	60000	63000	56000	45000	33500	30000	33500	31500	26500	28000	40000	60000	71000	63000	47500	17000	31500
	8 000	47500	56000	63000	56000	47500	37500	35500	37500	37500	31500	33500	42500	56000	63000	60000	47500	22400	31500
4 500 000	11 200	40000	56000	60000	53000	42500	30000	26500	30000	28000	22400	25000	35500	53000	67000	60000	42500	15000	30000
	8 000	42500	53000	60000	53000	45000	35500	31500	35500	33500	30000	31500	40000	53000	60000	56000	45000	20000	30000
5 600 000	11 200	37500	53000	53000	47500	37500	26500	23600	26500	25000	20000	21200	31500	50000	63000	53000	40000	12500	26500
	8 000	40000	50000	56000	50000	40000	31500	30000	31500	30000	26500	28000	35500	50000	60000	53000	42500	18000	28000
								max **90 000**										max **28 000**	max **56 000**

Values valid for solid low speed shaft[4)] (see ch. 17).

Size **280**

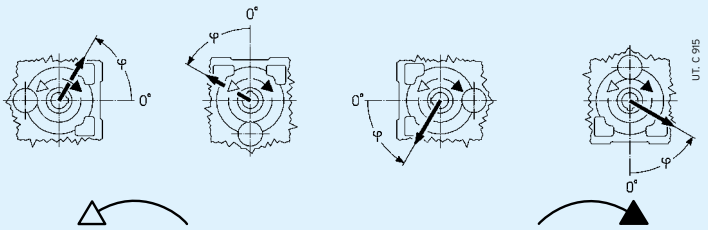
280 000	31 500	112000	112000	112000	112000	112000	100000	90000	100000	95000	80000	85000	112000	112000	112000	112000	112000	35500	71000
	22 400	112000	112000	112000	112000	112000	112000	106000	112000	112000	95000	100000	112000	112000	112000	112000	112000	35500	71000
355 000	31 500	112000	112000	112000	112000	112000	90000	80000	90000	85000	71000	75000	106000	112000	112000	112000	112000	35500	71000
	22 400	112000	112000	112000	112000	112000	100000	95000	100000	100000	85000	90000	112000	112000	112000	112000	112000	35500	71000
450 000	31 500	106000	112000	112000	112000	112000	80000	71000	80000	75000	63000	67000	95000	112000	112000	112000	112000	35500	71000
	22 400	112000	112000	112000	112000	112000	95000	85000	90000	90000	80000	85000	106000	112000	112000	112000	112000	35500	71000
560 000	31 500	100000	112000	112000	112000	106000	75000	63000	71000	67000	53000	56000	85000	112000	112000	112000	106000	33500	67000
	22 400	106000	112000	112000	112000	106000	85000	75000	85000	80000	71000	75000	95000	112000	112000	112000	112000	35500	67000
710 000	31 500	90000	112000	112000	112000	95000	67000	56000	63000	60000	45000	50000	75000	112000	112000	112000	95000	28000	60000
	22 400	95000	112000	112000	112000	100000	80000	71000	75000	75000	63000	67000	90000	112000	112000	112000	106000	35500	63000
	16 000	100000	112000	112000	112000	100000	85000	80000	85000	85000	75000	80000	95000	112000	112000	112000	106000	35500	63000
900 000	31 500	80000	112000	112000	112000	80000	56000	50000	56000	50000	40000	42500	67000	112000	112000	112000	90000	23600	56000
	22 400	90000	112000	112000	112000	95000	71000	63000	67000	67000	56000	60000	80000	112000	112000	112000	95000	35500	60000
	16 000	95000	112000	112000	112000	95000	80000	75000	80000	75000	67000	71000	90000	112000	112000	112000	100000	35500	60000
1 120 000	22 400	85000	112000	112000	112000	85000	63000	56000	63000	60000	50000	53000	75000	106000	112000	112000	90000	31500	56000
	16 000	85000	106000	112000	106000	90000	75000	67000	71000	71000	63000	67000	80000	106000	112000	112000	90000	35500	56000
1 400 000	22 400	75000	106000	112000	100000	80000	56000	50000	56000	53000	42500	47500	67000	100000	112000	112000	80000	26500	50000
	16 000	75000	100000	112000	106000	80000	60000	53000	60000	63000	56000	60000	75000	100000	112000	106000	85000	35500	53000
1 800 000	22 400	71000	100000	106000	95000	75000	53000	45000	50000	47500	37500	40000	60000	95000	112000	106000	75000	23600	47500
	16 000	75000	95000	106000	95000	75000	60000	56000	60000	56000	50000	53000	67000	95000	112000	100000	80000	31500	47500
2 240 000	16 000	67000	90000	100000	90000	71000	56000	50000	53000	53000	45000	47500	63000	85000	106000	95000	75000	28000	45000
	11 200	71000	85000	90000	85000	75000	63000	56000	60000	60000	53000	56000	67000	85000	95000	90000	75000	33500	45000
2 800 000	16 000	63000	80000	95000	85000	67000	50000	45000	50000	47500	40000	42500	56000	80000	100000	90000	67000	25000	42500
	11 200	67000	80000	85000	80000	67000	56000	50000	56000	56000	47500	50000	63000	80000	90000	85000	67000	31500	42500
3 550 000	16 000	60000	80000	85000	80000	60000	45000	40000	45000	42500	35500	37500	53000	75000	95000	85000	63000	22400	37500
	11 200	60000	75000	80000	75000	63000	50000	47500	50000	50000	42500	45000	56000	75000	85000	80000	63000	28000	40000
4 500 000	16 000	53000	75000	80000	71000	56000	40000	35500	40000	37500	31500	33500	47500	71000	90000	80000	56000	19000	35500
	11 200	56000	71000	75000	71000	60000	47500	42500	47500	45000	40000	42500	53000	71000	80000	75000	60000	25000	37500
5 600 000	16 000	50000	71000	75000	67000	53000	37500	31500	35500	33500	26500	30000	42500	67000	85000	75000	53000	17000	33500
	11 200	53000	67000	75000	67000	53000	42500	40000	42500	40000	35500	37500	47500	67000	75000	71000	56000	22400	33500
								max **112 000** (**63 000** for «short side»)										max **35 500**	max **71 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to $0{,}9 \cdot F_{r2max}$.
4) With hollow low speed shaft F_{r2} and F_{a2} permissible is 0,4 times the one stated in the table.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **opposite side to groove**

Sizes **320, 321**



$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]								F_{a2} [1)]	
min⁻¹·h	N m	0	45	90	135	180	225	270	315		
280 000	45 000	132000	140000	140000	140000	140000	140000	132000	118000	90000	45000
	31 500	140000	140000	140000	140000	140000	140000	140000	132000	90000	45000
355 000	45 000	118000	140000	140000	140000	140000	140000	118000	112000	85000	45000
	31 500	132000	140000	140000	140000	140000	140000	132000	125000	90000	45000
450 000	45 000	106000	125000	140000	140000	140000	140000	112000	100000	80000	37500
	31 500	118000	140000	140000	140000	140000	140000	118000	112000	85000	45000
560 000	45 000	100000	112000	118000	140000	140000	125000	100000	90000	75000	31500
	31 500	112000	125000	140000	140000	140000	132000	112000	106000	75000	45000
710 000	45 000	90000	95000	106000	125000	132000	118000	90000	80000	67000	25000
	31 500	100000	118000	132000	140000	140000	118000	100000	95000	71000	42500
	22 400	106000	118000	132000	140000	140000	118000	106000	100000	75000	45000
900 000	45 000	80000	80000	95000	112000	125000	112000	85000	75000	63000	20000
	31 500	90000	112000	125000	132000	132000	112000	95000	85000	67000	37500
	22 400	100000	112000	125000	132000	132000	112000	100000	95000	67000	45000
1 120 000	31 500	85000	100000	112000	125000	125000	106000	85000	80000	60000	31500
	22 400	90000	106000	118000	125000	118000	106000	90000	85000	63000	42500
1 400 000	31 500	75000	90000	95000	112000	118000	95000	80000	71000	56000	26500
	22 400	85000	95000	112000	118000	112000	100000	85000	80000	60000	37500
1 800 000	31 500	71000	80000	85000	100000	106000	90000	71000	63000	53000	22400
	22 400	75000	90000	106000	112000	106000	90000	80000	71000	53000	33500
2 240 000	22 400	71000	85000	95000	106000	100000	85000	71000	67000	50000	30000
	16 000	75000	85000	95000	100000	95000	85000	75000	71000	53000	37500
2 800 000	22 400	63000	75000	85000	95000	95000	80000	67000	60000	47500	25000
	16 000	71000	80000	90000	95000	90000	80000	71000	67000	47500	33500
3 550 000	22 400	60000	71000	75000	85000	90000	75000	60000	56000	42500	22400
	16 000	63000	75000	85000	90000	85000	75000	67000	63000	45000	30000
4 500 000	22 400	56000	63000	67000	75000	85000	67000	56000	50000	40000	19000
	16 000	60000	67000	80000	85000	80000	71000	60000	56000	42500	26500
5 600 000	22 400	50000	56000	60000	71000	75000	63000	50000	45000	37500	16000
	16 000	56000	63000	75000	80000	75000	63000	56000	53000	37500	23600
		max **140 000**								max **90 000**	max **45 000**

Values valid for solid low speed shaft[4] (see ch. 17).

Sizes **360**

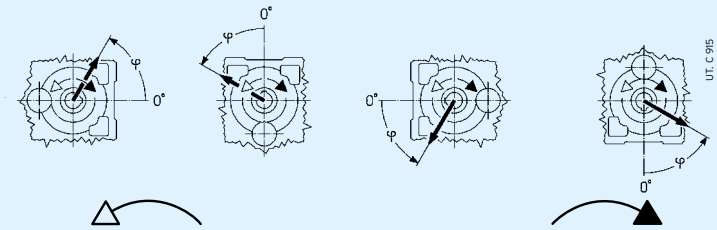
280 000	63 000	180000	180000	180000	180000	180000	180000	180000	170000	112000	56000
	45 000	180000	180000	180000	180000	180000	180000	180000	180000	112000	56000
355 000	63 000	160000	180000	180000	180000	180000	180000	160000	150000	112000	56000
	45 000	170000	180000	180000	180000	180000	180000	180000	170000	112000	56000
450 000	63 000	150000	180000	180000	180000	180000	180000	150000	140000	112000	56000
	45 000	160000	180000	180000	180000	180000	180000	160000	150000	112000	56000
560 000	63 000	132000	160000	180000	180000	180000	170000	140000	125000	106000	50000
	45 000	150000	170000	180000	180000	180000	180000	150000	140000	106000	56000
710 000	63 000	125000	140000	160000	180000	180000	160000	125000	112000	95000	42500
	45 000	132000	160000	180000	180000	180000	160000	140000	125000	100000	56000
	31 500	140000	160000	180000	180000	180000	160000	150000	140000	106000	56000
900 000	63 000	112000	125000	140000	160000	180000	150000	112000	100000	90000	35500
	45 000	125000	150000	170000	180000	180000	150000	125000	118000	95000	56000
	31 500	132000	150000	170000	180000	180000	170000	150000	132000	95000	56000
1 120 000	45 000	112000	140000	160000	170000	170000	140000	118000	106000	85000	47500
	31 500	125000	140000	160000	170000	160000	140000	125000	118000	90000	56000
1 400 000	45 000	106000	125000	140000	160000	160000	132000	106000	95000	80000	40000
	31 500	112000	132000	150000	160000	150000	132000	118000	106000	80000	56000
1 800 000	45 000	95000	112000	125000	140000	150000	125000	95000	90000	75000	35500
	31 500	106000	125000	140000	150000	140000	125000	106000	100000	75000	50000
2 240 000	31 500	95000	112000	132000	140000	132000	118000	100000	90000	71000	45000
	22 400	100000	118000	132000	140000	132000	118000	106000	100000	75000	56000
2 800 000	31 500	90000	106000	125000	132000	125000	106000	90000	85000	67000	40000
	22 400	95000	106000	125000	132000	125000	106000	95000	90000	67000	50000
3 550 000	31 500	80000	95000	112000	125000	118000	100000	80000	75000	60000	33500
	22 400	85000	100000	112000	118000	118000	100000	90000	85000	63000	45000
4 500 000	31 500	75000	90000	100000	112000	112000	95000	75000	67000	56000	30000
	22 400	80000	95000	106000	112000	106000	95000	80000	75000	60000	40000
5 600 000	31 500	67000	80000	90000	100000	106000	85000	67000	63000	53000	25000
	22 400	75000	85000	100000	106000	100000	85000	75000	71000	53000	35500
		max **180 000** (**100 000** for «short side»)								max **112 000**	max **56 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to 0,9 · F_{r2max}.
4) With hollow low speed shaft F_{r2} and F_{a2} permissible is 0,4 times the one stated in the table.

16.2 - Axial loads F_{a2} [N] or radial loads F_{r2} [N] on low speed shaft end

Radial load applied on **groove side** ●

Sizes **320, 321**

$n_2 \cdot L_h$		F_{r2} [1) 2) 3)]														F_{a2} [1)]	
																	
min⁻¹·h	N m	0	45	90	135	180	225	270	315	0	45	90	135	180	225	270	315		
280 000	45 000	106000	140000	140000	140000	140000	125000	90000	85000	140000	106000	100000	112000	140000	140000	140000	140000	90000	45000
	31 500	125000	140000	140000	140000	140000	140000	112000	106000	140000	125000	118000	132000	140000	140000	140000	140000	90000	45000
355 000	45 000	95000	140000	140000	140000	140000	140000	118000	80000	75000	132000	95000	85000	100000	140000	140000	140000	140000	85000	45000
	31 500	112000	140000	140000	140000	140000	132000	100000	95000	140000	112000	106000	118000	140000	140000	140000	140000	90000	45000
450 000	45 000	80000	132000	140000	140000	140000	106000	71000	63000	118000	85000	75000	90000	132000	140000	140000	140000	80000	37500
	31 500	106000	140000	140000	140000	140000	118000	95000	85000	132000	106000	95000	106000	140000	140000	140000	140000	85000	45000
560 000	45 000	71000	125000	140000	140000	140000	90000	60000	53000	112000	75000	67000	80000	118000	140000	140000	140000	75000	31500
	31 500	95000	132000	140000	140000	140000	112000	85000	75000	118000	95000	85000	95000	125000	140000	140000	140000	75000	45000
710 000	45 000	60000	112000	140000	140000	140000	80000	50000	45000	100000	67000	56000	71000	100000	140000	140000	140000	67000	25000
	31 500	85000	118000	140000	140000	140000	100000	75000	67000	112000	85000	75000	90000	118000	140000	140000	140000	71000	42500
	22 400	95000	125000	140000	140000	140000	112000	90000	85000	118000	95000	90000	100000	118000	140000	140000	140000	75000	45000
900 000	45 000	50000	100000	140000	140000	140000	71000	42500	37500	90000	56000	50000	63000	90000	125000	140000	140000	63000	20000
	31 500	75000	112000	140000	140000	140000	132000	90000	67000	100000	75000	71000	80000	106000	140000	140000	140000	67000	37500
	22 400	90000	118000	140000	140000	132000	100000	80000	75000	106000	90000	80000	90000	112000	140000	140000	132000	67000	45000
1 120 000	31 500	67000	106000	140000	140000	125000	80000	56000	53000	95000	67000	63000	71000	100000	132000	140000	132000	60000	31500
	22 400	80000	106000	140000	140000	125000	90000	71000	67000	100000	80000	75000	85000	106000	132000	140000	125000	63000	42500
1 400 000	31 500	56000	95000	132000	140000	118000	75000	50000	45000	85000	60000	53000	63000	90000	118000	132000	125000	56000	26500
	22 400	71000	100000	132000	140000	118000	85000	63000	60000	90000	71000	67000	75000	95000	118000	132000	118000	60000	37500
1 800 000	31 500	50000	85000	125000	140000	112000	67000	42500	40000	80000	53000	47500	56000	85000	106000	125000	118000	53000	22400
	22 400	67000	90000	125000	132000	112000	75000	56000	56000	85000	67000	60000	67000	90000	118000	125000	112000	53000	33500
2 240 000	22 400	60000	85000	118000	125000	100000	71000	53000	50000	80000	60000	56000	63000	85000	106000	118000	106000	50000	30000
	16 000	67000	90000	106000	112000	100000	75000	63000	60000	80000	67000	63000	71000	85000	100000	112000	100000	53000	37500
2 800 000	22 400	53000	80000	112000	118000	95000	63000	45000	42500	71000	53000	50000	56000	75000	100000	112000	100000	47500	25000
	16 000	63000	80000	100000	106000	95000	71000	56000	53000	75000	63000	60000	63000	80000	95000	106000	95000	47500	33500
3 550 000	22 400	47500	71000	100000	112000	90000	56000	40000	37500	67000	47500	42500	50000	71000	90000	100000	90000	42500	22400
	16 000	56000	75000	95000	100000	85000	67000	50000	50000	71000	56000	53000	60000	75000	90000	100000	90000	45000	30000
4 500 000	22 400	40000	67000	95000	106000	85000	53000	35500	31500	60000	42500	37500	45000	67000	85000	95000	85000	40000	19000
	16 000	53000	71000	90000	95000	80000	60000	47500	45000	67000	53000	47500	53000	67000	85000	95000	85000	42500	26500
5 600 000	22 400	35500	60000	85000	95000	80000	47500	30000	28000	56000	37500	33500	40000	60000	75000	85000	80000	37500	16000
	16 000	47500	67000	85000	90000	75000	56000	42500	40000	60000	47500	42500	50000	63000	80000	90000	80000	37500	23600
		max **140 000**														max **90 000**		max **45 000**	

Values valid for solid low speed shaft[4)] (see ch. 17).

Sizes **360**

280 000	63 000	150000	180000	180000	180000	180000	180000	132000	125000	180000	150000	140000	160000	180000	180000	180000	180000	112000	56000
	45 000	170000	180000	180000	180000	180000	180000	160000	150000	180000	170000	160000	180000	180000	180000	180000	180000	112000	56000
355 000	63 000	132000	180000	180000	180000	180000	160000	118000	106000	180000	140000	125000	140000	180000	180000	180000	180000	112000	56000
	45 000	160000	180000	180000	180000	180000	180000	140000	132000	180000	160000	150000	160000	180000	180000	180000	180000	112000	56000
450 000	63 000	118000	180000	180000	180000	180000	150000	106000	95000	170000	125000	112000	125000	180000	180000	180000	180000	112000	56000
	45 000	140000	180000	180000	180000	180000	170000	132000	125000	180000	140000	132000	150000	180000	180000	180000	180000	112000	56000
560 000	63 000	106000	170000	180000	180000	180000	132000	90000	80000	150000	112000	100000	112000	160000	180000	180000	180000	106000	50000
	45 000	132000	180000	180000	180000	180000	150000	118000	112000	170000	132000	118000	132000	170000	180000	180000	180000	106000	56000
710 000	63 000	90000	150000	180000	180000	180000	118000	75000	71000	140000	100000	85000	100000	150000	180000	180000	180000	95000	42500
	45 000	118000	160000	180000	180000	180000	140000	106000	95000	150000	118000	106000	125000	160000	180000	180000	180000	100000	56000
	31 500	132000	170000	180000	180000	180000	150000	125000	118000	160000	132000	125000	132000	160000	180000	180000	180000	106000	56000
900 000	63 000	75000	140000	180000	180000	180000	106000	67000	60000	132000	85000	75000	90000	132000	170000	180000	180000	90000	35500
	45 000	106000	150000	180000	180000	180000	125000	95000	85000	140000	106000	106000	112000	150000	180000	180000	180000	95000	56000
	31 500	125000	150000	180000	180000	180000	140000	112000	106000	150000	125000	118000	125000	150000	180000	180000	180000	95000	56000
1 120 000	45 000	95000	140000	180000	180000	170000	118000	85000	75000	132000	100000	90000	100000	132000	180000	180000	180000	85000	47500
	31 500	112000	140000	180000	180000	170000	132000	100000	95000	140000	112000	106000	118000	140000	170000	180000	170000	90000	56000
1 400 000	45 000	80000	125000	180000	180000	160000	106000	71000	67000	118000	85000	75000	90000	125000	160000	180000	170000	80000	40000
	31 500	100000	132000	170000	180000	160000	118000	90000	85000	125000	100000	95000	106000	132000	160000	170000	160000	80000	56000
1 800 000	45 000	71000	118000	170000	180000	150000	95000	63000	56000	112000	80000	67000	80000	118000	150000	170000	160000	75000	35500
	31 500	90000	125000	160000	170000	150000	106000	85000	75000	118000	95000	85000	95000	118000	150000	160000	150000	75000	50000
2 240 000	31 500	85000	118000	150000	160000	140000	100000	75000	71000	106000	85000	80000	85000	112000	140000	160000	140000	71000	45000
	22 400	95000	118000	140000	150000	132000	106000	85000	85000	112000	95000	90000	95000	118000	140000	150000	132000	75000	56000
2 800 000	31 500	75000	106000	140000	160000	132000	90000	67000	63000	100000	75000	71000	80000	106000	132000	150000	132000	67000	40000
	22 400	85000	112000	132000	140000	125000	100000	80000	75000	106000	85000	80000	90000	106000	132000	140000	125000	67000	50000
3 550 000	31 500	67000	100000	140000	150000	125000	80000	60000	53000	90000	67000	63000	71000	95000	125000	140000	125000	60000	33500
	22 400	80000	100000	125000	132000	118000	90000	71000	67000	95000	80000	75000	80000	100000	118000	132000	118000	63000	45000
4 500 000	31 500	60000	90000	132000	140000	112000	75000	53000	47500	85000	63000	56000	63000	90000	118000	132000	118000	56000	30000
	22 400	71000	95000	118000	132000	112000	85000	63000	60000	90000	71000	67000	75000	90000	112000	125000	112000	60000	40000
5 600 000	31 500	53000	85000	118000	132000	106000	67000	45000	40000	75000	56000	50000	56000	80000	106000	118000	112000	53000	25000
	22 400	63000	90000	112000	125000	106000	75000	60000	56000	85000	67000	60000	67000	85000	106000	118000	106000	53000	35500
		max **180 000** (**100 000** for «short side»)																max **112 000**	max **56 000**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) For radial loads acting simultaneously on both sides consult us.
3) An unfavourable direction of load can limit F_{r2} to $0{,}9 \cdot F_{r2max}$.
4) With hollow low speed shaft F_{r2} and F_{a2} permissible is 0,4 times the one stated in the table.

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ATTENTION. The simultaneous presence on the same gear reducer of two or more accessories or non-standard designs is not always possible: consult us for verification.

17 - Accessories and non-standard designs

Overview

Ref.	Description	Size	Designation
(1)	Low speed shaft	40 ... 360 40 ... 360	standard low speed shaft double extension low speed shaft
(2)	Solid low speed shaft	100 ... 360	solid low speed shaft on opposite groove side solid low speed shaft on groove side solid double extension low speed shaft
(3)	Oversized hollow low speed shaft	40, 50, 64, 100	oversized hollow low speed shaft
(4)	Hollow low speed shaft with front holes	250 ... 360	hollow low speed shaft with front holes
(5)	Stepped hollow low speed shaft	64 ... 360	stepped hollow low speed shaft
(6)	Hollow low speed shaft with shrink disc	40 ... 125 140 ... 360 140 ... 360	hollow low speed shaft with shrink disc hollow low speed shaft with shrink disc on machine side hollow low speed shaft with shrink disc on machine opp. side
(7)	Protection for hollow low speed shaft with shrink disc	140 ... 360	protection for shrink disc
(8)	Flange	40 ... 360 63 ... 81	flange B5 flange B5 type B
(9)	Backstop device	50 ... 360	backstop device free rotation white arrow backstop device free rotation black arrow
(10)	Reaction bolt using disc springs	40 ... 360	reaction bolt using disc springs
(11)	Kit using disc springs	40 ... 125	kit using disc springs
(12)	Reaction bolt using disc springs and bracket	63 ... 225	reaction bolt using disc springs and bracket
(13)	Rigid or flexible torque arm using bracket	63 ... 225	rigid torque arm using bracket flexible torque arm using bracket
(14)	Torque arm	40 ... 81	torque arm
(15)	Fan cooling	125 ... 360	fan cooling fan cooling pos. 1 fan cooling pos. 2 fan cooling pos. 1 and 2
(16)	Water cooling by coil	125 ... 360	water cooling by coil water cooling by coil and thermostatic valve
(17)	Independent cooling unit with internal heat exchanger	140 ... 360	Independent cooling unit with internal heat exchanger
(18)	Additional oversized housing hole with for cooling oil pipe	160 ... 360	additional housing hole with oversized diameter
(19)	Bearing lubrication pump	100 ... 360 100 ... 360	bearing lubrication pump high speed shaft lubrication device
(20)	Hollow low speed shaft washer	40 ... 360	hollow low speed shaft washer
(21)	Hollow low speed shaft washer with locking rings or bushing	40 ... 360	hollow low speed shaft washer with locking rings or bushing
(22)	Hollow low speed shaft protection cap	40 ... 360	hollow low speed shaft protection cap
(23)	Design for agitators, aerators, fans	125 ... 360	design for agitators
(24)	Optional paint	40 ... 360	optional paint 1HRAL 5010 optional paint 2HRAL 5010 optional paint 3HRAL 5010 optional paint 2IRAL 5010 optional paint 2LRAL 5010
(25)	Heater	125 ... 360	heater
(26)	Seals on high and low speed shafts	125 ... 360	
(27)	Magnetic tap	125 ... 360	oil drain magnetic plug
(28)	Oil drain tap	125 ... 360	oil drain tap
(29)	Independent cooling unit	-	independent cooling unit oil-air UR O/A ... independent cooling unit oil-water UR O/W ... independent cooling unit oil-air UR O/A ... and bearing and/or gear forced lubrication ... independent cooling unit oil-water UR O/W ... and bearing and/or gear forced lubrication ...
(30)	Oil temperature probe	125 ... 360	oil temperature probe
(31)	Oil temperature probe with terminal box and amperometric transducer	200 ... 360	oil temperature probe with amperometric transducer
(32)	Bearing temperature probe	200 ... 360	bearing temperature probe
(33)	Bearing temperature probe with terminal box and amperometric transducer	200 ... 360	bearing temperature probe with amperometric transducer
(34)	Bi-metal type thermostat	100 ... 360	bi-metal type thermostat
(35)	Oil level switch with float	125 ... 360	oil level switch with float
(36)	Oil optical probe	125 ... 360	oil optical probe
(37)	Gear reducer design ATEX II 2 GD and 3 GD	40 ... 360 40 ... 360 125 ... 360	design ATEX II 3 GD T4 design ATEX II 2 GD T4 monthly control design ATEX II 2 GD T4 quarterly control
(38)	NEMA C-Face adapter	IEC 63 ... 225	MPN... (see table)

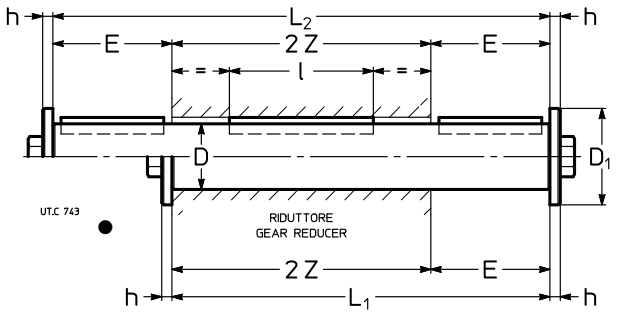
(1) Low speed shaft (sizes 40 ... 360)

This accessory is mounted on the gear reducer. The standard mounting position is with shaft and on opposite side to groove. For opposite mounting position, when possible (for some helical gearmotors MR 2I 40 ... 81 and MR 3I 40 ... 125 (model 2), the low speed shaft cannot overhang from motor side: consult us), state after the designation «groove side assembly».

The external diameter of the element or of the spacer abutting with the gear reducer must be (1,25 ÷ 1,4) · **D**; hole tolerance D H7 ... K7.

Other dimensions at ch. 6 «High and low speed shaft end».

Supplementary description when ordering by **designation**: **standard** or **double extension low speed shaft**.



● Position of the reference groove (see ch. 16) for radial load verification.

Size	D Ø	E	D1 Ø	h	L1	L2	l	2 Z	Screw UNI 5737-88	kg Standard	kg Double ext.
40	19 h7	30	28	4	122	152	50	92	M 6×20	0,3	0,4
50	24 h7	36[3]	35	5	142	178	63	106	M 8×25	0,6	0,7
63	30 h7	58[3]	47	5	184	242	63	126	M 10×30	1	1,3
64	32 h7	58[3]	47	5	184	242	70	126	M 10×30	1,2	1,5
80	38 h7	58	47	5	208	266	90	150	M 10×30	1,9	2,4
81	40 h7	58	47	5	208	266	90	150	M 10×30	2,1	2,7
100	48 h7	82	57	6	262	344	110	180	M 12×40	3,7	4,9
125	60 h7	97[1]	82	8	317	422	140	220	M 16×45	7	9,4
140	70 h7	105	82	8	355	460	180	250	M 16×45	11	14
160	80 h7	130	102	10	402	532	200	272	M 20×60	18	24
180	90 h7	130	102	10	430	560	200	300	M 20×60	21	28
200	100 j6	165	135	12	499	664	250	334	M 24×60	36	46
225	110 j6	165	135	12	525	690	250	360	M 24×60	39	51
250	125 j6	200[2]	160	16	612	812	320	412	M 30×70	62	83
280	140 j6	200	160	16	644	844	320	444	M 30×70	82	106
320,321	160 j6	240	205	20	748	988	400	508	M 36×90	125	165
360	180 j6	240	205	20	786	1026	400	546	M 36×90	166	216

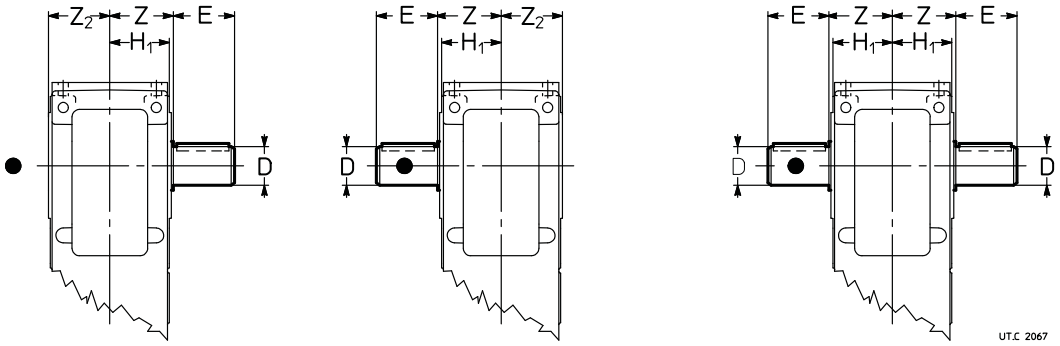
1) Value **not** to standard; with double extension low speed shaft E = 101.
2) Value **not** to standard.
3) For MR 3I the dimension E increases of 1.

(2) Solid low speed shaft (sizes 100 ... 360)

Gear reducers and gearmotors sizes 100 ... 360 can be supplied with solid low speed shaft overhanging from groove opposite side, from groove side or from double extension. For sizes 225, 280, and 360 the design foresees oversized bearings in order to allow high radial loads stated on ch. 16. In some cases with sizes MR 2I 40 ... 81 and MR 3I 40 ... 125 the low speed shaft cannot be foreseen on the motor size (excluding the «long» model 4).

Other dimensions at ch. 6 «High and low speed shaft end».

1) As alternative to the (not double extension) solid low speed shaft, for sizes 64 ... 81 it is possible to supply the standard low speed shaft axially fastened; the fastening is realized with retaining ring and the dimension E (see ch. 17 (1)) increases by 8 mm: consult us.



● Position of the reference groove (see ch. 8, 10, 12, 14).

Size	**D** Ø k6	**E**	**Z**	**Z_2**	**H_1**
100	48	82	90	88	84,5
125	60	105	110	108	103,5
140	70	105	125	122	103,5
160	80	130	136	133	128,5
180	90	130	150	148	128,5
200	100	165	167	165	158
225	110	165	180	177	158
250	125	200[1)]	206	204	195
280	140	200	222	219	195
320, 321	160	240	254	251	241
360	180	240	273	270	241

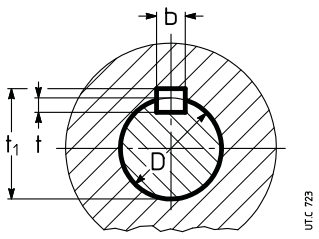
1) Value **not to** standard.

Supplementary description when ordering by **designation: solid low speed shaft opposite to groove side** or **groove side** or **double extension.**

(3) Oversized hollow low speed shaft (sizes 40, 50, 64, 100)

The gear reducers and gearmotors sizes 40, 50, 64 and 100 can be supplied with oversized hollow low speed shaft; dimensions are according to following table; hollow low speed shaft washer is not available.

Supplementary description when ordering by **designation**: **oversized hollow low speed shaft**.



Size	**D** Ø H7	Parallel key **b** × **h** × **l***	Keyway **b**	**t**	**t_1**
40	20	6 × 6 × 50	6	4,5[1)]	22,2[1)]
50	25	8 × 7 × 63	8	4,5[1)]	27,7[1)]
64	35[2)]	10 × 8 × 90	10	6,5[1)]	36,8[1)]
100	50	14 × 9 × 125	14	6,5[1)]	52,8[1)]

* Recommended length.
1) Values **not** to standard.
2) Without retaining ring groove.

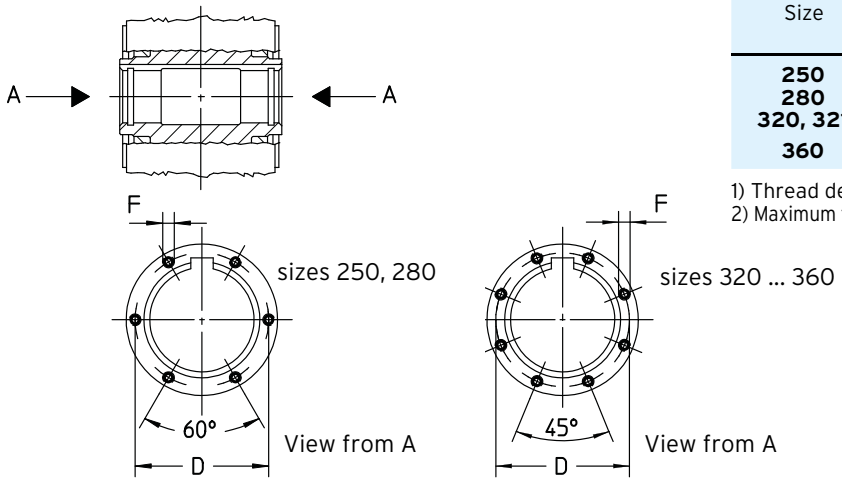
(4) Hollow low speed shaft with front holes (sizes 250 ... 360)

Hollow low speed shaft, sizes 250 ... 360, including tapped holes. The dimensions of tapped holes and the maximum axial force deriving from relevant screws class 8.8 are stated in the table.

ATTENTION. **This axial load can be unsufficient to assure the disassembly of gear reducer from machine shaft end**. In fact, according to the selected coupling tolerances to realize the machine shaft end and according to the coupling status – determined by installation environment and duty cycle (e.g.: alternate cycles, with overloads, etc.) – the disassembly operation could require an extraction force even much higher than the thread capacity that could be damaged irremediably.

In these cases, it is necessary to adopt an extraction system through hollow low speed shaft bushing (see ch. 17 (20)).

Supplementary description when ordering by **designation**: **hollow low speed shaft with front holes**.



Size	D Ø	F[1]		α [°]	$F_{a\,max}$[2] [kN]
250	144	M8	nr.6	60	99
280	162	M10	nr.6	60	157
320, 321	182	M10	nr.8	45	209
360	212	M12	nr.8	45	306

1) Thread depth 2·F.
2) Maximum total axial load relevant to bolts class 8.8.

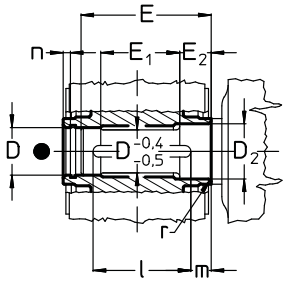
(5) Stepped hollow low speed shaft (sizes 64 ... 360)

Gear reducers and gearmotors sizes 64 ... 360 can be also supplied with stepped hollow low speed shaft always with keyway; this design **facilitates** installation and removal and **affords a notable increase** in rigidity and resistance to bending and torsional stresses at the shaft end of the driven machine.

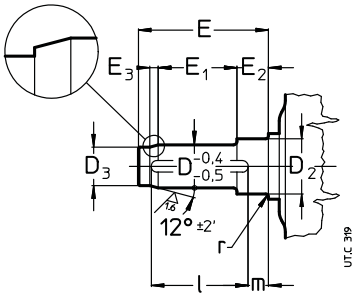
Hole with Ø $\mathbf{D_2}$ is always **opposite to groove side**.

Important: the shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,18 ÷ 1,25) · D.

Supplementary description when ordering by **designation**: **stepped hollow low speed shaft**.



Shaft end of driven machine for fitting with key



Shaft end of driven machine for fitting with key and locking bushing

Size	D Ø	D_2 Ø	D_3 Ø H7/h6	E 1)	E_1	E_2 1)	E_3	l	m	n	r
	H7/j6, k6										
64	32	35	27	110	63	28	10	70	28	6	1,5
80	38	40	32	134	75	35	12	90	30	6	1,5
81	40	42	34	134	72	38	12	90	30	6	1,5
100	48	52	41	162	92	41	14	110	35	7	2
125	60	65	52	201	118	47	16	140	40	7	2
140	70	75	62	228	135	52	16	180	35	8	2
160	80	85	70	250	147	57	21	200	36	8	3
180	90	100	80	274	162	63	21	200	50	9	3
200	100	110	88	308	188	66	25	250	42	10	3
225	110	120	98	331	195	75	25	250	55	10	3,5
	H7/h6, j6										
250	125	135	110	380	228	84	32	320	40	11	4
280	140	150	125	410	238	94	32	320	60	12	4
320, 321	160	170	140	471	276	107	43	400	45	13	5
360	180	195	160	506	293	116	43	400	72	14	5

● Position of the reference groove (see ch. 8, 10, 12, 14).

1) In presence of «Labyrinth seal and low speed shaft greaser» (ch. 17 (26)), it is necessary to increase the E (E_2) dimension by A quantity stated in the table on ch. 17 (26).

(6) Hollow low speed shaft with shrink disc (sizes 40 ... 360)

Sizes 40 ... 125

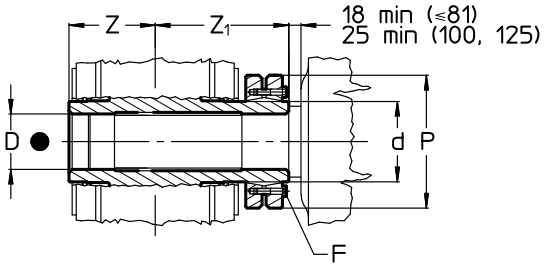
Gear reducers and gearmotors sizes 40 ... 125 can be supplied with hollow low speed shaft with shrink disc (see fig. a) – **always opposite side to groove** i.e. opposite side to motor for helical gearmotors – and not rotating protection cap on groove side (excluding input side of helical gear reducers and gearmotors sizes 40, 50 and MR 3I 63).

This design affords a notable increase in rigidity of keying and **reduces** the deformations of shaft end of driven machine (high mass **D**), also permits couplings with passing through shafts (only for bevel helical or long model see fig. c) eventually **avoiding**, when interposed between gear reducer and machine, the necessity of safety guards on the unit itself.

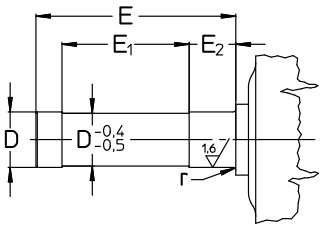
For the shaft end of driven machine on which gear reducer hollow low speed shaft (see fig. b) must be keyed, it is recommended to respect the dimensions stated in the table.

Important: the shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,18 ÷ 1,25) · D.

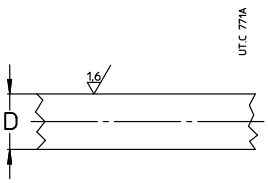
Supplementary description when ordering by **designation**: **hollow low speed shaft with shrink disc**



a) Hollow low speed shaft with shrink disc and shaft end of driven machine



b) Shaft end of driven machine



c) Through shaft of driven machine

Size	D Ø H7/j6, h6[1]	E 4)	E_1	E_2 4)	F UNI 5737-88 cl. 10.9	M N m 2)	d	P	r	Z	Z_1	$M_{2\,SD}$ N m 3)
40	20	99,5	65	25	M5 n.6	4	24	50	0,5	46	69	280
50	25	116,5	77	30	M5 n.7	4	30	60	0,5	53	79	400
63	30	135,5	86	34	M6 n.5	12	38	72	0,5	63	91	960
64	35	140	86	36	M6 n.7	12	44	80	1,5	63	93	1 400
80, 81	40	166	103	39,5	M6 n.8	12	50	90	1,5	75	107	1 800
100	50	197	122	46,5	M8 n.6	30	62	110	2,5	90	125	3 000
125	65	239	148	55	M8 n.8	30	80	145	2,5	110	148	5 200

1) Tolerance g6 also possible for shaft end opposite to shrink disk.
2) Tightening torque.
3) Maximum values for shrink disc.
4) In presence of «Labyrinth seal and low speed shaft grease» (ch. 17 (26)), in case of mounting of the shrink disc on machine opposite side, it is necessary to increase the E (E_2) dimension by A quantity stated in the table on ch. 17 (26).
● Position of the reference groove (see ch. 8,10, 12,14).
For design with labyrinth seals at low speed shaft, the dimensions E, E_1, E_2 are changing: please consult us.

For sizes 80 ... 125 and **train of gears CI and ICI**, it is possible to obtain the **shrink disc opposite side to machine** by selecting a suitable mounting position and design (direction of rotation). A protection for the shrink disc is supplied as standard, see page 328.

Sizes 140 ... 360: side to machine

Gear reducers and gearmotors sizes 140 ... 360 can be supplied with **stepped** hollow low speed shaft with shrink disc **side to machine** – that is **opposite side to groove**, i.e. opposite side to motor for helical gearmotors – and not rotating protection cap on groove side.

This design **facilitates** installation and removal and **affords a notable increase** in rigidity of keying and **reduces** the deformations of machine shaft end, avoids possible problems of interference between shrink disc and motor flange (for helical gear units) and may **avoid** the use of safety guards on the unit itself. Moreover, since deformability of keying area is greater ($d - D_2 < d - D$) and friction area acts on a greater diameter ($D_2 > D$), maximum transmissible torque increases by 18 ÷ 25% compared to the solution with shrink disc on opposite side to machine.

For a further axial fastening and in order to facilitate the assembling and disassembling operations (see ch. 18), it is possible to make use of hollow low speed shaft washer with retaining ring and bolt for axial fastening (on request).

For the shaft end of driven machine on which gear reducer stepped hollow low speed shaft must be keyed, it is possible to adopt both «long» and «short» shaft end of driven machine: dimensions as per table (for the other dimensions see ch. 18).

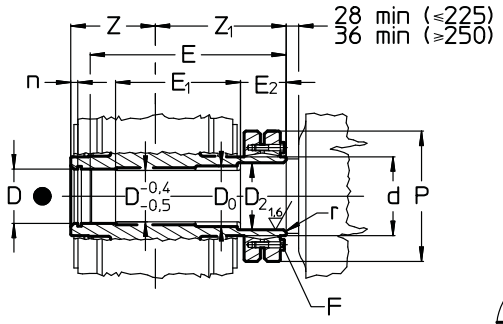
In the first case (fig. c), the assembly operations are facilitated, acting the «long» pivot as a guide. The possible application of a locking bushing with hollow low speed shaft washer (fig. d), reducing the fretting corrosion at the very least, especially facilitates the disassembling operations by giving at the same time a help in the torque transmission.

In the second case (fig. e), the reduced axial dimension of the «short» shaft end of driven machine, limits the mounting and removing overall dimensions at the very least.

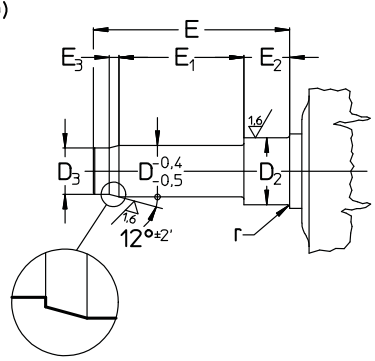
In both cases the rigidity and the resistance to bending and torsional stresses at the shaft and of driven machine do not change, since the only surface through which torque transmission occurs is the D_2 one.

Important: the shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,18 ÷ 1,25) · D.

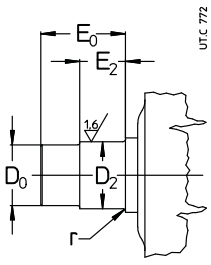
Supplementary description when ordering by **designation: hollow low speed shaft with shrink disc, on machine side.**



c) Stepped hollow low speed shaft with shrink disc and «long» machine shaft end



d) «Long» shaft end of driven machine also for locking bushing



e) «Short» shaft end of driven machine

Size	D Ø	D2 Ø	D3 Ø H7/h6	D0 Ø H7/h6	E	E0	E1	E2	E3	F UNI 5737-88 cl. 10.9	M N m 1)	d Ø	P Ø	n	r	Z	Z1	M2 SD N m 2)
	H7/j6, k6																	
140	70	75	62	72	273	99	180	52	16	M 8 n. 10	30	90	155	8	2	125	170	9 700
160	80	85	70	82	307	114	199	62	21	M 10 n. 9	60	105	185	8	3	136	193	14 500
180	90	100	80	95	335	124	221	65	21	M 10 n. 12	60	120	215	9	3	150	211	22 500
200	100	110	88	105	377	135	251	72	25	M 12 n. 10	100	130	230	10	3	167	236	32 500
225	110	120	98	115	404	150	265	78	25	M 12 n. 12	100	140	265	10	3,5	180	253	45 400
	H7/h6, j6																	
250	125	135	110	130	461	165	307	86	32	M 16 n. 8	250	160	290	11	4	206	287	62 900
280	140	150	125	145	506	185	324	104	32	M 16 n. 10	250	180	330	12	4	222	318	85 600
320, 321	160	170	140	165	567	203	375	104	43	M 16 n. 12	250	200	350	13	5	254	350	121 900
360	180	195	160	190	621	231	400	124	43	M 16 n. 15	250	230	370	14	5	273	388	172 000

1) Tightening torque.
2) Max transmissible torque relevant to shrink disc; in case of «Short shaft end» (fig. e), consult us.
● Position of the reference groove (see ch. 6).
For design with labyrinth seals at low speed shaft, the dimensions E, E1, E2 are changing: please consult us.

Sizes 140 ... 360: side opposite to machine

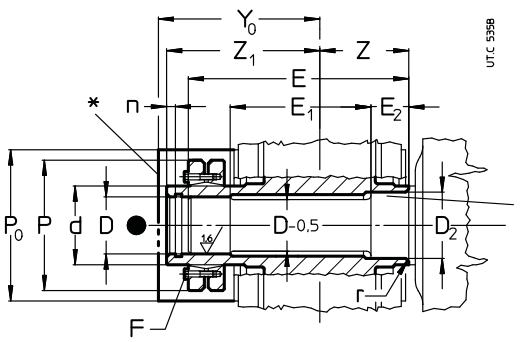
Gear reducer and gearmotor sizes 140 ... 360 can be supplied with **stepped** hollow low speed shaft with shrink disc on **opposite machine side**, i.e. **groove side** (see fig. f).

A protection for the shrink disc is supplied as standard, see page 328.

This design, compared with the machine side design, improves the accessibility to the shrink disc but it is more expensive, with lower torsional stiffness and with limits in the max admissible motor size for MR 2I ... UP2 ...; the shrink disc transmits a lower torque and, normally, requires a personal safety-guard (see «Protection for hollow shaft with shrink disc»).

Important: the shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,18 ÷ 1,25) · D.

Supplementary description when ordering by **designation: hollow low speed shaft with shrink disc, on machine opposite side.**



Hollow low speed shaft zone to be protected against fretting corrosion.

f) Stepped hollow low speed shaft with shrink disc and machine shaft end.

● Position of the reference groove (see ch.8, 10, 12, 14).
* Protection for hollow low speed shaft with shrink disc.

Size	MR 2I ... UP2 ... grand. motore max (ved. cap. 12)	D Ø	D_2 Ø	E 3)	E_1	E_2 3)	F UNI 5737-88 cl. 10.9	M N m 1)	n	d Ø	P Ø	r	Z	Z_1	Y_0	P_0	M_2 N m 2)
		H7/j6, k6															
140	132, 160 B5R	70	75	294,5	192,5	52	M 8 n. 10	30	8	90	155	2	125	191,5	222	234	8 000
160	180	80	85	329	208	57	M 10 n. 9	60	8	105	185	3	136	215	234	234	12 000
180	180, 200 B5R	90	100	363	228	63	M 10 n. 12	60	9	120	215	3	150	239	256	234	18 000
200	225	100	110	402	260	66	M 12 n. 10	100	10	130	230	3	167	261	282	254	26 000
225	225, 250 B5R	110	120	428	277	75	M 12 n. 12	100	10	140	265	3,5	180	277	298	283	36 600
		H7/h6, j6															
250	280	125	135	493	318	84	M 16 n. 8	250	11	160	290	4	206	319	345	315	51 600
280	280, 315S B5R	140	150	543	337	94	M 16 n. 10	250	12	180	330	4	222	355	381	345	71 500
320, 321	315	160	170	607	388	107	M 16 n. 12	250	13	200	350	5	254	390	405	393	102 000
360	315	180	195	668	414	116	M 16 n. 15	250	14	230	370	5	273	435	466	394	143 000

1) Tightening torque.
2) Maximum values relevant to shrink disc.
3) In presence of «Labyrinth seal and low speed shaft grease» (ch. 17 (26)), it is necessary to increase the E dimension (E_2) by A quantity stated in the table on ch. 17 (26).

(7) Protection for hollow low speed shaft with shrink disc

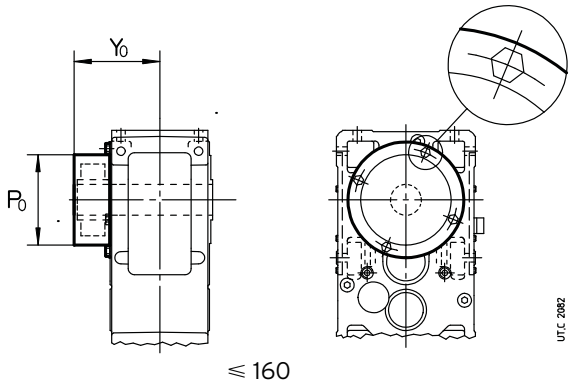
Safety protections, made of steel, for gear reducers equipped with hollow low speed shaft with shrink disc on machine opposite side (groove side). Normally supplied as standard when ordering the option low speed shaft with shrink disc. For details see below.

Sizes 140 ... 360

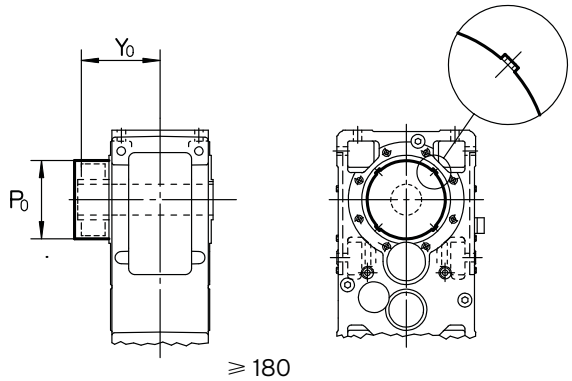
For dimensions and assembly sketch see «Low speed shaft with shrink disc on machine opposite side».

The accessory **cannot be supplied** for:

- **R I** gear reducers;
- gear reducers and gearmotors in vertical mounting positions **V5** and **V6 with shrink disc uppermost**;
- **some combined units of helical gearmotors** (UP**2**...) stated in the **table** (for the other gearmotor combined units this accessory will be available).



⩽ 160



⩾ 180

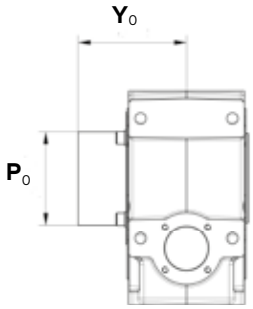
For dimensions P_0 and Y_0 see. ch. 17 (6).

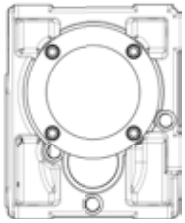
Size MR 2I, 3I UP**2**...	B5 motor size incompatible with accessory
140	⩾ 100
160	⩾ 160
180	⩾ 200
200	⩾ 250
225	⩾ 250
250	315
280	315

Sizes 80 ... 125

Train of gears CI and ICI for overall dimensions according to table on the right.
For other sizes and train of gears contact Rossi.

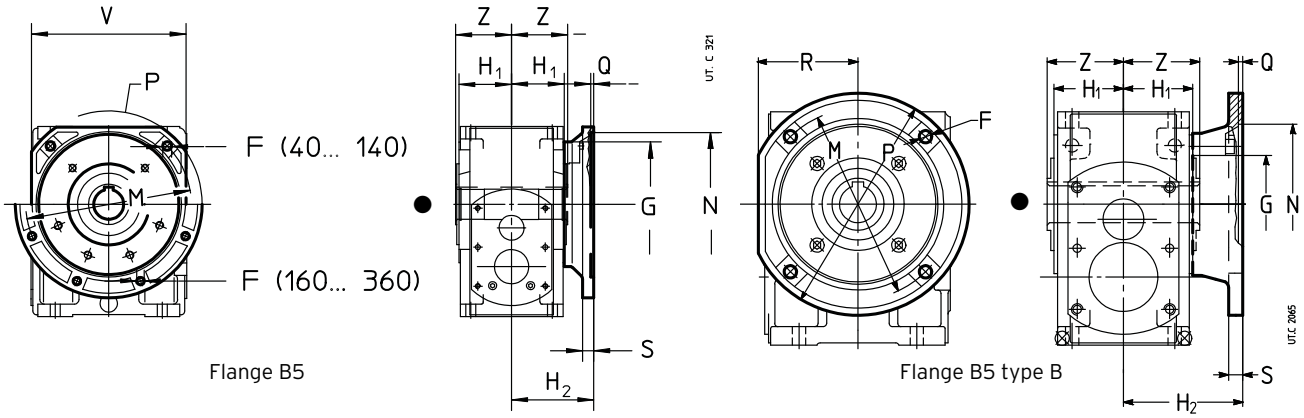
Size MR CI, ICI	Y_0	P_0
80, 81	123	114
100	155	134
125	182	184





(8) Flange (sizes 40 ... 360)

All gear reducers and gearmotors can be supplied with B5 flange having clearance holes and spigot «recess».
For sizes 63 ... 81, it is available in two versions with different coupling dimensions: **B5 flange** and **B5 flange type B**.
The accessory is supplied fitted onto the gear reducer. Unless otherwise stated, the mounting position is on groove opposite side (input opposite, for helical gear units: for these sizes 40 ... 125 is the only one possible; for greater sizes, consult us). For groove side mounting position (for bevel helical gear units only), state in the designation: «**mounting on groove side**». Locking adhesives such as LOCTITE are recommended both around threads and on mating surfaces.
For dimensions H_1 and Z see ch. 8, 10, 12 and 14.
Supplementary description when ordering by **designation**: **flange B5** or **flange B5 type B** (see table).



Flange B5 — Flange B5 type B

● Position of the reference groove (see ch. 16) for radial load verification.

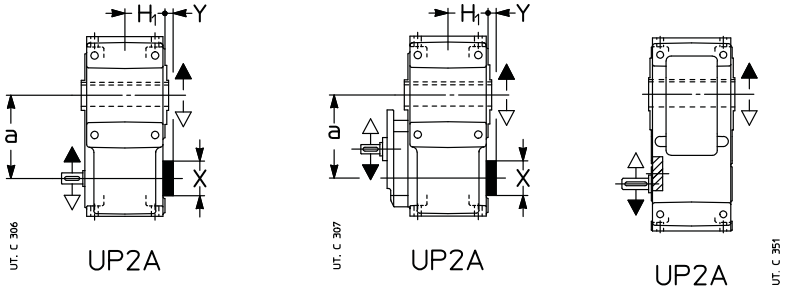
Size	F Ø	G Ø	H_2 h12	M Ø	N Ø H7	P Ø	Q	R	S	V □	Mass kg	Designation
40	9,5	60	80	115	95	140	4	-	11	110	0,8	**Flange B5**
50	9,5	70	80	130	110	160	4,5	-	12	122	1	**Flange B5**
63, 64	11,5	80	100	165	130	200	4,5	-	14	152	2	**Flange B5**
63, 64	14	80	107	176	152	210	6	100	14	-	2,9	**Flange B5 type B**
80, 81	14	110	112	215	180	250	5	-	16	196	3,2	**Flange B5**
80, 81	14	110	129	230	170	280	6	121	16	-	5,8	**Flange B5 type B**
100	14	130	132	265	230	300	5	-	18	248	5,5	**Flange B5**
125	18	180	154	300	250	350	6	-	20	290	8,5	**Flange B5**
140	18	230	165	350	300	400	6	-	22	350	13	**Flange B5**
160	18^8	230	191	400	350	450	6	-	22	-	15	**Flange B5**
180	18^8	250	191	400	350	450	6	-	22	-	20	**Flange B5**
200	18^8	300	231	500	450	550	6	-	25	-	25	**Flange B5**
225	22^8	350	231	500	450	550	6	-	25	-	31	**Flange B5**
250, 280	27^8	450	280	600	550	660	7	-	30	-	50	**Flange B5**
320 ... 360	33^8	550	345	740	680	800	7	-	37	-	80	**Flange B5**

(9) Backstop device (sizes 50 ... 360)

For the sizes stated in the table, helical **gear reducers** with $i_N \geq$ **10**, bevel helical with $i_N \geq$ **12,5** ($i_N \geq$ **10** for size 50; $i_N \geq$ **11,2** for sizes 160, 200, 250, 320, 321) and helical and bevel helical **gearmotors**, can be supplied together with backstop device; the designs and the positions are the ones stated below. For the value of dimensions **a**, **C**, **H**, H_1, H_0 see ch. 8, 10, 12 and 14.

Supplementary description when ordering by **designation**: **backstop device**, **white or black arrow free-rotation**.

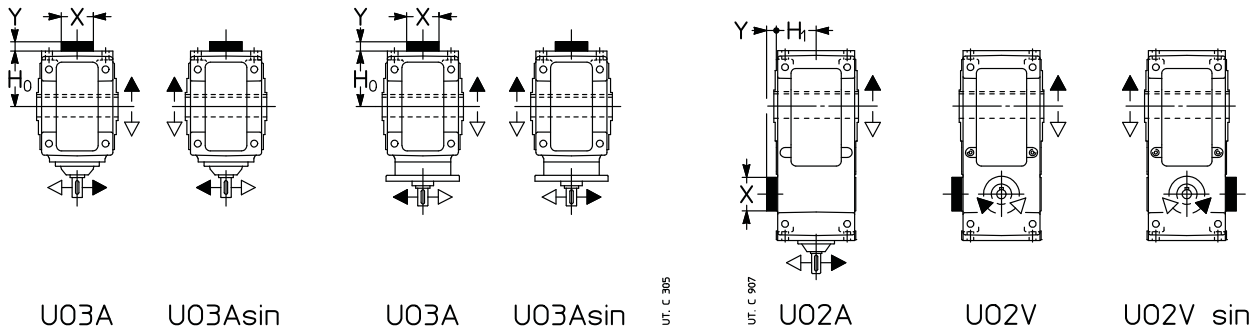
2I[1] **63 ... 360** **3I 63 ... 125** **3I 140 ... 360**[2]



Size	2I, 3I, 4I	
	X Ø	Y
63, 64	47	7
80, 81	52	7
100	62	7
125, 140	72	10
160, 180	90	10
200, 225	110	10
250, 280	130	7
320 ... 360	170	7

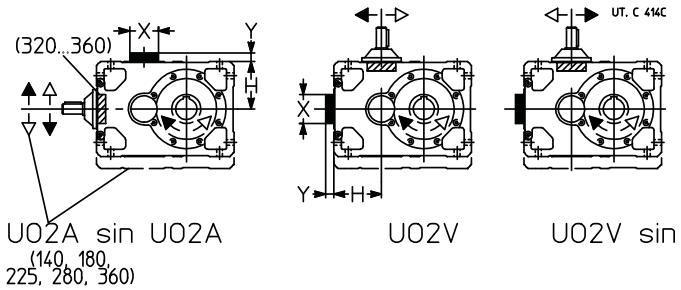
1) Also MR 4I sizes 63 ... 125.
* Backstop device doesn't project from dimension H_1. Also available for UP2D, UP4A and UP4D design.

CI[1] **50 ... 100** **ICI 50 ... 200** **C2I 140 ... 360**



1) Also MR C3I sizes 50 ... 125.

CI 125 ... 360



Size	CI, ICI, C3I		C2I	
	X Ø	Y	X Ø	Y
50 ... 64	47	4	-	-
80, 81	52	4	-	-
100	62	4	-	-
125, 140	122	16	72	10
160, 180	155	21	90	10
200, 225	190	21	110	10
250, 280	238	26	130	7
320 ... 360	-[2]	-[2]	170	7

2) Backstop device is fitted between high speed shaft bearings.

Backstop device load capacity

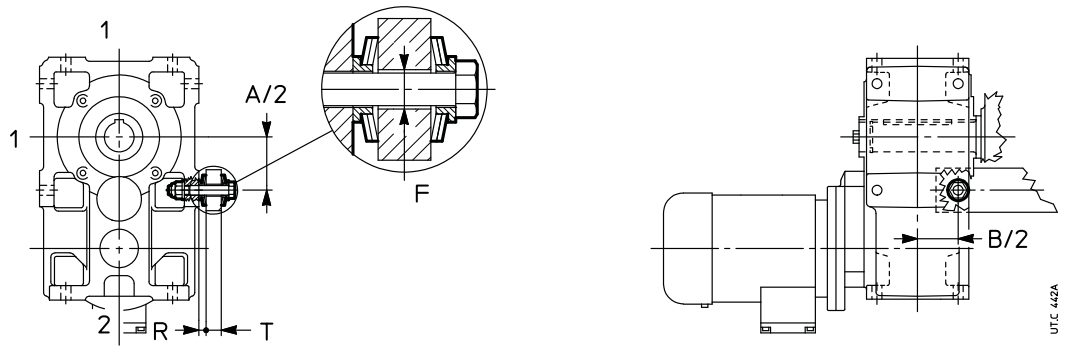
Nominal torque M_{N2} [N m] of backstop device when lower than M_{N2} of gear reducer (see ch. 9, 11, 13). Maximum permissible overload **1,7 · M_{N2}**.

Size	Train of gears (i_N) M_{N2} [N m]		
	3I *(28)* **C2I** *(20)*	**2I** *(10)* **3I** (31,5) **C2I** *(22,4)*	**3I** *(35,5)* **C2I** *(25)*
140	2 800	3 150	3 550
180	5 600	6 300	7 100
225	11 200	12 500	14 000
280	21 200	23 600	26 500
321, 360	42 500	47 500	53 000

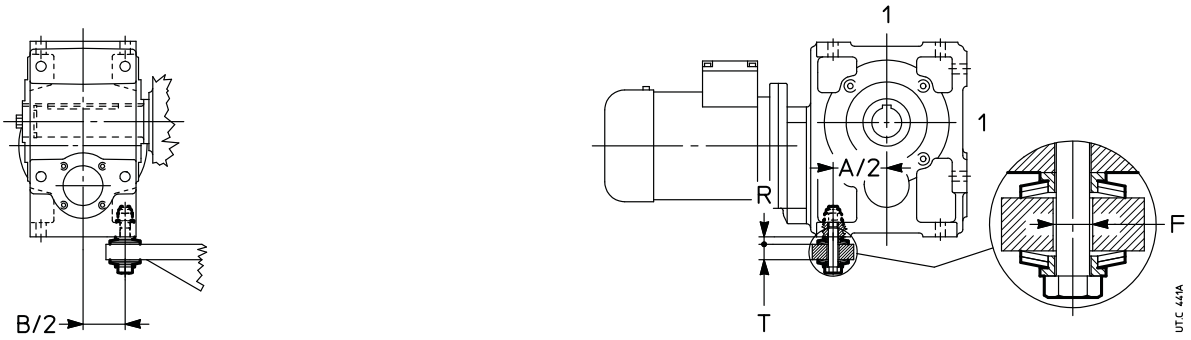
(10) Reaction bolt using disc spring (sizes 40 ... 360)

Reaction arrangement for shaft mounting
See technical explanations at ch. 18.
For dimensions **A**, $\mathbf{A_1}$, **B** see ch. 8, 10, 12 and 14.
For trains of gears CI, ICI, C3I apply this system **preferably** on side **1**; for trains of gears 2I, 3I, 4I **do not** apply on side **2**.
Supplementary description when ordering by **designation**: **reaction bolt using disc springs**.

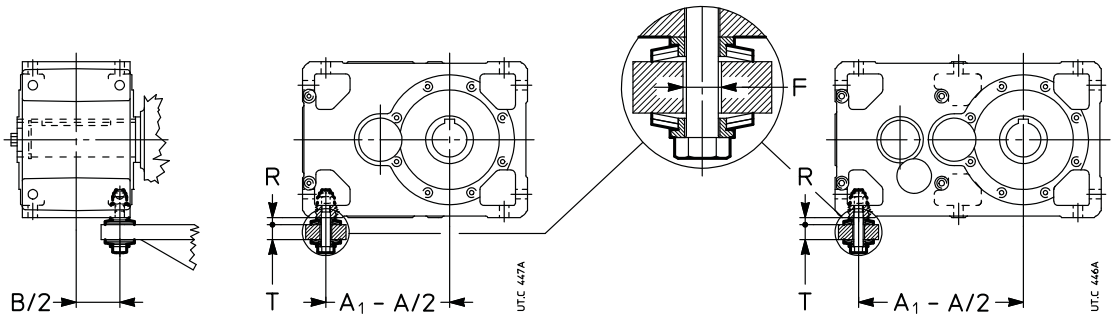
2I ⩽ 125 ; 3I ⩽ 125 ; 4I



CI ⩽ 100 ; ICI ⩽ 125 ; C3I



CI ⩾ 125 **2I ⩾ 140 ; 3I ⩾ 140 ; C2I**



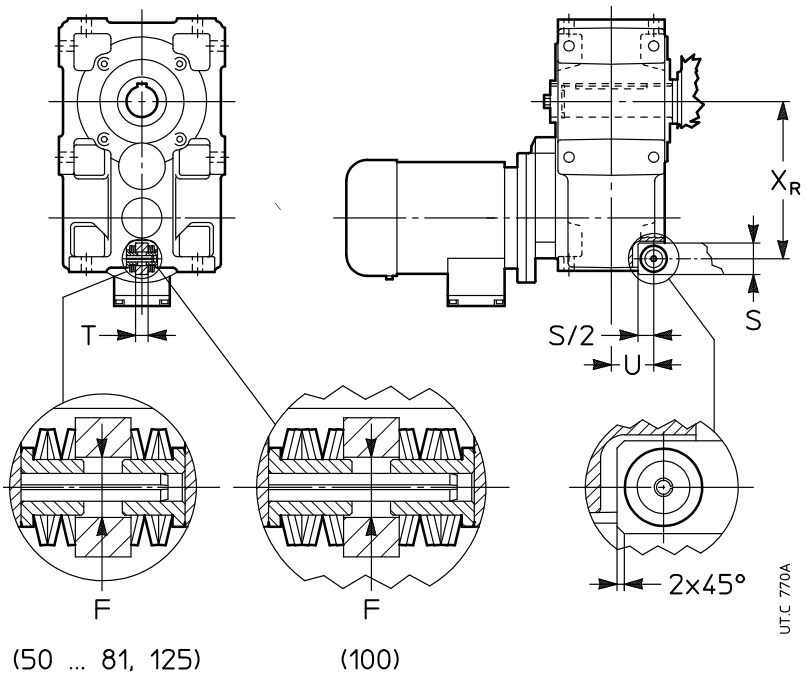
Size	Screw	Disc spring		T	F	R	M_2 ⩽
	UNI 5737-88	DIN 2093			Ø	1)	2) N m
40	M 6 × 40	A18	n.2	8 ÷ 10	8	4,9	63
50	M 8 × 55	A25	n.2	10 ÷ 14	11	6,5	140
63, 64	M 12 × 70*	A35,5	n.2	14 ÷ 17	20	8,8	224
80, 81	M 12 × 90	A35,5	n.3	18 ÷ 25	20	10,8	400
100	M 16 × 110	A50	n.2	25 ÷ 32	20	13,1	630
125, 140	M 16 × 110	A50	n.2	25 ÷ 32	20	13,1	1000[3]
160, 180	M 20 × 130	A63	n.3	25 ÷ 38	24	17,9	-
200, 225	M 24 × 160	A80	n.2	29 ÷ 48	30	20,7	-
250, 280	M 30 × 200	A100	n.2	37 ÷ 60	36	26,2	-
320 ... 360	M 36 × 260	A100	n.3	45 ÷ 75	42	32,2	-

* Modified bolt.
1) Theoretical value: tolerance 0 ÷ -1.
2) For higher M_2 values, use 2 reaction bolts or the arrangement with bracket (see following page).
3) The limit 1 000 N m is applied only to size 125, for all train of gear excluding train of gear CI.

(11) Kit using reaction disc springs (sizes 40 ... 125)

Reaction arrangement for shaft mounting
See technical explanations at ch. 18.
For dimensions **A**, $\mathbf{A}_1$, **B** see ch. 8, 10, 12 and 14.
Supplementary description when ordering by **designation**: **kit using reaction disc springs**.

2I ⩽ 125 ; 3I ⩽ 125 ; 4I



(50 ... 81, 125) (100)

Size	Disc spring DIN 2093		F	T h11	S	x_R	U	M_2 ⩽ N m
40	A18	n.3	10	10	22	106	32,5	-
50	A25	n.3	13	12	30	130	37,5	-
63	A25	n.3	13	15	35	163	50	-
64	A25	n.3	13	15	35	165	50	350[2]
80, 81	A35,5	n.3	19	20	40	199	54	-
100	A35,5	n.6	19	25	50[1]	246[3]	66	-
125	A50	n.3	26	30	60	306[3]	82	2 600[2]

1) S/2 = 22,5 mm.
2) For mounting positions B3 and B8.
3) For long model x_R dimension is: 302 (size 80, 81), 351 (size 100), 439 (size 125).

(12) Reaction bolt using disc springs with bracket (sizes 63 ... 225)

Reaction arrangement for shaft mounting

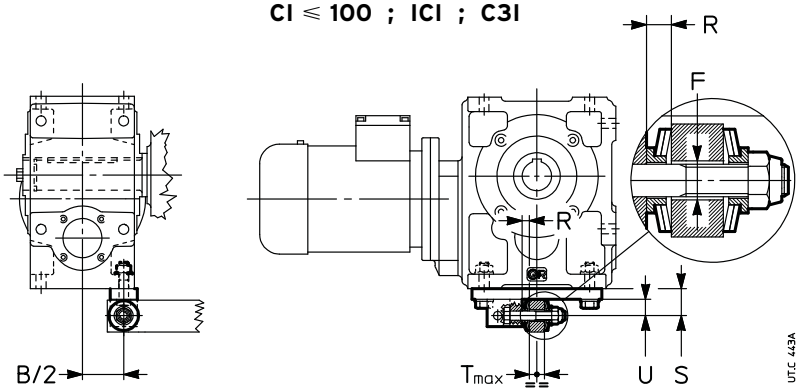
See technical explanations at ch. 18

For dimensions **A**, **A**$_1$, **B** see ch. 8, 10, 12 and 14.

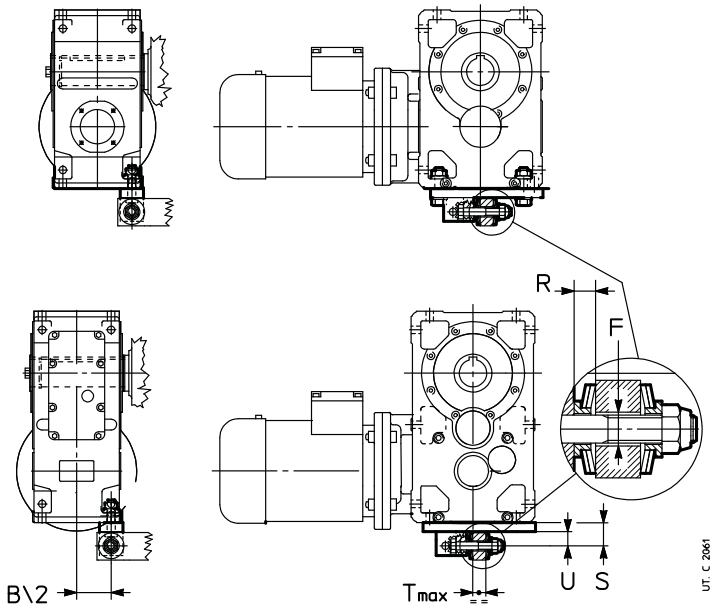
This arrangement can be applied, if need be (overall dimension, less stress or other reasons) on the **short** farthest side from low speed shaft also for parallel shaft gear reducers sizes 63 ... 225.

Supplementary description when ordering by **designation: reaction bolt using disc springs and bracket.**

CI ⩽ 100 ; ICI ; C3I



CI ⩾ 125 ; C2I



Size	Screw UNI 5737-88	Disc spring DIN 2093		T	F Ø	S	U	R 1)	B/2
63, 64	M 12 × 70*	A 35,5	n.1	14 ÷ 17	20	38	23	6,8	45
80, 81	M 12 × 90	A 35,5	n.2	18 ÷ 25	20	38	23	8,8	53
100	M 16 × 110	A 50	n.2	25 ÷ 32	20	50	30	13,1	65,5
125,140	M 16 × 110	A 50	n.2	25 ÷ 32	20	50	30	13,1	81
160, 180	M 20 × 130	A 63	n.3	23 ÷ 38	24	65	40	17,9	100,5
200, 225	M 24 × 160	A 80	n.2	29 ÷ 48	30	80	48	20,7	125

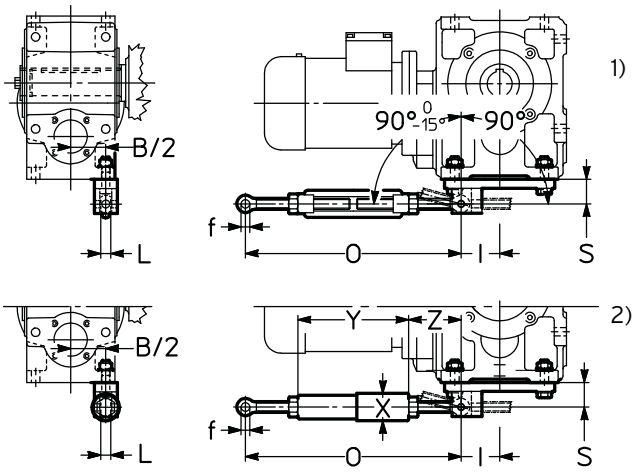
* Modified bolt.

1) Theoretical value after tightening: tolerance 0 ÷ -1.

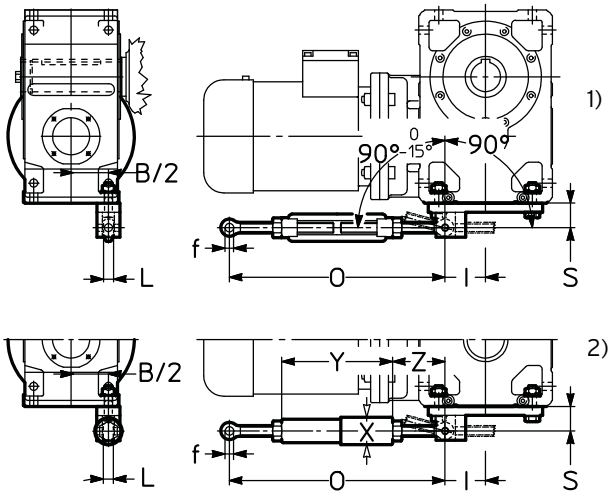
(13) Rigid or flexible torque arm using bracket (sizes 63 ... 225)

Reaction arrangement for shaft mounting
See technical explanations at ch. 18.
For dimensions **A**, **A**$_1$, **B** see ch. 8, 10, 12 and 14.
This arrangement can be applied, if need be (overall dimension, less stress or other reasons) on the short farthest side from low speed shaft in all gear reducers sizes 63 ... 225.
Supplementary description when ordering by **designation: rigid** or **flexible torque arm using bracket.**

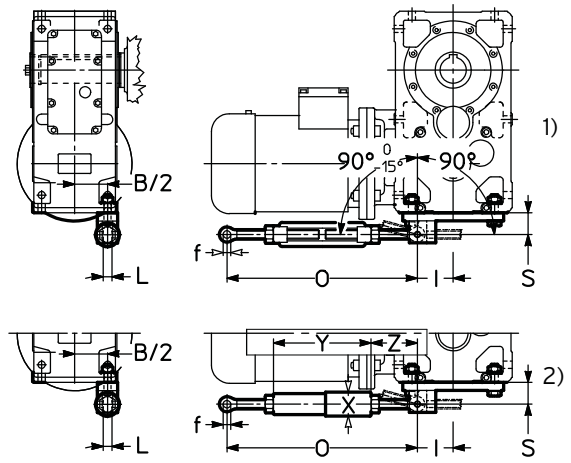
CI ⩽ 100 ; ICI ; C3I



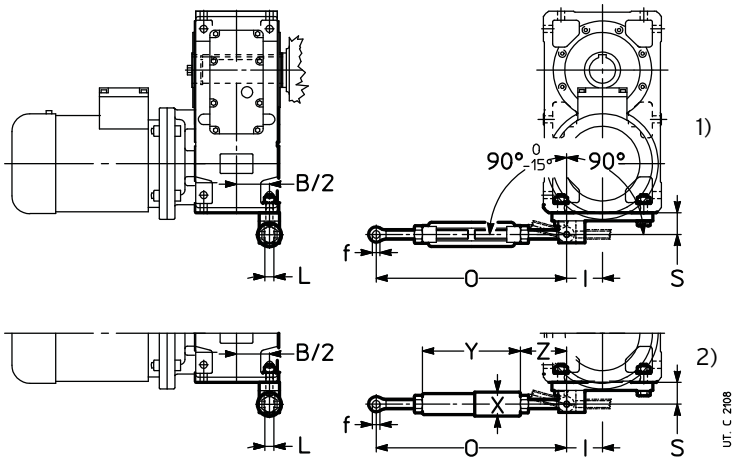
CI ⩾ 125



C2I



2I ⩾ 140 ; 3I ⩾ 140



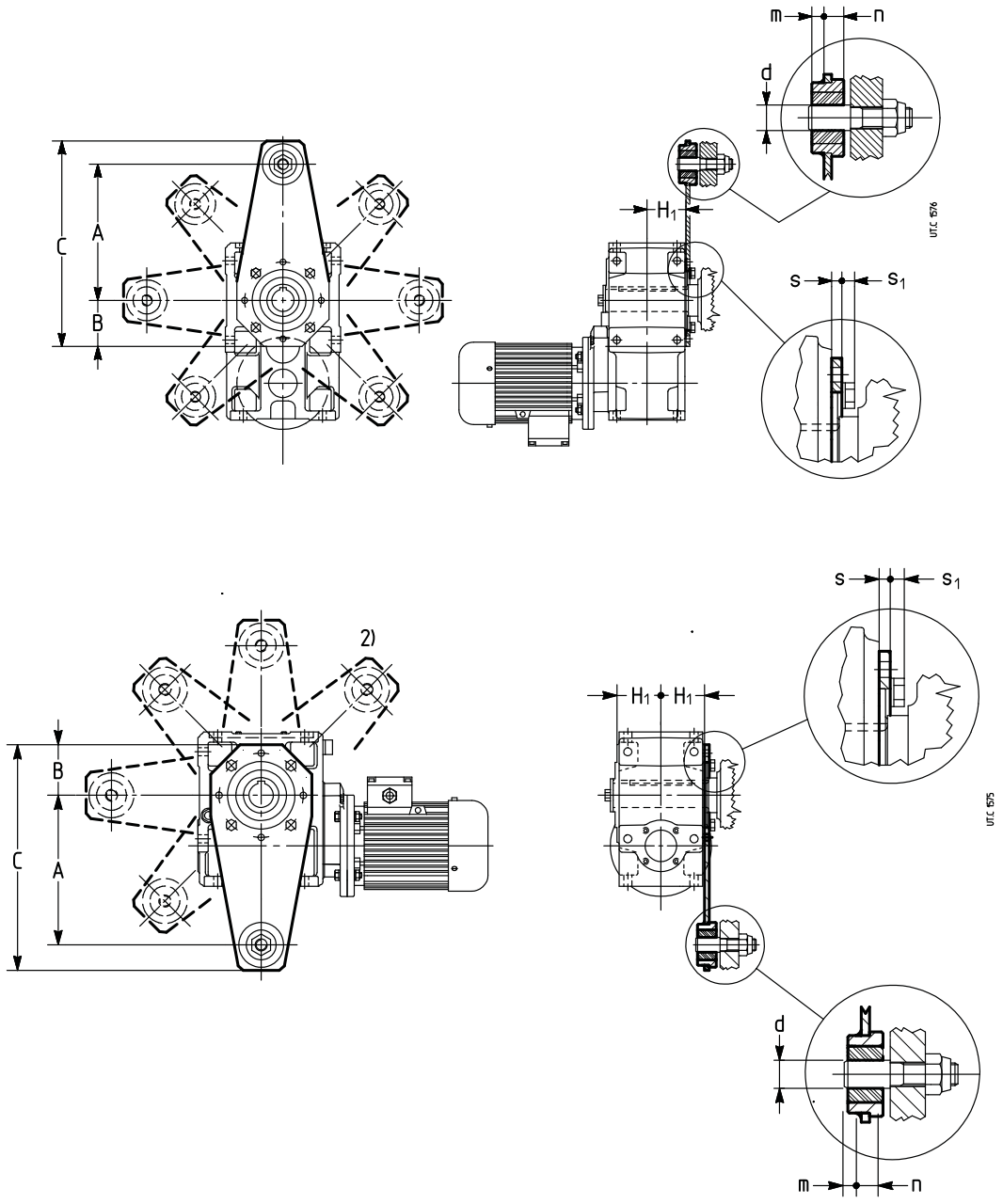
1) Rigid torque arm using bracket.
2) Flexible torque arm using bracket (not supplied for size 63 ... 81).

Size	f ø	O	S	L	X ø	Y	Z ≈	I	B/2
63, 64	12	280 ÷ 350	38	14	–	–	–	50	45
80, 81	12	280 ÷ 350	38	14	–	–	–	56	53
100	16	410 ÷ 510	50	17	52	242	84	74	65,5
125, 140	16	410 ÷ 510	50	17	52	242	84	74	81
160, 180	22	580 ÷ 680	65	24	64	285	147	92	100,5
200, 225	28	580 ÷ 680	80	30	88	305	137	113	125

(14) Torque arm (sizes 40 ... 81)

Reaction arrangement for shaft mounting
See technical explanations at ch. 18.
For dimensions **A**, **A**$_1$, **B** see ch. 8, 10, 12 and 14.

The accessory, including fixing bolts for gear reducer, is supplied not assembled. According to motor overall dimensions, the assembly towards motor could not be possible.
Supplementary description when ordering by **designation**: **torque arm.**



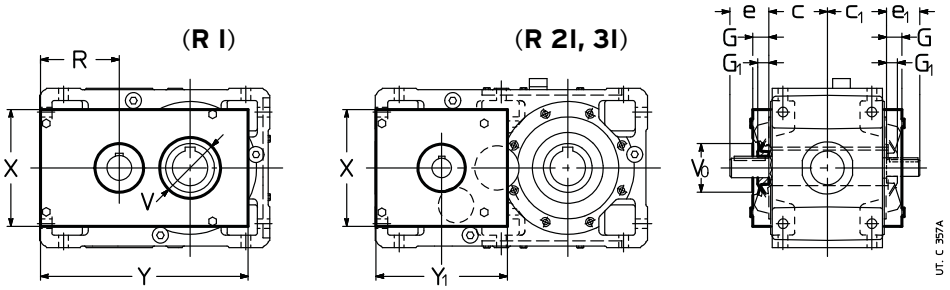
Size	A	B	C	d ∅ H11	H_1 h12	m	n ∅	s	s_1 ≈	M_2 ≤ N m
40	100	45	157	8[1)]	41,5	5	9	4	4,7	135
50	150	52,5	230	10	49	7	13	6	5,6	280
63, 64	200	60	294	20	58,5	9,5	15,5	6	7,5	335
80, 81	250	80	364	20	69,5	9,5	15,5	6	9,2	670

1) Plastic damping bushing not present.
2) Position not possible for train of gears MR ICI.

(15) Fan cooling (sizes 125 ... 360)

The **helical** gear reducers of size and train of gears stated in the table can be supplied with **one** or **two** fans. For the value of dimensions **e**, $\mathbf{e_1}$, and **c**, $\mathbf{c_1}$ see ch. 8

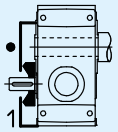
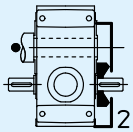
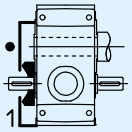
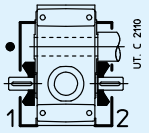
Gearmotors MR 2I 140 ... 360 and MR 3I 140 ... 360 **UP...D** can be supplied fitted with **one** fan.



Size R I[4]	Size R 2I[4], R 3I[4]	G [1]	G_1	R	V_0 Ø	V Ø [3]	X	Y	Y_1
125	**140**	34	25[5]	148	90	90	212	379	247
140	**-**	51	39	148	90	100	240	420	-
160	**160, 180**	38	25[6]	178	110[6]	115	264	469	297
180	**-**	54	39	178	110	130	296	487	-
200	**200, 225**	44	32	223	130	140	326	585	357
225	**-**	44	32	223	140	160	326	610	-
250	**250, 280**	52	40[2]	278	160	175	426	740	447
280	**-**	52	40	278	175	200	426	770	-
320, 321	**320 ... 360**	63	50[2]	353	200	220	554	951	557
360	**-**	63	50	353	220	260	554	991	-

1) Bolts projecting 6 mm from dimension **G**.
2) For R 3I dimension G_1 = 32 (250, 280), 40 (320 ... 360).
3) Only for **second** fan in pos. **2** or, on request, in other cases.
4) Design not possible with B5 flange on fan side; if required, consult us.
5) For R 2I 140 pos. **2** dimension G_1= 15.
6) For R 3I 160 and 180 with $i \geq 72$ and/or pos. **2** dimension G_1=15 and dimension V_0=90.

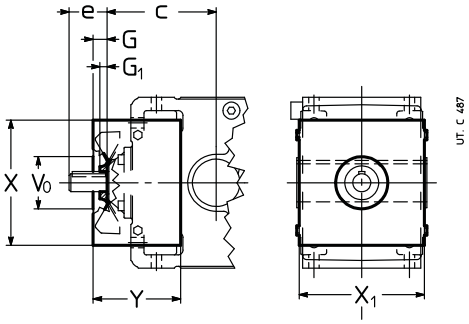
For **R I** gear reducers, the forced cooling with fan is in some cases incompatible with other non-standard designs and accessories, according to the scheme on the following table; consult us, if need be.

Non-standard design	UP...A, UP...L One fan in pos. 1		UP...D One fan in pos. 2		UP...D One fan in pos. 1		UP...D Two fans	
								
	Groove side •	Groove opposite side	Groove side •	Groove opposite side	Groove side •	Groove opposite side	Groove side •	Groove opposite side
(1) Standard low speed shaft[1]	-	✓	✓	-	-	✓	-	✓
(2) Solid low speed shaft[1]	-	✓	✓	-	-	✓	-	✓
(6) Hollow low speed shaft with shrink disc	-	✓	✓	-	-	✓	-	-
(8) Flange	-	✓	-	-	-	-	-	-

- Design or accessory not possible.
✓ Design or accessory possible.
1) **Double extension** low speed shaft not possible.

Bevel helical gear reducers of size and train of gears indicated in the table can be supplied fitted with **one** fan. See ch. 10 for dimensions **e** and **c**.

Also gearmotors MR CI 125 ... 280, MR C2I 160 ... 360 **... D ...**, **... H ...**, **... R ...** can be supplied fitted with **one** fan.



Size CI			G	G_1	V_0 Ø	X	X_1 1)	Y
125	R	$i_N \leq 8$	25	15	90	212	212	140
		$i_N \geq 9$	25	15	90	212	212	127
	MR		25	15	90	212	212	127
140	R	$i_N \leq 9$	25	15	90	212	212	140
		$i_N \geq 10$	25	15	90	212	212	127
	MR		25	15	90	212	212	127
160	R	$i_N \leq 8$	34	20	110	264	264	209
		$i_N \geq 9$	29	15	110	264	264	184
	MR		29	15	110	264	264	184
180	R	$i_N \leq 9$	34	20	110	264	264	209
		$i_N \geq 10$	29	15	110	264	264	184
	MR		29	15	110	264	264	184
200	R	$i_N \leq 8$	41	20	150	326	326	255
		$9 \leq i_N \leq 16$	41	20	130	326	326	232
		$i_N \geq 18$	41	15	130	326	326	232
	MR	$i_N \leq 14$	41	20	130	326	326	232
		$i_N \geq 16$	41	15	130	326	326	232
225	R	$i_N \leq 9$	41	20	150	326	326	255
		$10 \leq i_N \leq 16$	41	20	130	326	326	232
		$i_N \geq 18$	41	15	130	326	326	232
	MR	$i_N \leq 16$	41	20	130	326	326	232
		$i_N \geq 18$	41	15	130	326	326	232
250	R	$i_N \leq 10$	47	25	175	426	404	317
		$11,2 \leq i_N \leq 16$	46	25	150	426	404	293
		$i_N \geq 18$	46	20	150	426	404	293
	MR	$i_N \leq 14$	46	25	150	426	404	293
		$i_N \geq 16$	46	20	150	426	404	293
280	R	$i_N \leq 11,2$	47	25	175	426	404	317
		$12,5 \leq i_N \leq 16$	46	25	150	426	404	293
		$i_N \geq 18$	46	20	150	426	404	293
	MR	$i_N \leq 16$	46	25	150	426	404	293
		$i_N \geq 18$	46	20	150	426	404	293
320 ... 360	R		57	32	220	554	500	392

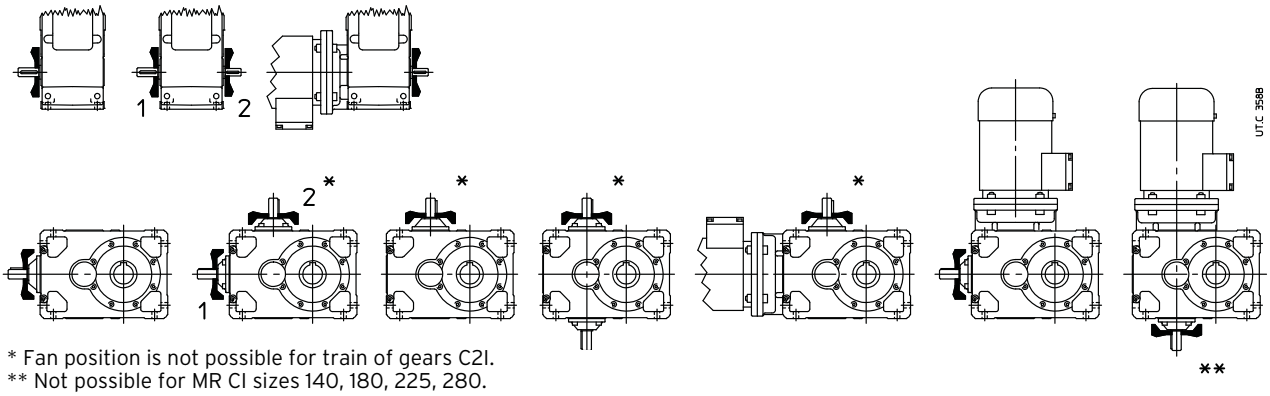
1) Bolts projecting 6 mm from dimension X_1.

Size C2I			G	G_1	V_0 Ø	X	X_1 1)	Y
160	R	$i_N \leq 31,5$	25	15	110	264	264	184
		$i_N \geq 35,5$	25	15	110	264	264	173
	MR		25	15	110	264	264	173
180	R	$i_N \leq 31,5$	25	15	110	264	264	184
		$i_N \geq 35,5$	25	15	110	264	264	173
	MR		25	15	110	264	264	173
200	R	$i_N \leq 31,5$	34	20	130	326	326	232
		$i_N \geq 35,5$	41	15	130	326	326	222
	MR		41	15	130	326	326	222
225	R	$i_N \leq 31,5$	34	20	130	326	326	232
		$i_N \geq 35,5$	41	15	130	326	326	222
	MR		41	15	130	326	326	222
250	R	$i_N \leq 31,5$	43	20	150	426	404	293
		$35,5 \leq i_N \leq 63$	41	20	150	426	404	268
		$i_N \geq 71$	41	15	150	426	404	268
	MR	$i_N \leq 63$	41	20	150	426	404	268
		$i_N \geq 71$	41	15	150	426	404	268
280	R	$i_N \leq 31,5$	43	20	150	426	404	293
		$35,5 \leq i_N \leq 63$	41	20	150	426	404	268
		$i_N \geq 71$	41	15	150	426	404	268
	MR	$i_N \leq 63$	41	20	150	426	404	268
		$i_N \geq 71$	41	15	150	426	404	268
320 321 360	R	$i_N \leq 31,5$	55	32	220	554	500	365
		$35,5 \leq i_N \leq 63$	46	25	185	554	500	333
		$i_N \geq 71$	46	20	185	554	500	333
	MR	$i_N \leq 28$	55	32	220	554	500	365
		$31,5 \leq i_N \leq 63$	46	25	185	554	500	333
		$i_N \geq 71$	46	20	185	554	500	333

1) Bolts projecting 6 mm from dimension X_1.

With double extension high speed shaft designs both extensions are **accessible** even with fan fitted: personnel safety-guards are the Buyer's responsibility (2006/42/EC).

Designs and positions are as shown below.



* Fan position is not possible for train of gears C2I.
** Not possible for MR CI sizes 140, 180, 225, 280.

Temperature of cooling air must not exceed ambient temperature.

Supplementary description when ordering by **designation**: **fan cooling**; in design with double extension high speed shaft state if pos. **1** or **2** or – only for helical gear units – **1** and **2**.
Also available independent cooling unit with heat exchanger (see h. 17 (30)); consult us, if need be.

(16) Water cooling by coil (sizes 125 ... 360)

Gear reducers and gearmotors sizes 125 ... 360, excluding ICI train of gears and mounting positions V... with groove side towards the bottom, can be supplied with copper alloy coil for water cooling.

On request, available also stainless steel coil (AISI 316) or cupro-nickel; consult us.

Cooling water specifications:

- be not too hard ⩽ 12 °F (French degrees) ;
- max temperature 20 °C;
- capacity 10 ÷ 20 dm^3/min;
- pressure 0,2 ÷ 0,4 MPa (2 ÷ 4 bar).

A smooth metallic pipe (with external diameter **d** stated on table) is sufficient for the connection.

The load loss in the coil, according to the water flow and pressure, is of 0,6 ÷ 0,8 bar for diameter Ø d16 and 0,8 ÷ 1 bar for diameter Ød 12.

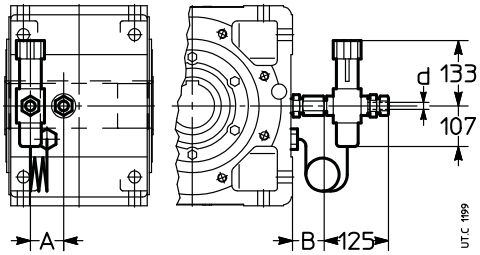
On request **thermostatic valve** which, automatically and without auxiliary supply need, permits water circulation when gear reducer oil reaches the set temperature; the valve sensor is equipped with immersion bulb. Mounting and setting, adjustable within 50 ÷ 90 °C, are Buyer's responsibility.

For ambient temperature lower than 0 °C consult us.

Supplementary description when ordering by **designation: water cooling by coil** or **water cooling by coil and thermostatic valve.**

Size	A[1] ≈	B[1] ≈	d Ø	Ms N m
125 ... 180	40	40	10	30
200 ... 280	50	40	12	30
320 ... 360	60	45	16	35

1) Values valid for B3 mounting position and U ... A design. For other mounting positions and/or designs: consult us.

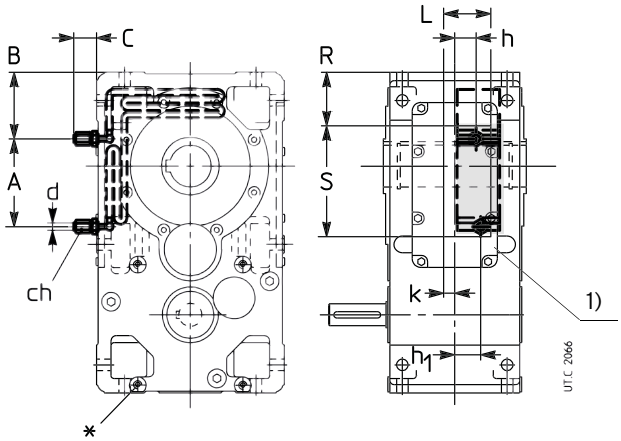


(17) Cooling by internal exchanger (sizes 140 ... 360)

The following gear reducers and gearmotors:

- sizes 140 ... 360;
- helical gear units 2I, 3I;
- bevel helical C2I, design UO2A, ...H, ...V, ...R (excluding the relevant versions sin);

can be equipped with **internal** and **extractable** heat exchanger, made of aluminium, finned, mounted on gear reducer inspection cover (facilitating the maintenance operations) for the water cooling of lubrication oil.



Internal heat exchanger, on gear reducer inspection cover

1) Free area for pipe fastening and coil fastening devices.

In case of MR gearmotors mounting positions UO2V ... UO2H the heat exchanger may not be fully extractable.

The value of thermal factor ft_{1b} according to size and mounting position is given in the table.

Size	ft_{1b}			A	B	C	ch	d	h	h_1	K	L	R	S
	B3	B6, B7	B8, V5, V6	≈	≈			Ø						
140	1,7	1,9	1,8	30	81,5	54	22	12	32	19	16	68	60	130
160	2,12	2,36	2,24	0	102	54	22	12	20	46	16	86	77	177
180	2	2,24	2,12	0	102	54	22	12	21	47	15	86	77	177
200	2,24	2,5	2,36	190	152	25	22	12	41	41	14	75	105	263
225	2,12	2,36	2,12	190	152	25	22	12	41	41	14	75	105	263
250	2,36	2,65	2,5	180,5	170,5	25	22	12	50,5	50,5	18	100	125	311
280	2,24	2,5	2,36	180,5	170,5	25	22	12	54	54	15	100	125	311
320, 321	2,12	2,36	2,24	60	255	34	30	16	66	66	2	129	177	302
360	2	2,24	2,12	60	255	34	30	16	66	66	2	129	177	302

Cooling water specifications:

- be not too hard ⩽ 12° F (French degrees);
- max temperature max 20 °C;
- capacity 10 ÷ 20 dm^3/min;
- pressure 0,2 ÷ 0,4 MPa (2 ÷ 4 bar).

A smooth metallic pipe (with external diameter **d** stated on table) is sufficient for the connection, paying attention to keep fixed the fillet using a second hexagon wrench, when fastening the pipe on the fillet.

The load loss in the internal exchanger, according to the water flow and pressure, is of 1,4 ÷ 1,8 bar for diameter Ød 16 and 1,8 ÷ 2 bar for Ød 12.

On request **thermostatic valve** which, automatically and without auxiliary supply need, permits water circulation when gear reducer oil reaches the set temperature (after technical feasibility verification, consult us); the valve sensor is equipped with immersion bulb. Mounting and setting, adjustable within 50 ÷ 90 °C, are Buyer's responsibility.

For ambient temperature lower than 0 °C consult us.

Supplementary description when ordering by **designation**: **independent cooling with internal exchanger**.

(18) Additional oversized housing hole for cooling oil pipe (sizes 160 ... 360)

In the event of oil cooling system through centralized external circuit (e.g.: paper plants) it is necessary to foresee an additional hole of proper dimensions on gear reducer housing in order to allow the lubricant flow for gravity.

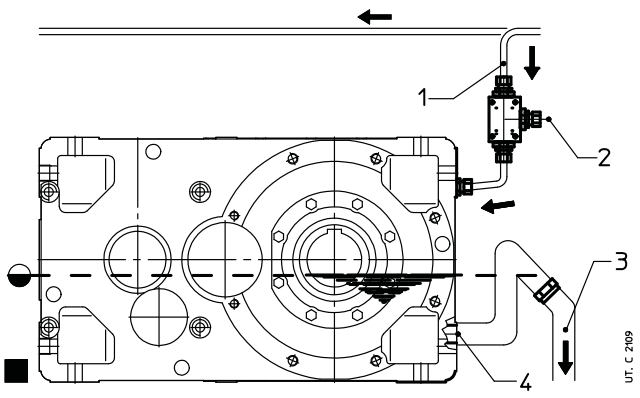
The setting of oil flow at gear reducer input must be executed by the Customer during the installation.

The heat quantity dissipated by the system depends on oil flow and on input and output oil temperature difference.

Available only for mounting positions B3 and B8 and sizes 160 ... 360.

Threaded hole **G 2"** for sizes 160 ... 225 and **G 2 1/2"** for sizes 250 ... 360.

Supplementary description when ordering by **designation**: **additional oversized housing hole**.



Legend:

1 Oil input.
2 Flow rate fine tuning value
3 Oil drain, towards centralized cooling tank
4 Additional oversized diameter housing hole

(19) Bearing lubrication pump (sizes 100 ... 360)

Piston pump (driven by a cam from the low speed shaft) or **high speed shaft lubrication device** (only R 2I size 100 ... 280 and mounting position V5), for non oil-bath bearing lubrication.

In the following table the cases are stated where for input speed included in the range n_1 = **1 400 ÷ 1 800** min^{-1} it is necessary to foresee the bearing lubrication pump or the high speed shaft lubrication device (see also at ch. 8, 10, 12, 14). For other speed values, consult us.

In general, when the maximum system reliability is required, in presence of particularly heavy duty cycles or sever ambient conditions, it is necessary to evaluate the possibility to install a bearing lubrication pump; consult us.

Supplementary description when ordering by **designation: bearings lubrication pump or high speed shaft lubrication device.**

Train of gears	Mounting position	Presence of lubrication pump or lubrication device n_1 = **1 400 ÷ 1 800** min^{-1} — Gear reducer size					
		100	**125**	**140 ... 180**	**200, 225**	**250, 280**	**320 ... 360**
R I	**V5, V6**	1)	1)	1)	1)	1)	1)
R 2I	**V5**	D[2)]	D[2)]	D[2)]	D[2)]	P	P
	V6	-	-	-	-	-	P
R 3I	**V5**	-	-	P	P	P	P
R CI	**V5, V6**	-	-	-	P	P	P
	B3, B6, B8 with	-	P	P	P	P	P
R C2I	**V5, V6**	-	-	-	-	-	P
	B3, B6 with	-	-	P	P	P	P
MR CI	**B3, B6, B8 with**	-	P	P	P	P	-
MR C2I	**B3, B6 with**	-	-	P	P	P	P

- = Bearing lubrication pump and high speed shaft lubrication device not necessary.
D = Lubrication device.
P = Lubrication pump.
1) Consult us.
2) Lubrication pump on request.

(20) Hollow low speed shaft washer (sizes 40 ... 360)

All gear reducers and gearmotors can be supplied with washer, retaining ring (excluding sizes 40 ... 63), bolt for axial fastening and protection cap (excluding input side of helical gear reducers and gearmotors sizes 40, 50 and gearmotors 3I 63), see ch. 18.

Supplementary description when ordering by **designation**: **hollow low speed shaft washer**.

(21) Hollow low speed shaft washer with locking rings or bushing (sizes 40 ... 360)

All gear reducers and gearmotors (excluding MR 3I 40 ... 63) can be supplied with washer, retaining ring (excluding sizes 40 ... 63), locking rings (sizes 40 ... 63) or locking bushing (sizes 64 ... 360), bolt for axial fastening and protection cap (excluding input side of helical gear reducers and gearmotors, sizes 40, 50), see ch. 18 «Hollow low speed shaft».

ATTENTION. In applications with **travelling lifts**, the locking bushing is not sufficient to assure a stable keying of hollow low speed shaft with machine shaft end, even if the axial fastening screw is fitted with locking adhesive. In these cases, it is necessary to have a keying with hollow shaft and **shrink disc**. This is valid, in general, also for a high frequency of starting and braking with motion reversal and when the inertia ratio J/J_0 is very high (≥ 5).

Supplementary description when ordering by **designation: hollow low speed shaft washer with locking rings or bushing.**

(22) Hollow low speed shaft protection cap (sizes 40 ... 360)

The gear reducers and gearmotors, sizes 40 ... 360, can be supplied with a protection cap of the hollow low speed shaft free area (see ch. 18 «Hollow low speed shaft»).

ATTENTION. The protection cannot be mounted:
- on input side of helical gear reducers and gearmotors sizes 40, 50 and gearmotors 3I 63;
- in presence of standard low speed shaft;
- on sizes 180 ... 360 not equipped with the necessary pre-arrangement (e.g.: assembly is not possible for «aftermarket» supplies).

The protection cannot be supplied in presence of:
- double seal on low speed shaft (sizes 63 ... 160);
- labyrinth seal and greaser;

Consult us, if need be.

Supplementary description when ordering by **designation: hollow low speed shaft with protection cap or cover.**

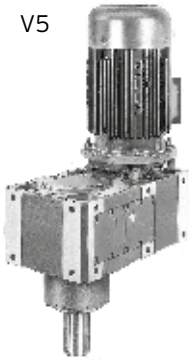
(23) Design for agitators, aerators, fans (sizes 125 ... 360)

This design has been specifically developed for aerators, agitators, and fans with high bending moment values (as a rough guide ⩾ 0,4 · M_2).

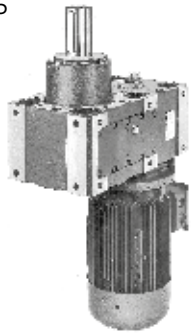
In addition to the rigid and precise **single piece** housing, «symmetrical» **universal** mounting, **patented** keying system for motor sizes 200 ... 315 which offers easier assembly and disassembly and avoids fretting corrosion, taper roller bearings, the fundamental characteristics of this **compact, economic and reliable** design are:

- extended bearing housing to improve radial and axial load ratings (taper roller bearings) and to reduce overhungs;
- plentiful low speed shaft end diameter;
- double seals on the low speed shaft with chromium plated raceway;
- space between double seals packed with grease and top hat arrangement which acts as water splash guard for aerators and as slinger for fans;
- oil lubricated bearing on low speed shaft end side: oil-bath for lower position (V5), pump lubrication for upper position (V6) (price addition); additional stainless steel drain plug to facilitate complete **oil** drainage. All this ensures **total reliability** (gear pairs and bearings) during running and **minimum maintenance**;

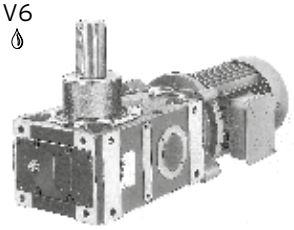
V5



V6 🛢



V6 🛢



🛢) Bearing lubrication pump.

Options:

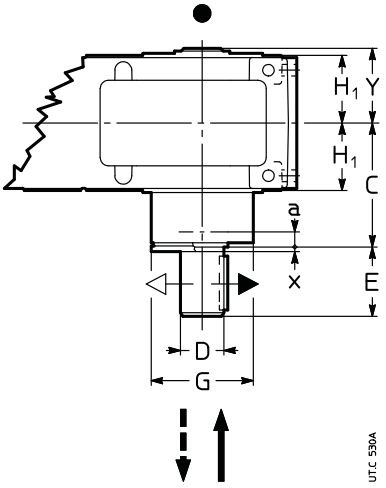
- drip proof cover for motor (standard protection IP 55);
- special paint;
- remote oil level and/or oil temperature indicator with threshold signal (sizes ⩾ 160).

Combinations **2** (direction of rotation - axial load direction) are to be preferred since they permit to withstand the highest of the two F_{a2} axial loads (see following table).

ICI and C3I trains of gears not possible; for CI and C2I, the ...sin designs are not possible.

Supplementary description when ordering by **designation**: **design for agitators**.

IMPORTANT. For selection of the gear reducer or gearmotor size and verification of radial and axial loads (and hence for the need of this design) **we always must be consulted: a detailed program of calculation** enables us to give a quick and reliable answer.



● Position of the reference groove (see ch.8, 10, 12, 14): useful for gear reducer design and mounting position identification on catalog.

Size	a 1)	C	D Ø m6	E	G Ø	x ≈ 2)	Y	Δm kg	F_{a2} ← ↓	F_{a2} ← ↑	F_{a2} → ↓	F_{a2} → ↑
125	55	220	70	105	140	3	108	12	1	2	2	1
140	62	235	70	105	159	3	122	20	1	2	2	1
160	68	270	90	130	183	4	133	28	2	1	1	2
180	72	275	90	130	226	4	148	38	2	1	1	2
200	76	327	110	165	248	4	164	55	1	2	2	1
225	76	340	110	165	248	4	177	65	1	2	2	1
250	97	402	140	200	310	5	203	105	2	1	1	2
280	97	418	140	200	310	5	218	120	2	1	1	2
320, 321	110	505	180	240	388	6	250	215	1	2	2	1
360	110	523	180	240	388	6	268	250	1	2	2	1

For dimension H_1 see ch. 8, 10, 12 and 14. Other dimensions at ch. 6 «High and low speed shaft end».
1) Position of the center point of the bearing.
2) Thickness of protection disk.

(24) Optional paint (sizes 40 ... 360)

The gear reducers and gearmotors can be supplied with optional painting cycles, according to following table.
Additional description when ordering by **designation**: **optional paint ...** (see code stated in the table; i.e.: «**optional paint 2HRAL5010**».

Application field	Features	Corrosivity class ISO 12944-2	Durability classes ISO 12944-2	Description	Average final thickness on machined parts µm	Code
Applications in aggressive environments	Good resistance to atmospheric and aggressive agents	C4	Low	Dual-compound epoxy primer Water-soluble dual-compound enamel with acrylic-polyurethan resins	150	**1HRAL5010** (blue)
			Medium	Dual-compound epoxy primer (× 2) Water-soluble dual-compound enamel with acrylic-polyurethan resins	200	**2HRAL5010** (blue)
			High	Dual-compound epoxy primer (× 4) Water-soluble dual-compound enamel with acrylic-polyurethan resins	300	**3HRAL5010** (blue)
Outdoor applications in saline environment [1]	Excellent resistance to atmospheric and aggressive agents Outdoor applications in saline environment	C 5 - M	Medium	Sand blasting Dual-compound antirust primer with zinc phosphates Dual-compound epoxy primer Water-soluble dual-compound enamel with acrylic-polyurethan resins	300	**2IRAL5010** (blue)
			High	Sand blasting Dual-compound antirust primer with zinc phosphates Recess sealing with polyurethan sealant Dual-compound epoxy primer Water-soluble dual-compound enamel with acrylic-polyurethan resins	400	**2KRAL5010** (blue)
Outdoor applications in chemically aggressive environment and high humidity industrial areas [1]	Excellent resistance to atmospheric and aggressive agents Outdoor applications in chemically aggressive environment (fertilizers, etc.)	C 5 - I	Medium	Sand blasting Dual-compound antirust primer with zinc phosphates Dual-compound epoxy primer Water-soluble dual-compound enamel with epoxy resins	300	**2LRAL5010** (blue)
			High	Sand blasting Dual-compound antirust primer with zinc phosphates Recess sealing with polyurethan sealant Dual-compound epoxy primer Water-soluble dual-compound enamel with epoxy resins	400	**2YRAL5010** (blue)

1) For sizes 40 ... 63 please consult us.
Gearmotor paint cycle does not include sandblasting.

Other colors are available on request, preferred RAL codes are as follows:

1000, 1003, 1004, 1013, 1014, 1015, 1016, 1018, 1021, 1023, 1028,

2000, 2001, 2002, 2003, 2004, 2009, 2010,

3000, 3001, 3002, 3003, 3005, 3007, 3011, 3016, 3020,

4003,

5000, 5001, 5002, 5003, 5005, 5007, 5008, 5009, 5011, 5012, 5013, 5015, 5017, 5018, 5019, 5021, 5022, 5023, 5024,

6000, 6001, 6003, 6004, 6005, 6010, 6011, 6012, 6017, 6018, 6019, 6020, 6021, 6024, 6025, 6026, 6027, 6028, 6029, 6032, 6033, 6037,

7000, 7001, 7004, 7006, 7011, 7012, 7015, 7016, 7021, 7022, 7023, 7024, 7030, 7031,7032, 7033, 7034, 7035, 7036, 7037, 7038, 7040, 7042, 7043, 7044, 7046, 7048,

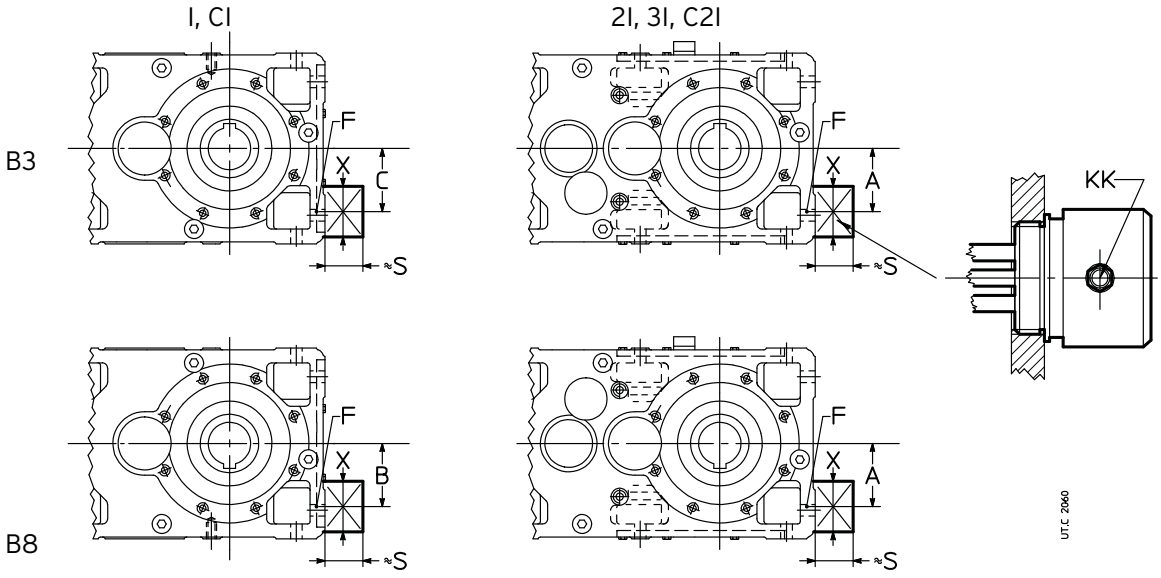
8012, 8014,

9001, 9002, 9003, 9005, 9011, 9017, 9006, 9007, 9010, 9016, 9018, 9023

(25) Heater (sizes 125 ... 360)

Oil heater for starting at low ambient temperature.
Specify the design «Oil temperature probe» together with this design.
The heater is piloted through proper control device (at customer's care e.g.: PLC or supplied by Rossi e.g. 2-threshold signalling device CT03 or three-threshold signalling device CT10) releasing when achieving the pre-set oil temperature.
IMPORTANT. The data stated in the table refer to **mounting positions B3** and **B8 only**; for other mounting positions, consult us.
The design can be not compatible with other designs (e.g. internal pump...), consult us.
Not possible for train of gears ICI and C3I.
Features:
- specific power 2W/cm$^{2;}$
- single phase supply 230 V 50-60 Hz or three-phase supply Δ 230 Y 400 V 50-60 Hz (see table);
- stainless steel resistors AISI 321;
- metallic terminal box; cable gland protection IP 65;
- horizontal mounting with oil bath lubrication;
- max oil temperature 90 °C;
- threaded brass joint;
- available also in ATEX design; dimension and power values change, please consult us.

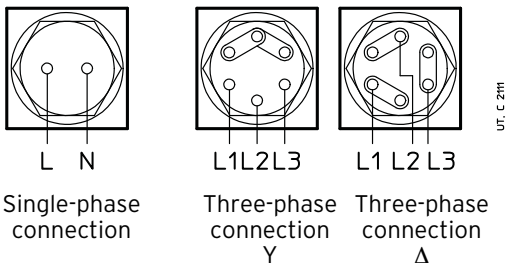
Supplementary description when ordering by **designation**: **oil heater**.



Size	A	B	C	F	L [1] ≈	S ≈	X ≈	P W	KK	Supply
125	85	85	85	G 1"	215	85	85	300	Pg 11	1~ 230 V 50-60 Hz
140	100	85	100							
160	125	114	114	G 1" 1/4	240			600		
180		100	125							
200	150	146	146	G 1" 1/2	360	90		900	Pg 13	3~ Δ230 Y400 V 50-60 Hz
225		140	155							
250	200	170	170	G 2"	310			1500		
280		170	235							
320, 321	250	235	235		410			2100		
360		222	318							

1) Maximum oil heater length.

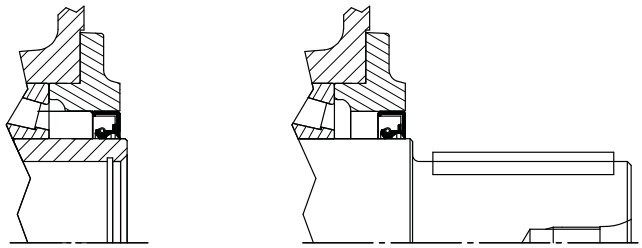
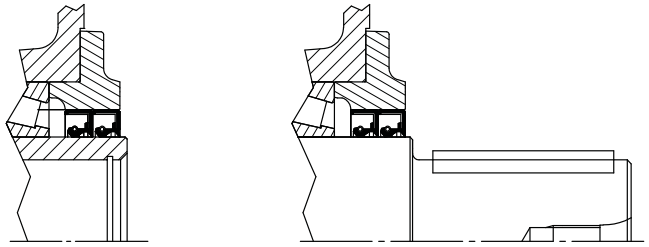
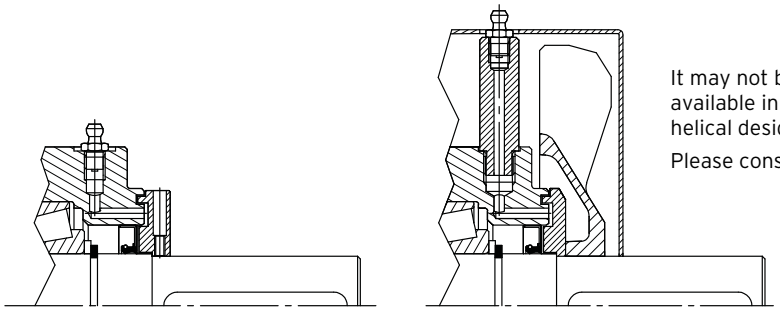
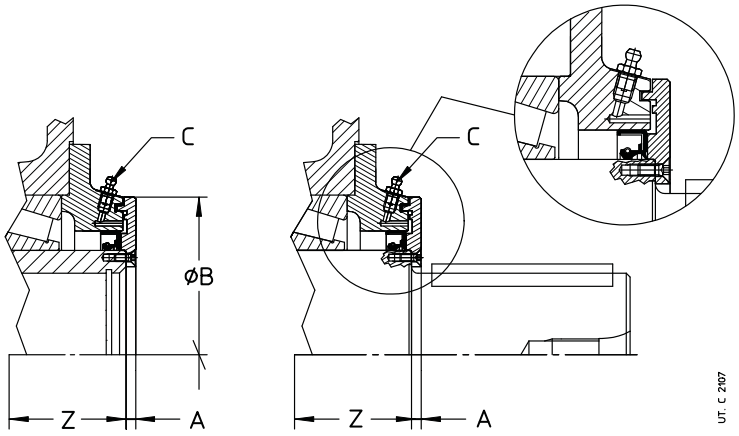
Wiring schemes:



Single-phase connection | Three-phase connection Y | Three-phase connection Δ

(26) Seals on high and low speed shafts (sizes 125 ... 360)

The seal types available (standard and on request) for sizes 125 ... 360 on low and high speed shaft, are stated in the following table; for size ⩽ 100, consult us.

Type of seal	Scheme
Standard	
High speed shaft double seal Environment is quite dirty and/ or outdoor **Low speed shaft double seal** Environment is quite dirty and/ or outdoor	 Additional description when ordering by **designation**: **high speed shaft double seal.** **low speed shaft double seal**.
Labyrinth seal and high speed shaft greaser («taconite») Environment is very dirty (e.g.: mining industry)	 It may not be always available in the bevel helical design with fan. Please consult us. Additional description when ordering by **designation**: **labyrinth seal and high speed shaft greaser.**
Labyrinth seal with low speed shaft greaser («taconite») Environment is very dirty (e.g.: mining industry) 1)	 Note: for Z dimension see ch. 8, 10, 12 and 14. Additional description when ordering by **designation**: **labyrinth seal and low speed shaft greaser**.

Size	A	B Ø	C nr.1
125	5	138	M6
140	5	155	M6
160	6	178	M8
180	6	175	M8
200	8	195	M8
225	8	195	M8
250	8	242	M8
280	9	242	M8
320, 321	9	310	M8
360	9	310	M8

1) The labyrinth disc overhangs from A dimension compared with shaft shoulder; the length of low speed shaft end is equal to E - A (for dimension E see ch. 17 (1) and (2)).

Notes.

- The compound of seal rings is acrylonitrilic as standard; on request, seal rings with fluoro compound are available (e.g.: for high temperatures, for aggressive environments or for high rotation speed, etc.); specify in the designation: **seal with fluoro compound**.
- The **double seal of high speed shaft** is generally **to be avoided** as the bigger localized heating reduces the life of seal; for gearmotors the design can be supplied only on the eventual double extension high speed shaft; for gear reducers, the design can be supplied according to the following scheme.

Size	Double seal on high speed shaft											
	R I		**R 2I**		**R 3I**		**R CI**		**R ICI**		**R C2I**	
	shaft end		shaft end		shaft end		shaft end		shaft end		shaft end	
	normal	double ext.	normal	double ext.	normal	double ext.	normal	double ext.	normal	double ext.	normal	double ext.
125	●	●	●	●	-	●	●	●	-	●	-	-
140	-	-	●	●	●	●	●	●	-	●	●	●
160	●	●	●	●	●	●	●	●	-	●	●	●
180	-	-	●	●	●	●	●	●	-	●	●	●
200, 225	-	-	●	●	●	●	●	●	-	●	●	●
250, 280	-	-	●	●	●	●	●	●	-	-	●	●
320 ... 360	●	●	●	●	-	●	●	●	-	-	●	●

● Design possible
\- Design not possible; consult us, if need be.

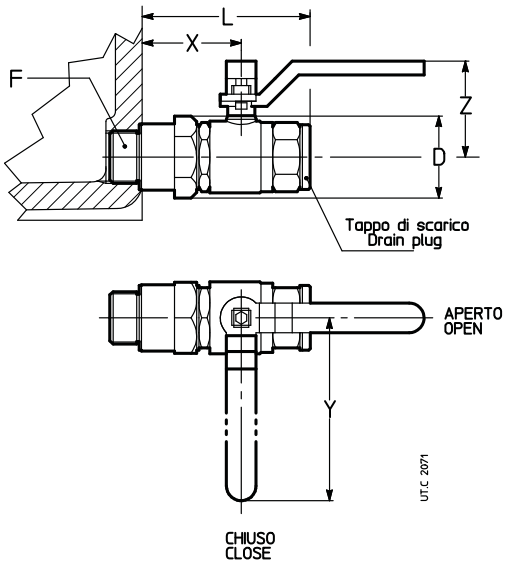
- In case of **double seal**, the external seal ring can be counter mounted (e.g. in presence of water jets); speficy in the designation: **external ring counter mounted**.
- The design **seal with labyrinth and high speed shaft greaser** can be supplied only after technical verification of feasibility by Rossi S.p.A.: consult us.
- The **hollow shaft with shrink disc** (see ch. 17 (6)) can be supplied with **labyrinth seal** only on **opposite side** to shrink disc; in this case foresee the «**hollow low speed shaft protection with shrink disc**» (see ch. 17 (7)); when this design is not available, consult us.
- For the additional description to the **designation** when ordering, see table on the previous page.

(27) Magnetic tap (sizes 125 ... 360)

In order to reduce lubricant contamination and to increase the maintenance interval and oil replacement, gear reducers and gearmotors size ⩾ 125 can be supplied with magnetic plug.
In presence of oil drain tap (28) the oil drain magnetic plug is mounted in a second drain hole on housing and not in the tap.
Additional description when ordering by **designation**: **oil drain magnetic plug**.

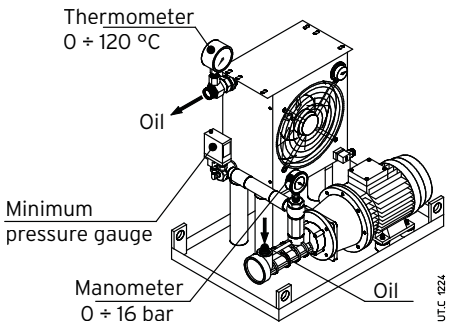
(28) Oil drain tap (sizes 125 ... 360)

The gear reducers and gearmotors size ⩾ 125 can be supplied with oil drain tap (accessory already assembled) in place of the drain plugs (see ch. 8, 10, 12, 14).
Additional description when ordering by **designation**: **oil drain tap**.

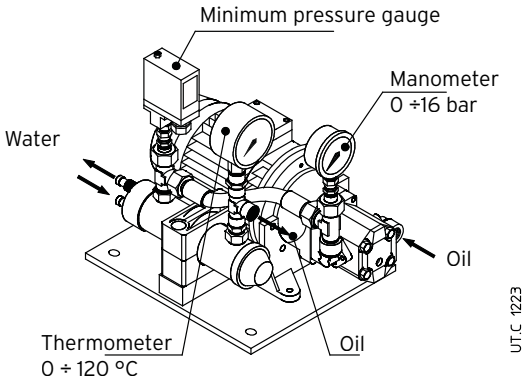


Size	F	D Ø	L ≈	X	Y	Z
125, 140	G 1/2"	31	80	50	80	40
160 ÷ 280	G 3/4"	40	90	56	112	55
320 ÷ 360	G 1"	46	106	66	115	60

(29) Independent cooling unit



Oil/Air



Oil/Water

Additional cooling device in the event that the other forced cooling systems are not sufficient for the dissipation of thermal power produced by gear reducer during operation (see ch. 4).

Including:

- **oil/air heat exchanger** (O/A; with thermostat and adjustable control knob 0 ÷ 90 °C) or **oil/water heat exchanger** (O/W),
- **motor pump**: screw pump with fluoro rubber seals (gear pump for UR O/W4 ÷ UR O/W 21); 4 pole motor B3/B5 (three-phase Δ230 Y400 V 50 Hz); motor-pump connection with coupling;
- **motor fan** (O/A) (three-phase supply Δ230 Y400 V 50 Hz or single phase supply 230 V 50, 60 Hz, see next table)
- **analogic manometer** (0 ÷ 16 bar) mounted between pump and exchanger;
- **analogic thermometer** (0 ÷ 120 °C) mounted at exchanger output;
- **low pressure switch** (with on-off switch) mounted between pump and exchanger;
- **supporting frame** with nameplate.

On request, several accessories are at disposal (supplied separately, assembled by Customer) in order to satisfy all functionality and safety needs.

- **oil temperature probe Pt100**;
- **2-threshold signalling device CT03** (necessary also the oil temperature probe Pt100) for the mounting on rail to DIN EN 50022;
- **3-threshold signalling device CT10** (necessary also the oil temperature probe Pt100) for the mounting on rail to DIN EN 50022;
- **bi-metal type thermostat**;
- **flow gauge**;
- **filter** (with optical-eletric blockage warning and one or two filters M60)

Connections realized by flexible pipes (type SAE 100 R1, maximum length 2 m) between gear reducer and cooling unit and the assembly of accessories and signalling devices are Buyer's responsibility.

For the heat exchanger power required by the independent cooling unit:

$$\boldsymbol{P}s \geqslant (\boldsymbol{P}_1 - \boldsymbol{P}t_N \cdot \boldsymbol{f}t_1 \cdot \boldsymbol{f}t_2 \cdot \boldsymbol{f}t_3 \cdot \boldsymbol{f}t_4 \cdot \boldsymbol{f}t_5) \cdot (1 - \eta) \cdot K_1$$

where:

$\boldsymbol{P}s$	nominal power of unit [kW], i.e. the power dissipable with hot oil at approx. 80 °C and cooling air at 40 °C (O/A) or cooling water at 20 °C (O/W) with stated capacity (see next table);
$\boldsymbol{P}_1$	power at gear reducer input [kW] (consider the power installed when being uncertain about the power absorbed).
$\boldsymbol{P}t_N$	nominal thermal power of gear reducer [kW] (see ch. 4);
$\boldsymbol{f}t_1$	thermal factor according to input speed (see ch. 4);
$\boldsymbol{f}t_2$	thermal factor according to ambient temperature (see ch. 4);
$\boldsymbol{f}t_3$	thermal factor according to mounting position (see ch. 4);
$\boldsymbol{f}t_4$	thermal factor according to altitude (see ch. 4); for UR O/A derate also the exchanger power: multiply $\boldsymbol{P}s$ by 0,85 (for 1 000 ÷ 2 500 m a.s.l.) or by 0,71 (for 2 500 ÷ 5 000 m a.s.l.);
$\boldsymbol{f}t_5$	thermal factor according to air speed on the housing (see ch. 22);
η	gear reducer efficiency (see ch. 6);

K_1 = 1,18 takes into account the decrease of the exchanger efficiency due to dirt on the external surface.

17 - Accessories and non-standard designs

Designation	Ps kW	Exchanger	Oil motor pump motor 3~ kW	Oil motor pump flow dm³/min	Motor fan motor kW	Motor fan flow m³/h	Oil connections intake	Oil connections delivery	Exchanger capacity dm³	Mass kg
UR O/A 5	**5**	AP 300E	1,5	30	0,12 1~	900	1" (1"1/4)[2]	1" (1"1/4)[2]	2	60
UR O/A 7	**7**	AP 300/2E	1,5	30	0,12 1~	1300			3,6	65
UR O/A 10	**10**	AP 430E	1,5	30	0,21 3~	2750			3,6	70
UR O/A 13	**13**	AP 430/2E	1,5	30	0,18 3~	2700			5,5	75
UR O/A 16	**16**	AP 580 EB	2,2	56	0,18 3~	3500			15	96
UR O/A 21	**21**	AP 680 EB	2,2	56	0,69 3~	6300			16	118
UR O/A 26	**26**	AP 730 EB	3	56	0,69 3~	7450	1" 1/4	1" 1/2 (1")[1]	16	127
UR O/A 30	**30**	AP 730 EB	3	80	0,69 3~	7450			16	127
UR O/A 40	**40**	AP 830 EB	2,2	56	0,81 3~	9500			20	140
UR O/A 46	**46**	AP 830 EB	3	80	0,81 3~	9500			20	140

Designation	Ps kW	Exchanger	Oil motor pump motor 3~ kW	Oil motor pump flow dm³/min	Water flow dm³/min	Water connection	Oil connections intake	Oil connections delivery	Exchanger capacity dm³	Mass kg
UR O/W 4	**4**	T60CB1	0,37	16	⩾ 8 (⩽ 30)	Ø 12	G 1/2"	G 1/2"	0,4	13
UR O/W 6	**6**	T60CB2	0,37	16	⩾ 10 (⩽ 30)	Ø 12	G 1/2"	G 1/2"	0,6	15
UR O/W 9	**9**	T80CB2	0,55	16	⩾ 16 (⩽ 30)	Ø 12	G 1/2"	G 1/2"	1	18
UR O/W 13	**13**	MS84P2	1,1	30	⩾ 25 (⩽ 45)	G 1/2"	G 3/4"	G 3/4"	1	31
UR O/W 21	**21**	MS134P1	1,5	30	⩾ 40 (⩽ 110)	G 1"	G 3/4"	G 3/4"	3	44
UR O/W 31	**31**	MS134P1	2,2	56	⩾ 50 (⩽ 110)	G 1"	G 1"1/4	G 1"1/4	3	55
UR O/W 50	**50**	MS134P2	3	80	⩾ 80 (⩽ 110)	G 1"	G 1"1/4	G 1"1/4	4,5	70

Starting mode and required accessories

Ref.	Gear reducer lubrication system	Gear reducer starting mode	T_{amb} °C	Required accessories	Required oil type	Description and remarks
A1	Splash lubrication	Without oil pre-heating	0 ÷ 25	Pt100 + CT10	Mineral oil or synthetic oil (preferable)	**Gear reducer starting and subsequent motor-pump starting with warm oil**. The motor-pump is managed by the **three-threshold** oil temperature control system (Pt100 + CT10). Set the three-threshold device CT10 with: - operating temperature 60 °C (starting of motor-pump); - restoring temperature 40 °C; - warning temperature 90° C.
A2	Splash lubrication	Without oil pre-heating	› 25	-	Polyalphaolefine based synthetic oil	**Simultaneous starting of gear reducer and motor-pump** Oil filter not possible[4].
B1	Forced lubrication (bearings and/or gears)	With oil pre-heating	0 ÷ 25	Pt100 + CT03 Pt100 + CT10 Oil heater	Mineral oil or synthetic oil (preferable)	**Simultaneous starting of gear reducer and motor-pump after oil pre-heating**[3]. The oil heater is managed by the **two-threshold** oil temperature control system (Pt100 + CT03). The motor-pump and the gear reducer motor are managed by the **three-threshold** oil temperature control system (Pt100 + CT10). Set the two-threshold device CT03 with: - operating temperature 50 °C (oil heater disconnection); - restoring temperature 30° C. Set the three-threshold device CT10 with: - operating temperature 40 °C (starting of motor-pump and gear reducer motor); - restoring temperature 10 °C; - warning temperature 90° C.
B2	Forced lubrication (bearings and/or gears)	Without oil pre-heating	› 25	-	Polyalphaolefine based synthetic oil	**Simultaneous starting of gear reducer and motor-pump**[3] Oil filter not possible[4].

1) Connection for delivery UR O/A 16.
2) Connection for delivery in case of filter.
3) It is advisable to delay the gear reducer motor starting by at least 1 min compared to the motor pump starting.
4) The oil filter requires that cooling unit is started with oil already warm: refer to case A1 or B1.

Additional description when ordering by **designation**:
independent oil-air cooling unit UR O/A ... or **independent oil-water cooling unit UR O/W ...** , possibly integrated, when required by the application, with description: «**Forced lubrication ...**» and the statement of bearings and/or gear pairs to be lubricated. For dimensions, accessories and further technical details, see specific literature.

(30) Oil temperature probe (sizes 125 ... 360)

Remote oil temperature gauge; installation (at Buyer's responsibility) instead of an existing drain plug, or into a hole properly pre-arranged. The temperature gauge is realized with a thermo-resistor *P*t100 having following features:

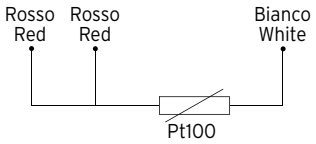
- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- operation temperature field -40 °C ÷ 200 °C;
- max current 3 mA;
- 3 wires connection according to IEC 751 (see fig. below);
- stainless steel probe AISI 316; diameter 6 mm;
- cable 1 m long with free end.

For the connection of probe to relevant signalling device CT03 or CT10 (on request, consult us) use a protected section cable ⩾ 1,5 mm² positioned separately from power cables.

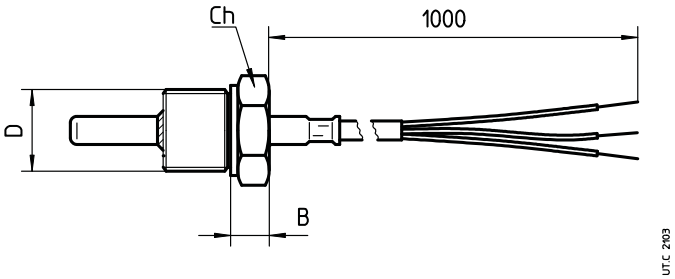
In case of gear reducer supplied with oil and optional oil temperature probe, for the assembly of the same probe.

It is necessary to position the gear reducer so that the probe seating hole is upwards; if this is not possible, it is necessary to arrange a probe already equipped with a bulb pre-assembled in the factory, whose position has to be agreed in advance with Rossi; consult us.

Supplementary description when ordering by **designation**: **oil temperature probe**.



Size	B	Ch (key)	D
125, 140	8	22	G 1/2"
160 ... 280	10	32	G 3/4"
320 ... 360	15	36	G 1"



(31) Oil temperature probe with terminal box and amperometric transducer 4 ÷ 20 mA (sizes 125 ... 360)

Remote oil temperature gauge, with terminal box and amperometric transducer; installation (at Buyer's responsibility) instead of drain plug. The temperature gauge is realized with a thermo-resistor Pt100 having following features:

- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- temperature range -40 °C ÷ 200 °C;
- 3 wires connection according to IEC 751 (see fig. below);
- stainless steel probe AISI 316; diameter 6 mm;
- amperometric transducer with output signal 4 ÷ 20 mA;
- alluminium terminal block (supplied without cable gland);
- protection IP65;
- input cables G ½''.

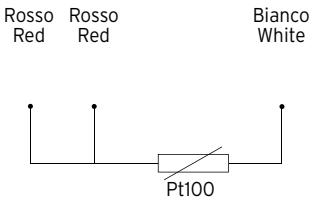
For the connection of probe to relevant signalling device use a protected section cable ⩾ 1,5 mm² positioned separately from power cables.

ATTENTION. Accessory available only for technical feasibility evaluation by Rossi S.p.A.: consult us.

In case of gear reducer supplied with oil and optional oil temperature probe, for the assembly of the same probe.

It is necessary to position the gear reducer so that the probe seating hole is upwards; if this is not possible, it is necessary to arrange a probe already equipped with a bulb pre-assembled in the factory, whose position has to be agreed in advance with Rossi; consult us.

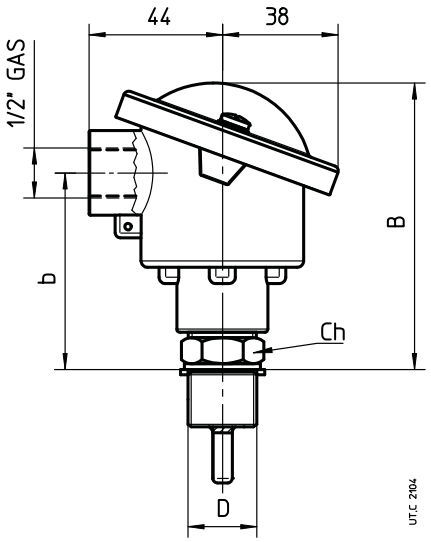
Supplementary description when ordering by **designation**: **oil temperature probe with therminal box and amperometric transducer**.



Size

(key)

	B	Ch	b	D
125, 140	90	24	60	G 1/2"
160 ... 280	92	32	62	G 3/4"
320 ... 360	97	36	67	G 1"



(32) Bearing temperature probe (sizes 125 ... 360)

Probe for the remote monitoring of bearing temperature; installation (at Buyer's responsibility) into a hole properly pre-arranged, next to a bearing to **be agreed during order phase** (for the most common cases, in order to facilitate the identification of bearing to be monitored, refer to following scheme).

The temperature gauge is realized with a thermo-resistor Pt100 having following features:

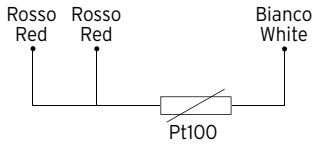
- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- temperature range -40 °C ÷ 200 °C;
- max current 40 mA;
- 3 wire connection according to IEC 751 (see fig. below);
- stainless steel AISI 316 flat probe; diameter 6 mm;
- stainless steel sliding fillet.

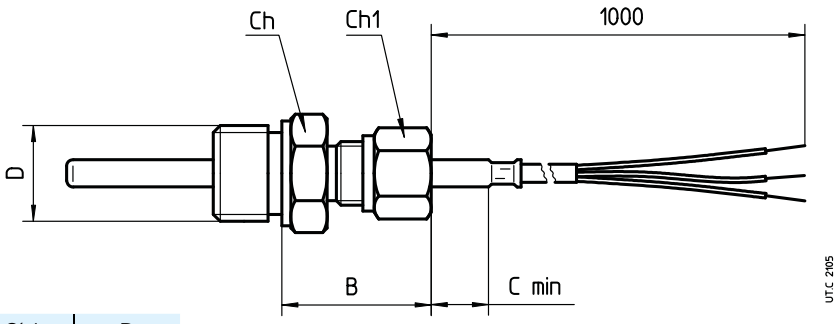
Not available for ICI and C3I train of gears.

For gearmotors, positions A1 and A2 not available.

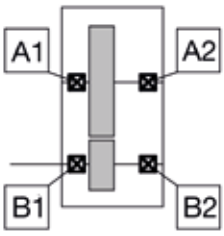
For the connection of probe to relevant signalling device CT03 or CT10 use a protected section cable ⩾ 1,5 mm² positioned separately from power cables.

Supplementary description when ordering by **designation**: **bearing temperature probe**.

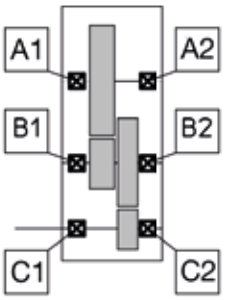




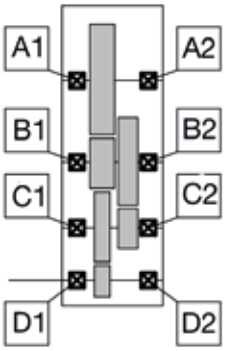
Size	C min	B	Ch (key)	Ch1 (key)	D
125 ... 360	5	32	24	17	G 1/2"



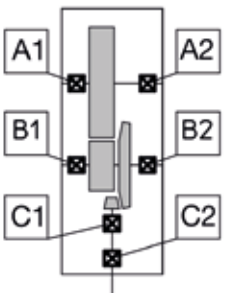
I ... UP2A



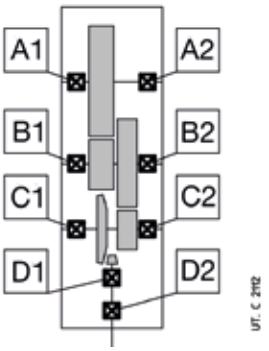
2I ... UP2A



3I ... UP2A



CI ... U02A (UO2V)



C2I ... U02A (UO2V)

(33) Bearing temperature probe with terminal box and amperometric transducer 4 ÷ 20 mA (sizes 125 ... 360)

Probe for remote bearing temperature monitoring, with terminal box and amperometric transducer; installation (at Buyer's responsibility) in a threaded hole properly pre-arranged next to a bearing **to be agreed when ordering** (for the most common cases, in order to facilitate the identification of the bearing to be monitored, it is possible to refer to the scheme at (32)).

The temperature gauge is realized with a thermo-resistor Pt100 having following features:

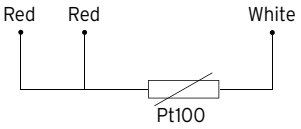
- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- temperature range -40 °C ÷ 200 °C;
- 3 wire connection according to IEC 751 (see fig. below);
- amperometric transducer with output signal 4 ÷ 20 mA;
- alluminium terminal block (supplied without cable gland);
- protection IP65;
- input cables G ½";
- stainless steel AISI 316 flat probe; diameter 6 mm;
- stainless steel **sliding** fillet.

For the connection of probe to relevant signalling device use a protected section cable ⩾ 1,5 mm² positioned separately from power cables.

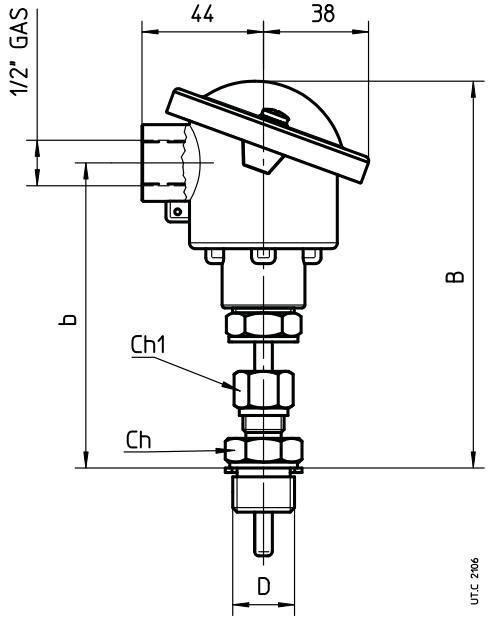
Not available for ICI and C3I train of gears.

For gearmotors, positions A1 and A2 not available.

Supplementary description when ordering by **designation**: bearing temperature probe with **amperometric transducer**.



Size	**B**	**b**	**C**h (key)	**C**h1 (key)	**D**
125 ... 360	134	104	24	17	G 1/2"

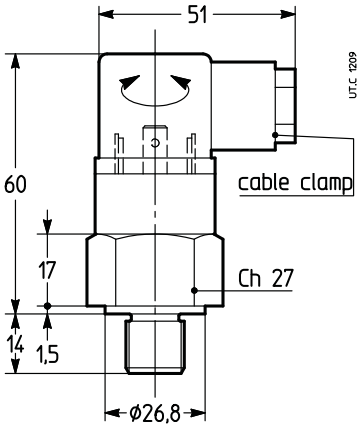


(34) Bi-metal type thermostat (sizes 100 ... 360)

Gear reducers and gearmotors sizes ⩾ 100 can be supplied with bimetal type thermostat for the control of the maximum admissible oil temperature.
Thermostat specifications:
- NC contact with maximum alternate current 10 A - 240 V d.c. (5 A - 24 V d.c.);
- G 1/2" thread connection;
- Pg 09 DIN 43650 cable gland;
- IP65 protection;
- Setting temperature 90 °C ± 5 °C (other setting temperatures are possible, on request);
- Differential temperature 15 °C.

Mounting into a threaded hole (position to be defined according to mounting position and mounting arrangement: consult us) and oil bath lubrication is Buyer's responsibility.

ATTENTION. Accessory available only for technical feasibility evaluation by Rossi S.p.A.: consult us.



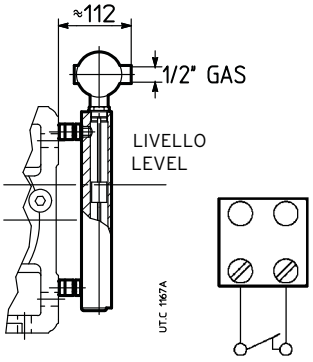
Supplementary description when ordering by **designation**: **bimetal type thermostat**.

(35) Oil level switch with float (sizes 125 ... 360)

It is a level control device with reed contacts in a supporting stem moved by the magnetic field activated by the magnets included in the float.
The float and the supporting stem are included in a hollow column of not magnetic material connected to the gear reducer housing through communicating vessels.
Connecting features:
- 2 wires connection;
- maximum voltage: 350 V
- maximum current: 1.5 A
- 1 cable input 1/2" UNI 6125 - IP65
- G 1" brass joint.

The switch is supplied ready for use; when level goes down approx 5 mm, the switch goes on and contact opens.
When filling oil in the gear reducer it is necessary to verify that device is properly calibrated. If any problems occur during this operation contact Rossi.

ATTENTION. Accessory available only for technical feasibility evaluation by Rossi S.p.A.: consult us.

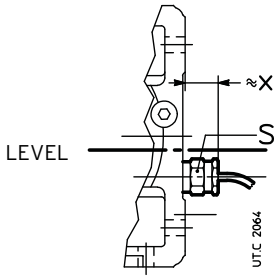


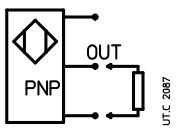
Supplementary description when ordering by **designation: oil level switch with float**

(36) Oil optical probe (sizes 125 ... 360)

Optical scanner, without mobile parts, for the constant control of oil level, inside the gear reducer (at rest).
Features:
- stainless steel probe;
- operating temperature range -40 °C + 125 °C
- d.c. supply 12 ÷ 28 V (other types on request, consult us);
- PNP output (other types on request, consult us), max 100 mA;
- male coupling G 3/8", G 1/2", G 3/4", G 1" according to gear reducer size.

Supplementary description when ordering by **designation**: **oil optical probe.**





Size	S	x
125 ... 140	27	40
160 ... 360	36	45

(37) Ex Gear reducer design ATEX II 2 GD and 3 GD (sizes 40 ... 360)

Helical (excluding model **4**) and bevel helical gear reducers and gearmotors may be supplied according to Directive ATEX in order to be used in potentially explosive atmospheres – category **2 GD** (for operation in zones 1 (gas), 21 (dust): **probable** presence of explosive atmosphere) and **3 GD** (for operation in zones 2 (gas), 22 (dust): **improbable** presence of explosive atmosphere) – with surface temperature T 135 °C (T4).

These are the main variations of the product:

– fluoro-rubber seal rings;
– metal plugs; filler plug with filter and valve;
– special name plate with ATEX mark and indication of application limits;
– external protection based on a water-soluble dual-compound polyrethane **conductive** enamel, **color grey** RAL 7040, corrosivity class C3 ISO 12944-2;
– «ATEX instructions» manual.

For category **2 GD**[1)], depending on **minimum control intervals**, also:

2 GD monthly control

– double seal rings on low speed shaft;

2 GD quarterly control (sizes 125 ... 360):

– double seal rings on low speed shaft;
– oil temperature probe;
– possible bearing temperature probes.

This solution is advisable when the gear reducer has difficult access or when a decrease in control frequency is desired.

Temperature range: -20 ÷ +40 °C (0 ÷ +40 °C for gear reducers supplied with bearing lubrication pump).

The «**ATEX instructions**» (with the additional documentation, if any) are **integral part of the supply of each gear reducer**; every indication stated in it must be carefully applied. Consult us if need be.

Attention. In the following cases ATEX design of gear reducer is incompatible with accessories and non-standard designs:

Accessory or non-standard design	Gear reducer ATEX II design	
	2 GD	**3 GD**
Hollow low speed shaft with shrink disc (6)	●	●
Optional paint according to cycles 3H..., 2I..., 2L... (24)	○	○
Heater (25)	○	○
Labyrinth seal and greaser (26)	●	●
Independent cooling unit (29)	-	-
Oil temperature probes (30) (31)	○	○
Bearing temperature probes (32) (33)	○	○
Bi-metal type thermostat (34)	-	-
Oil level switch with float (35)	2)	●
NEMA C-Face adapter (38)	●	●
Hollow low speed shaft protection (20) (22) for sizes 63 ... 160	-	-

- Not available.
● Available.
○ Available but in ATEX design suitable for gear reducer's ATEX design and for use purpose and area.
1) The presence of bearing lubrication pump requires one or more additional bearing temperature probes.
2) This accessory is available for category 2 G (zone 1) only.

Gear reducer size selection

Determine the size of gear reducer as indicated in ch. 5 considering following additional indications:

- **maximum input speed** $n_1 \leq$ **1 500 min**$^{-1}$; for other input speed, consult us.
- **service factor required** determined as per ch. 3, increased by table correction factor fs_{ATEX} (see table 1) and anyway **never lower than 1**; inpresence of a hollow shaft with shrink disc (6) verify that maximim peak torque is always lower than M_{2SD} / $f_{s\ ATEX}$ (for M_{2SD} values see ch. 17(6)).
- thermal power Pt verified as per ch. 4 according to nominal thermal power Pt_N increased by thermal factors ft_1[1] ... ft_4 and ft_{ATEX} corrective factor(see table 1).

Table 1 - Corrective factors for ATEX design of service factor required and of nominal thermal power

Category	fs_{ATEX}	ft_{ATEX}
2 GD	1,18	0,8 (0,71 for I and CI)
3 GD	1,06	0,9 (0,8 for I and CI)

1) When determining ft_1 consider a value of ft_{1a} (see page 28) **never exceeding 1**.

Supplementary description when ordering by **designation**[2]:

design ATEX II ...

... 3 GD T4	sizes 40 ... 360
... 2 GD T4 monthly control	sizes 40 ... 360
... 2 GD T4 quarterly control	sizes 125 ... 360

2) This designation, in case of gearmotor, refers to the gear reducer part only.

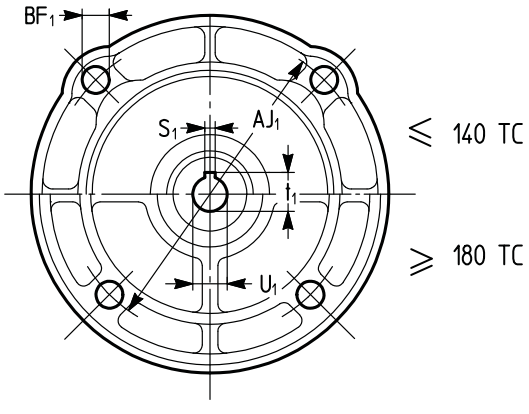
(38) NEMA C-Face adapter (IEC motor sizes 63 ... 225)

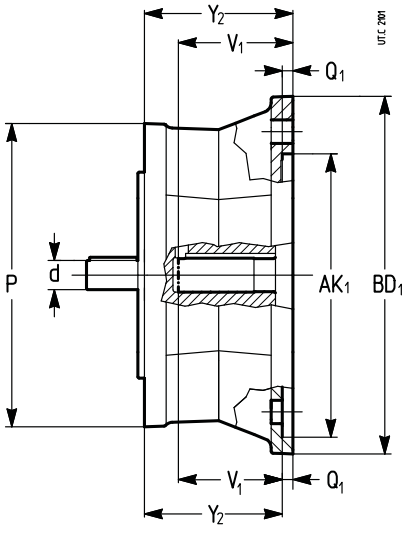
Accessory for the transformation of motor coupling dimensions, at gearmotor input, from IEC to NEMA C-Face; available for IEC-NEMA motor size combinations stated in the table; other combinations on request; consult us. Mounted on gear reducer.

For the **verification of maximum flange bending moment MR** (see ch. 6) it is necessary to add the value of Y2 [mm] to HF dimension (ch. 6) and include in the mass of motor NEMA [kg] the mass of adapter [kg].

Supplementary description when ordering by **designation**: **MPN ...** (see following page).

IEC side **NEMA C-Face** side





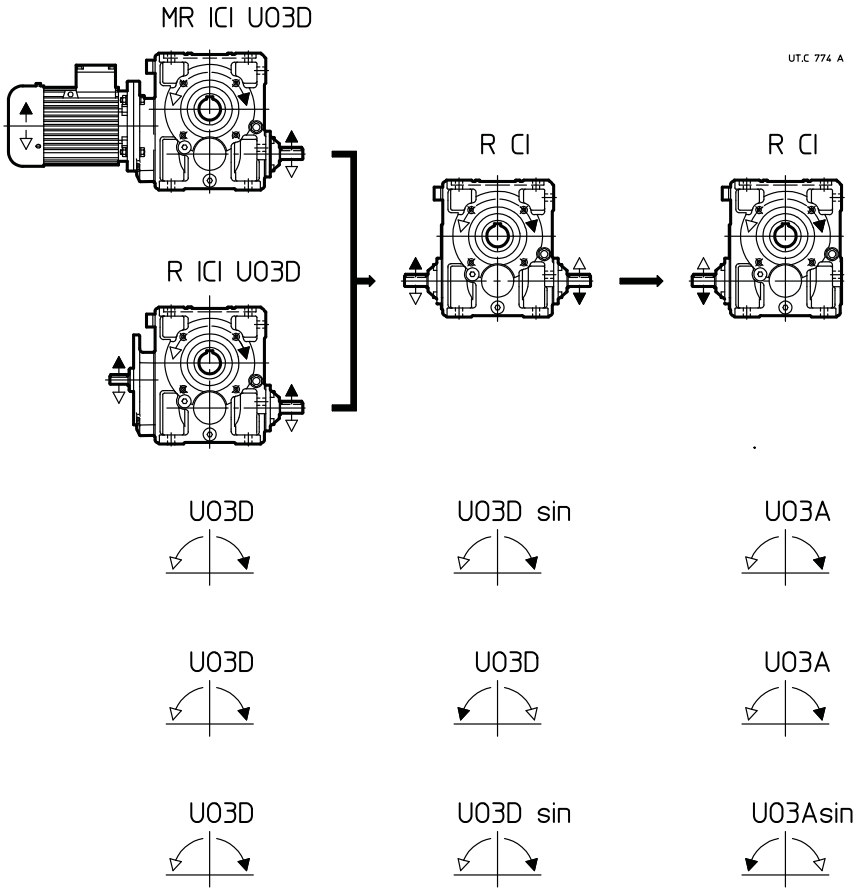
17 - Accessories and non-standard designs

lato **IEC** d × P Ø Ø	Grand. motore IEC	lato **NEMA C-Face** Grand. motore NEMA	U_1 Ø	V_1	S_1	t_1	BF_1 Ø	AJ_1 Ø	AK_1 Ø	BD_1 Ø	Q_1	Y_2	kg	**Codice designazione**
			1)		2)				3)					
			mm *in*	mm *in*	mm *in*	mm *in*	mm *in*	mm *in*	mm *in*	mm *in*	mm *in*	mm *in*	kg *lb*	
11 × 140	63B5	**56C**	15,9 *0,625*	52,3 *2,06*	4,8 *0,188*	18,0 *0,709*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	3,1 *6,9*	**MPN 63 B5 - 56 C**
14 × 140	71B5A	**56C**	15,9 *0,625*	52,3 *2,06*	4,8 *0,188*	18,0 *0,709*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	3,1 *6,9*	**MPN 71 B5A - 56 C**
14 × 160	71B5	**56C**	15,9 *0,625*	52,3 *2,06*	4,8 *0,188*	18,0 *0,709*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	3,4 *7,5*	**MPN 71 B5 - 56 C**
19 × 160	80B5A	**56C**	15,9 *0,625*	52,3 *2,06*	4,8 *0,188*	18,0 *0,709*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	3,4 *7,6*	**MPN 80 B5A - 56 C**
19 × 200	80B5	**56C**	15,9 *0,625*	52,3 *2,06*	4,8 *0,188*	18,0 *0,709*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	4,4 *9,6*	**MPN 80 B5 - 56 C**
19 × 160	80B5A	**140TC**	22,2 *0,875*	53,8 *2,12*	4,8 *0,188*	24,5 *0,964*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	3,4 *7,4*	**MPN 80 B5A - 140 TC**
24 × 200	90B5	**56C**	15,9 *0,625*	52,3 *2,06*	4,8 *0,188*	18,0 *0,709*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	4,4 *9,8*	**MPN 90 B5 - 56 C**
19 × 200	90B5R	**140TC**	22,2 *0,875*	53,8 *2,12*	4,8 *0,188*	24,5 *0,964*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	4,3 *9,4*	**MPN 90 B5R - 140 TC**
24 × 200	90B5	**140TC**	22,2 *0,875*	53,8 *2,12*	4,8 *0,188*	24,5 *0,964*	10,9 *0,43*	149,2 *5,875*	114,3 *4,5*	165,1 *6,5*	5,1 *0,2*	68,6 *2,7*	4,4 *9,6*	**MPN 90 B5 - 140 TC**
19 × 200	90B5R	**180TC**	28,6 *1,125*	66,5 *2,62*	6,4 *0,25*	31,5 *1,241*	14,2 *0,56*	184,2 *7,25*	215,9 *8,5*	228,6 *9*	5,6 *0,22*	85,1 *3,35*	7,7 *16,9*	**MPN 90 B5R - 180 TC**
24 × 200	90B5	**180TC**	28,6 *1,125*	66,5 *2,62*	6,4 *0,25*	31,5 *1,241*	14,2 *0,56*	184,2 *7,25*	215,9 *8,5*	228,6 *9*	5,6 *0,22*	85,1 *3,35*	7,8 *17,1*	**MPN 90 B5 - 180 TC**
28 × 250	100B5	**180TC**	28,6 *1,125*	66,5 *2,62*	6,4 *0,25*	31,5 *1,241*	14,2 *0,56*	184,2 *7,25*	215,9 *8,5*	228,6 *9*	5,6 *0,22*	85,1 *3,35*	9,3 *20,5*	**MPN 100 B5 - 180 TC**
24 × 200	100B5R	**210TC**	34,9 *1,375*	79,2 *3,12*	7,9 *0,312*	38,6 *1,518*	14,2 *0,56*	184,2 *7,25*	215,9 *8,5*	228,6 *9*	5,6 *0,22*	102,5 *4,04*	9,2 *20,3*	**MPN 100 B5R - 210 TC**
28 × 250	100B5	**210TC**	34,9 *1,375*	79,2 *3,12*	7,9 *0,312*	38,6 *1,518*	14,2 *0,56*	184,2 *7,25*	215,9 *8,5*	228,6 *9*	5,6 *0,22*	102,5 *4,04*	10,8 *23,9*	**MPN 100 B5 - 210 TC**
38 × 300	132B5	**210TC**	34,9 *1,374*	79,2 *3,12*	7,9 *0,311*	38,6 *1,520*	14,5 *0,57*	184,2 *7,25*	215,9 *8,5*	228,6 *9*	5,5 *0,22*	102,5 *4,04*	13,6 *29,98*	**MPN 132 B5 - 210TC**
28 × 250	132B5R	**250TC**	41,3 *1,625*	95,3 *3,75*	9,5 *0,375*	45,6 *1,796*	14,2 *0,56*	184,2 *7,25*	215,9 *8,5*	254,0 *10*	5,6 *0,22*	120,5 *4,74*	13,8 *30,4*	**MPN 132 B5R - 250 TC**
38 × 300	132B5	**250TC**	41,3 *1,626*	95,3 *3,75*	9,5 *0,374*	45,6 *1,795*	14,5 *0,57*	184,2 *7,25*	215,9 *8,5*	254,0 *10*	5,5 *0,22*	120,5 *4,74*	17,2 *37,8*	**MPN 132 B5 - 250TC**
42 × 350	160B5	**250TC**	41,3 *1,626*	95,3 *3,75*	9,5 *0,375*	45,6 *1,795*	14,5 *0,57*	184,2 *7,25*	215,9 *8,5*	254,0 *10*	5,5 *0,22*	120,5 *4,74*	19,9 *43,8*	**MPN 160 B5 - 250TC**
48 × 350	180B5	**280TC**	47,6 *1,874*	111,1 *4,37*	12,7 *0,5*	53,2 *2,094*	14,5 *0,57*	228,6 *9*	266,7 *10,5*	285,8 *11,25*	5,5 *0,22*	139,5 *5,49*	24,5 *54*	**MPN 180 B5 - 280TC**
48 × 350	180B5	**320TC**	54,0 *2,126*	127,0 *5*	12,7 *0,5*	59,7 *2,350*	18,0 *0,71*	279,4 *11*	317,5 *12,5*	355,6 *14*	5,5 *0,22*	155,5 *6,12*	37,8 *83,25*	**MPN 180 B5 - 320TC**
55 × 400	200B5	**320TC**	54,0 *2,126*	127,0 *5*	12,7 *0,5*	59,7 *2,350*	18,0 *0,71*	279,4 *11*	317,5 *12,5*	355,6 *14*	5,5 *0,22*	155,5 *6,12*	42,1 *92,8*	**MPN 200 B5 - 320TC**
60 × 450	225B5	**320TC**	54,0 *2,126*	127,0 *5*	12,7 *0,5*	59,7 *2,350*	18,0 *0,71*	279,4 *11*	317,5 *12,5*	355,6 *14*	5,5 *0,22*	155,5 *6,12*	47,0 *103,6*	**MPN 225 B5 - 320TC**

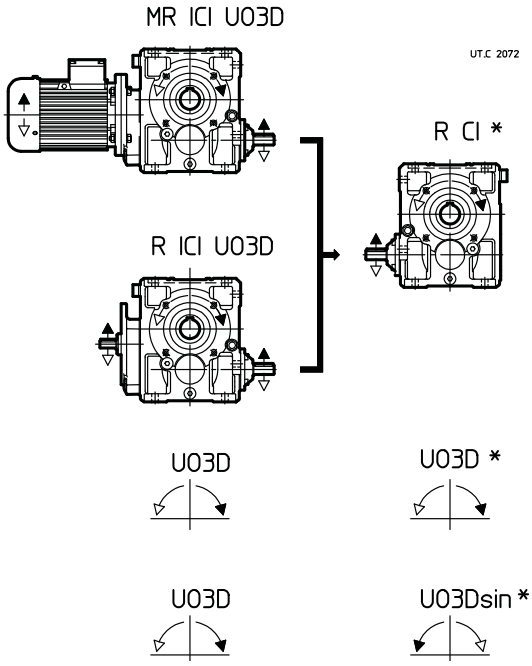
1) Tolerance 0/+0,025 mm (0/+0,0010 ***in***).
2) Tolerance 0/+0,051 mm (0/+0,0020 ***in***).
3) Tolerance -0,018/+0,025 mm (-0,0007/+0,0010 ***in***).

Miscellaneous

- Synchronous multiple drives:
  gear reducers and gearmotors with trains of gears ICI sizes 50 ... 100 can be applied for multiple drives together with same size gear reducers, all having the same transmission ratio (see also ch. 10);



On request, gear reducers R CI can be supplied also for sizes 125 ... 200. In this case, after defining the size and the initial gear reducer or gearmotor transmission ratio ICI, the gear reducers R CI must be selected with this same size and transmission ratio resulting from the one of the initial gear reducer divided by the transmission ratio of the first helical reduction stage; the performance keep the same of initial ICI gear reducer or gearmotor.

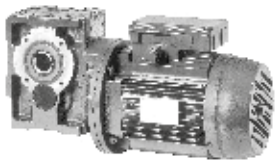


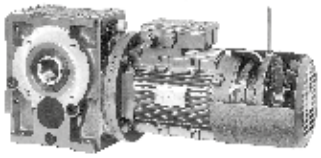
* Gear reducers R ICI ... with design UO3 ... without helical first reduction stage

- Designs (direction of rotation), dimensions and mounting positions of gear reducers R CI 125 ... 200 U03A ... UO3Esin can be deducted from the ones of the similar gear reducers R ICI (see ch. 10).
- If necessary, consult us.

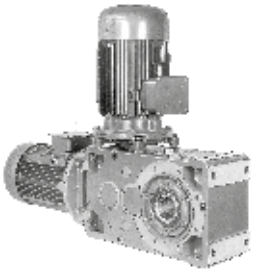
17 - Accessories and non-standard designs

- Gearmotors with:
  - **brake motor** (also single phase) with d.c. **safety and/or parking brake** (sizes 63 ... 132) with overall dimensions almost equal to the ones of standard motor and braking torque $M_f \geqslant M_N$, maximum cost-effectiveness;
  - **two speed motor** (standard, brake, brake with safety and/or parking brake, with flywheel) with 2.4, 2.6, 2.8, 2.12, 4.6, 4.8, 6.8 poles;
  - motor featuring: d.c. supply; single-phase; explosion-proof; with second shaft end; with special protection, voltage and frequency; provided with devices against overloads and overheating;
  - **motor without fan** with external cooling **by natural convection** (sizes 63 ... 112); design usually realized for textile environment;
  - **motor for roller tables** with cooling fins by natural convection, no plastic parts, electromagnetic sizing and specific insulation system for drive with inverter and nominal torque constant on all frequency range;

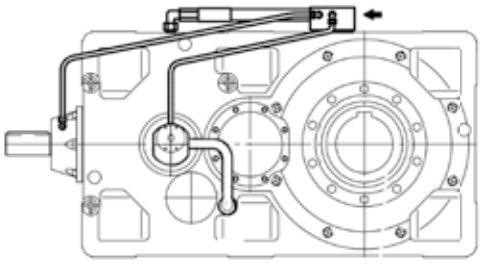




  - Design with **2**[a] **motorization** with identical speed (**same** or different direction of rotation) or **reduced** (same direction of rotation, free-wheel coupling) (see picture); for sizes 320 ... 360 the 2nd motorization is realized with bevel helical gearmotor connected with bevel wheel shaft end;



- Housing with B14 flange **on two faces** (train of gears 2I, 3I and 4I sizes 63 ... 125 model 2);
- Input centering (h8) for R CI, R C2I;
- Long model gearmotors sizes **250 ... 360**;
- Gearmotors with interposed compact clutch-brake or fluid coupling/ brake unit;
- Fitting with key, bronze bushing and shrink disc of CI, C2I trains of gears or motor size $\leqslant$ 200;
- Semi-flexible and hydrodynamic couplings;
- Design for MR 2I with **through** low speed shaft;
- **Direct driven pump for forced lubrication of bearings and/or oil cooling by heat exchanger**.



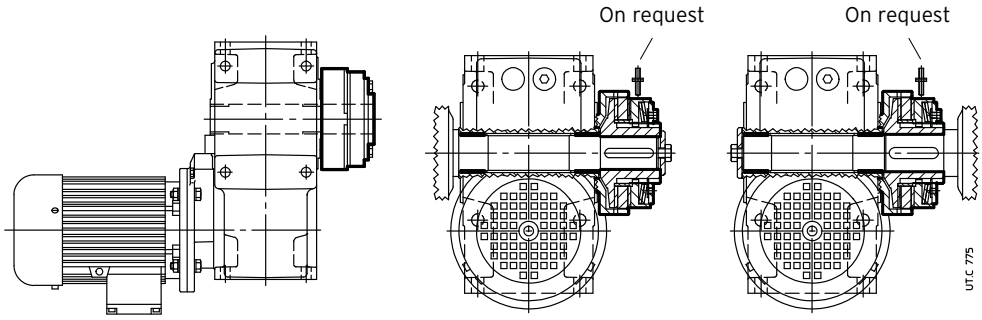
- Gear reducers (excluding R I) and gearmotors with output **mechanical torque limiter** on gear reducer sizes **50 ... 125** (excluding sizes 64, 81).Gear reducer design with mechanical friction type torque limiter (friction surfaces without asbestos), compact, with high transmissible torque – up to **1 600** N m – and top quality standards.

  It protects the drive from accidental overloads by excluding the effect of inertia loads transmitted from up-line masses and (the torque limiter being mounted on the output shaft) inertia loads transmitted from down-line masses.

17 - Accessories and non-standard designs

The system also permits **shaft mounting** with the limiter mounted **externally** (easily accessible), or in the **intermediate** position (better safety protection).

On request slide detector. For more details see **specific literature**.



External limiter mounting

Intermediate limiter mounting

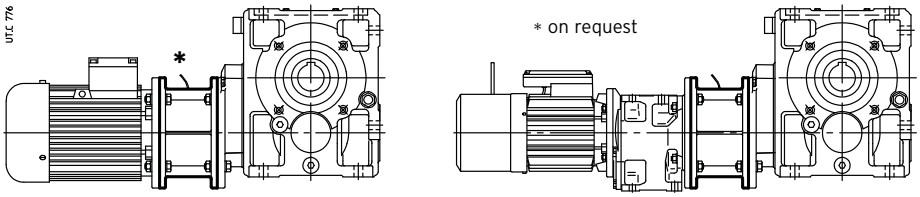
– **MLA unit, mechanical torque limiter on input shaft**, motor sizes **80 ... 200**.

Mechanical torque limiter unit to be interposed between gear reducer and B5 mounting position motor standardized to IEC (or wide belt or planetary motor-variator) or, in combined units, between the initial coaxial gear reducer and the final gear reducer sizes **63 ... 280**.

Axially ultra-compact design: excellent load bearing with life lubricated double row angular contact ball bearings (motor size < 112) or «O» disposed taper roller bearings.

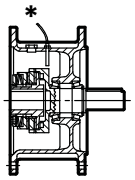
The unit protects the drive from accidental overloads by excluding inertia loads transmitted from up-line masses and down-line masses.

Module **MLA unit is friction type** (friction surfaces without asbestos). When the transmitted torque tends to exceed the setting, the drive «slips» although it remains engaged and transmits torque equal to the limiter setting value; slipping stops as soon as the load returns to normal; in the case of very brief overloads the driven machine will continue normal operation (after decelerating or stopping) without requiring reset procedures.



MLA
mounted between gear reducer and motor or motor-variator

MLA
mounted onto combined units

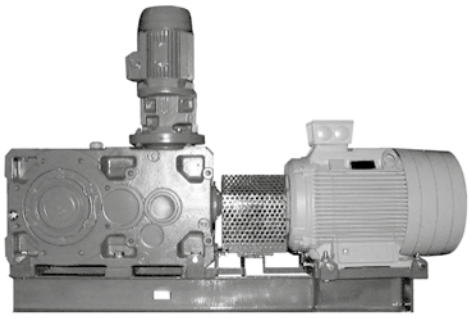


MLA
friction

* on request

Special maintenance-free wearproof mechanical seal for MR 2I, 3I size ⩾ 160, for one direction of rotation only (patented).

Driving group complete of base - motor, coupling, brake if any, second drive for shaft - mounting arrangements (see ch. 32).



18 - Installation and maintenance

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18. Installation and maintenance

Safety

IMPORTANT: gear reducers and gearmotors supplied by Rossi are **components** to be incorporated into machinery and **should not be commissioned before the machinery in which the components have been incorporated conforms to:**

- **Machinery directive 2006/42/EC and subsequent updatings; in particular, possible safety guards for shaft ends not being used for eventually accessible fan cover passages (or other) are the Buyer's responsibility;**
- **«Electromagnetic compatibility (EMC)» 2004/108/EC and subsequent updatings.**

Attention! It is recommended to pay attention to all instructions of present catalog, all standards concerning correct installation and all existing safety laws. Whenever personal injury or property damage may occur, foresee adequate supplementary protection devices against:

release or breakage of fastening screws;

- **rotation or unthreading of the gear reducer from shaft end of driven machine following to accidental breakage of the reaction arrangement;**
- **accidental breakage of shaft end of driven machine.**

If deviations from normal operation occur (temperature increase, unusual noise, etc.) immediately switch off the machine.

Installation

An incorrect installation, an improper use, the removing or disconnection of protection devices, the lack of inspections and maintenance, improper connections may cause severe personal injury or property damage. Therefore the component must be moved, installed, commissioned, handled, controlled, serviced and re-paired **exclusively by responsible qualified personnel specifically instructed** and have the experience necessary to **recognize** and prevent **dangers** connected to present products avoiding all possibile emergencies.

Gear reducers and gearmotors of present handbook are normally suitable for installations in **industrial areas**: **additional protection** measures, if necessary, must be adopted and assured by the personnel responsible for the installation.

Attention! Components in non-standard design or with special executions or with constructive variations may differ in the details from the ones described here following and may require additional information.

Attention! For the installation, use and maintenance of the **electric motor** or of the eventual motor variator and/or electric supply device (frequency converter, soft-start etc.), and/or optional electric devices (e.g.: independent cooling unit, etc.), consult the attached specific documentation. If necessary, require it.

Maintenance

When operating on gear reducer or on components connected to it the **machine** must be **at rest**: disconnect motor (including auxiliary equipments) from power supply, gear reducer from load, be sure that safety systems are on against any accidental starting and, if necessary, pre-arrange mechanical locking devices (to be removed before commissioning).

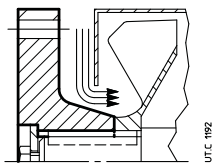
Attention! During the running the gear reducers could have **hot surfaces**; always wait that the gear reducer or the gearmotor to cool before carrying out any operations.

Please download further technical documentation from our website www.rossi.com.

Generals

Be sure that the structure on which gear reducer or gearmotor is fitted is plane, levelled and sufficiently dimensioned in order to assure fitting stability and vibration absence, keeping in mind all transmitted forces due to the masses, to the torque, to the radial and axial loads.

Position the gear reducer or gearmotor so as to allow a free passage of air for cooling both gear reducer and motor (especially at gear reducer and motor fan sides).



If there is fan on the gear reducer verify that there is sufficient space allowing an adequate circulation of cooling air also after fitting coupling protection. If a coupling protection is fitted, smooth the coupling hub, if necessary.

Avoid: any obstruction to the air-flow; heat sources near the gear reducer that might affect the temperature of cooling-air and of gear reducer for radiation; insufficient air recycle or any other factor hindering the steady dissipation of heat.

Mount the gear reducer so as not to receive vibrations.

When external loads are present use pins or locking blocks, if necessary.

When fitting gear reducer and machine and/or gear reducer and eventual flange **B5** it is recommended to use **locking adhesives** such as LOCTITE on the fastening screws (also on flange mating surfaces).

For outdoor installation or in a hostile environment protect the gear reducer or gearmotor with anticorrosion paint. Added protection may be afforded by water-repellent grease (especially around the rotary seating of seal rings and the accessible zones of shaft end).

Gear reducers and gearmotors should be protected wherever possible, and by whatever appropriate means, from solar radiation and extremes of weather; weather protection **becomes essential** when high or low speed shafts are vertically disposed, or where the motor is installed vertical with fan uppermost.

For ambient temperatures greater than 40 °C or less than 0 °C, consult us.

Before wiring-up the gearmotor, make sure that motor voltage corresponds to input voltage. If direction of rotation is not as desired, invert two phases at the terminals.

Star-delta starting should be adopted for starting on no load (or with a very small load) and/or when the necessity is for smooth starts, low starting current and limited stresses.

If overloads are imposed for long periods or if shocks or danger of jamming are envisaged, then motor-protection, electronic torque limiters, fluid couplings, safety couplings, control units or other similar devices should be fitted.

Usually protect the motor with a thermal cut-out; however, where duty cycles involve a high number of on-load starts, it is necessary to utilise thermal probes for motor protection (fitted on the wiring); thermal cut-out is unsuitable since its threshold must be set higher than the motor nominal current of rating.

Connect thermal probes, if any, to auxiliary safety circuits.

Use varistors to limit voltage peaks due to contactors.

Attention! Bearing life, good shaft and coupling running depend on alignment precision between the shafts. Carefully align the gear reducer with the motor and the driven machine (with the aid of shims if need be), interposing flexible couplings whenever possible.

Whenever a leakage of lubricant could cause heavy damages, increase the frequency of inspections and/or envisage appropriate control devices (e.g.: remote oil level gauge, lubricant for food industry, etc.).

In polluting surroundings, take suitable precautions against lubricant contamination through seal rings or other.

Gear reducer or gearmotor should not be put into service before it has been incorporated on a machine which is conform to 2006/42/EC directive.

For brake or special motors, consult us for specific information.

18. Installation and maintenance

Shaft end of driven machine

Dimensions of shaft end on which the gear reducer hollow shaft is to be keyed are those recommended in the table and shown in the figures below.

Sizes 40, 63: fitting with key (fig. a) or fitting with key and locking rings (fig. b).

Sizes 64 ... 360: fitting with key (fig. c) or fitting with key and locking bushing (fig. d); see also ch. 19 and 20; see also ch. 17.

In the case of cylindrical shaft end with only diameter D (fig. a, c), for the seat D on input side, we recommend tolerance h6, j6 (size < 225) or g6, h6 (size ⩾ 250) to facilitate mounting.

Important: the shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,18 ÷ 1,25) D.

40 ... 63

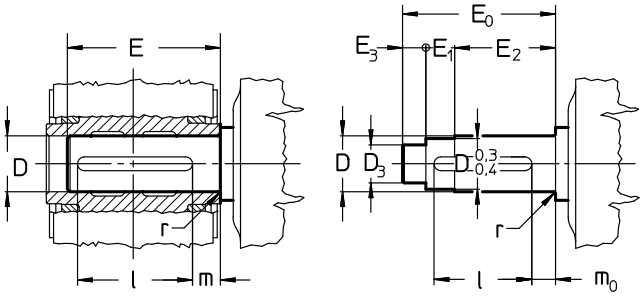


fig. a) fig. b)

64 ... 360

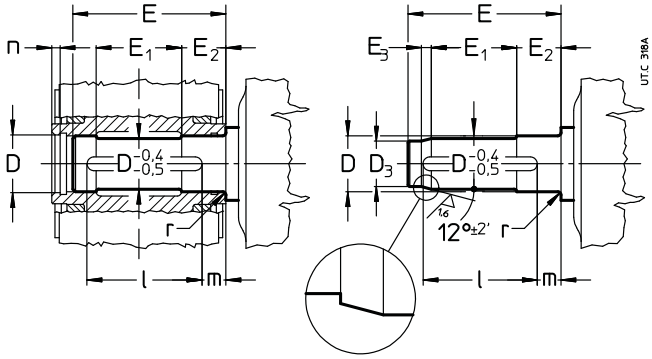


fig. c) fig. d)

Gear reducer size	D Ø	D_3 Ø H7/h6	E 2)	E_0	E_1	E_2 2)	E_3	l	m	m_0	n	r
	H7/j6, k6											
40	19	15	76,5	81	14	53	14	50	21	14	-	1,5
50	24	19	90,5	95	21	60	14	63	21,5	15	-	1,5
63	30[1)]	25	107,5	112,5	19,5	72	21	63	31,5	25	-	1,5
64	32	27	110	-	57	34	10	70	28	-	6	1,5
80	38[1)]	32	134	-	71	39,5	12	90	30	-	6	1,5
81	40	34	134	-	71	39,5	12	90	30	-	6	1,5
100	48	41	162	-	87	46,5	14	110	35	-	7	2
125	60	52	201	-	110	55	16	140	40	-	7	2
140	70[1)]	62	228	-	124	63	16	180	35	-	8	2
160	80	70	250	-	136	68	21	200	36	-	8	3
180	90	80	274	-	150	75	21	200	50	-	9	3
200	100	88	308	-	174	80	25	250	42	-	10	3
225	110	98	331	-	180	90	25	250	55	-	10	3,5
	H7/h6, j6											
250	125	110	380	-	212	100	32	320	40	-	11	4
280	140	125	410	-	220	112	32	320	60	-	12	4
320, 321	160[1)]	140	471	-	258	125	43	400	45	-	13	5
360	180	160	506	-	272	137	43	400	72	-	14	5

1) Keyway depth not to standard (see ch. 6 «Hollow low speed shaft» table, dimension t).

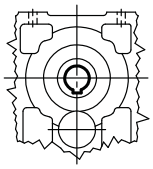
2) In presence of «Labyrinth seal and low speed shaft grease» (ch. 17 (26)), it is necessary to increase the E dimension (E_2) by A quantity stated in the table on ch. 17 (26).

Fitting of components to shaft end

It is recommended that the holes of parts keyed onto shaft ends should be machined to H7 tolerance; for high speed shaft ends having D ⩾ 55 mm, tolerance G7 is permissible provided that the load is uniform and light; for low speed shaft end, tolerance must be K7 if load is not uniform and light. Other data according to table «High and low speed shaft end» (ch. 6). Before mounting, clean carefully and lubricate mating surfaces against seizure and fretting corrosion.

Installing and removal operations should be carried out with **pullers** and **jacking screws** using the tapped hole at the shaft butt-end; for H7/m6 and K7/j6 fits it is advisable that the part to be keyed is preheated to a temperature of 80 ÷ 100 °C.

Hollow low speed shaft



In order to remove the hollow low speed shaft (this is the first operation to perform when disassembling the gear reducer) turn the shaft until the keyway is facing the intermediate shaft, as shown in the drawing alongside, and push the shaft from the reference groove side (see ch. 6).

For the shaft end of machines where the gear reducer stepped hollow shaft is to be keyed, h6, j6 or k6 tolerances are recommended according to requirements. Other details are given under «High and low speed shaft end (ch. 6)» and «Shaft end of driven machine» (ch. 18).

In order to have an easier **installing and removing** of gear reducers sizes 64 ... 360 with retaining ring groove proceed as per the drawings a, b, respectively (excluding MR 3I 100 with motor size 112 and 3I 125 with motor size 132; consult us).

For MR 3I 64 ... 81 first insert the washer with screw and the retaining ring into gear reducer hollow shaft (on motor opposite side); then mount on machine shaft end.

For the axial fastening it is possible to adopt the system as per fig. c, d. For sizes 64 ... 360, when shaft end of driven machine has no shoulder, a spacer may be located between the retaining ring and the shaft end itself (as in the lower half of the fig. d).

The use of **locking rings** (sizes 40 ... 63, fig. e), or of **locking bushing** (sizes 64 ... 360, fig. f) will permit easier and more accurate installing and removing and to eliminate backlash between key and keyway, friction system **complying** with Atex.

The locking rings or the locking bushing should be inserted after mounting (for MR 3I 64 ... 81 insert the bushing onto machine shaft end or into hollow shaft before mounting; pay attention when positioning the keyway); the shaft end of driven machine must be as prescribed at the previous page (or at ch. 17(6)) with stepped hollow low speed shaft or with shrink disc). Do not use molybdenum disulphide or equivalent lubricant for the lubrication of the parts in contact. **When tightening the bolt**, we recommend the use of a **locking adhesive** LOCTITE 601. For **vertical ceiling-type** mounting consult us.

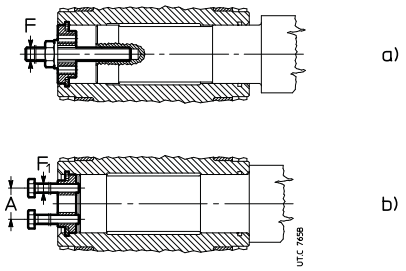
In case of axial fastening with locking rings or bushing – especially when having heavy duty cycles, with frequent reversals – verify, after some hours of running, the bolt tightening torque and eventually apply the locking adhesive again.

A **washer** for gear reducer installing, removing (excluding sizes 40 ... 63) and gear reducer axial fastening with or without **locking rings or bushing** (dimensions stated in table) and hollow low speed shaft **protection cap** can be supplied on request. Parts in contact with retaining ring, if any, must have sharp edges.

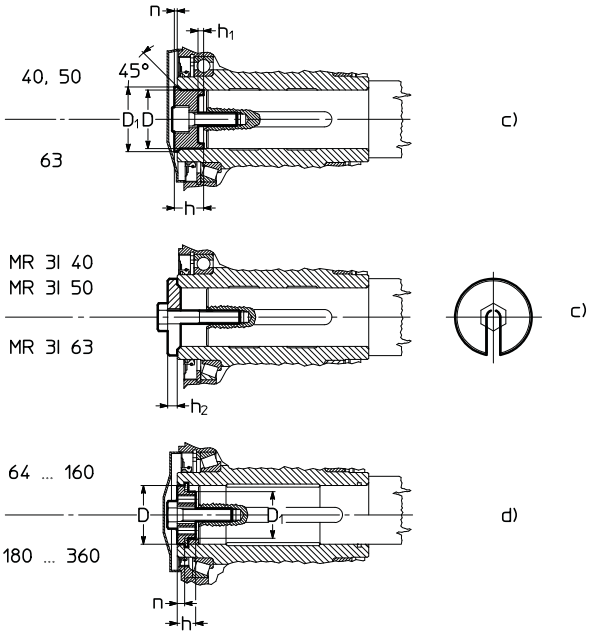
Whenever personal injury or property damage may occur, **foresee adequate supplementary protection devices** against:

- rotation or unthreading of the gear reducer from shaft end of driven machine following to accidental breakage of the reaction arrangement;
- accidental breakage of shaft end of driven machine.

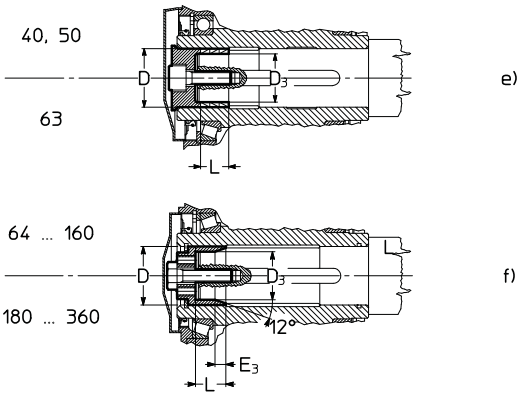
Installing a) and removing b)



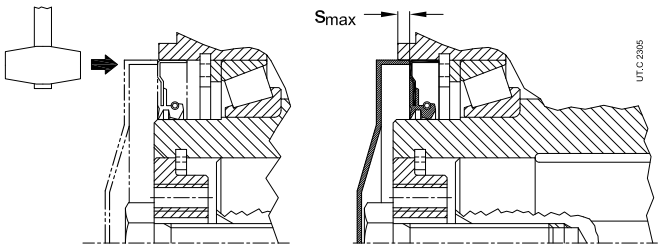
Axial fastening



Fitting with key and locking rings e), with key and locking bushing f).



Size	63	64	80	81	100	125	140	160
s_{max}	2	3	6	6	7	9	9	11



For sizes 63 ... 160, the hollow low speed shaft protection cap must be keyed into seal ring seat that, for this reason, must be pushed towards gear reducer inside for the maximum depth stated in the table.

For this operation use the protection cap as a tool, hammering it carefully along the periphery (see fig. above).
For ATEX design gear reducers, this accessory is not available.

18. Installation and maintenance

Size	A	D Ø	D_1 Ø[1]	D_3 Ø[3]	E_3 ≈	F	F_1	h	h_1	h_2	L	n	Axial fastening bolt UNI 5737-88	Axial fastening bolt *Ms*[1] N m
40	-	19	22,5	15[4]	-	M8	-	14,8	2,8	4	12,6[4]	1,1	M8×25[2]	29
50	-	24	27,5	19[4]	-	M8	-	14,8	2,8	4	12,6[4]	1,2	M8×25[2]	35
63	-	30	34	25[4]	-	M10	-	18,5	3,7	5	18,9[4]	1,4	M10×30[2]	43
64	18	32	23	27	9	M10	M6[5]	10	-	-	19	6	M10×35	43
80	18	38	27	32	11	M10	M6[5]	12	-	-	23	6	M10×35[3]	51
81	18	40	28	34	11	M10	M6	12	-	-	23	6	M10×35[3]	53
100	23	48	35	41	13	M12	M8	14	-	-	28	7	M12×45[3]	92
125	30	60	45	52	15	M14	M12	16	-	-	35	7	M14×45[3]	170
140	36	70	54	62	15	M16	M12	19	-	-	40	8	M16×50	210
160	45	80	63	70	20	M20	M12	19	-	-	45	8	M20×60	340
180	49	90	72	80	20	M20	M16	23	-	-	49	9	M20×60[3]	430
200	56	100	81	88	24	M24	M16	23	-	-	52	10	M24×70	660
225	64	110	89	98	24	M24	M16	24	-	-	60	10	M24×70[3]	830
250	72	125	102,5	110	30	M30	M20	28	-	-	67	11	M30×90	1 350
280	87	140	117	125	30	M30	M20	30	-	-	76	12	M30×90[3]	1 660
320, 321	97	160	133,5	140	41	M36	M24	33	-	-	86	13	M36×110	2 570
360	117	180	153	160	41	M36	M24	36	-	-	95	14	M36×110[3]	3 150

1) Tightening torque for locking rings or bushing.
2) UNI 5931-84. For MR 3I: M 8 × 35 and M 10 × 40 UNI 5737-88.
3) For locking bushing: M 10 × 35, M 12 × 45, M 14 × 45, class 10.9; M 20 × 65, M 24 × 80 and M 30 × 100 UNI 5737-88 class 10.9; M 36 × 120 UNI 5931-84 class 10.9.
4) Locking bushing is not possible for MR 3I.
5) It cannot be used for the disassembly of MR 3I.

Lubrication

Gear pairs are oil-bath lubricated with the exception of the first reduction stage in helical gear reducers train of gears **3I** and the first two reduction stages of gearmotors **4I** sizes ⩽ 125 in V5 mounting position, which are lubricated «for life» with grease (SHELL Gadus S5). Bearings are either oil-bathed or splashed with the exception of the top bearings which are lubricated with a pump (see ch. 17(19)) or lubricated «**for life**» with grease (with or without NILOS ring according to speed).

Sizes 40 ... 81

The gear reducers are supplied **filled with synthetic oil** (KLÜBER Klübersynth GH 6-220, MOBIL Glygoyle 220, SHELL Omala S4 WE 220), providing lubrication – assuming pollution-free surroundings – «**for life**». Ambient temperature 0 40 °C with peaks up to -20 °C and +50 °C.

Important: verify mounting position keeping in mind that if gear reducer is installed in a mounting position differing from the one stated on name plate, it could need the addition – through the proper hole – of the difference between the two lubricant quantities as shown in ch. 8, 10, 12 and 14.

Sizes 100 ... 360

The gear reducers are supplied **without oil**; before putting into service, fill to the specified level[1], with **mineral oil** with **EP** (extreme pressure) **additives**, having the ISO viscosity grade given in the table. Under normal conditions the first speed range is for train of gears **I**, the second is for trains of gears **2I** and **CI**, the third is for trains of gears **3I**, **4I**, **C2I**, **ICI** and **C3I**, while the fourth is for **combined units**.

When it is required to increase oil change interval («long life»), the ambient temperature range and/or reduce oil temperature, use PAO polyalphaolefine based **synthetic oil** with **EP** (extreme pressure) **additives**, having ISO viscosity grade as indicated in the table.

1) Lubricant quantities stated on ch. 8, 10, 12, 14 are approximate for provisioning. The exact oil quantity the gear reducer is to be filled with is definitely given by the level.

ISO viscosity grade
Mean kinematic viscosity [cSt] at 40 °C.

Speed n_2 min^{-1}	Ambient temperature[1] [°C] mineral oil 0 ÷ 20	mineral oil 10 ÷ 40	synthetic oil 0 ÷ 40
> **224**	150	150	150
224 ÷ 22,4	150	220	220
22,4 ÷ 5,6	220	320	320
< **5,6**	320	460	460

1) Peaks of 10 °C (20 °C for synthetic oil) below and 10 °C above the ambient temperature range are acceptable.

Oil types

Manufacturer	PAO synthetic oil ISO VG 150 ... 460	mineral oil ISO VG 150 ... 460
AGIP	Blasia SX	Blasia
ARAL	Degol PAS	Degol BG
BP	Enersyn EPX	Energol GR XP
CASTROL	Alphasyn EP	Alpha SP
FUCHS	Renolin Unisys CLP	Renolin CLP
KLÜBER	Klübersynth GEM4	Klüberoil GEM1
MOBIL	Mobil SHC Gear	Mobilgear 600 XP
SHELL	Omala S4 GX / S4 GXV	Omala S2 G / S2 GV
CHEVRON	Pinnacle	Meropa
TOTAL	Carter SH	Carter EP

For continuous duty, the use of synthetic oil is recommended in the following cases:
- R ICI, MR C3I 100, 125 and MR ICI 100 ... 200 mounting position B6;
- R I 100 with n_2 ⩾ 375 min^{-1};
- R CI 100 with n_2 ⩾ 150 min^{-1};
- R 2I and MR 2I 125 with i_N ⩽ 12,5, mounting position B7, n_1 ⩾ 950 min^{-1};
- MR ICI 200, motor size 225;

- gear reducers and gearmotors with size and mounting position marked with ⅄ (see ch. 8, 10, 12, 14) and bevel helical gear reducers with double extension high speed shaft.

An overall guide to oil-change interval[2] is given in the table, and assumes pollution-free surroundings. When heavy overloads are present, halve the values.

Oil temperature [°C]	Oil change interval [h]	
	mineral oil	synthetic oil
⩽ 65	8 000	25 000
65 ÷ 80	4 000	18 000
80 ÷ 95	2 000	12 500
95 ÷ 110[1]	–	9 000

1) Values admissible for not continuous duty, only.
2) Values not valid for gear reducers according to ATEX directive; for values see ATEX instructions.

Apart from the running hours:
- replace the mineral oil at least each 3 years;
- replace or regenerate the synthetic oil at least each 5 - 8 years, according to gear reducer size, running and environmental conditions.

Never mix different makes of synthetic oil; if oil-change involves switching to a type different from that used previously, then give the gear reducer a thorough clean-out.

Combined gearmotor units

Lubrication remains independent, thus data relative to each single gear reducer hold good.

Seal rings

Duration depends on several factors such as dragging speed, temperature, ambient conditions, etc.; as a rough guide it can vary from 3150 to 25000 h.

Filler plug

For gear reducer sizes 100 ... 360, before unscrewing the filler plug with valve (symbol ⊖) wait until the unit has cooled and then open with caution.

Motor assembly and disassembly

Gearmotors with motor keyed onto hollow high speed shaft of gear reducer

Helical gearmotors MR 2I, MR 3I 140 ... 360
Bevel helical gearmotors MR CI, MR C2I

- be sure that the mating surfaces are machined under accuracy rating (IEC 60072-1);
- clean surfaces to be fitted thoroughly;
- check that the fit-tolerance (push-fit) between hole and shaft end is G7/j6 for D ⩽ 28 mm, F7/k6 for D ⩾ 38 mm;
- lubricate surfaces to be fitted against fretting corrosion;
- in the event of a lowered keyway, replace the motor key with the one supplied with the gear reducer; if necessary, check the key so that between its top and the bottom of the hole keyway there is a backlash of 0,1 - 0,2 mm; in case of output shaft keyway, lock the key by pins;

In presence of **hub clamp** (helical gearmotors 2I, 3I with motor sizes ⩾ 200) proceed as follows, for the mounting:
- Turn the hub clamp until the fastening screw head is aligned with one of the access holes on gear reducers flange, after having removed the relevant closure plugs;
- do not modify the axial position of the hub clamp supplied from workshop, as this position is the excellent one in order to achieve the maximum tightening effect;
- push the motor up to shoulder;
- tighten the motor fastening screws or nuts to gear reducer motor flange;
- complete the tightening with dynamometric wrench up to the tightening torque stated in the table; during this operation pay attention not to modify the axial position of hub clamp;
- screw again the closure plugs of access holes to gear reducer flange;

Gear reducer size 2I	Gear reducer size 3I	Screw UNI 5931	*M*s N m
160 ... 225	**200 ... 280**	M12× 45 cl. 12.9	143
250... 360	**320 ... 360**	M12× 45 cl. 12.9 Ød ⩽ 75	143
		M14× 50 cl. 8.8 Ød = 80	135

For the disassembly, proceed as follows:
- acting on motor shaft rear end, whenever possible, or disconnecting the gear reducer from machine and acting on gear reducer low speed shaft (with brake motor the brake must be released), align the wrench hole with the tightening screw of hub clamp;
- loosen the tightening screw and consequently the hub clamp (taking care not to modify the axial position of hub clamp);
- unscrew the motor fastening screws of nuts to gear reducer flange;
- disassemble the motor.

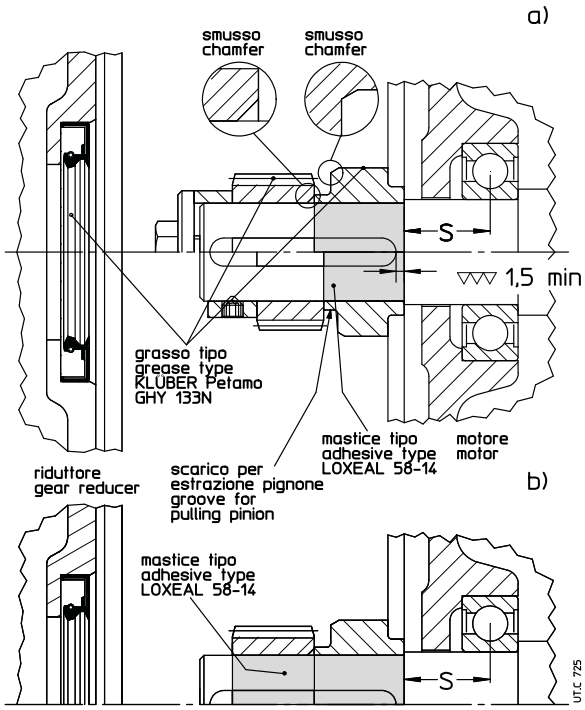
Gearmotors with helical pinion keyed directly on motor shaft end

Helical gearmotors MR 3I 40 ... 125, MR 4I
Bevel helical gearmotors MR ICI, MR C3I
Coaxial gearmotors, coupled with helical and bevel helical gear reducers (combined units).

- be sure that the mating surfaces are machined under accuracy rating (IEC 60072-1);
- clean surfaces to be fitted thoroughly;
- check that the fit-tolerance (push-fit) between hole and shaft end is K6/j6 for D ⩽ 28 mm, J6/k6 for D ⩾ 38 mm;
- in the event of a lowered keyway, replace the motor keyway with the one supplied with the gear reducer; adjust the keyway length to the motor shaft, if need be; check that between the top and the bottom of the hole keyway there is a backlash of 0,1 - 0,2 mm; in the event of output shaft keyway, lock the key by pins.
- make sure that the motors have bearing location and overhang (distance S) as shown in the table;

Motor size	Min dynamic load capacity N		Max dimension 'S' mm
	Front	Rear	
63	4 500	3 350	16
71	6 300	4 750	18
80	9 000	6 700	20
90	13 200	10 000	22,5
100	20 000	15 000	25
112	25 000	19 000	28
132	35 500	26 500	33,5
160	47 500	33 500	37,5
180	63 000	45 000	40
200	80 000	56 000	45
225	100 000	71 000	47,5

- assemble on motor shaft, as follows:
- the **spacer** pre-heated at **65 °C** sealing the motor shaft part with **locking adhesive type LOXEAL 58-14** and ensuring that between keyway and motor shaft shoulder there is a ground cylindrical section of at least 1,5 mm; pay attention **not to damage the external surface** of spacer;
- the **key** in the keyway, taking care that a brief segment of at least 0,9 times the pinion width;
- the pinion pre-heated at **80 ÷ 100 °C**;
- the **axial fastening system** where foreseen (head self-locking screw with base, spacer, or hub clamp with one or more dowels, fig. a); for the cases foreseen **without axial fastening** (fig. b), seal with **locking adhesive type LOXEAL 58-14** also the motor shaft section below the **pinion**;
- in the event of axial fastening system with hub clamp and dowels, be sure that these ones do not overhang from spacer external surface: screw the dowel and matrix the motor shaft with a tip;
- grease the pinion teeth, the sealing ring rotary seat and the seal ring (with KLÜBER Petamo GHY 133N), and assemble carefully, **paying attention not to damage the seal ring lip due to accidental shock with the pinion toothing.**



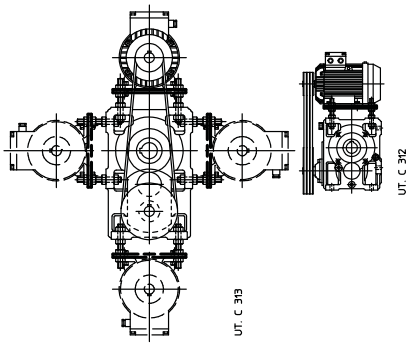
Shaft mounting arrangements

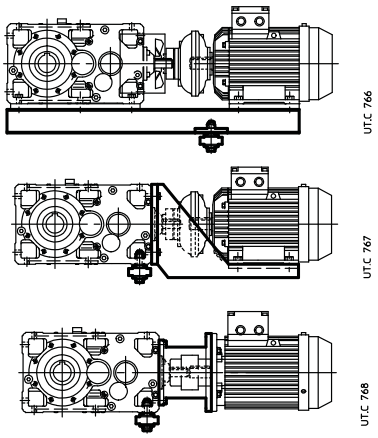
The strength and shape of the housing offer advantageous possibilities for shaft mounting (for several reaction arrangements which can be supplied, see ch. 17 «Shaft mounting arrangements»), even - for instance - gearmotor with belt drive, with hydraulic coupling, low speed shaft support, etc.

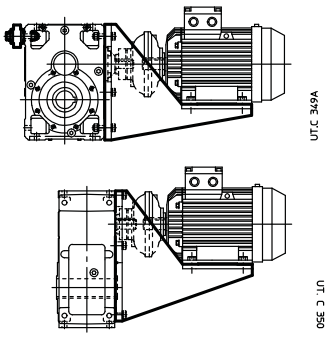
A few shaft mounting arrangements are shown here with the relative details as to selection, and installation.

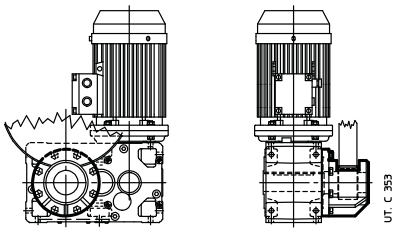
IMPORTANT: When shaft mounted, the gearmotor must be supported both axially and radially (even for mounting positions B3 ... B8) by the shaft end of driven machine, as well as anchored against rotation only, by means of a reaction having **freedom of axial movement** and sufficient clearance in its couplings to permit minor oscillations - always in evidence - without provoking dangerous overloads on the gearmotor. Lubricate with proper products the hinges and the parts subject to sliding; when tightening the screws it is recommended to apply locking adhesives type LOCTITE 601.

In case of shaft-mounting arrangement with elastic constraint, for the sizes 140 ... 360 C2I, 2I, 3I in B3 or B8 mounting position, ensure that the housing oscillation, during the running, not overtake - towards the top - the horizontal position.

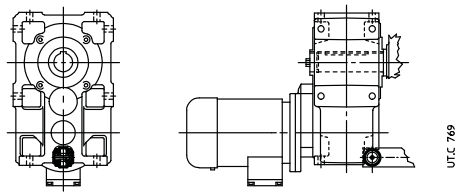




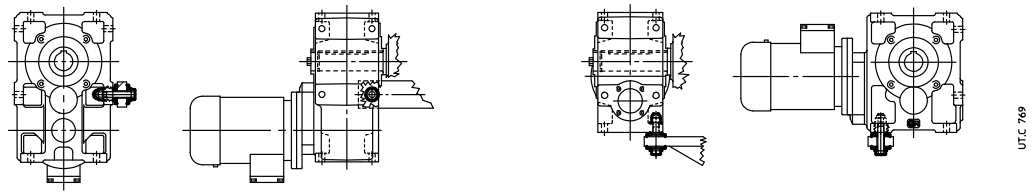




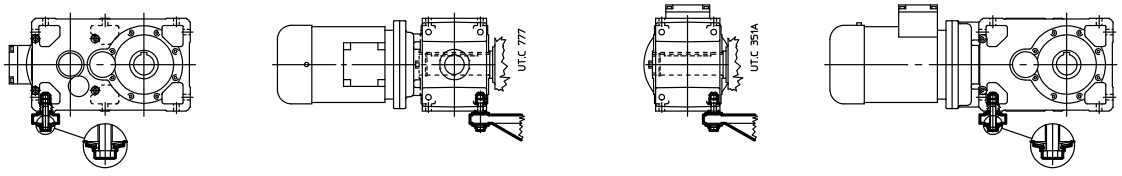
Semi-flexible and economic reaction arrangement for 2I, 3I, 4I sizes ⩽ 125 (ch. 17) using **reaction recess and disc springs**.



Semi-flexible and economic reaction arrangement for sizes ⩽ 125 (ch. 17), with **bolt using disc springs**, suitable for low torque values.

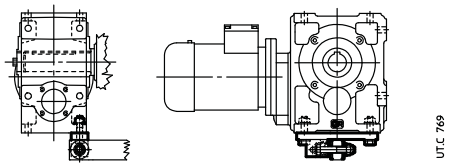


Semi-flexible and economic **reaction arrangement** for sizes ⩾ 140 (⩾ 125 for CI; ch. 17), **using disc springs**. Safety devices may be installed to prevent accidental overloads.

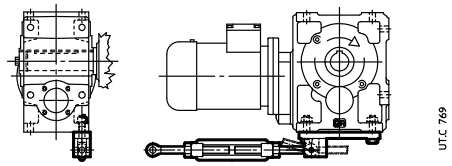


18. Installation and maintenance

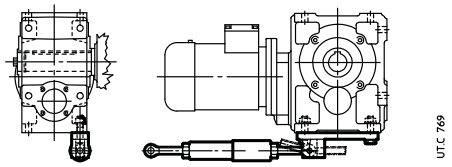
Semi-flexible reaction arrangement (ch. 17), **using disc springs and bracket**.



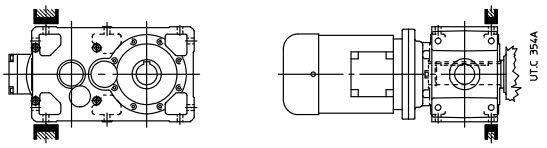
Rigid torque arm reaction arrangement for variable distance anchorage (ch. 17).
If the direction of rotation is opposite to that given in the fig. rotate the torque arm by 180°.

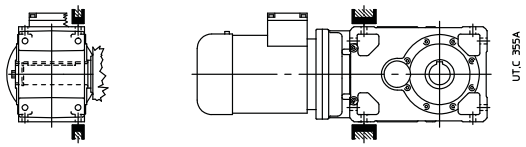


Reaction arrangement see above (ch. 17), but **flexible**; safety devices may be installed to prevent accidental overloads
The flexible torque arm may be turned through 180° regardless of direction of rotation.



Flexible reaction arrangement using **rubber buffers** (drawings are approximate, but the buffers will be positioned abutting with gear reducer housing). It is possible to install safety devices against accidental overloads.

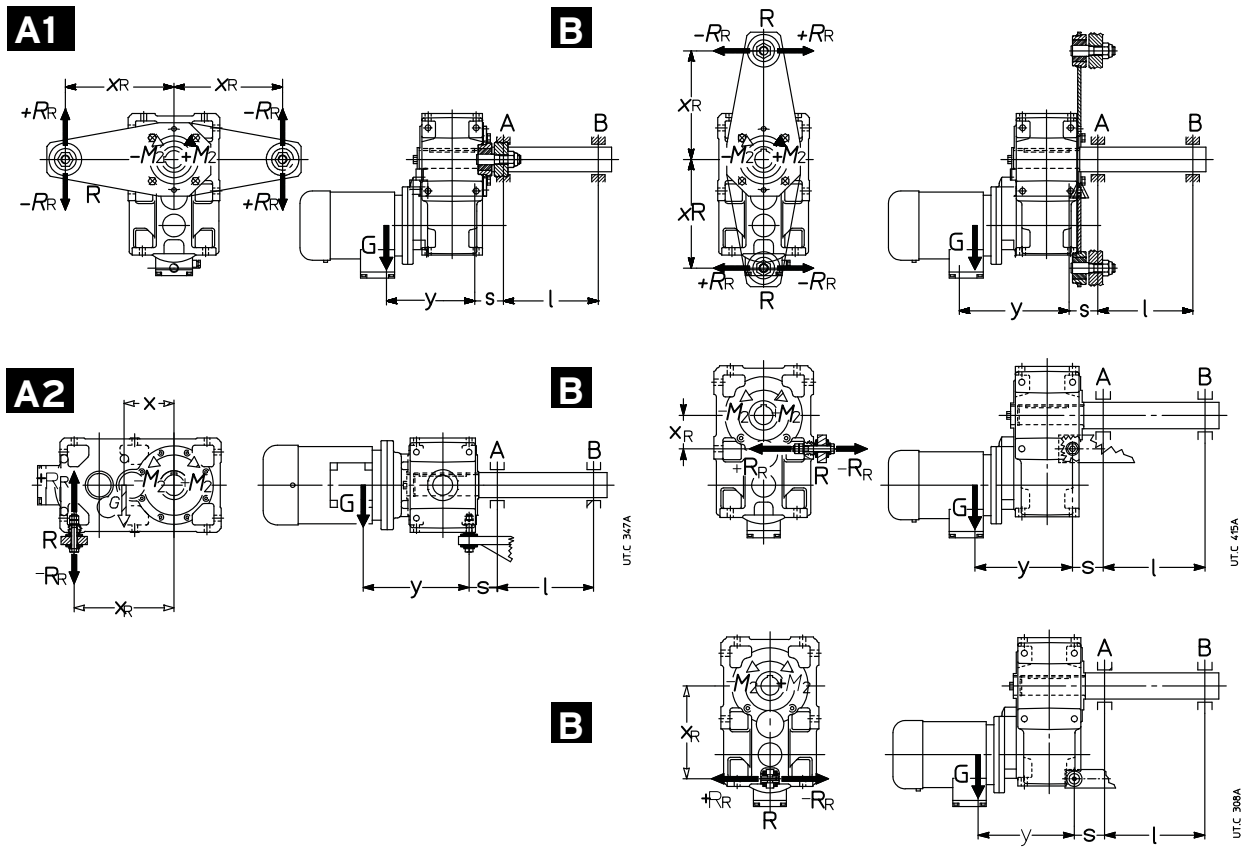




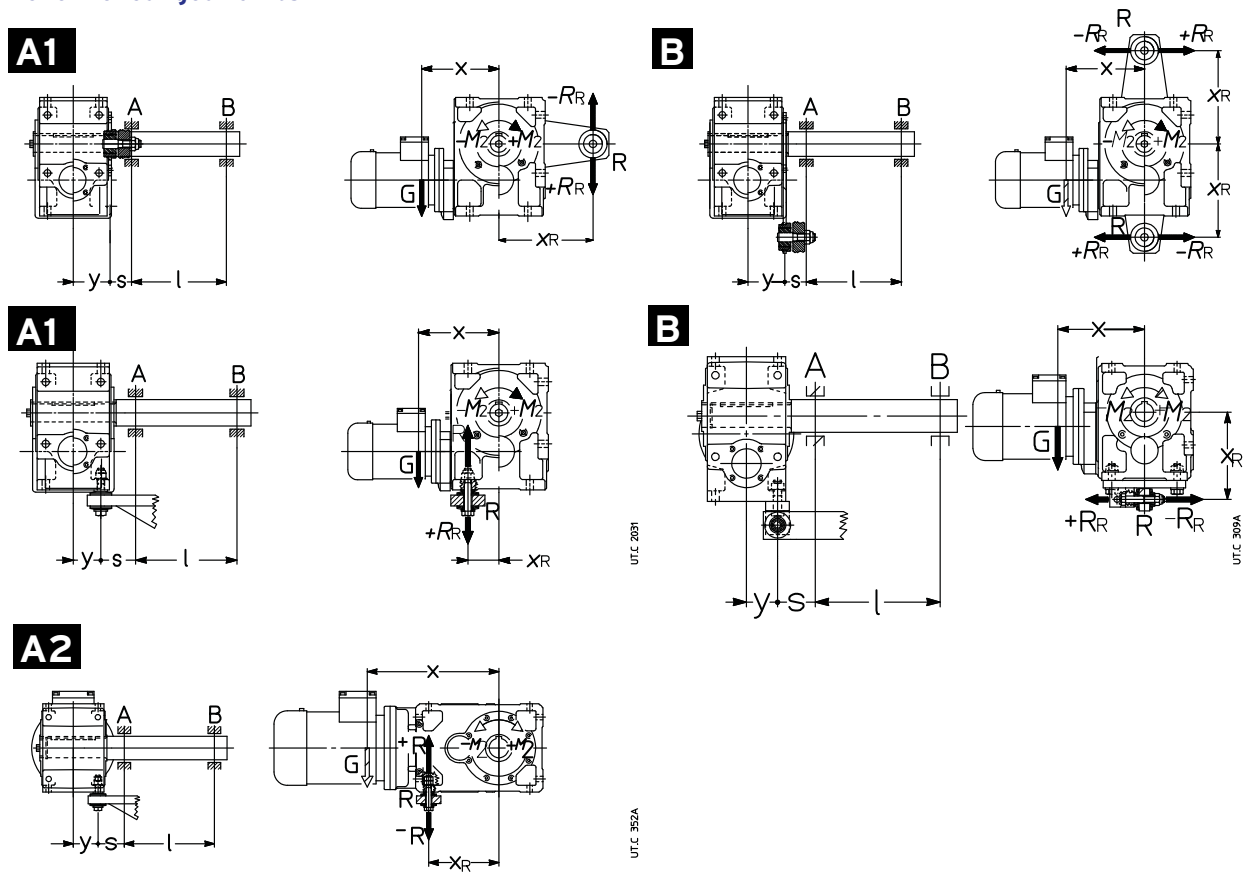
18. Installation and maintenance

For the majority of normal cases, where weight force G is parallel or orthogonal to reaction R_R as illustrated in the drawings, reactions are calculated thus (verify the worst condition) valid for long model too:

Helical gear units



Bevel helical gear units



- G [N]: weight force almost equal numerically to gearmotor mass (ch. 12 and 14) · 10;
- M_2 [N m]: output torque expressed by + or – according to the direction of rotation in the drawing;
- x [m]: for helical gearmotors dimension x = 0 (scheme A1 and B) or x = 0,67 · a (scheme A2) (ch. 12); for bevel helical gearmotors dimension x = G + 0,2 · Y (schemes A1 and B) or x = a + G + 0,2 · Y (scheme A2) (ch. 14);
- y [m]: for helical gearmotors dimension y = 0,5 · B + G + 0,2 · Y (ch. 12); for bevel helical gearmotors dimension y = 0,5 · B (ch. 14);
- x_R [m]: see ch. 12, 14, 17;
- l, s [m]: dimension s must be as short as possible.

1) reaction R_R produced by support R:

$$R_R = (1 / x_R) \cdot [G \cdot x + (\pm M_2)]$$

2) bending moment M_{fA} through the cross-section of bearing A:

A1 **A2** $M_{fA} = [G \cdot (y + s)] - [(\pm R_R) \cdot s]$ [N m]

B $M_{fA} = \sqrt{[G \cdot (y + s)]^2 + [R_R \cdot s]}$ [N m]

3) radial reaction R_A produced by bearing A:

A1 **A2** $R_A = \frac{1}{l} \{[G \cdot (y + s + l)] - [(\pm R_R) \cdot (s + l)]\}$ [N]

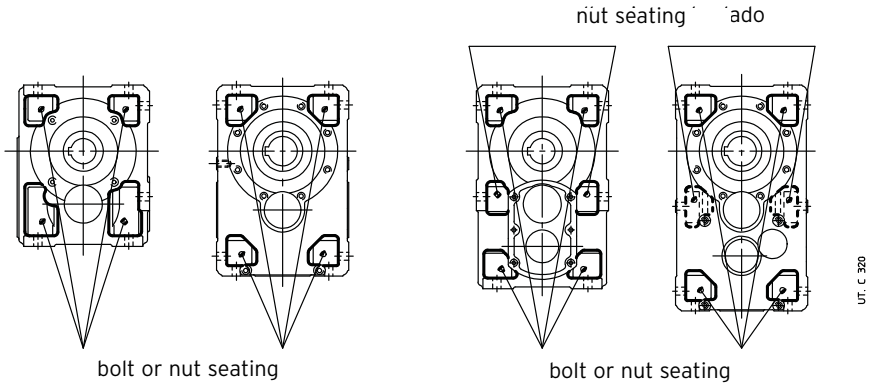
B $R_A = \frac{1}{l} \sqrt{[G \cdot (y + s + l)]^2 + [R_R \cdot (s + l)]}$ [N]

4) radial reaction R_B produced by bearing B:

$$R_B = \frac{M_{fA}}{l}$$

18. Installation and maintenance

Fastening bolt dimensions for gear reducer feet



Gear reducer size	Bolt UNI 5737-88 (l max)
40	M 6 × 22
50	M 8 × 30
63, 64	M 10 × 35
80, 81	M 12 × 40
100	M 14 × 50
125, 140	M 16 × 55
160, 180	M 20 × 70
200, 225	M 24 × 90
250, 280	M 30 × 110
320 ... 360	M 36 × 130

Tightening torque

Unless otherwise stated, usually it is sufficient to use bolts in class 8.8.
- Before tightening the bolt be sure that the eventual centering of flanges are inserted properly
- The bolts are to be diagonally tightened with the maximum tightening torque.

Before tightening, carefully degrease the bolts; for strong vibrations, heavy duties, frequent motion reversals, apply a thread-braking seal Loxeal 23-18 or equivalent.

Table of tightening torque for axial fastening bolts (locking rings or bushing) and shrink disc[1)]

Gear reducer size	**40**	**50**	**63**	**64**	**80**	**81**	**100**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**320, 321**	**360**
Axial fastening bolts UNI 5737-88 cl. 8.8	M8[2)]	M8[2)]	M10[2)]	M10	M10[3)]	M10[3)]	M12[3)]	M14[3)]	M16	M20	M20[3)]	M24	M24[3)]	M30	M30[3)]	M36	M36[4)]
Ms [N m] for rings or bushing	29	35	43	43	51	53	92	170	210	340	430	660	830	1350	1660	2570	3150
Shrink disc bolts UNI 5737-88 class 10.9	M5	M5	M6	M6	M6	M6	M8	M8	M8	M10	M10	M12	M12	M16	M16	M16	M16
Ms [N m] for shrink disc	4	4	12	12	12	12	30	30	30	60	60	100	100	250	250	250	250

1) The bolts of shrink disc must be gradually and uniformly tightened, with continuous sequence (not diagonally!) and in several phases up to the reaching of maximum tightening torque stated on table.
2) UNI 5931-84 cl. 8.8 (excluding MR 3I).
3) UNI 5737-88 cl. 10.9.
4) UNI 5931-84 cl. 10.9.

Table of tightening torque for fastening bolts (feet, flange)

Screw	***M***s [N m] UNI 5737-88, UNI 5931-84		
	cl. 8.8	cl. 10.9	cl. 12.9
M4	2,9	4	-
M5	6	8,5	10
M6	11	15	20
M8	25	35	40
M10	50	70	85
M12	85	120	145
M14	135	190	230
M16	205	290	350
M18	280	400	480
M20	400	560	680
M22	550	770	930
M24	710	1000	1200
M27	1000	1400	1700
M30	1380	1950	2350
M33	2000	2800	3400
M36	2500	3550	4200

Table of tightening torque for plugs

Gear reducer size	Thread dimension	***M***s [N m]
40, 50	G 1/4''	7
63 ... 81	M16 x 1,5	14
100 ... 140	G 1/2''	14
160 ... 280	G 3/4''	14
320 ... 360	G 1''	25

G series 400 - 401

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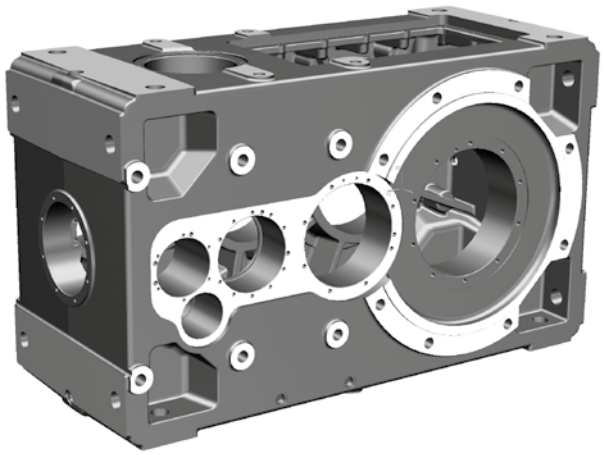
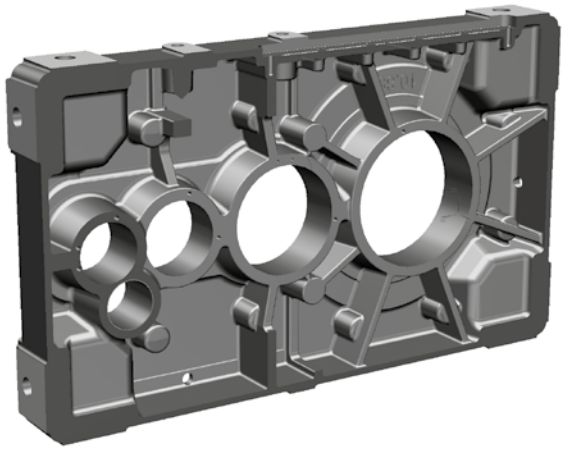
Universal mounting: suitable for horizontal or vertical mounting
Rigid and precise single-piece nodular cast iron housing; high oil capacity
Hollow low speed shaft as standard
Pre-arranged for motor bell housing
Pre-arranged for backstop device
Double extension high speed shaft
Single or double extension solid low speed shaft, hollow shaft with shrink disc,
Two sizes: standard (400) and strengthened (401)

Main structural features

Main specifications are:

- **universal mounting** with integral **feet** to housing on 4 faces and with **B14 flange** on 2 faces; design and strength of the housing permit interesting shaft mounting solutions, foot mounted motor (s. ch. 31) and mounting for auxiliary devices;
- gear reducer overall sized so as to permit the transmission of **high nominal and maximum torques,** and to withstand **high loads on** the high and low speed **shaft ends**;
- standard **hollow low speed shaft** in steel with keyway and retaining ring grooves for extraction; standard low speed shaft (overhanging right or left) or double extension low speed shaft (s. ch. 30);
- cylindrical high speed shaft end with key;
- **possibility of second high speed shaft extension (excluding C3I);**
- improved and upgraded modular construction both for component parts and assembled product;
- standardized dimensions and compliance with standards;
- **nodular cast iron single-piece** housing (400-15 UNI ISO 1083); stiffening ribs and high oil capacity;
- bearings: swinging roller bearings on low and intermediate speed shafts, **coupled** taper roller bearings plus one swinging roller bearing on high speed shafts with train of gears 2I, C2I, C3I and intermediate train of gears C2I, taper roller bearing plus one cylindrical roller bearing on high speed shaft with train of gears 3I;
- oil bath lubrication; synthetic or mineral oil (ch. 31) including filler plug with **valve**, drain and level plug; sealed;
- additional bearings lubrication through proper pipelines or pump;
- natural or forced cooling (by fan, coil or independent cooling unit with heat exchanger, see ch. 30);
- paint: external coating in water-soluble dual-compound polyurethan enamel resistant to atmospheric and aggressive agents (corrosivity class C3 ISO 12944-2); suitable for further coats only with dual-compound products after degreasing and sanding; color blue RAL 5010 DIN 1843, other colors and/or painting cycles on request, see ch. 30); internal protection in synthetic paint appropriate for resistance to mineral oils or to polyalphaolefines synthetic oils;
- non-standard designs: backstop device (always prearranged), shaft mounting arrangements, one or double extension solid low speed shaft, **hollow** low speed shaft with shrink disc, special paints, etc. (ch. 30).



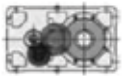
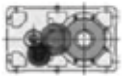
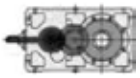
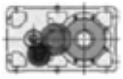
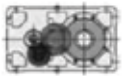
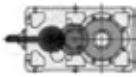
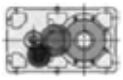
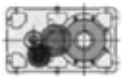
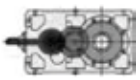
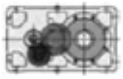
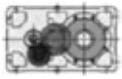
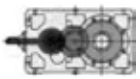
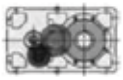
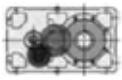
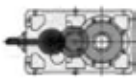
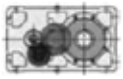
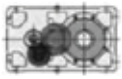
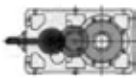
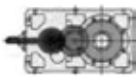
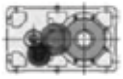
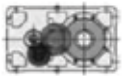
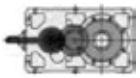
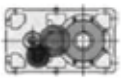
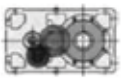
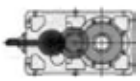
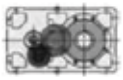
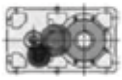
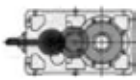
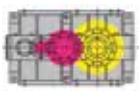
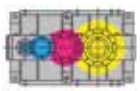
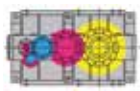
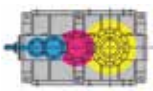
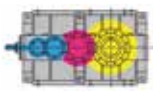
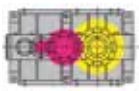
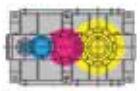
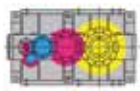
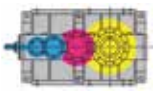
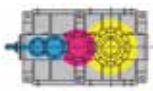


Train of gears

- 2, 3, 4 cylindrical gear pairs (helical gear units);
- 1 bevel gear pair plus 2, 3 helical gear pairs (bevel helical type);
- 1 double size (standard and strengthened)
- nominal transmission ratios to R 20 series for trains of gears 2I (i_N = 10 ... 25); 3I (i_N = 25 ... 125, excluding i_N = 112), and C2I (i_N = 20 ... 125, excluding i_N = 112); to R 10 series for 4I (i_N = 125 ... 315) and C3I (i_N = 125 ... 315);
- casehardened and hardened gear pairs in 16 CrNi4 or 20 MnCr5 (depending on size) and 18 NiCrMo5 steel, according to UNI 7846-78;
- helical toothed cylindrical gear pairs with **ground** profile;
- GLEASON spiral bevel gear pairs with **ground** profile;
- gear load capacity calculated for tooth breakage and pitting.

Specific standards

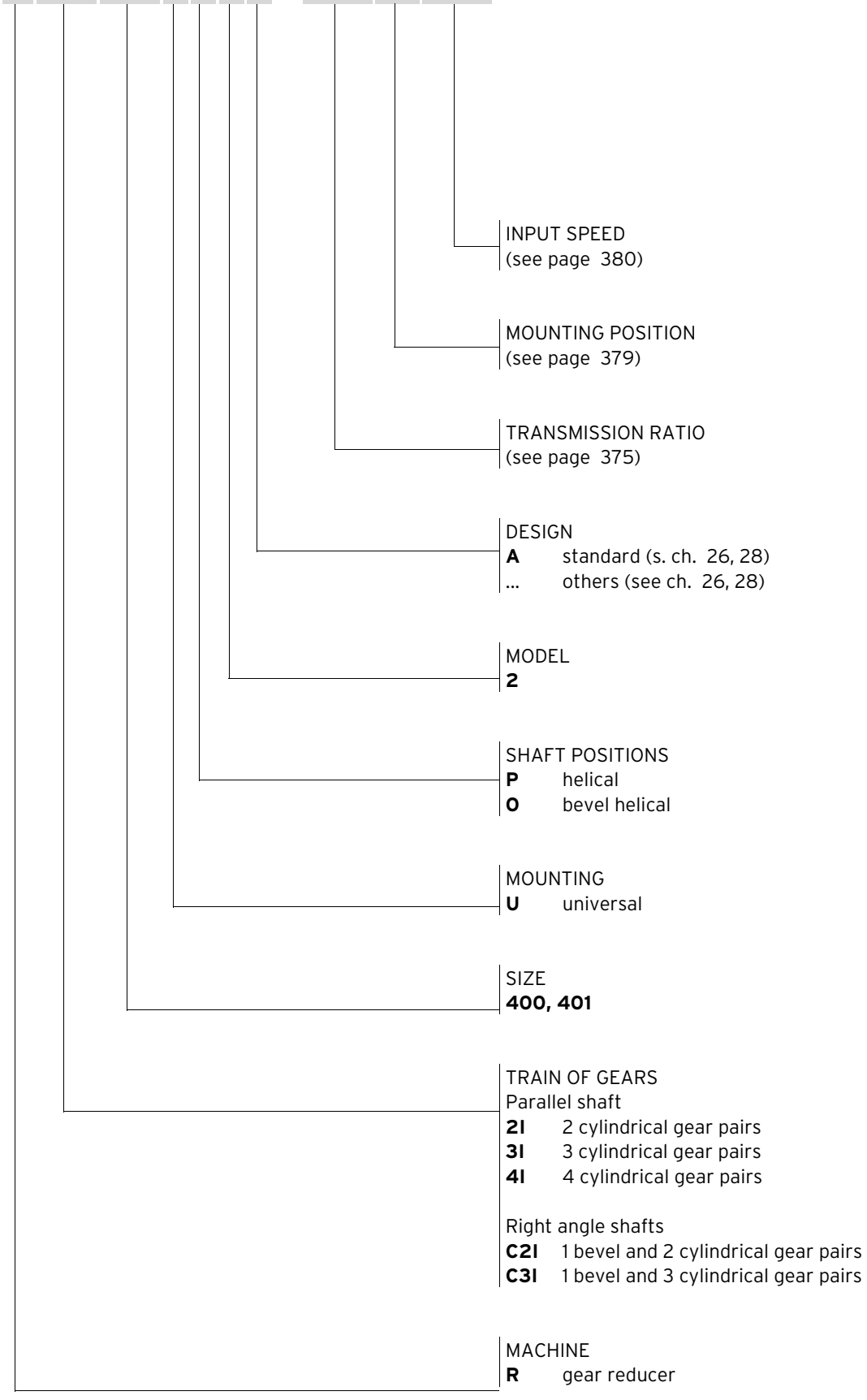
- nominal transmission ratios and principal dimensions according to UNI 2016 (DIN 323-74, NF X 01.001, BS 2045-65, ISO 3-73);
- toothing profile to UNI 6587-69 (DIN 867-86, NF E 23.011, BS 436.2-70, ISO 53-74);
- shaft heights to UNI 2946-68 (DIN 747-76, NF E 01.051, BS 5186-75, ISO 496-73);
- medium series fixing holes to UNI 1728-83 (DIN 69-71, NF E 27.040, BS 4186-67, ISO/R 273);
- cylindrical shaft ends to UNI ISO 775-88 (DIN 748, NF E 22.051, BS 4506-70, ISO/R 775) with tapped butt-end hole to UNI 9321 (DIN 332 BI. 2-70, NF E 22.056) excluding correspondence d-D;
- parallel keys UNI 6604-69 (DIN 6885 BI. 1-68, NF E 27.656 and 22.175, BS 4235.1-72, ISO/R 773-69);
- mounting positions derived from CEI 2-14 (DIN EN 60034-7, IEC 34.7);
- load capacity verified according to UNI 8862, DIN 3990, AFNOR E 23-015, ISO 6336; thermal capacity verified.

Size		I	2I	3I	4I	CI	ICI	C2I	C3I
M_{N2}	- F_{r2}								
140	5,15 kN m - 28 kN				-				-
160	7.75 N m - 35,5 kN				-				-
180	10,9 kN m - 45 kN				-				-
200	15,5 kN m - 56 kN				-				-
225	21,8 kN m - 71 kN				-		-		-
250	31,5 kN m - 90 kN				-		-		-
280	43,7 kN m - 112 kN				-		-		-
321	54,5 kN m - 140 kN				-		-		-
321	69 kN m - 140 kN				-		-		-
360	87,5 kN m - 180 kN				-		-		-
400	90 kN m - 200 kN	-				-	-		
401	103 kN m - 200 kN	-				-	-		

20 - Designation

Designation code

R C2I 400 U O 2 A - 25.4 B3

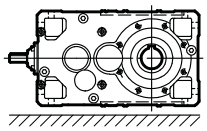


Note: For ATEX environment see details at page 447.

Gear reducer mounting position

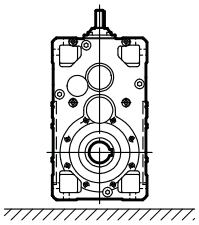
Mounting positions of gear reducers and gearmotors are stated at ch. 26, 28 (the designation of mounting position is referred to foot mounting only, even if gear reducers are in universal mounting). Here following see some designation examples of important mounting positions.

1. **Standard** mounting position **B3**; in case of no specific needs, **prefer the adoption of B3 mounting positions** as it is the most advised from a technical and economic point of view (maximum simplification of lubrication system, lower oil splash, lower gear reducer heating, stock availability).

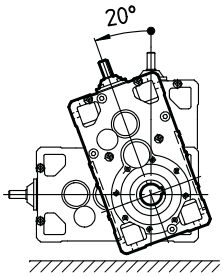


2. **Non-standard** mounting positions

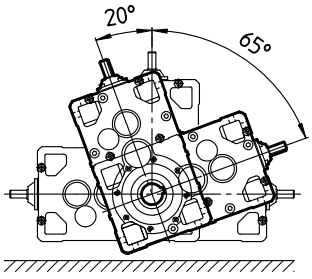
2a. Mounting position to catalog (see ch. 26, 28), **one only** and **fixed**, differing from B3; e.g.: mounting position **B6**



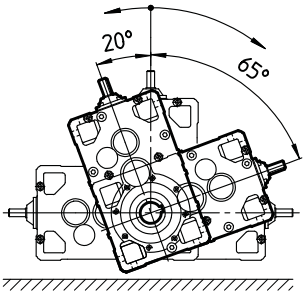
2b. **Inclined** and **fixed** mounting position ; e.g.: mounting position **B6 - 20° B3**



2c. **One only mounting** position **but defined within a predetermined angle**; e.g.: mounting position included among **B6 - 20° B3 / B6 - 65° B8**



2d. **Oscillatory mounting position** (gear reducer oscillating when running); e.g.: mounting position **B6 - 20° B3 / B6 - 65° B8 oscillatory**



Input speed

The designation is to be completed stating the input speed n_1, in the following cases:
- $n_1 > 1800$ min^{-1} or $n_1 \leqslant 355$ min^{-1};
- for cases highlighted with following symbols (▲, ,) (ch. 26, 28);
- when forced cooling is required.

Example:

R 2I 400 UP2A/17,6 **mounting position V5**, n_1 **= 900 min^{-1}**

R C2I 401 UO2A/51,3 **mounting position B3**, n_1 **= 2000 ÷ 600 min^{-1}**

Accessories and non-standard designs

In the event of a gear reducer being required in a design different from those stated above, specify it in detail (ch. 35).

21 - Service factor *fs*

21 - Service factor *fs*

Service factor ***fs*** takes into account the different running conditions (nature of load, running time, frequency of starting, speed n_2, other considerations) which must be referred to when performing calculations of gear reducer selection and verification.

The power and torques shown in the catalog are nominal values (i.e. valid for ***fs*** = 1).

The **minimum service factor required** is given by the following ratio:

$$\boldsymbol{fs} \text{ required} \geqslant \boldsymbol{fs}_1 \cdot \boldsymbol{fs}_2 \cdot \boldsymbol{fs}_3 \cdot \boldsymbol{fs}_4 \cdot \boldsymbol{fs}_5$$

where fs_1 ... fs_5 are stated in the following tables.

Service factor $\boldsymbol{fs}_1$ based on **nature of load** and **running time**

Nature of load[1] of the driven machine		$\boldsymbol{fs}_1$ Running time [h/d] ⩽				
Ref,	Description	**2**	**4**	**8**	**16**	**24**
a	Uniform	1	1	1	1,18	1,32
b	**Moderate overloads** (1,6 times the normal load)	1,12	1,18	1,25	1,5	1,7
c	**Heavy overloads** (2,5 times the normal load)	1,4	1,5	1,7	2	2,24

Service factor $\boldsymbol{fs}_2$ based on **nature of load** and of **frequency of starting**

Nature of load[1] of the driven machine		$\boldsymbol{fs}_2$ Frequency of starting ***z*** [starts/h]					
Ref.	Description	**1**	**2**	**4**	**8**	**16**	**32**
a	Uniform	1	1,06	1,12	1,18	1,25	1,5
b	**Moderate overloads** (1,6 times the normal load)	1	1	1,06	1,12	1,18	1,4
c	**Heavy overloads** (2,5 times the normal load)	1	1	1	1,06	1,12	1,32

Service factor $\boldsymbol{fs}_3$ based on **motor type**

Motor type Description		$\boldsymbol{fs}_3$
Electric, turbine		1
Electric three-phase brake motor		1,06[4]
Internal combustion	multi-cylinder	1,25
	single-cylinder	1,5

Service factor $\boldsymbol{fs}_4$ based on **reliability level**

Reliability level[5]	$\boldsymbol{fs}_4$
Standard	1
Average	1,25
High	1,4

Service factor $\boldsymbol{fs}_5$ based on **output angular speed** $\boldsymbol{n}_2$

Output speed n_2 [min^{-1}]	$\boldsymbol{fs}_5$
> 560	1,32
560 ÷ 355	1,25
355 ÷ 224	1,18
224 ÷ 140	1,12
140 ÷ 90	1,06
⩽ 90	1

Details and considerations about service factor.

fs values stated above are valid for:

- maximum time on overload 15 s, on starting 3 s; if over and/or subject to heavy shock effect, consult us;
- a whole number of overload cycles (or start) **imprecisely completed** in 1, 2, 3 or 4 revolutions of low speed shaft; if **precisely**, a continuous overload should be assumed;

Motors having a starting torque not exceeding nominal values (star-delta starting, particular types of motor operating on direct current, and single-phase motors), and particular types of coupling between gear reducer and motor, and gear reducer and driven machine (flexible, centrifugal, fluid and safety couplings, clutches and belt drives) affect service factor favourably, allowing its reduction in certain heavy-duty applications; consult us if need be.

1) For indication on the type of load of the driven machine according to the application, see table on next page.

4) For Y- Δ starting, running with inverter or with «soft start» devices, fs_3 = 1.

5) Reliability degrees higher than normal are required in presence of very difficult maintenance, great importance of gear reducer in the production cycle, safety, etc.

21 - Service factor *fs*

Classification of nature of load according to application

Application	Ref. load *
Stirrers and mixers	
Liquids:	
– constant density	**a**
– varying density, solids in suspension, high viscosity	**b**
concrete mixers, mullers, flash mixers	**c**
Feeders and batchers	
rotary (roller, table, sector)	**a**
belt, screw, plate	**a, b**
reciprocating, shaker	**c**
Compressors	
centrifugal (single-stage, multi-stage)	**a**
rotary (vane, lobe, screw)	**b**
axial	**b**
reciprocating:	
- multi-cylinder	**b**
– single-cylinder	**c**
Elevators	
belt, centrifugal or gravity discharge, screw jacks, escalators	**a, b**
bucket, arm and tray elevators, paddle wheel, hoists, skips	**b**
man lifts, mobile scaffolding, passenger transport (cable cars, chair, ski, gondola lifts etc.)	**a, b**
Excavators and dredges	
cable reels, conveyors, pumps, winches (manoeuvring and utility), stackers, draining wheels	**b**
cutter head drives, cutters, excavators (bucket ladder, paddle wheel, cutter)	**c**
vehicles:	
- on rails	**b**
- crawlers	**c**
Crushers and granulators	
sugar cane, rubber, plastics	**b**
minerals, stone	**c**
Cranes, winches and travelling lifts	
travel (bridge, trolley, forks)[1]	**b**
slewing	**b**
hoist[2]	**a, b**
Food industry	
cookers (cereals and malt), mash tubs	**a**
slicers, dough mixers, meat grinders, beet slicers, centrifuges, peelers, winemaking plant, bottle/bin/cratewashers, rinsers, fillers, corkers, cappers, extruders, crate filling and emptying equipment	**b**
Paper mills	
winders, suction rolls, dryers, embossing machinery, bleachers, press rolls, coating rolls, paper rolls, beaters, and pulpers	**a**
agitators, mixers, extruders, chip feeders, calenders, felt dryers and stretchers, rag grinders, washers, thickeners	**b**
cutters, chippers, calenders (super), felt whippers, glazing machines, presses	**c**
Lumber and woodworking industries	
mechanical loaders, pallet stackers	**a, b**
conveyors for:	
– boards, chips, waste	**b**
– logs	**c**
machine tools (planing, cutting, cross-cut and re-sawing, tenoning, bevelling, moulding, sanding, sizing and scratch-brushing machinery etc.):	
– feed drive	**b**
– cutter drive	**b, c**
barkers:	
– mechanical and hydraulic	**b**
– drum	**c**
Oil industry	
paraffin filter presses, chillers	**b**
rotary drilling equipment	**c**
pumping equipment	
Textile industry	
calenders, cards, pickers, dryers, nappers, spinners, slashers, pads, soapers, washers, mangles, tenter frames, looms (Jacquard), warping machines, winders, knitting machines, dyeing machines, twisting frames, gig mills, cutters	**b**
Clay working machinery	
pug mills, extruders, rotary deslimers	**b**
brick and tile presses	**c**
Rubber and plastics industries	
extruders:	
– plastics	**b**
– rubber	**c**
mixing mills, warming mills, friction calenders, refiners, tubers and strainers, rolling mills	**b**
crackers, masticators	**c**
Wrapping and stacking machinery	
wrapping (film, cardboard), binding, strapping and labelling equipment	**a**
palletizing/depalletizing and stacking/unstacking machinery, palletizing robots	**b**
Engineering machine tools	
boring, shaping, planing, broaching, gear cutting and FMS machines, etc.:	
– main drivers (cut and feed)	**b**
auxiliary drives (tools magazine, chip conveyor, workpiece infeed)	**a**
Mechanisms	
indexing, crank and slotted link, Maltese cross, articulated parallelogram	**b**
rod and crank, cam control (cam and tappet, cam and rocker)	**c**
Metal mills	
shears:	
– trimming, cropping, facing	**b**
– for sheet/plate, ingots, billets	**c**
transverse drive rollers, draw benches, coilers, inverter, draglines, flattening rolls, bending rolls	**b**
pushers, descaling equipment, pipe welders, mill roll train drives, rolling mills, forging presses, billet croppers, power hammers, punches, impact extruders, tapping machines, straightening presses	**c**
Rollerways	**b, c**
Mills	
rotary (rod, roller, pebble, ball)	**b**
hammer, pin crusher, centrifugal, impact, rolling (ball or roller)	**c**
Pumps	
rotary (gear, screw, lobe, vane) and axial	**a, b**
centrifugal:	
– liquids, constant density	**a**
– liquids, variable density or high viscosity	**b**
proportioning	**b**
alternative:	
– single acting (⩾ 3 cylinders), double acting (⩾ 2 cylinders)	**b**
– single acting (⩽ 2 cylinders), double acting single cylinder	**c**
Rotating drums	
dryers, chillers, rotary kilns, washing machines	**b**
tumblers, cement kilns	**c**
Transport conveyors	
belts (plastic, rubber, metal) for:	
– fine grade loose material	**a**
– coarse grade loose material or discrete items	**b**
belt, apron, bucket, slat, tray, roller, screw, chain, overhead rail, assembly	**b**
drag (slat, flight, chain, Redler, etc.) ground level chain, flow accumulating	**b**
reciprocating, shaker	**c**
overhead power rail	
Sewage treatment	
biological tanks (revolving disk)	**a**
dewatering screws, collectors, rotary screens, thickeners, vacuum filters, anaerobic digestion tanks	**b**
aerators, rotary breakers	**c**
Screen and riddles	
air washing, travelling water intake	**a**
rotary (stone, gravel, cereals)	**b**
vibrating screens, riddles, jigs	**c**
Fans	
small diameter (centrifugal, axial-flow)	**a**
large diameter (mines, furnaces, etc.) cooling towers (inducted or forced draft), ducted, piston	**b**

* Nature of load reference admits of modification where precise knowledge of duty is available.
1) In the traverse movement of the bridge usually it is necessary to have at least fs > 1,6 and in the storeyard cranes fs > 2 (container handling).
2) For selection of fs to F.E.M./I-10.1987, consult us.

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22 - Thermal power Pt [kW]

22 - Thermal power *P*t [kW]

The nominal thermal power Pt_N, stated in red in the table, is that which can be applied at the gear reducer input, without exceeding 95 °C[1] approximately oil temperature when operating in following running conditions:

- input speed n_1 = 1 500 min^{-1};
- mounting position B3;
- continuous duty S1;
- maximum ambient temperature 20 °C (in the table also the values referred to 40 °C);
- maximum altitude 1 000 m above sea level;
- air speed ⩾ 1,25 m/s (typical value in presence of a self-cooled motor).

Nominal thermal power Pt_N

Size	T_{amb}	Pt_N [kW]		
		2I	3I, C2I	4I, C3I
400, 401	20 °C	315	236	180
	40 °C	236	180	132

Always verify that the power applied P_1 is lower than or equal to gear reducer thermal power Pt_N multiplied by correction coefficients ft_1, ft_2, ft_3, ft_4, ft_5 (stated in the following tables) considering the various operating conditions:

$$P_1 \leqslant Pt_N \cdot ft_1 \cdot ft_2 \cdot ft_3 \cdot ft_4 \cdot ft_5$$

When the power applied is not constant and when the exact load cycle is given, it is possible, or advisable, to calculate the equivalent power applied, according to the formula:

$$P_{1th} = \frac{1}{\eta} \cdot \sqrt[3]{\frac{P^3_{2_1} \cdot t_1 + P^3_{2_2} \cdot t_2 + \ldots + P^3_{2_i} \cdot t_i + \ldots + P^3_{2_n} \cdot t_n}{t_c}}$$

where:
η is the gear reducer efficiency (see ch. 6);
P_{2i} [kW] is the power, referred to the gear reducer output, required in the time interval ti [s];
$t_c = t_1 + t_2 + \ldots + t_i + \ldots + t_n$ is the total duration of load cycle [s].

In these cases choose factor ft_2 from the continuous duty column S1.

Whenever the thermal verification should not be satisfied, in spite the prearrangement of cooling system, it is possible to install an **independent cooling unit with heat exchanger** (see ch. 30.(29)); consult us.

Thermal power needs not be taken into account when maximum duration of continuous running time is 1 ÷ 3 h (from small to large gear reducer sizes) followed by rest periods long enough to restore the gear reducer to near ambient temperature (likewise 2 ÷ 4 h). For maximum ambient temperature higher than 40 °C or lower than 0 °C consult us.

1) Corresponding to an average temperature of the external housing surface of approximately 85 °C; locally housing temperature can achieve the oil temperature.
1) If, simultaneously, forced cooling with coil is acting, multiply the values by 1,8.
4) For positions, dimensions and design verification see ch. 30.
5) Value also valid for electric fan (installed by the Buyer).
6) With axial fan, values are to be multiplied by 1,12. Consult us.
7) (Duration of running on load / 60) · 100 [%].

22 - Thermal power *P*t [kW]

Thermal factor ft_1 (= $ft_{1a} \cdot ft_{1b}$) according to **cooling system** and **input speed** n_1

Cooling system			ft_{1a}, ft_{1b} input speed n_1 [min^{-1}]				
			750	**1 000**	**1 200**	**1 500**	**1 800**
ft_{1a}	Natural convection	train of gears 2I	1,18	1,12	1,06	1	0,85
		3I, 4I, C2I, C3I	1,06	1,06	1,03	1	0,95
ft_{1b}	Forced cooling[3) 4) 6)]	with 1 radial fan (helical gear units)	1,12	1,18	1,25	1,32	1,4
		with 2 radial fans (helical gear units) with 1 radial fan (bevel helical gear units)	1,25	1,4	1,6	1,8[5)]	2
	with water coil[4)]		2				
	with heat exchanger[4)]		see ch. 30				

Thermal factor ft_2 according to **ambient temperature** and **service**

Maximum ambient temperature °C	ft_2 Continuous duty **S1**	Intermittent duty **S3 ... S6** Cyclic duration factor [%] for 60 min running[7)] **60**	**40**	**25**	**15**
50	0,6	0,71	0,8	0,95	1
40	0,75	0,9	1	1,12	1,25
30	0,9	1,06	1,18	1,32	1,5
20	**1**	1,18	1,32	1,5	1,7
10	1,12	1,32	1,5	1,7	1,9

Thermal factor ft_4 according to **altitude of installation**

Altitude a.s.l. [m]	ft_4
⩽ 1 000	**1**
1 000 ÷ 2 000	0,95
2 000 ÷ 3 000	0,9
3 000 ÷ 4 000	0,85
⩾ 4 000	0,8

Thermal factor ft_3 according to **mounting position** (see also ch. 26, 28): where it is not specified ft_3 = 1

Train of gears		ft_3 mounting position **B3, B8**	**B6**	**B7**	**V5**	**V6**
2I		1	0,9	0,8	0,8	0,9
3I		1	0,9	0,8	0,8	0,9
4I		1	0,9	0,8	0,8	0,9
C2I	UO2A, UO2N sin UO2V, UO2L sin	1	0,9	0,8	0,9 with upper low speed wheel 0,8 with low speed wheel below	
	UO2H, UO2M sin	0,9	0,8	0,71	0,8 with upper low speed wheel 0,71 with low speed wheel below	
C3I		1	0,9	0,8	0,9 with low speed shaft below 0,8 with upper low speed wheel	

Thermal factor ft_5 according to cooling air speed on housing

Air speed m/s	Installation environment	ft_5
< 0,63	very small environment or without air movements or with protected gear reducer	consult us
0,63	small environment and with limited air movements	0,71
1	wide environment without air movements	0,9
1,25	wide environment with light air movements (e,g, gearmotor with self-cooled motor	**1**
2,5	open and colled	1,18
4	with heavy air movements	1,32

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23 - Selection

23.1 - Preliminary considerations

Motor power

Taking into account the efficiency of the gear reducer, and other drives – if any – motor power is to be as near as possible to the power rating required by the driven machine: accurate calculation is therefore recommended.

The power required by the machine can be calculated, seeing that it is related directly to the power-requirement of the work to be carried out, to friction (starting, sliding of rolling friction) and inertia (particularly when mass and/ or acceleration or deceleration are considerable). It can also be determined experimentally on the basis of tests, comparisons with existing applications, or readings taken with amperometers or wattmeters.

An oversized motor would involve: a greater starting current and consequently larger fuses and heavier cable; a higher running cost as power factor (cos w) and efficiency would suffer; greater stress on the drive, causing danger of mechanical failure, drive being normally proportionate to the power rating required by the machine, not to motor power.

In such cases, a detailed description of duty requirement must be made available: duration and frequency per hour of work cycle, acceleration and deceleration requirements if any, inertia, loads deriving from friction and work. In the absence of such data it is essential to provide all details which will permit their determination.

Only high values of ambient temperature, altitude, frequency of starting or other particular conditions require an increase in motor power.

Input speed n_1

The maximum gear reducer input speed, valid for **continuous duty S1 and in absence of a forced lubrication system of gears and bearings** (**with eventual heat exchanger**), is stated in the following table according to train of gears and gear reducer size; however, according to specific transmission ratio, this limit could not be achieved: in these cases, in the selection tables (s. ch. 25,27), performance P_{N2} is not stated and value M_{N2} is valid only for B selection method (s. 23.2).

For intermittent duty or for particular needs, higher speeds are possible, but always lower than n_{1peak}; consult us.

Peak speed is admitted for a maximum duration of 5 s, including a proper rest period or a low speed period for the cooling of gear reducer, especially on high speed shaft side.

For variable n_1, the selection should be carried out on the basis of n_{1max}, but it should also be verified on the basis of n_{1min}.

When there is a belt drive between motor and gear reducer, different input speeds n_1 should be examined in order to select the most suitable unit from engineering and economy standpoints alike.

Input speed should not be higher than 1 800 min^{-1}, unless conditions make it necessary; better to take advantage of the transmission, and use an input speed lower than 900 min^{-1}.

Size	Train of gears												
	2I			**3I**		**4I**		**C2I**			**C3I**		
	i_N	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}	i_N	n_{1max} min^{-1}	n_{1peak} min^{-1}	n_{1max} min^{-1}	n_{1peak} min^{-1}
400, 401	⩽ 11.2 ⩾ 12.5	1 600 1 800	2 120 2 120	1 800	2 240	1 800	2 360	⩽ 25 ⩾ 28	1 500 1 800	2 240 2 240	1 800	2 360

23.2 - Determining the gear reducer size

Constant load

- Fill out the questionnaire for the selection on page 392; in particular, make available required output power P_2, the angular speeds n_2 and n_1, the running conditions (nature of load, frequency of starting h/d, frequency of starting ***z***, other considerations) referring to ch. 21.
- Determine service factor ***f***s required on the basis of running conditions (ch. 21).
- Select the gear reducer size (also, the train of gears and transmission ratio ***i*** at the same time) on the basis of n_2, n_1 and of a power P_{N2} greater than or equal to $P_2 \cdot f$s (ch. 25 and 27).
- Calculate power P_1 required at input side of gear reducer using the formula P_2 / η, where η = 0,97 ÷ 0,94 is the efficiency of gear reducer (ch. 24).

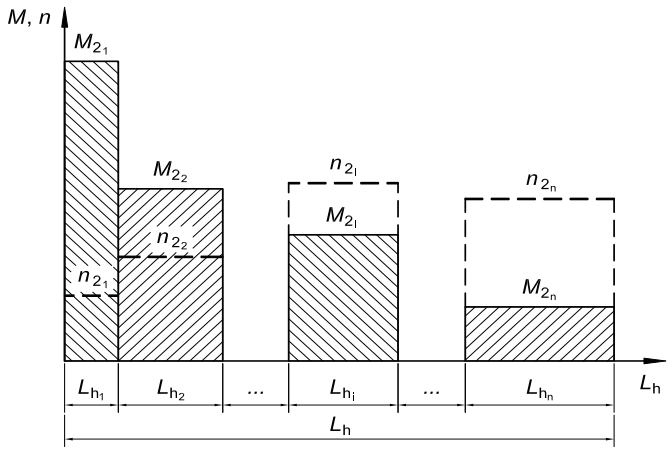
When for reasons of motor standardization, power P_1 applied at input side of gear reducer turns out to be higher than the power required (considering motor/gear reducer efficiency), it must be certain that this excess power applied will never be required, and frequency of starting ***z*** is so low as not to affect service factor (ch. 23. (3).

Otherwise, make the selection by multiplying P_{N2} by P_1 applied / P_1 required.

Calculations can also be made on the basis of torque instead of power; this method is even preferable for low n_2 values.

Variable load

- Fill out the questionnaire for the selection on page 392; in particular, make available the torque M_2 and the angular speed n_2 required at gear reducer output, the running conditions (nature of load, duration of running required, frequency of starting z, other considerations) referring to ch. 21.
- In presence of required torque M_2 and angular speed n_2 variable in time, according to a given load cycle, calculate the equivalent torque M_{2eq} and angular speed n_{2eq} with the following formulae:



$$M_{2eq} = \sqrt[p]{\frac{M_{2_1}^p \cdot n_{2_1} \cdot L_{h_1} + M_{2_2}^p \cdot n_{2_2} \cdot L_{h_2} + \ldots + M_{2_i}^p \cdot n_{2_i} \cdot L_{h_i} + \ldots + M_{2_n}^p \cdot n_{2_n} \cdot L_{h_n}}{n_{2\,eq} \cdot L_h}}$$

$$n_{2eq} = \frac{n_{2_1} \cdot L_{h_1} + n_{2_2} \cdot L_{h_2} + \ldots + n_{2_i} \cdot L_{h_i} + \ldots + n_{2_n} \cdot L_{h_n}}{L_h}$$

where:

M_{2eq}	[N m] is the equivalent torque of load cycle
M_{2i}	[N m] is the torque required (constant) of load level i
n_{2eq}	[min^{-1}] is the equivalent speed in the load cycle
n_{2i}	[min^{-1}] is the low speed shaft speed (constant) of load level i
t_i	[min] is the duration of interval i
t_c	[min] is the total duration of cycle (t_1 + ... + t_i + ...+ t_n)
p = 6,61	for a running duration ⩽ 8 h/d
p = 3,33	for a running duration > 8 h/d

23.3 - Verifications

- Verify possible radial loads F_{r1}, F_{r2} and axial loads F_{a2} according to instructions and values given in ch. 29.
- When a load chart is available, and/or there are overloads – due to starting on full load (especially with high inertias and low transmission ratios), braking, shocks, gear reducers in which the low speed shaft becomes driving member due to driven machine inertia, or other static or dynamic causes - verify that the maximum torque peak (ch. 24) is always lower than 2 · M_{N2}, if hither or if it cannot be evaluated in the above cases – install a safety device so that 2 · M_{N2}. will be never exceeded.
- Verify for each single interval i of the eventual load cycle that the required torque M_{2i} is lower than 2 · M_{N2} and therefore never higher than M_{N2} valid for $n_1 \leqslant 90$ min^{-1} (see ch. 25 and 27) and that input speed (relevant to output shaft speed n_{2i}) is $n_{1i} \leqslant n_{1max}$ (s. ch. 23.1);
- Verify the possible need for forced cooling (ch. 22 and 30).
- Verify that the input speed is lower than or equal to n_{1max} (see ch. 23.1);
- For gear reducers with backstop device, having particular i_N or low values of fs, verify max load capacity of backstop device (ch. 30).

23.4 - Selection questionnaire

Make available all data and information necessary for a correct gear reducer selection by filling out the questionnaire on next page.

Attach any technical specifications relevant to gear reducer, excluding data regarding the machine of the plant.

When possible, attach all possible drawings, pictures and/or any further information facilitating the technical and economic selection.

23 - Selection

1 Conditions of application

Area of application/Industry sector

Type of machine to be driven

☐ new machine
☐ existing and running machine
gear reducer in use

Ambient temperature [°C]

min	normal	max

Altitude [m a.s.l.]

Ambient:
☐ normal (industrial) indoor
☐ normal (industrial) outdoor
☐ dusty
☐ corrosive / humid

Gear reducer position:
☐ tight space with insufficient air recycle (v_{air} < 0,63 m/s)
☐ wide space with free air recycle (v_{air} ⩾ 1,25 m/s)
☐ outdoor, protected against extremes of weather and radiation

2 Data of load

Output speed required [min^{-1}]

min	nominal	max

Output torque required [N m]

min	nominal	max

Power required on low speed shaft [kW]

min	nominal	max

Input speed (gear reducers) [min^{-1}]

min	nominal	max

Nature of load:
☐ uniform
☐ moderate overloads
☐ heavy overloads

Frequency of starting [starts/h]

Moment of inertia of machine [kg m^2]

min	normal	max

Running time [h/d]

Total duration [h]

Duty cycle (S1 ... S10)

Load cycle attached

☐ yes
☐ no

3 Motor

Motor type:
☐ asynchronous three-phase (a.c.)
☐ asynchronous three-phase + inverter
☐ d.c. + converter
☐ internal combust. (one - cylinder)
☐ internal combust. (multi-cylinder)

Power P_1 [kW]

min	nominal	max

Nominal speed n_1 [min^{-1}]

min	nominal	max

A.c. motor supply:

voltage [V]	frequency [Hz]

IEC motor size (a.c. motor)

A.c. motor connection:
☐ direct
☐ Y / Δ
☐ soft starter / inverter

Electromagnetic brake
☐ parking
☐ working
☐ safety
Braking torque [N m]

Starting torque [N m]

Moment of inertia [kg m^2]

Electric motor design (a.c. and d.c.):
☐ with fan cooling
☐ with encoder:
☐ with tachometer generator

Connection with gear reducer:
☐ with coupling
☐ with V-belt

section	No.	d_m [mm]	d_1 [mm]

☐ with toothed belt

section	No.	d_m [mm]

Eventual limitation of drive overall dimensions

4 Gear reducer

Mounting position

Output shaft direction of rotation
☐ white arrow
☐ black arrow
☐ black and white arrow

Backstop device (if any)
☐ white arrow free rotation
☐ black arrow free rotation

Type of cooling admitted
☐ fan cooling
☐ coil
☐ internal heat exchanger
☐ unit UR O/A
☐ unit UR O/W

Type of connection to machine
☐ shaft mounting
☐ flexible / semi-flexible coupling
☐ universal coupling
☐ timing belt

pitch	d_m	d_1	φ

☐ chain

pitch	No.	z_2	z_3	overhang [mm]	φ

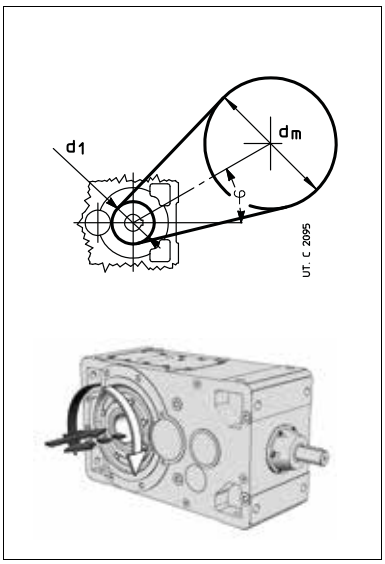
☐ straight tooth helical gear pair

pitch	No.	z_2	z_3	overhang [mm]	φ

Eventual axial load F_a [N]

← - - - →

Eventual reduction of drive overall dimensions



24 - Structural and operational details

Sound levels L_{WA} and L_{pA}

Standard production sound power level L_{WA} [dB(A)][1] and mean sound pressure level L_{pA} [dB(A)][2] assuming nominal load, and input speed n_1 = 1 500[3] min^{-1}. Tolerance +3 dB(A).

If required, gear reducers can be supplied with reduced sound levels (normally 3 dB(A) less than tabulated values): consult us.

In case of gear reducers with fan cooling, add to the values in the table 3 dB(A) for 1 fan and 5 dB(A) for 2 fans.

Size	Helical gear reducers												Bevel helical gear reducers					
	R 2I				R 3I				R 4I				R C2I				R C3I	
	$i_N \leq 12,5$		$i_N \geq 14$		$i_N \leq 63$		$i_N \geq 71$		$i_N \leq 160$		$i_N \geq 200$		$i_N \leq 63$		$i_N \geq 71$			
	L_{WA}	L_{pA}	L_{WA}	L_{pA}	L_{WA}	L_{pA}	L_{WA}	L_{pA}	L_{WA}	L_{pA}	L_{WA}	L_{pA}	L_{WA}	L_{pA}	L_{WA}	L_{pA}	L_{WA}	L_{pA}
400, 401	**105**	93	**102**	90	**101**	89	**98**	86	**95**	83	**92**	80	**98**	86	**96**	84	**92**	80

1) To ISO/CD 8579.

2) Mean value of measurement at 1 m from external profile of gear reducer standing in free field on a reflecting surface.

3) In the speed range n_1 = 750 ÷ 1 800 min^{-1}, sum to the table values: –3 dB(A) for 750 min^{-1}; –2 dB(A) for 1000 min^{-1}; –1 dB(A) for n_1 = 1 200 min^{-1}; 2 dB(A) for n_1 = 1 800 min^{-1}.

Efficiency

The efficiency stated in the table is rough and referred to nominal running conditions (torque, speed, temperature); it is necessary to keep in mind that the efficiency value can diminish considerably for values of $M_2 \ll M_{N2}$

Nominal efficiency	Helical gear reducers			Bevel helical gear reducers	
	R 2I	R 3I	R 4I	R C2I	R C3I
η	0.970	0.955	0.940	0.955	0.940

Overloads

When a gear reducer is subjected to high static and dynamic overloads, the need arises for verifying that such overloads will always remain lower than 2 · M_{N2} (see ch. 25, 27).

Overloads are normally generated when one has:

– starting on full load (especially for high inertias and low transmission ratios), braking, shocks;

– gear reducers in which the low speed shaft becomes driving member due to driven machine inertia;

– applied power higher than that required; other static or dynamic causes.

The following general observations on overloads are accompanied by some formulae for carrying out evaluations in certain typical instances.

Where no evaluation is possible, install safety devices which will keep values within M_{N2}.

Starting torque

When starting on full load (especially for high inertias and low transmission ratios) verify that 2 · M_{N2} is equal to or greater than starting torque, by using the following formula:

$$M_2 \text{ start} = \left(\frac{M \text{ start}}{M_N} \cdot M_2 \text{ available} - M_2 \text{ required}\right) \frac{J}{J + J_0} + M_2 \text{ required}$$

where:
Mstart and M_N are the starting torque and the motor nominal torque, respectively;
M_2 required is the torque absorbed by the machine through work and frictions;
M_2 available is the output torque due to motor nominal power;
J_0 is the moment of inertia (of mass) of the motor;
J is the external moment of inertia (of mass) in kg m^2 (gear reducers, couplings, driven machine) referred to the motor shaft;
NOTE: when seeking to verify that starting torque is sufficiently high for starting, take into account starting friction, if any, in evaluating M_2 required.

Stopping machines with high kinetic energy (high moments of inertia combined with high speeds) with brake motor

Verify braking stress by means of the formula:

$$\left(\frac{Mf}{\eta} \cdot i + M_2 \text{ required}\right) \frac{J}{J + J_0} - M_2 \text{ required} \leq 2 \cdot M_{N2}$$

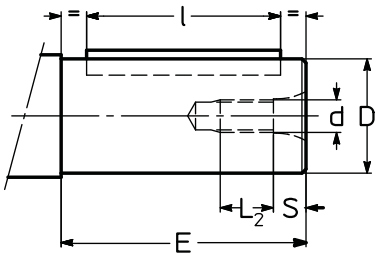
where:
Mf is the braking torque applied on high speed shaft; for other symbols see above and ch. 19.

Moment of inertia (of mass) J_1 [kg m2]

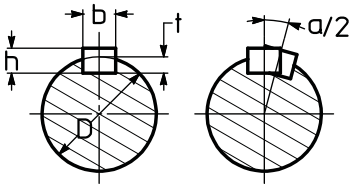
The moment of inertia is referred to the high speed shaft of gear reducer, standard design; the one referred to the low speed shaft is given by following ratio: $J_2 = J_1 \cdot i^2$,

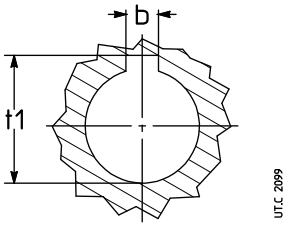
Gear red, size	Moment of inertia of mass J_1 [kg m^2]												
	2I i_N		**3I** i_N		**4I** i_N		**C2I** i_N				**C3I** i_N		
	⩽ 12.5	⩾ 14	⩽ 56	⩾ 63	⩽ 160	⩾ 200	⩽ 31,5	35,5 ... 63	71 ... 90	⩾ 100	⩽ 125	160 ... 200	⩾ 250
400, 401	0,554	0,343	0,121	0,050	0,048	0,011	0,402	0,226	0,107	0,083	0,041	0,027	0,013

High and low speed shaft end



Gear reducer





(Hollow) machine shaft

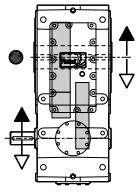
Shaft end						Parallel key									Keyway		
D Ø	**E**	**d** Ø	**S**	**L_2**	**α/2** arc min 1)	**b** h9	×	**h** h11	×	**l**					**b** h9 hub N9 shaft	**t** shaft	**t_1** hub
38 k6	80	M10	7,6	18,4	3,27	10	×	8	×	70					10	5	41,3
48 k6	110	M12	9,5	22,5	3,08	14	×	9	×	90					14	5,5	51,8
55 m6	110	M12	9,5	22,5	2,75	16	×	10	×	90					16	6	59,3
65 m6	140	M16	12,7	27,3	2,33	18	×	11	×	110					18	7	69,4
70 m6	140	M16	12,7	27,3	2,55	20	×	12	×	125					20	7,5	74,9
80 m6	170	M20	16	34	2,23	22	×	14	×	140					22	9	85,4
90 m6	170	M20	16	34	1,99	25	×	14	×	140					25	9	95,4
110 m6	210	M24	19	41	1,63	28	×	16	×	180					28	10	116,4
190 m6	280	M36	27	54	1,12	45	×	25	×	250					45	15	200,4
200 m6	280	M36	27	54	1,07	45	×	25	×	250					45	15	210,4

1) Maximum angular disalignment of keyways on double extension shafts

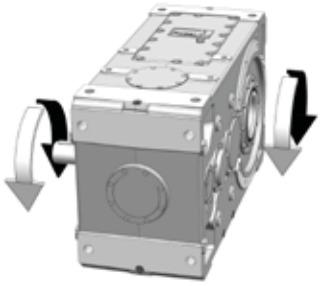
Direction of rotation

The correspondence between gear reducer high speed shaft and low speed shaft direction of rotation is given at ch, 26, 28 and it is according to design and train of gears, For the arrows' meaning interpretation refer to the following examples

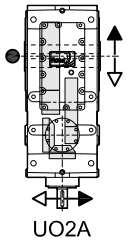
Helical gear reducer:
R 2I 400, 401 UP2A



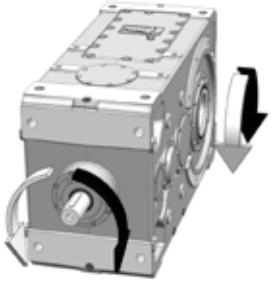
UP2A



Bevel helical gear reducer:
R C2I 400, 401 UO2A



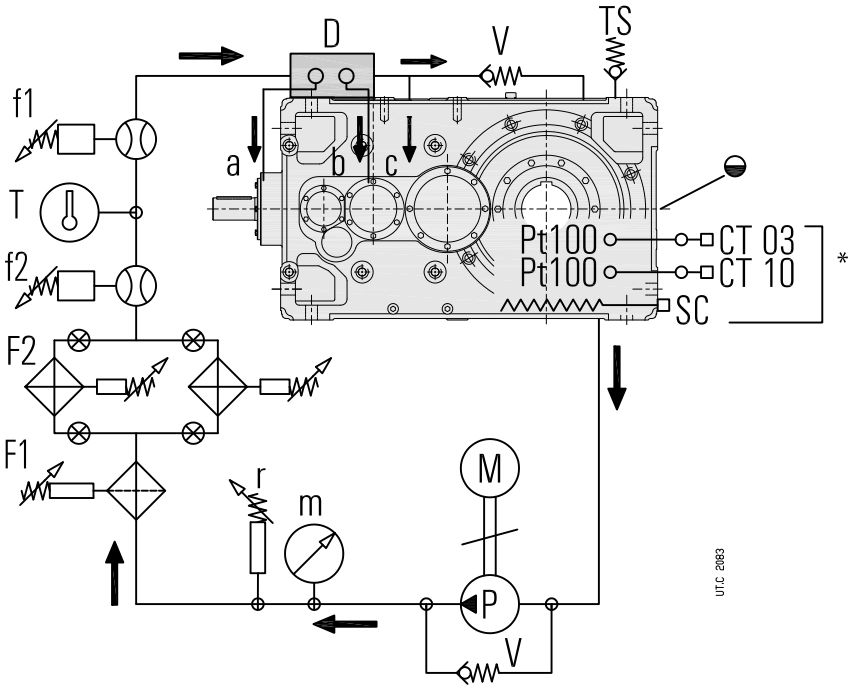
UO2A



- Low speed shaft position (s. ch. 26 and 28) for the verification of radial load.

Forced lubrication of bearings and/or gears with motor pump: hydraulic circuit diagram

NOTE: Bearings and/or gear pairs to be forced lubricated are defined by Rossi according to gear reducer and application.



As standard

a, b, c	Gear pair/bearing pipes
m	Pressure gauge (0 ÷ 16 bar)
M	Motor pump (ch. 30(29))
P	Pump (ch. 12(29))
T	Thermometer 0 ÷ 120 °C
V	Safety valve
r	Minimum pressure gauge
TS	Filler plug
D	Flow rate
◒	Approx. oil level

On request

Pt100*	Oil temperature probe (loose)*
f1	Electric flow switch: vertical mounting
f2	Visible flow switch
F1	Filter
F2	Exchange filter
CT03N*, CT10N*	Control devices with 2 and 3 thresholds (separately supplied); supply 230 V 50 Hz*
SC*	Oil heater*

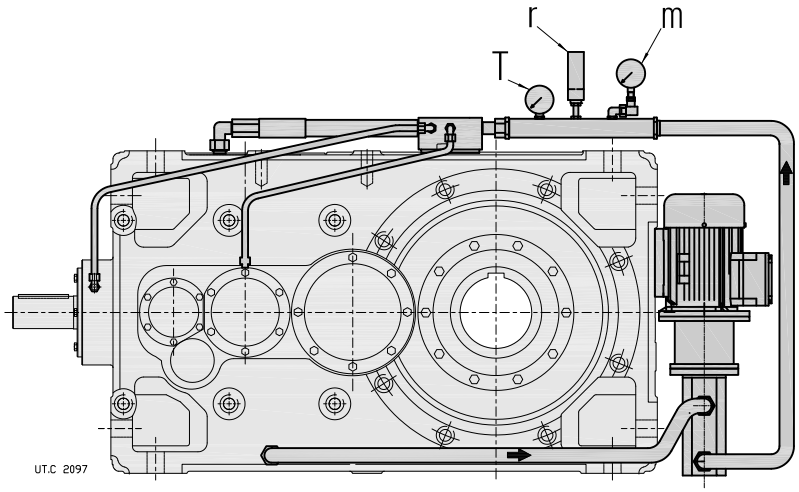
* On request, but necessary for gear reducer starting at $T_{ambient}$ (= T_{oil}) ⩽ 25 °C: pre-heat the oil with the heater.

Starting at low temperature (T_{oil} = $T_{ambient}$ ⩽ 25 °C) of gear reducer with forced lubrication

Always foresee the oil heater and the 2-threshold signalling device CT03N + Pt100 and the 3-threshold signalling device CT10N + Pt100.

- **CT03N** (2-threshold device) and relevant temperature probe Pt100, to pilot the heater; set the operating threshold at 50 °C (stopping the heater supply) and the reset threshold at 30 °C.
- **CT10N** (3-threshold device) and relevant temperature probe Pt100 to start the motor pump and the motor of gear reducer; it is advised to delay the starting of gear reducer motor by at least 1 min from the motor pump starting so that oil is already circulating: the motor pump must run simultaneously with gear reducer; set the operating threshold at 30 °C to start the gear reducer and the motor pump, the reset threshold at 0 °C (10 °C when having the independent cooling unit with heat exchanger) and the safety threshold at 90 °C.

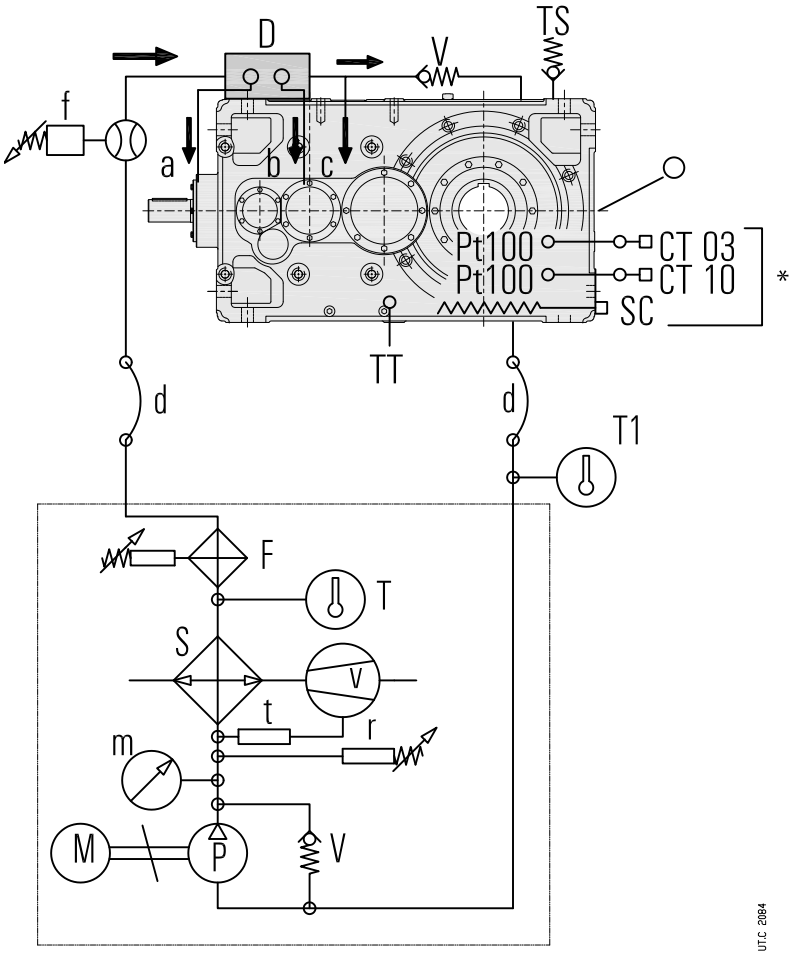
For starting with T_{oil} (= $T_{ambient}$) ⩽ 0 °C the devices CT03N and CT10N must be set according to the real ambient temperature.



Example of forced lubrication with motor pump; the exact position of motor pump depends on the gear reducer size, train of gears, mounting position and available dimensions: for this reason, on request, a drawing of the specific solution will be supplied; pipes are usually realized with sucation and delivery flexible pipes and with rigid pipes between the flow rate and the bearings.

Bearing and/or gear pair forced lubrication with oil/air or oil/water independent cooling unit: hydraulic circuit diagram

NOTE: Bearings and/or gear pairs to be forced lubricated are defined by Rossi according to gear reducer and application.



As standard

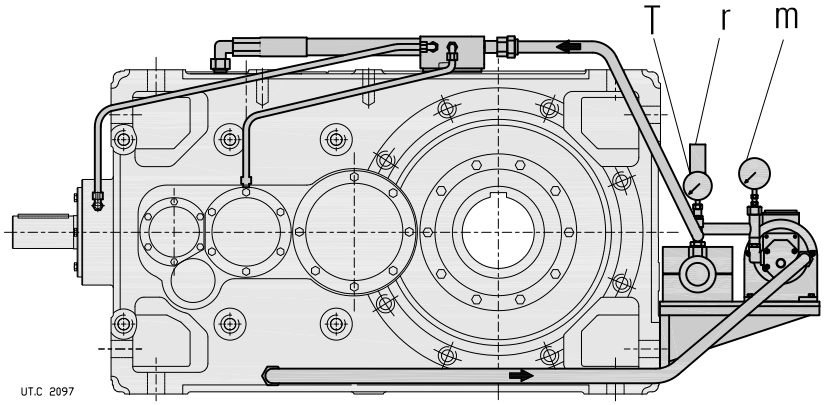
a, b, c	Gear pair/bearing pipes
d	Flexible connection (by Customer)
m	Pressure gauge (0 ÷ 16 bar)
M	Motor pump (ch. 30(29))
P	Pump (ch. 30(29))
S	Oil/air or oil/water exchanger
v	Motor fan (UR O/A...)
t	Fan thermostat 0 ÷ 90°C (UR O/A)
T	Thermometer 0 ÷ 120 °C
V	Safety valve
r	Minimum pressure gauge
TS	Filler plug
D	Flow rate
◒	Approx. oil level

On request

Pt100*	Oil temperature probe (loose)*
f	Flow switch (loose)
F	Filter with electric blockage warning (with UR O/A... it is supplied loose)
CT03N*, CT10N*	Signalling device (loose)*
T1	Thermometer 0 ÷ 120 °C
TT	Bi-metal type thermostat
SC*	Oil heater*

* On request, but necessary for gear reducer starting at $T_{ambiene}$ (= T_{oil}) ⩽ 25 °C: pre-heat the oil with the heater.

For **starting at low temperature**: s. previous page.



Example of forced lubrication with cooling unit: the exact position of cooling unit depends on the gear reducer size, on train of gears, mounting position and available dimensions: for this reason, on request, a drawing of specific solution is supplied; the pipes are usually realize3d with suction/delivery flexible pipes and with rigid pipes between the flow rate and the bearings.

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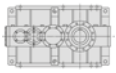
25 - Helical gear reducer selection tables



Gear reducer size

P_{N2} [kW] - n_{N2} [min^{-1}]
M_{N2} [kN m]

Train of gears	i_N	i	n_1 = 1 800 min^{-1}		n_{N2}	n_1 = 1 500 min^{-1}		n_{N2}	n_1 = 1 200 min^{-1}		n_{N2}	n_1 = 1 000 min^{-1}		n_{N2}	n_1 = 90 min^{-1}		n_{N2}
			400	401		400	401		400	401		400	401		400	401	
2I	10	9,86	1480▲ 77,3	1710▲ 89,3	180	1260 79	1450 91,1	150	1020 79,8	1170 92	118	863 81,3	994 93,6	100	86 90	98,4 103	9
	11,2	11,2	1300▲ 77,3	1500▲ 89,3	160	1110 79	1280 91,1	132	894 79,8	1030 92	106	760 81,3	875 93,6	90	75,7 90	86,6 103	8
	12,5	12,4	1200 78,9	1380 91	140	1020 80,6	1170 92,9	118	823 81,4	948 93,7	95	699 82,9	804 95,4	80	68,3 90	78,1 103	7,1
	14	14,1	1050 78,9	1210 91	132	897 80,6	1030 92,9	106	724 81,4	834 93,7	85	615 82,9	707 95,4	71	60,1 90	68,8 103	6,3
	16	16,3	888 76,7	1020 88,3	112	756 78,3	870 90,1	95	611 79,1	702 90,9	75	519 80,6	596 92,6	63	50,7 87,5	57,9 100	5,6
	18	17,6	835 78,2	960 89,9	100	711 79,8	816 91,7	85	574 80,6	659 92,6	67	487 82,1	559 94,2	56	46,7 87,5	53,4 100	5
	20	20,3	724 78,2	833 89,9	90	617 79,8	709 91,7	75	498 80,6	572 92,6	60	423 82,1	485 94,2	50	40,6 87,5	46,3 100	4,5
	22,4	22,5*	617 73,7	711 84,9	80	525 75,3	605 86,7	67	424 76	489 87,6	53	360 77,4	415 89,2	45	34,6 82,5	39,8 95	4
3I	25	25,2	626 83,8	720 96,3	71	533 85,5	612 98,1	60	430 86,3	493 99	47,5	365 87,8	418 101	40	33,6 90	38,5 103	3,55
	28	28,7	551 83,8	633 96,3	63	469 85,5	538 98,1	53	378 86,3	434 99	42,5	321 87,8	368 101	35,5	29,6 90	33,9 103	3,15
	31,5	31,6	509 85,3	585 97,9	56	433 87,1	497 99,8	47,5	350 87,8	401 101	37,5	297 89,4	339 102	31,5	26,9 90	30,8 103	2,8
	35,5	35,9	448 85,3	515 97,9	50	381 87,1	437 99,8	42,5	308 87,8	353 101	33,5	261 89,4	299 102	28	23,6 90	27,1 103	2,5
	40	41,3	378 82,9	433 95,1	45	322 84,6	368 96,9	37,5	260 85,4	297 97,7	30	220 86,9	252 99,4	25	19,9 87,5	22,8 100	2,24
	45	45,2	353 84,5	404 96,7	40	300 86,2	343 98,6	33,5	242 86,9	276 99,4	26,5	203 87,5	232 100	22,4	18,3 87,5	20,9 100	2
	50	52,1	306 84,5	350 96,7	35,5	260 86,2	297 98,6	30	210 86,9	240 99,4	23,6	176 87,5	201 100	20	15,8 87,5	18,1 100	1,8
	56	57,4	283 86,1	323 98,5	31,5	239 87,5	274 100	26,5	192 87,5	219 100	21,2	160 87,5	182 100	18	14,4 87,5	16,4 100	1,6
	63	66,2	245 86,1	281 98,5	28	208 87,5	237 100	23,6	166 87,5	190 100	19	139 87,5	158 100	16	12,5 87,5	14,2 100	1,4
	71	70,6	234 87,5	267 100	25	195 87,5	223 100	21,2	156 87,5	178 100	17	130 87,5	148 100	14	11,7 87,5	13,4 100	1,25
	80	81,3	203 87,5	232 100	22,4	169 87,5	193 100	19	135 87,5	154 100	15	113 87,5	129 100	12,5	10,1 87,5	11,6 100	1,12
	90	88,2	187 87,5	214 100	20	156 87,5	178 100	17	125 87,5	142 100	13,2	104 87,5	119 100	11,2	9,35 87,5	10,7 100	1
	100	102	162 87,5	185 100	18	135 87,5	154 100	15	108 87,5	124 100	11,8	90,1 87,5	103 100	10	8,11 87,5	9,27 100	0,9
4I	125	125	135 90	155 103	14	113 90	129 103	11,8	90,1 90	103 103	9,5	75,1 90	85,9 103	8	6,76 90	7,74 103	0,71
	160	159	106 90	122 103	11,2	88,6 90	101 103	9,5	70,9 90	81,2 103	7,5	59,1 90	67,6 103	6,3	5,32 90	6,09 103	0,56
	200	191	88,8 90	102 103	9	74 90	84,6 103	7,5	59,2 90	67,7 103	6	49,3 90	56,4 103	5	4,44 90	5,08 103	0,45
	250	243	69,8 90	79,9 103	7,1	58,2 90	66,6 103	6	46,6 90	53,3 103	4,75	38,8 90	44,4 103	4	3,49 90	4 103	0,355
	315	299	56,8 90	65 103	5,6	47,3 90	54,2 103	4,75	37,9 90	43,3 103	3,75	31,6 90	36,1 103	3,15	2,84 90	3,25 103	0,28

▲ Necessary forced lubrication with motor pump and possible heat exchanger (see ch. 6 and ch. 12).
* **Finite** transmission ratio.

26 - Dimensions, designs, mounting positions of helical gear reducers

26.1 - R 2I gear reducers

Dimensions 402
Designs (direction of rotation) 402
Mounting positions, plug position, oil quantity 403

26.2 - R 3I gear reducers

Dimensions 404
Designs (direction of rotation) 404
Mounting positions, plug position, oil quantity 405

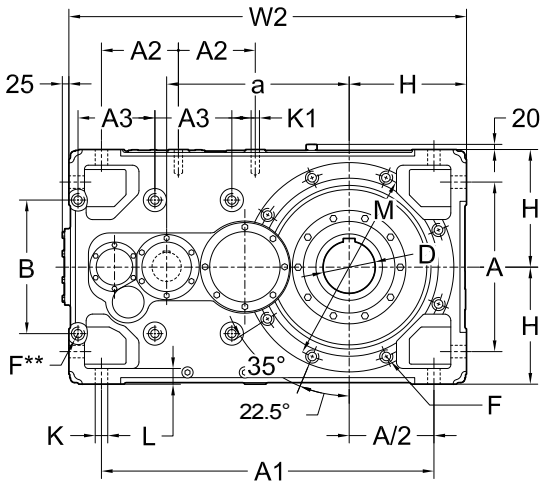
26.3 - R 4I gear reducers

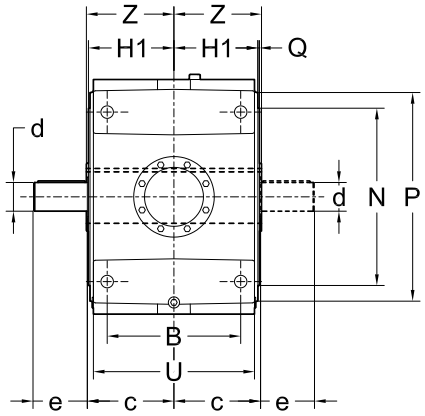
Dimensions 406
Designs (direction of rotation) 406
Mounting positions, plug position, oil quantity 407

26.1 - R 21 gear reducers

Dimensions

UT.C 024

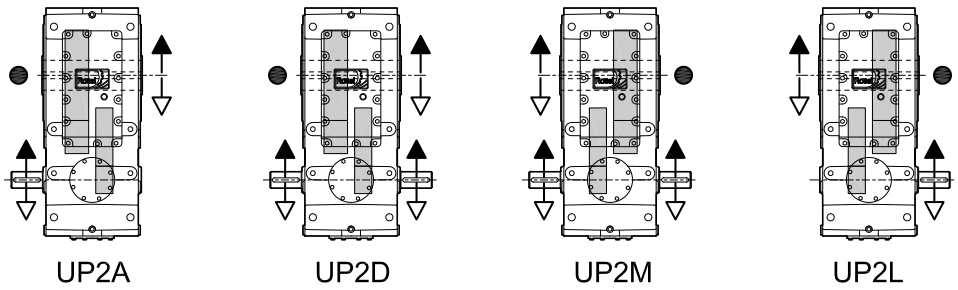




UT.C 025

Size	a	A	A_1	A_2	A_3	B	c	D Ø H7	d Ø m6	e	F 1)	H h11	H_1	K Ø	K_1 1)	L	M	N h6	P	Q	U	W_2 2)	Z	kg
									$i_N \leq 11,2$															
400, 401	700	650	1275	295	295	512	330	200	110	210	M36	450	322	48	M36	65	740	680	800	6	618	1525	330	2250
									$i_N \geq 12,5$															
									90	170														

Designs (direction of rotation)



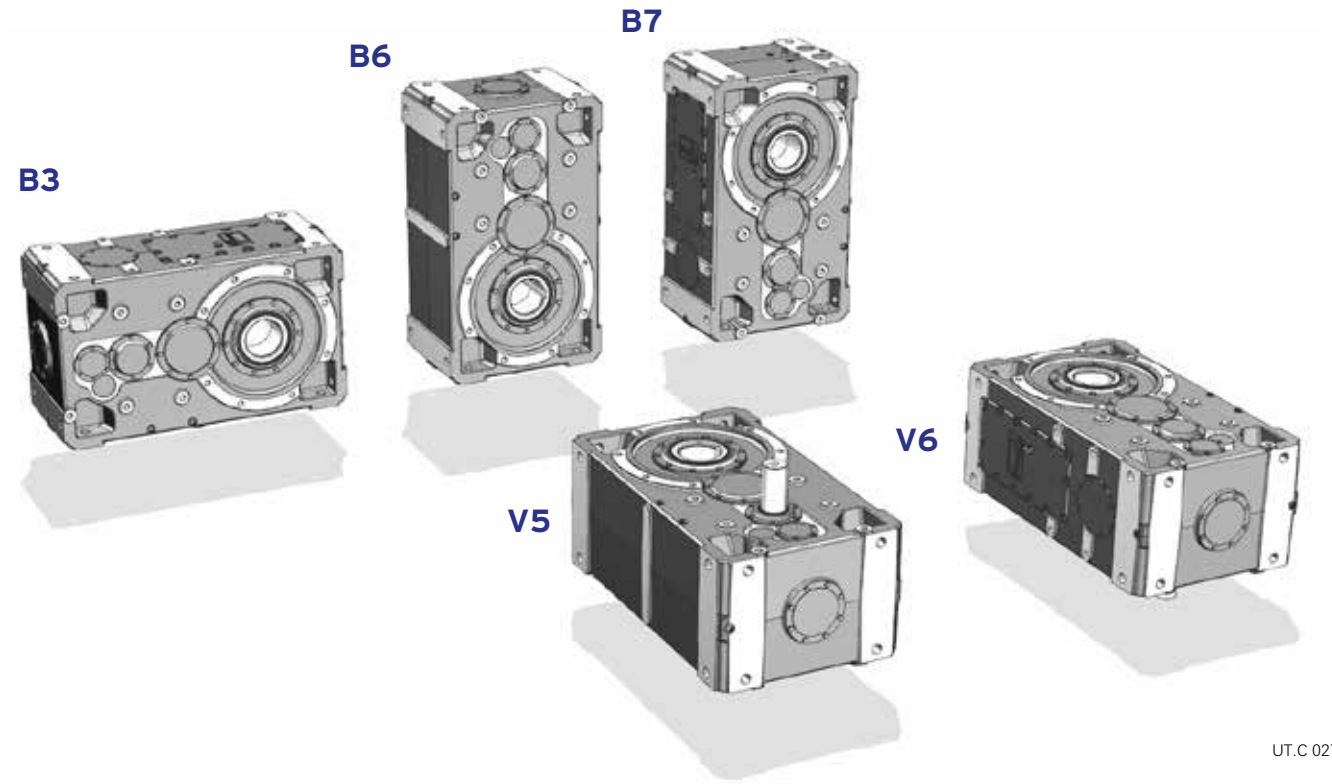
UT.C 026

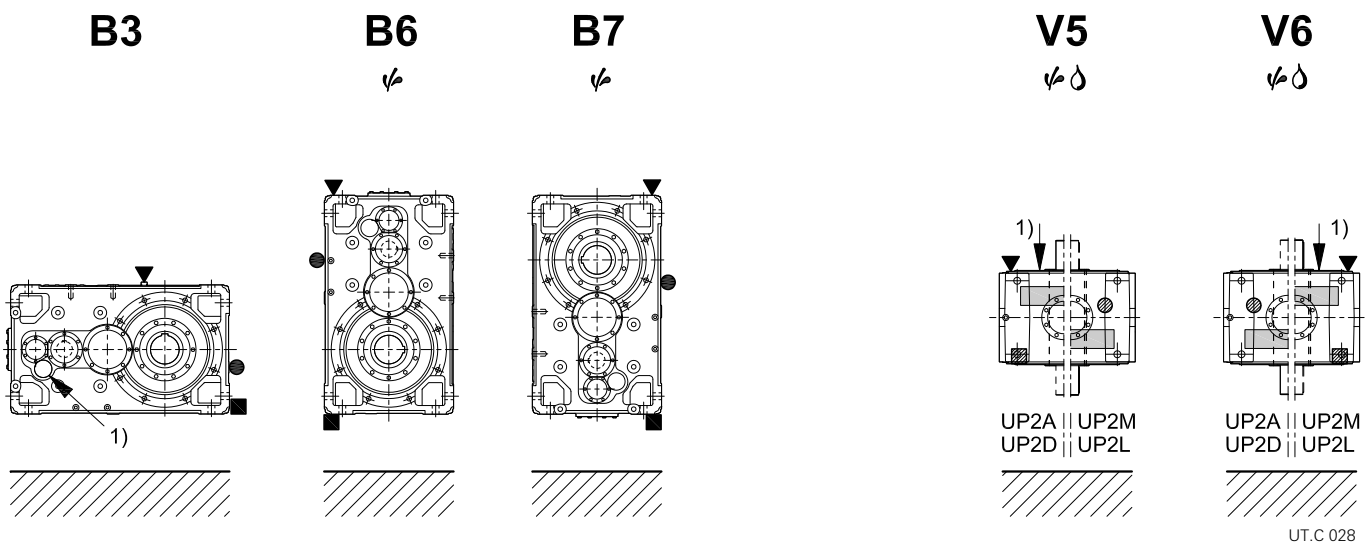
** Machined surface and No. 6 threaded holes (on opposite side not in view as well).
1) Working length of thread 1,7 · F.
2) For mounting positions B6, B7, V5, V6, dimension **W_2** increases by 20 for overall dimensions of filler plug.
● Position of the low speed wheel for radial load verification.

26 - Dimensions, designs, mounting positions of helical gear reducers

26.1 - R 2I gear reducers

Mounting positions, plug position, oil quantity





Size	Oil quantity [l]				
	B3	B6	B7	V5, V6	
				with low speed shaft below	with upper low speed wheel
400, 401	180	230	224	315	325

Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 22.

Possible bearing lubrication pump: consult us if need be.

1) Position of intermediate shaft for the mounting position identification; for mounting positions V5 and V6 it is possible to use the **position of low speed wheel** (s. also «Designs» on previous page).

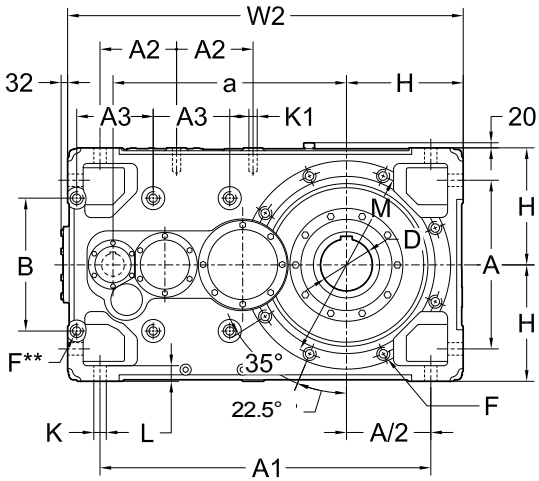
▼ Oil filler plug
● Oil level plug
■ Oil drain plug

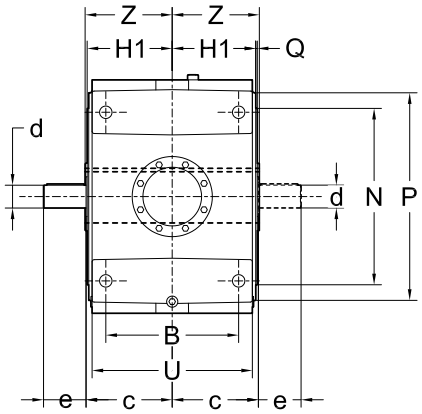
▽ Oil filler plug on opposite side (not in view)
▨ Oil level plug on opposite side (not in view)
⊘ Oil drain plug on opposite side (not in view)

26.2 - R 3I gear reducers

Dimensions

UT.C 029

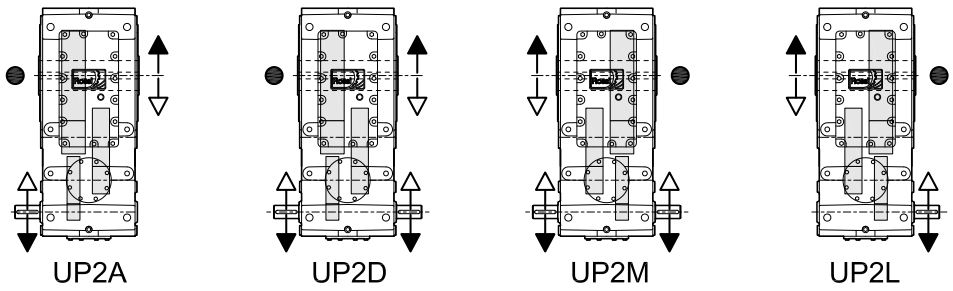




UT.C 030

Size	a	A	A_1	A_2	A_3	B	c	D Ø H7	d Ø m6	e	F 1)	H h11	H_1	K Ø	K_1 1)	L	M	N h6	P	Q	U	W_2 2)	Z	kg
									$i_N \leq 50$															
400, 401	900	650	1275	295	295	512	325	200	80	170	M36	450	322	48	M36	65	740	680	800	6	618	1525	330	2300
									$i_N \geq 56$															
									65	140														

Designs (direction of rotation)

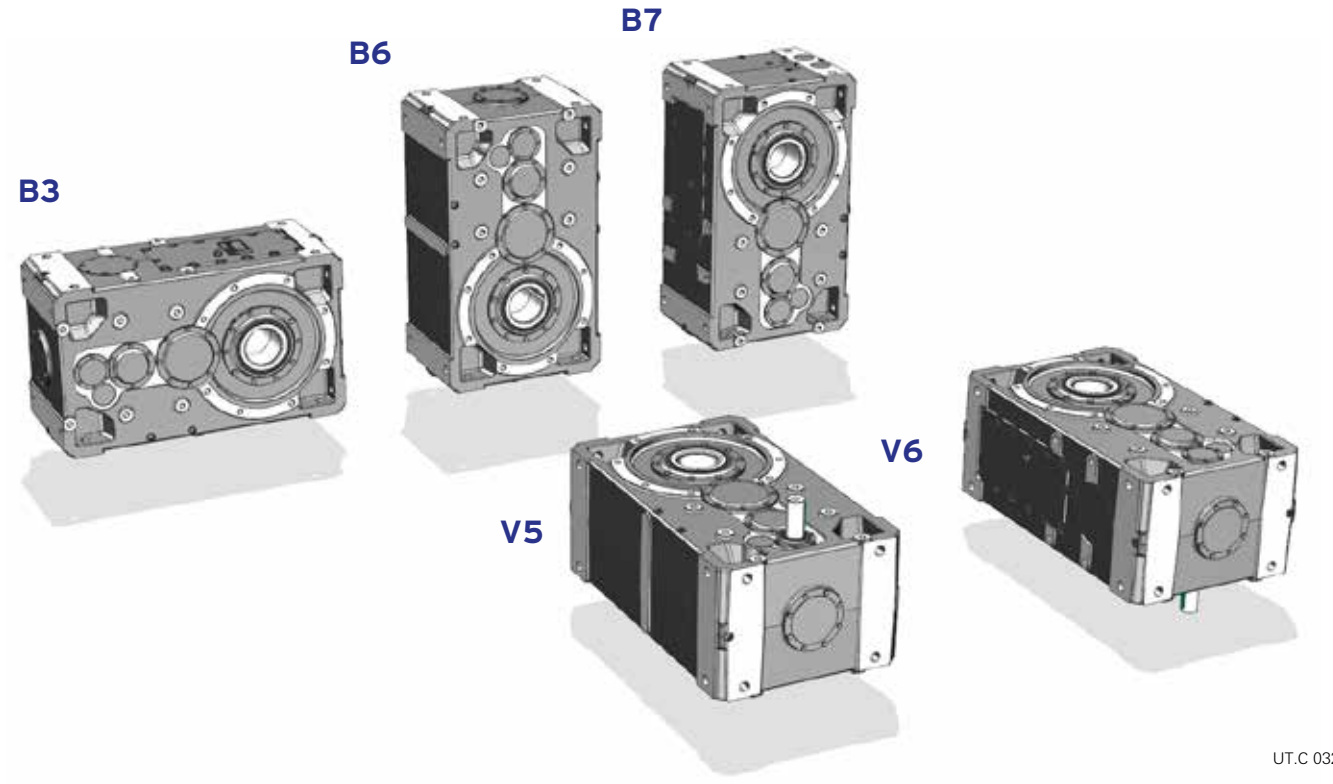


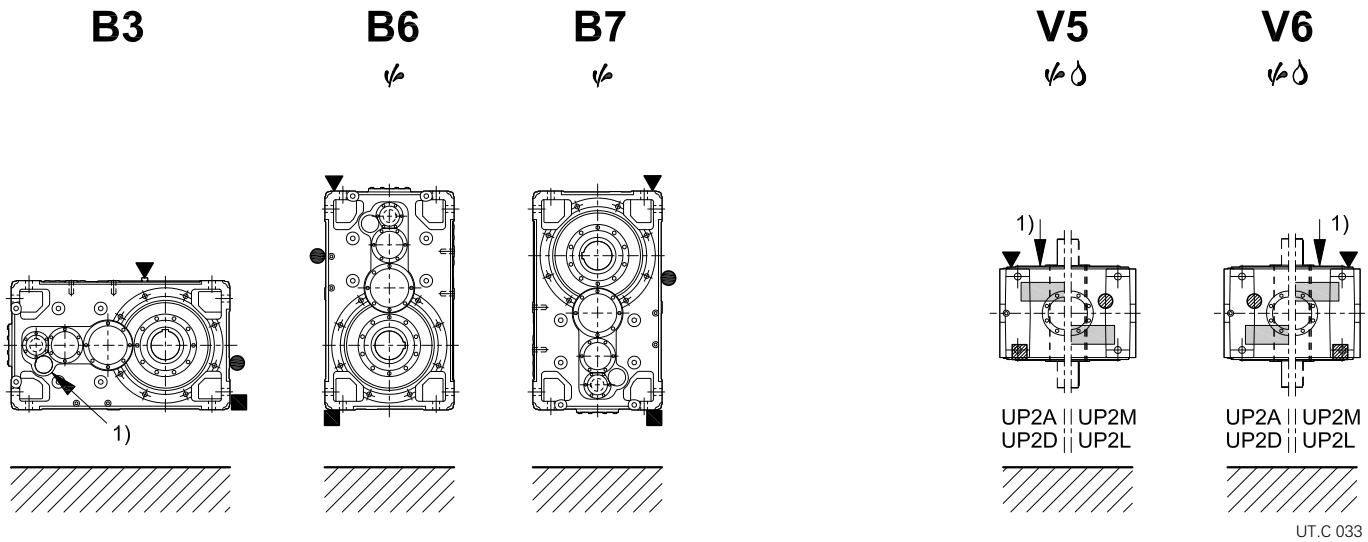
UT.C 031

** Machined surface and No. 6 threaded holes (on opposite side not in view as well).
1) Working length of thread 1,7 · F.
2) For mounting positions B6, B7, V5, V6, dimension W_2 increases by 20 for overall dimensions of filler plug.
● Position of the low speed wheel for radial load verification.

26.2 - Gear reducers R 3I

Mounting positions, plug position, oil quantity





Size	Oil quantity [l]				
	B3	B6	B7	V5, V6	
				with low speed shaft below	with upper low speed wheel
400, 401	180	230	224	315	325

Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 22.

Possible bearing lubrication pump: consult us if need be.

1) Position of intermediate shaft for the mounting position identification; for mounting positions V5 and V6 it is possible to use the **position of low speed wheel** (s. also «Designs» on previous page).

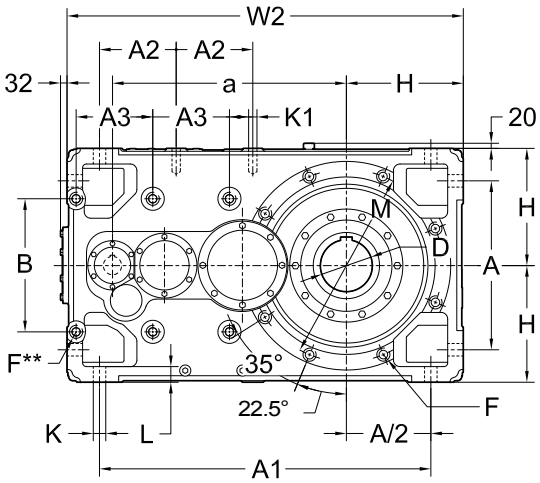
Oil filler plug
Oil level plug
Oil drain plug

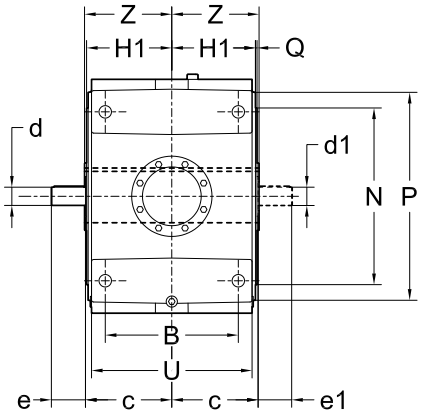
Oil filler plug on opposite side (not in view)
Oil level plug on opposite side (not in view)
Oil drain plug on opposite side (not in view)

26.3 - R 4I gear reducers

Dimensions

UT.C 034

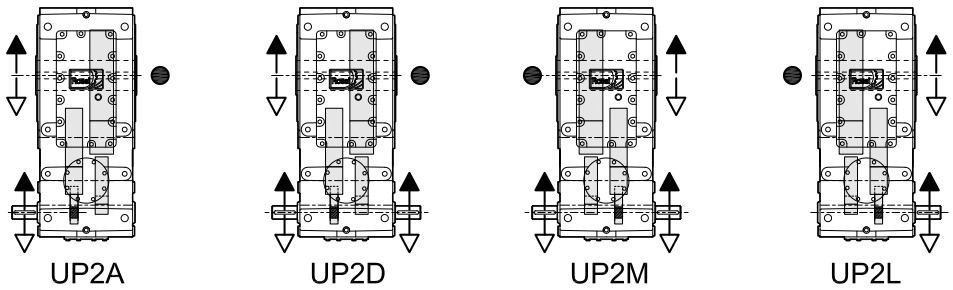




UT.C 035

Size	a	A	A_1	A_2	A_3	B	c	D Ø H7	d Ø m6	e	d_1 Ø m6	e_1	F 1)	H h11	H_1	K Ø	K_1 1)	L	M	N h6	P	Q	U	W_2 2)	Z	kg
400, 401	900	650	1275	295	295	512	325	200	$i_N \leq 160$: 55 / $i_N \geq 200$: 48	110	48	110	M36	450	322	48	M36	65	740	680	800	6	618	1525	330	2280

Designs (direction of rotation)

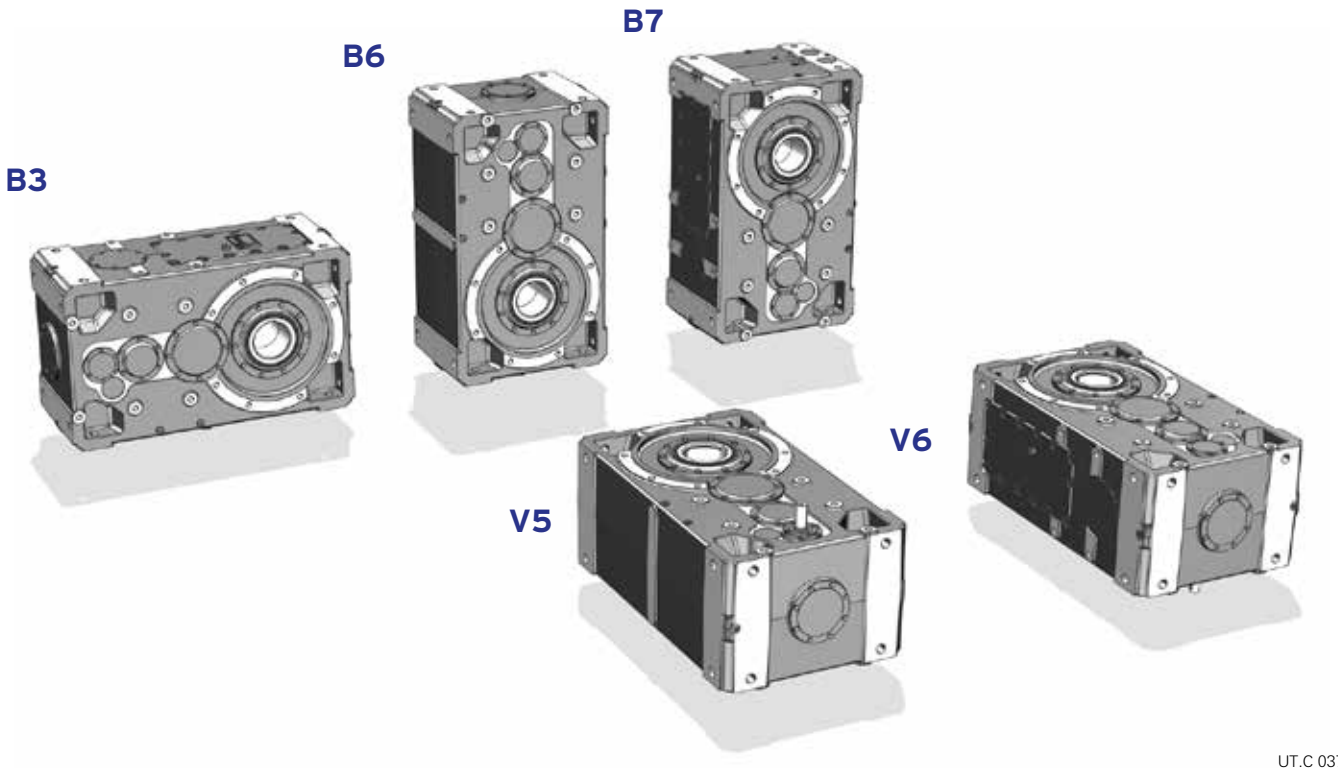


UT.C 036

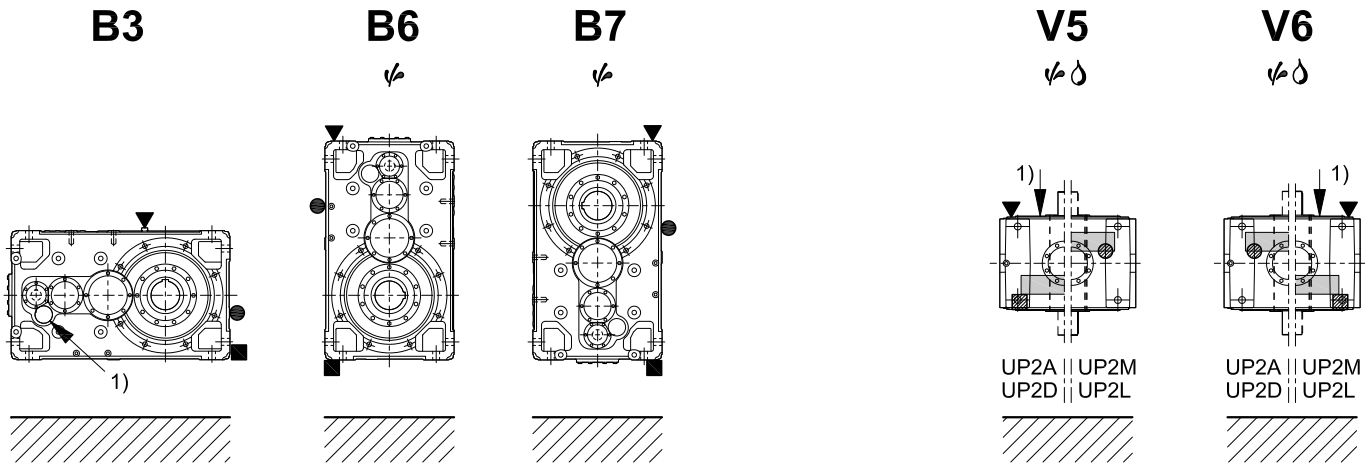
** Machined surface and No. 6 threaded holes (on opposite side not in view as well).
1) Working length of thread 1,7 · F.
2) For mounting positions B6, B7, V5, V6, dimension W_2 increases by 20 for overall dimensions of filler plug.
● Position of the low speed wheel for radial load verification.

26.3 - Gear reducers R 4I

Mounting positions, plug position, oil quantity



UT.C 037



UT.C 038

Size	Oil quantity [l]				
	B3	B6	B7	V5, V6	
				with low speed shaft below	with upper low speed wheel
400, 401	180	230	224	315	325

Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 22.

Possible bearing lubrication pump: consult us if need be.

1) Position of intermediate shaft for the mounting position identification; for mounting positions V5 and V6 it is possible to use the **position of low speed wheel** (s. also «Designs» on previous page).

Oil filler plug
Oil level plug
Oil drain plug

Oil filler plug on opposite side (not in view)
Oil level plug on opposite side (not in view)
Oil drain plug on opposite side (not in view)

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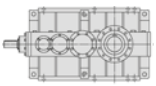
27 - Bevel helical gear reducer selection tables



Train of gears	i_N	i	Gear reducer size P_{N2} [kW] - n_{N2} [min^{-1}] M_{N2} [kN m]													
			n_1 = **1 800**		min^{-1}	n_1 = **1 500**		min^{-1}	n_1 = **1 200**		min^{-1}	n_1 = **1 000**		min^{-1}	n_1 = **90**		min^{-1}
			400	**401**	n_{N2}	**400**	**401**	n_{N2}	**400**	**401**	n_{N2}	**400**	**401**	n_{N2}	**400**	**401**	n_{N2}
C2I	20	**19,7**	784▲ **82,1**	902▲ **94,4**	90	667▲ **83,8**	767▲ **96,3**	75	539 **84,6**	619 **97,2**	60	457 **86,1**	525 **98,8**	50	43 **90**	49,2 **103**	4,5
	22,4	**22,4**	690▲ **82,1**	794▲ **94,4**	80	587▲ **83,8**	675▲ **96,3**	67	474 **84,6**	544 **97,2**	53	402 **86,1**	462 **98,8**	45	37,8 **90**	43,3 **103**	4
	25	**25,8**	582▲ **79,8**	669▲ **91,6**	71	495▲ **81,5**	568▲ **93,5**	60	400 **82,2**	459 **94,3**	47,5	339 **83,7**	389 **95,9**	40	31,9 **87,5**	36,5 **100**	3,55
	28	**28**	547▲ **81,3**	627▲ **93,3**	63	465 **83**	533 **95,1**	53	375 **83,7**	430 **95,9**	42,5	318 **85,2**	364 **97,6**	35,5	29,4 **87,5**	33,6 **100**	3,15
	31,5	**32,3**	474▲ **81,3**	544▲ **93,3**	56	404 **83**	463 **95,1**	47,5	326 **83,7**	373 **95,9**	37,5	276 **85,2**	316 **97,6**	31,5	25,5 **87,5**	29,2 **100**	2,8
	35,5	**35,3**	442▲ **82,8**	507▲ **94,9**	50	376 **84,5**	431 **96,8**	42,5	304 **85,3**	347 **97,6**	33,5	257 **86,8**	294 **99,2**	28	23,4 **87,5**	26,7 **100**	2,5
	40	**40,7**	384▲ **82,8**	440▲ **94,9**	45	326 **84,5**	374 **96,8**	37,5	264 **85,3**	302 **97,6**	30	223 **86,8**	256 **99,2**	25	20,3 **87,5**	23,2 **100**	2,24
	45	**44,5**	357 **84,4**	409 **96,6**	40	304 **86,1**	347 **98,5**	33,5	245 **86,9**	280 **99,3**	26,5	206 **87,5**	235 **100**	22,4	18,5 **87,5**	21,2 **100**	2
	50	**51,3**	310 **84,4**	355 **96,6**	35,5	264 **86,1**	301 **98,5**	30	213 **86,9**	243 **99,3**	23,6	179 **87,5**	204 **100**	20	16,1 **87,5**	18,4 **100**	1,8
	56	**56,5**	287 **86**	328 **98,4**	31,5	243 **87,5**	278 **100**	26,5	195 **87,5**	223 **100**	21,2	162 **87,5**	185 **100**	18	14,6 **87,5**	16,7 **100**	1,6
	63	**65,1**	249 **86**	285 **98,4**	28	211 **87,5**	241 **100**	23,6	169 **87,5**	193 **100**	19	141 **87,5**	161 **100**	16	12,7 **87,5**	14,5 **100**	1,4
	71	**70,6**	234 **87,5**	267 **100**	25	195 **87,5**	223 **100**	21,2	156 **87,5**	178 **100**	17	130 **87,5**	148 **100**	14	11,7 **87,5**	13,4 **100**	1,25
	80	**81,3**	203 **87,5**	232 **100**	22,4	169 **87,5**	193 **100**	19	135 **87,5**	154 **100**	15	113 **87,5**	129 **100**	12,5	10,1 **87,5**	11,6 **100**	1,12
	90	**88,2**	187 **87,5**	214 **100**	20	156 **87,5**	178 **100**	17	125 **87,5**	142 **100**	13,2	104 **87,5**	119 **100**	11,2	9,35 **87,5**	10,7 **100**	1
	100	**102**	162 **87,5**	185 **100**	18	135 **87,5**	154 **100**	15	108 **87,5**	124 **100**	11,8	90,1 **87,5**	103 **100**	10	8,11 **87,5**	9,27 **100**	0,9
C3I	125	**130**	127 **87,5**	145 **100**	14	106 **87,5**	121 **100**	11,8	84,5 **87,5**	96,6 **100**	9,5	70,4 **87,5**	80,5 **100**	8	6,34 **87,5**	7,24 **100**	0,71
	160	**164**	100 **87,5**	115 **100**	11,2	83,7 **87,5**	95,7 **100**	9,5	67 **87,5**	76,5 **100**	7,5	55,8 **87,5**	63,8 **100**	6,3	5,02 **87,5**	5,74 **100**	0,56
	200	**209**	79 **87,5**	90,3 **100**	9	65,9 **87,5**	75,3 **100**	7,5	52,7 **87,5**	60,2 **100**	6	43,9 **87,5**	50,2 **100**	5	3,95 **87,5**	4,52 **100**	0,45
	250	**265**	62,3 **87,5**	71,2 **100**	7,1	51,9 **87,5**	59,4 **100**	6	41,6 **87,5**	47,5 **100**	4,75	34,6 **87,5**	39,6 **100**	4	3,12 **87,5**	3,56 **100**	0,355
	315	**325**	50,7 **87,5**	57,9 **100**	5,6	42,2 **87,5**	48,3 **100**	4,75	33,8 **87,5**	38,6 **100**	3,75	28,2 **87,5**	32,2 **100**	3,15	2,53 **87,5**	2,9 **100**	0,28

▲ Necessary forced lubrication with motor pump and possible heat exchanger (see ch. 24 and ch. 30).

28 - Dimensions, designs, mounting positions of bevel helical gear reducers

28.1 - R C2I gear reducers

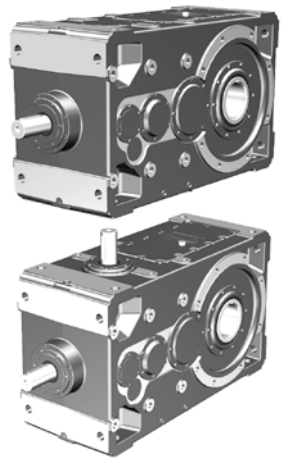
Dimensions 412
Designs (direction of rotation) 412
Mounting positions, plug position, oil quantity 413

28.2 - R C3I gear reducers

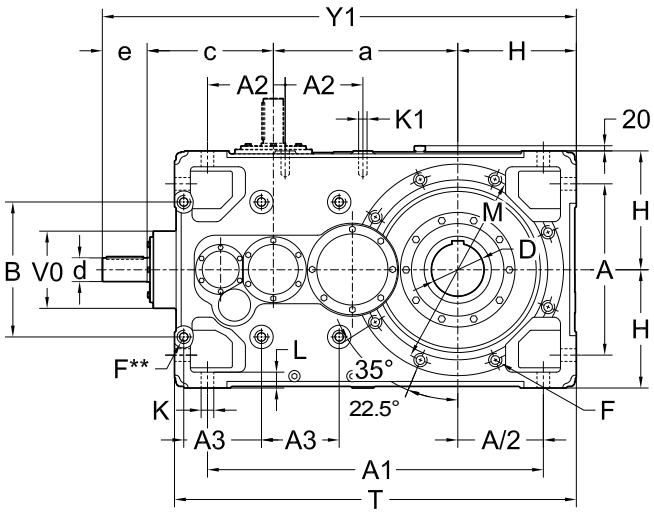
Dimensions 414
Designs (direction of rotation) 414
Mounting positions, plug position, oil quantity 415

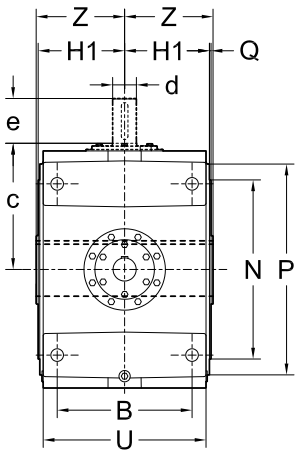
28.1 - R C2I gear reducers

Dimensions



UT.C 040

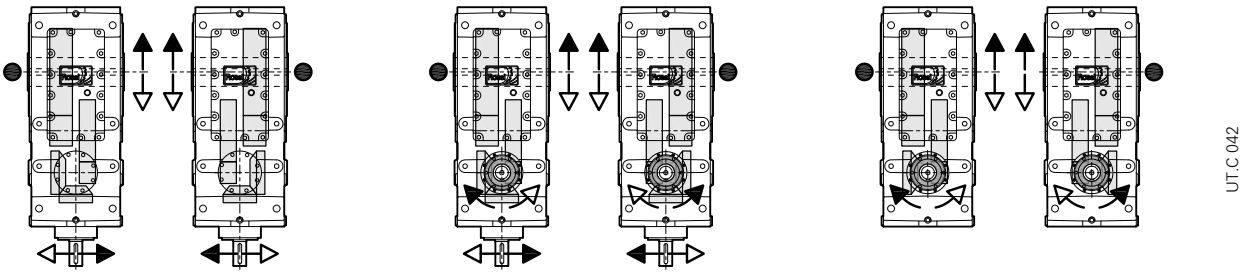




UT.C 041

Size	a	A	A_1	A_2	A_3	B	c	D Ø H7	d Ø m6	e	Y_1 2)	F 1)	H h11	H_1	K Ø	K_1 1)	L	M	N h6	P	Q	T 2)	U	V_0	Z	kg
									$i_N \leq 40$																	
400, 401	700	650	1275	295	295	512	480	200	90	170	1800	M36	450	322	48	M36	65	740	680	800	6	1525	618	293	330	2470
									$i_N \geq 45$																	
									70	140	1770															

Designs (direction of rotation)



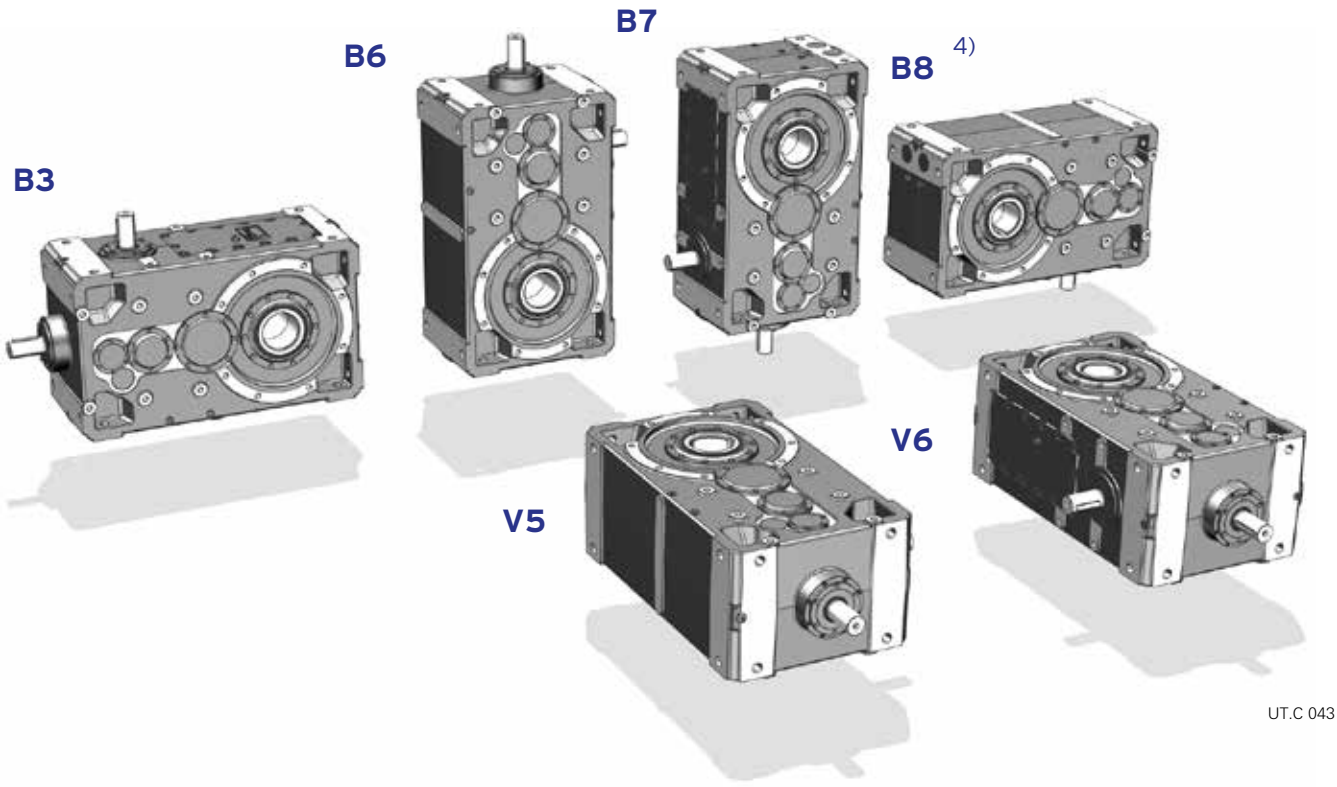
UT.C 042

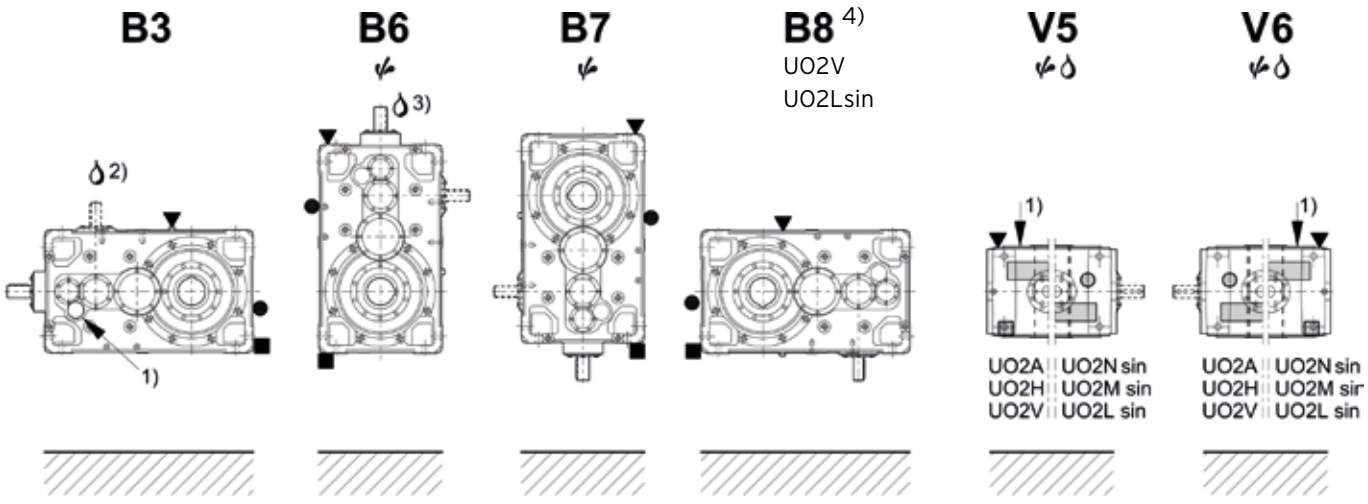
** Machined surface and No. 6 threaded holes (on opposite side not in view as well).
1) Working length of thread 1,7 · F.
2) For mounting positions B6, B7, V5, V6 dimension $\mathbf{Y}_1$ and **T** increase by 20 for overall dimensions of filler plug.
• Position of the low speed wheel for radial load verification.

28 - Dimensions, designs, mounting positions of bevel helical gear reducers

28.1 - R C2I gear reducers

Mounting positions, plug position, oil quantity





Size	Oil quantity [l]					
	B3	B6	B7	B8	V5, V6	
					bottom low speed wheel	upper low speed wheel
400, 401	180	230	224	180	315	325

Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 22.

Possible bearing lubrication pump: consult us if need be.

1) Position of intermediate shaft for the mounting position identification; for mounting positions V5 and V6 it is possible to use the **position of low speed wheel** (s. also «Designs» on previous page).

2) for designs UO2H, UO2M sin, UO2V, UO2L sin.

3) for designs UO2A, UO2N sin, UO2H, UO2M sin.

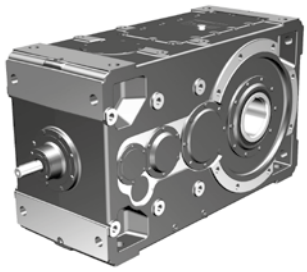
4) Mounting postion B8 available only for designs UO2V, UO2Lsin.

Oil filler plug
Oil level plug
Oil drain plug

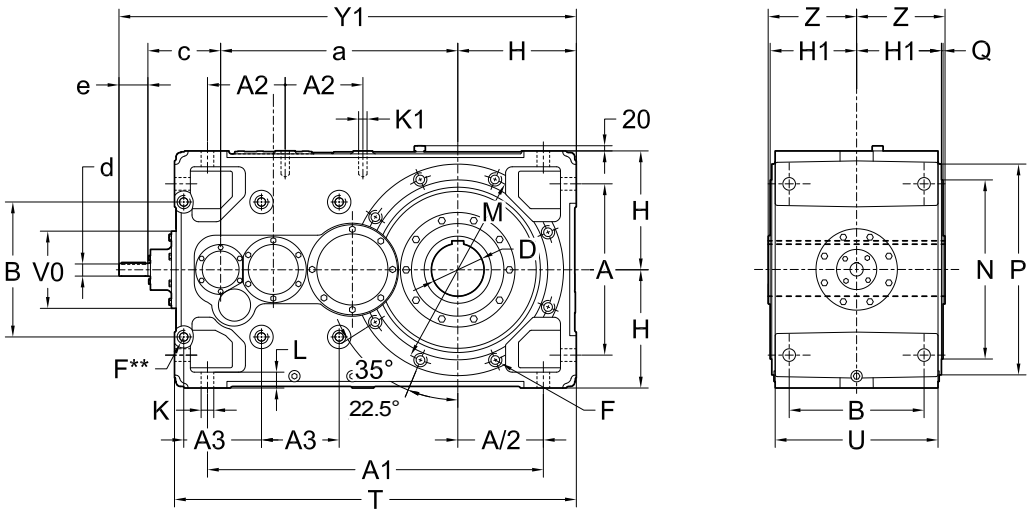
Oil filler plug on opposite side (not in view)
Oil level plug on opposite side (not in view)
Oil drain plug on opposite side (not in view)

28.2 - R C3I gear reducers

Dimensions



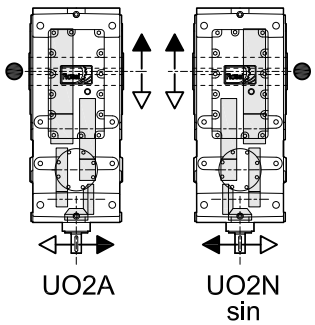
UT.C 045



UT.C 046

Size	a	A	A_1	A_2	A_3	B	c	D Ø H7	d Ø m6	e	Y_1 2)	F 1)	H h11	H_1	K Ø	K_1 1)	L	M	N h6	P	Q	T 2)	U	V_0	Z	kg
400, 401	900	650	1275	295	295	512	282	200	$i_N \leq 200$: 48	110	1742	M36	450	322	48	M36	65	740	680	800	6	1525	618	293	330	2520
									$i_N \geq 250$: 38	80	1712															

Designs (direction of rotation)

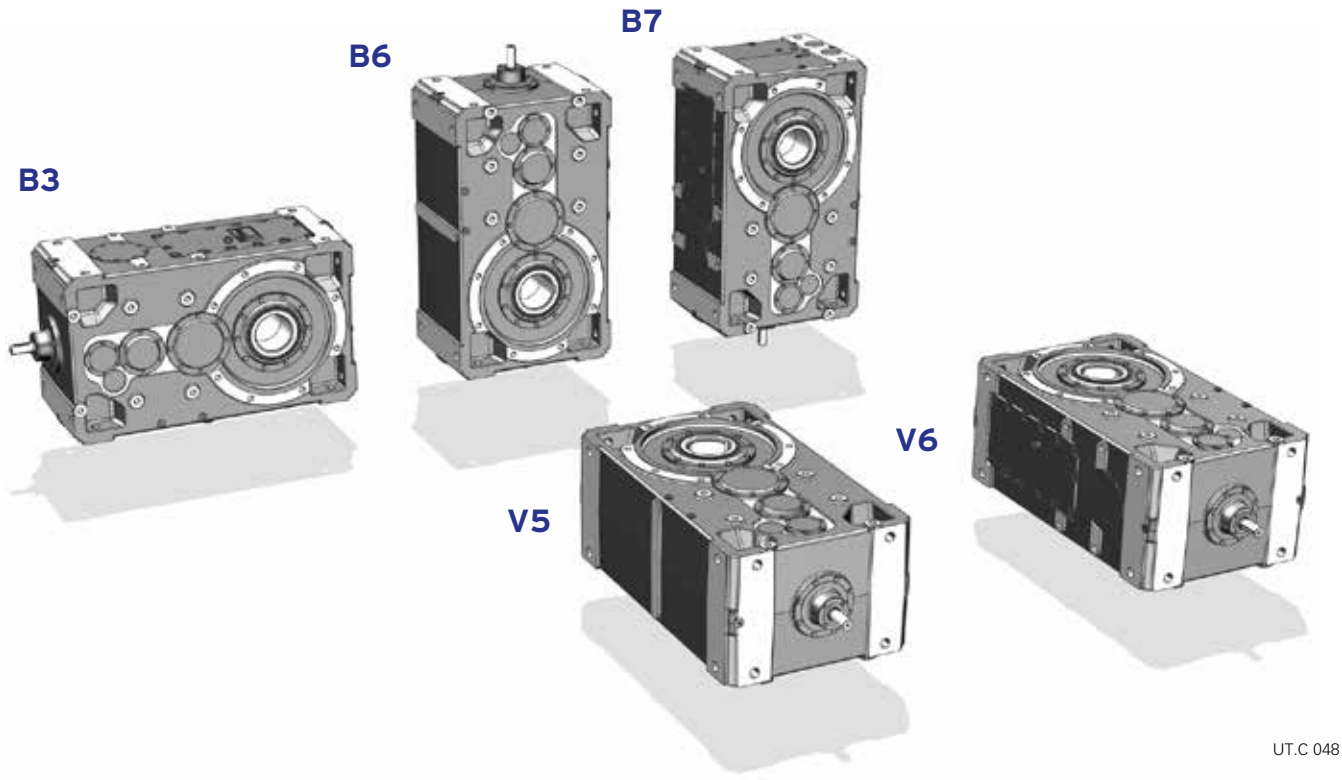


UT.C 047

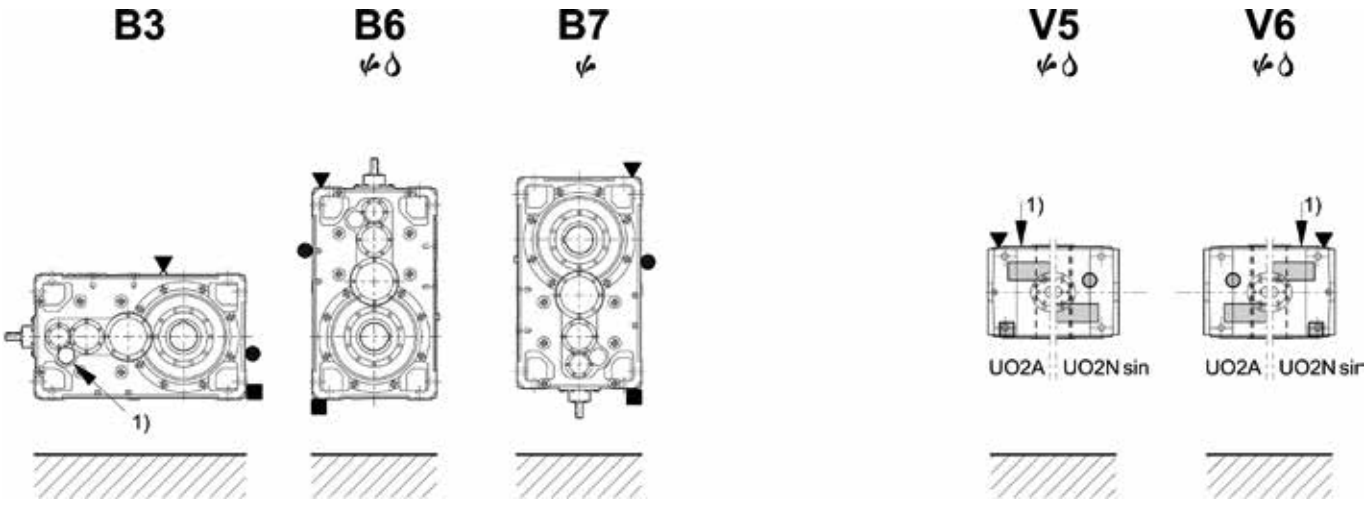
** Machined surface and No. 6 threaded holes (on opposite side not in view as well).
1) Working length of thread 1,7 · F.
2) For mounting positions B6, B7, V5, V6 dimension $\mathbf{Y}_1$ and **T** increase by 20 for overall dimensions of filler plug.
• Position of the low speed wheel for radial load verification.

28.2 - R C3I gear reducers

Mounting positions, plug position, oil quantity



UT.C 048



UT.C 049

Size	Oil quantity [l]					
	B3	B6	B7	B8	V5, V6	
					bottom low speed wheel	upper low speed wheel
400, 401	180	230	224	180	315	325

Possible high oil splash: for the corrective factor ft_3 of nominal thermal power Pt_N see ch. 22.

Possible bearing lubrication pump: consult us if need be.

1) Position of intermediate shaft for the mounting position identification; for mounting positions V5 and V6 it is possible to use the **position of low speed wheel** (s. also «Designs» on previous page).

▼ Oil filler plug
● Oil level plug
■ Oil drain plug

▽ Oil filler plug on opposite side (not in view)
▨ Oil level plug on opposite side (not in view)
⊘ Oil drain plug on opposite side (not in view)

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29 - Radial loads

29.1 - Radial loads F_{r1} [kN] on high speed shaft

Radial loads generated on the shaft end by a drive connecting gear reducer and motor must be less than or equal to those given in the relevant table.

n_1	F_{r1} [kN]		
min^{-1}	**2I**	**3I, C2I**	**4I, C3I**
1 800	20	12,5	5
1 500	21,2	13,2	5,3
1 200	22,4	14	5,6
1 000	23,6	15	6
710	26,5	17	6,7
560	28	18	7,1
450	30	19	7,5
355	33,5	21,2	8,5
F_{r1max}	**33,5**	**21,2**	**8,5**

The radial load F_{r1} given by the following formula refers to most common drives:

$$F_{r1} = \frac{28{,}65 \cdot P_1}{d \cdot n_1} \text{ [kN]}$$ for timing belt drive

$$F_{r1} = \frac{47{,}75 \cdot P_1}{d \cdot n_1} \text{ [kN]}$$ **for V-belt drive**

where:
P_1 [kW] is the power required at the input side of gear reducer;
n_1 [min^{-1}] is the angular velocity of gear reducer
d [m] is the pitch diameter of pulley keyed on gear reducer high speed shaft

Radial loads given in the table are valid for overhung loads on centre line of high speed shaft end, i.e. operating at a distance of 0,5 · e (e = shaft end length) from the shoulder. If radial loads are in a different position, i.e. at a distance differing from 0,5 e from shoulder, multiply the admissible radial load value by 1,25 (without exceeding the maximum value F_{r1max}, stated in the table) if acting at 0,315 · e; by 0,8 if acting at 0,8 · e .

It is always advisable **to mount the pulley against the shaft shoulder** and in any case to avoid that the pulley exceeds the shaft end.

An **axial load** of up to 0,2 times the value in the table is permissible, simultaneously with the radial load.

In absence of the radial load, an axial load may be acting on center line, not higher than 0,5 times the stated radial load.

IMPORTANT: tabulated values for radial load F_{r1} can increase considerably in certain instances (direction of rotation, angular position of load, etc.). If necessary and/or in presence of **misaligned** axial loads, consult us.

29.1 - Radial loads F_{r1} [kN] on high speed shaft end

V-belt drives

See the table for the driving pulleys advised for the various powers and motor polarities and the radial loads resulting on motor and gear reducer shaft ends.

The transmissions have been calculated with a service factor ⩾1,4; replace section SPA with SPB, section SPB with SPC, section SPC with 8V, in order to increase the service factor with the same ***d*** and belt number.

The radial loads have been calculated according to the formula: $(47\,750 \cdot P_1) / (d \cdot n_1)$.

The radial load F_{r1}, referring to the selected motor pulley, must be lower than or equal to the one admitted by gear reducer.

IMPORTANT. For the good running of drive and in order not to overload motor and gear reducer bearings, reduce the overhung to a minimum and do not stress belts excessively. Pulleys with d ⩾ 400 must be dynamically balanced.

Motor			Motor pulley: belt number and section, pitch diameter ***d*** [mm], radial load F_{r1} [N]															
P_1 kW	Size and pole number			***d***	F_{r1} ≈		***d***	F_{r1} ≈		***d***	F_{r1} ≈		***d***	F_{r1} ≈		***d***	F_{r1} ≈
1,1	80B	2	2 Z	**71**	265	2 Z	**80**	236	2 Z	**90**	212	1 Z	**100**	190	1 Z	**112**	170
	90S	4	2 A	**90**	425	2 A	**100**	375	2 A	**112**	335	1 A	**125**	300	1 A	**140**	265
	90L	6	2 A	**90**	670	2 A	**100**	600	2 A	**112**	530	2 A	**125**	475	1 A	**140**	425
1,5	90S	2	2 A	**90**	280	2 A	**100**	250	1 A	**112**	224	1 A	**125**	200	1 A	**140**	180
	90L	4	2 A	**90**	560	2 A	**100**	500	2 A	**112**	450	2 A	**125**	400	1 A	**140**	355
	100LA	6	3 A	**90**	900	3 A	**100**	800	2 A	**112**	710	2 A	**125**	630	2 A	**140**	560
2,2	90LA	2	2 A	**90**	425	2 A	**100**	375	2 A	**112**	335	2 A	**125**	300	1 A	**140**	265
	100LA	4	3 A	**90**	850	3 A	**100**	750	3 A	**112**	670	2 A	**125**	600	2 A	**140**	530
	112M	6	3 A	**112**	1060	3 A	**125**	950	3 A	**140**	850	2 A	**160**	750	2 A	**180**	670
3	100LA	2	3 A	**90**	560	3 A	**100**	500	2 A	**112**	450	2 A	**125**	400	2 A	**140**	355
	100LB	4	3 A	**112**	900	3 A	**125**	800	2 A	**140**	710	2 A	**160**	630	2 A	**180**	560
	132S	6	3 SPA	**100**	1600	3 SPA	**112**	1400	2 SPA	**125**	1250	2 SPA	**140**	1120	2 SPA	**160**	1000
4	112M	2	3 A	**100**	670	3 A	**112**	600	2 A	**125**	530	2 A	**140**	475	2 A	**160**	425
	112M	4	3 A	**125**	1060	3 A	**140**	950	3 A	**160**	850	2 A	**180**	750	2 A	**200**	670
	132M	6	3 SPA	**112**	1900	3 SPA	**125**	1700	2 SPA	**140**	1500	2 SPA	**160**	1320	2 SPA	**180**	1180
5,5	132S	2	3 SPA	**100**	950	3 SPA	**112**	850	2 SPA	**125**	750	2 SPA	**140**	670	2 SPA	**160**	600
	132S	4	3 SPA	**112**	1700	3 SPA	**125**	1500	2 SPA	**140**	1320	2 SPA	**160**	1180	2 SPA	**180**	1060
	132MB	6	3 SPA	**140**	2120	3 SPA	**160**	1900	2 SPA	**180**	1700	2 SPA	**200**	1500	2 SPA	**224**	1320
7,5	132SB (SC)	2	3 SPA	**112**	1120	3 SPA	**125**	1000	2 SPA	**140**	900	2 SPA	**160**	800	2 SPA	**180**	710
(9,2)	132M (MB)	4	3 SPA	**125**[1)]	2000	3 SPA	**140**	1800	2 SPA	**160**	1600	2 SPA	**180**	1400	2 SPA	**200**	1250
	160M	6	3 SPA	**160**	2500	3 SPA	**180**	2240	3 SPA	**200**	2000	2 SPA	**224**	1800	2 SPA	**250**	1600
11	160MR	2	3 SPA	**125**	1500	3 SPA	**140**	1320	2 SPA	**160**	1180	2 SPA	**180**	1060	2 SPA	**200**	950
	160M	4	3 SPA	**160**	2360	3 SPA	**180**	2120	3 SPA	**200**	1900	2 SPA	**224**	1700	2 SPA	**250**	1500
	160L	6	3 SPA	**200**	3000	3 SPA	**224**	2650	3 SPA	**250**	2360	2 SPA	**280**	2120	2 SPA	**315**	1900
15	160M	2	3 SPA	**140**	1800	3 SPA	**160**	1600	3 SPA	**180**	1400	2 SPA	**200**	1250	2 SPA	**224**	1120
	160L	4	3 SPA	**180**	2800	3 SPA	**200**	2500	3 SPA	**224**	2240	3 SPA	**250**	2000	2 SPA	**280**	1800
	180L	6	4 SPA	**200**	4000	4 SPA	**224**	3550	4 SPA	**250**	3150	3 SPA	**280**	2800	3 SPA	**315**	2500
18,5	160L	2	3 SPA	**160**	2000	3 SPA	**180**	1800	3 SPA	**200**	1600	3 SPA	**224**	1400	2 SPA	**250**	1250
	180M	4	4 SPA	**180**	3550	4 SPA	**200**	3150	4 SPA	**224**	2800	3 SPA	**250**	2500	3 SPA	**280**	2240
	200LR	6	4 SPB	**200**	5000	4 SPB	**224**	4500	3 SPB	**250**	4000	3 SPB	**280**	3550	3 SPB	**315**	3150
22	180L	4	4 SPA	**200**	3750	4 SPA	**224**	3550	4 SPA	**250**	3000	3 SPA	**280**	2650	3 SPA	**315**	2360
	200L	6	4 SPB	**224**	5300	4 SPB	**250**	4750	3 SPB	**280**	4250	3 SPB	**315**	3750	3 SPB	**355**	3550
30	200L	4	4 SPB	**224**	4500	4 SPB	**250**	4000	3 SPB	**280**	3550	3 SPB	**315**	3150	3 SPB	**355**	2800
	225M	6	5 SPB	**250**	6300	5 SPB	**280**	5600	4 SPB	**315**	5000	4 SPB	**355**	4500	4 SPB	**400**	4000
37	225S	4	5 SPB	**224**	5600	5 SPB	**250**	5000	4 SPB	**280**	4500	4 SPB	**315**	4000	4 SPB	**355**	3550
	250M	6	6 SPB	**250**	8000	6 SPB	**280**	7100	5 SPB	**315**	6300	5 SPB	**355**	5600	5 SPB	**400**	5000
45	225M	4	5 SPB	**250**	6000	5 SPB	**280**	5300	4 SPB	**315**	4750	4 SPB	**355**	4250	4 SPB	**400**	3750
55	250M	4	6 SPB	**250**	7500	6 SPB	**280**	6700	5 SPB	**315**	6000	5 SPB	**355**	5300	5 SPB	**400**	4750
75	280S	4	6 SPB	**280**	9000	5 SPB	**315**	8000	5 SPB	**355**	7100	5 SPB	**400**	6400	–	–	–
90	280M	4	6 SPB	**315**	9000	5 SPC	**315**	9000	5 SPC	**355**	8000	4 SPC	**400**	7100	–	–	–
110	315S	4	6 SPC	**315**	11000	5 SPC	**355**	10000	4 SPC	**400**	8800	–	–	–	–	–	–
132	315M	4	6 SPC	**355**	12000	5 SPC	**400**	10600	4 SPC	**450**	10600	–	–	–	–	–	–
160	315MC	4	6 SPC	**400**	13000	6 SPC	**450**	11500	5 8V	**450**	11500	–	–	–	–	–	–

1) Not valid for power 9,2 kW: d ⩾ 140 mm.

Note: Pulley band width: **1 Z** 16, **2 Z** 28, **1A** 20, **2 A-2 SPA** 35, **3 A-3 SPA** 50, **4 SPA** 65, **3 SPB** 63, **4 SPB** 82, **5 SPB** 101, **6 SPB** 120, **4 SPC** 110, **5 SPC** 136, **6 SPC** 162, **5 8V** 152.

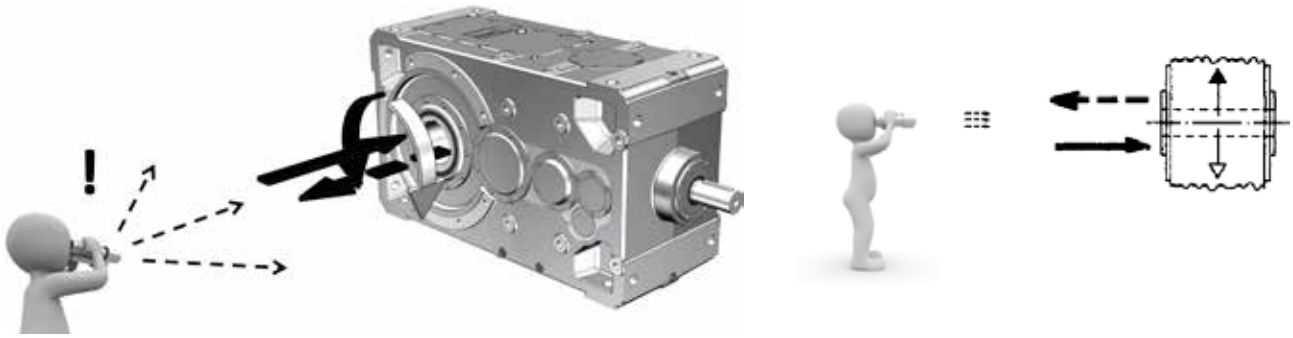
29.2 - Axial loads F_{a2} [kN] or radial loads F_{r2} [kN] on low speed shaft end

Axial loads F_{a2}

Permissible F_{a2} is shown in the column where direction of rotation of low speed shaft (black or white arrow) and direction of the axial force (solid or broken arrow) correspond to those of the gear reducer in question. Direction of rotation and direction of axial force may be established viewing the gear reducer from any point of the two output sides of low speed shaft, providing the same point is adopted for rotation and axial load (see fig. below).

Notes:

- White and black arrows of present chapter do not refer to the ones stating the correspondence of direction of rotation for the different designs (see ch. 26, 28);
- Wherever possible, choose the load conditions corresponding to the column with highest admissible values.
- Values stated in the table are valid for the center line axial load; in the event of a misaligned axial load, consult us.



Radial loads F_{r2}

Radial loads generated on the shaft end by a drive connecting gear reducer and machine must be less than or equal to those given in the relevant tables in the following pages.

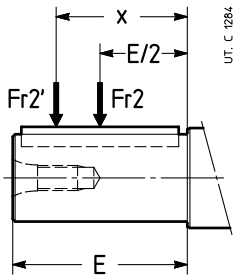
Normally, radial loads on low speed shaft ends are considerable: in fact there is a tendency to connect the gear reducer to the machine by means of a transmission with high transmission ratio (economizing on the gear reducer) and with small diameters (economizing on the drive, and for requirements dictated by overall dimensions). Bearing life and wear (which also affect gears unfavourably) and low speed shaft strength, clearly impose limits on permissible radial load.

IMPORTANT. Permissible radial loads given in the tables are valid for design with one-extension **solid low speed shaft;** for hollow low speed shaft or solid double extension low speed shaft, consult us.

Permissible radial loads given in the tables are therefore based on: the low speed shaft side where radial load is applied according to low speed wheel position (see ch. 26 and 28), the product of speed n_2 [min^{-1}] for the bearing duration L_h [h] required, the direction of rotation, the angular position φ [°] the load and torque M_2 [kN m] required.

Permissible radial loads given in the tables are valid for overhung loads on center line of high speed shaft end, i.e. operating at a distance of 0,5 · E (E = shaft end length) from the shoulder. If radial loads are in a different position, i.e. at a distance differing from 0,5 · E from shoulder, re-calculate the permissible value of radial load according to the following formula, trying not to exceed the maximum value F_{r2max}, stated in the tables:

$$F'_{r2} = F_{r2} \cdot \frac{E/2 + y}{x + y} \text{ [kN]}$$



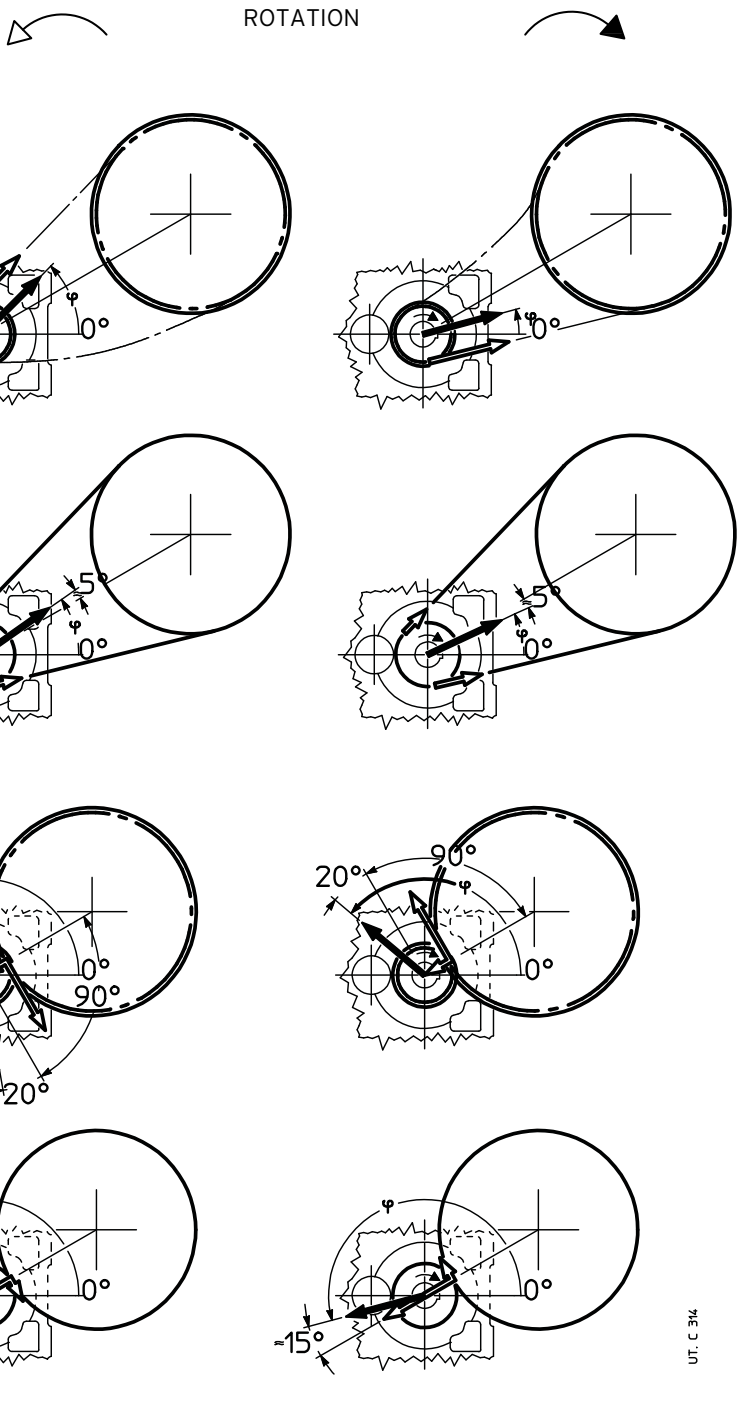
Size	y
400	561
401	554

where:

$F_{r2'}$ [N] is the permissible radial load acting at the distance x from shaft shoulder;
F_{r2} [N]] is the permissible radial load acting on center line of high speed shaft end (see table on next page);
E [mm] is the shaft end length (see ch. 25, 27);
y [mm] is given in the table;
x [mm] is the distance between the shaft shoulder and the load application point.

29.2 - Axial loads F_{a2} [kN] or radial loads F_{r2} [kN] on low speed shaft end

Radial load F_{r2} for most common drives has the following value and angular position:



$$F_{r2} = \frac{19{,}1 \cdot P_2}{d \cdot n_2} \text{ [kN]}$$

for chain drive (lifting in general);
for chain drive replace
19,1 with 28,65

$$F_{r2} = \frac{47{,}75 \cdot P_2}{d \cdot n_2} \text{ [kN]}$$

for V-belt drive

$$F_{r2} = \frac{20{,}32 \cdot P_2}{d \cdot n_2} \text{ [kN]}$$

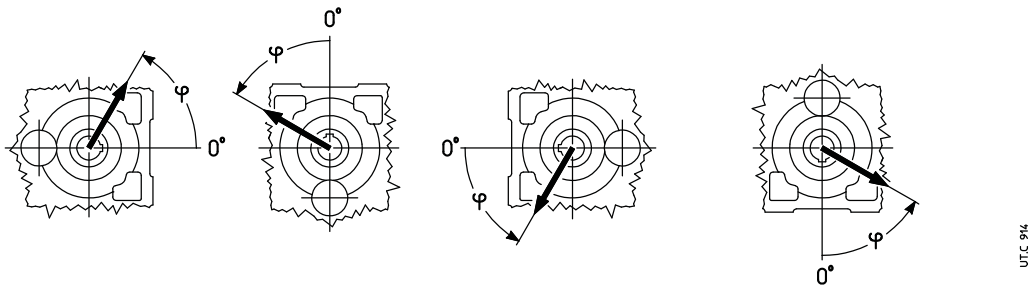
for spur gear pair drive

$$F_{r2} = \frac{67{,}81 \cdot P_2}{d \cdot n_2} \text{ [kN]}$$

for friction wheel drive
(rubber-on-metal)

where: P_2 [kW] is the power required at the output side of the gear reducer, n_2 [min^{-1}] is the speed, d [m] is the pitch diameter.

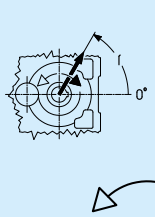
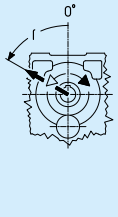
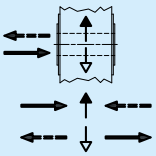
IMPORTANT: 0° coincides with a straight line concurrent with the axis of the last reduction and orientated as shown above, and therefore it follows the rotation of the housing, as shown below.



29.2 - Axial loads F_{a2} [kN] or radial loads F_{r2} [kN] on low speed shaft end

Radial load applied on **opposite side to low speed wheel**[3] (opposite side •)

size **400**

$n_2 \cdot L_h$		F_{r2} [1) 2)]																F_{a2} [1)]	
																			
min^{-1},h	kN m	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**		
355 000	80	200	200	200	200	200	200	200	200	170	150	160	200	200	200	200	200	31,5	80
	56	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
450 000	80	200	200	200	200	200	200	200	200	150	125	140	180	200	200	200	200	25	80
	56	200	200	200	200	200	200	200	200	200	180	190	200	200	200	200	200	40	80
560 000	80	200	200	170	150	200	200	200	200	125	106	118	160	200	200	200	170	18	80
	56	200	200	200	200	200	200	200	200	180	160	170	200	200	200	200	200	40	80
710 000	80	200	200	106	95	150	200	200	200	106	90	100	140	200	200	200	150	12,5	80
	56	200	200	200	200	200	200	200	200	160	140	150	180	200	200	200	190	33,5	80
900 000	80	200	95	40	35,5	60	200	190	200	85	67	75	118	180	200	190	132	9	80
	56	200	200	200	200	200	200	200	200	140	125	132	160	200	200	200	170	28	80
	40	200	200	200	200	200	200	200	200	170	160	170	190	200	200	200	200	40	80
1 120 000	56	200	200	200	200	200	200	190	200	125	106	118	150	190	200	200	160	23,6	80
	40	200	200	200	200	200	200	200	200	150	140	150	170	200	200	200	180	37,5	80
1 400 000	56	200	200	170	160	200	180	180	190	106	95	100	132	170	200	180	140	18	80
	40	200	200	200	200	200	190	190	200	140	125	132	160	190	200	190	160	33,5	80
1 800 000	56	200	200	118	112	160	170	160	170	90	75	85	112	160	180	170	125	13,2	80
	40	200	200	200	200	200	180	170	180	125	112	118	140	170	190	180	150	28	75
2 240 000	56	190	150	80	75	112	150	150	160	75	63	71	100	140	170	150	112	9	75
	40	190	200	200	200	180	160	160	170	112	100	106	125	160	170	160	132	23,6	71
2 800 000	40	170	200	180	170	170	150	150	150	100	90	95	118	140	160	150	125	20	67
	28	180	190	200	190	170	160	150	160	125	112	118	132	150	170	160	140	31,5	63
3 550 000	40	160	180	150	140	160	140	132	140	85	75	80	100	132	150	140	112	16	63
	28	160	180	180	180	160	150	140	150	112	100	106	125	140	150	150	125	26,5	60
4 500 000	40	150	170	112	106	150	132	125	132	75	63	71	90	118	140	125	100	12,5	60
	28	150	170	170	160	150	140	132	140	100	90	95	112	132	140	132	118	23,6	56
							max **200**											max **40**	max **80**

size **401**

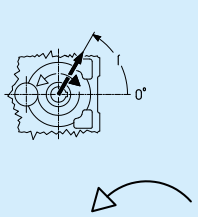
355 000	95	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
450 000	95	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
560 000	95	200	200	200	200	200	200	200	200	200	190	200	200	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
710 000	95	200	200	200	200	200	200	200	200	190	170	180	200	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
900 000	95	200	200	200	200	200	200	200	200	170	140	150	200	200	200	200	200	37,5	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
	47,5	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
1 120 000	67	200	200	200	200	200	200	200	200	200	180	190	200	200	200	200	200	40	80
	47,5	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
1 400 000	67	200	200	200	200	200	200	200	200	180	160	170	200	200	200	200	200	40	80
	47,5	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
1 800 000	67	200	200	200	200	200	200	200	200	150	140	150	180	200	200	200	200	40	80
	47,5	200	200	200	200	200	200	200	200	190	180	190	200	200	200	200	200	40	80
2 240 000	67	200	200	200	200	200	200	200	200	140	118	132	170	200	200	200	180	35,5	80
	47,5	200	200	200	200	200	200	200	200	170	160	170	190	200	200	200	200	40	80
2 800 000	47,5	200	200	200	200	200	200	200	200	160	140	150	180	200	200	200	190	40	80
	33,5	200	200	200	200	200	200	200	200	180	170	180	200	200	200	200	200	40	80
3 550 000	47,5	200	200	200	200	200	190	180	190	140	125	132	160	200	200	200	170	40	80
	33,5	200	200	200	200	200	200	190	200	160	150	160	180	200	200	200	190	40	80
4 500 000	47,5	200	200	200	200	200	180	170	180	125	112	118	140	180	200	190	160	35,5	80
	33,5	200	200	200	200	200	190	180	190	150	140	140	160	190	200	200	170	40	80
							max **200**											max **40**	max **80**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) An unfavourable direction of load can limit F_{r2} to 0,9 · F_{r2max}.
3) For radial loads acting simultaneously on both sides of double extension low speed shaft or for hollow low speed shaft, consult us.

29.2 - Axial loads F_{a2} [kN] or radial loads F_{r2} [kN] on low speed shaft end

Radial load applied on **low speed wheel side**[3] (side •)

size **400**

$n_2 \cdot L_h$		F_{r2} [1) 2)]								F_{a2} [1)]									
																			
min^{-1},h	kN m	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**		
355 000	80	200	200	200	200	200	200	200	200	125	95	100	150	200	200	200	200	31,5	80
	56	200	200	200	200	200	200	200	200	200	160	170	200	200	200	200	200	40	80
450 000	80	200	200	200	200	200	200	190	200	100	71	75	125	200	200	200	190	25	80
	56	200	200	200	200	200	200	200	200	170	140	150	190	200	200	200	200	40	80
560 000	80	200	200	200	200	200	200	170	180	75	53	56	100	200	200	200	160	18	80
	56	200	200	200	200	200	200	200	200	150	125	132	170	200	200	200	200	40	80
710 000	80	200	200	200	200	200	180	150	160	50	33,5	35,5	71	190	200	200	132	12,5	80
	56	200	200	200	200	200	200	190	200	132	106	112	150	200	200	200	190	33,5	80
900 000	80	200	200	200	200	200	160	132	140	–	–	–	33,5	160	200	200	95	10	80
	56	200	200	200	200	200	190	170	180	112	85	90	132	200	200	200	170	28	80
	40	200	200	200	200	200	200	190	200	150	132	140	170	200	200	200	200	40	80
1 120 000	56	200	200	200	200	200	170	150	160	90	67	75	112	190	200	200	150	23,6	80
	40	200	200	200	200	200	190	170	180	140	118	118	150	200	200	200	180	37,5	80
1 400 000	56	190	200	200	200	200	160	140	150	75	53	56	90	170	200	200	140	18	80
	40	200	200	200	200	200	180	160	170	125	100	106	140	190	200	200	170	33,5	80
1 800 000	56	170	200	200	200	200	140	118	132	56	37,5	42,5	71	150	200	200	118	13,2	80
	40	180	200	200	200	200	160	140	150	106	85	90	118	170	200	200	150	28	75
2 240 000	56	160	200	200	190	180	132	106	118	37,5	–	–	53	132	200	190	100	10	75
	40	170	200	200	200	190	150	132	140	90	71	75	106	160	200	190	140	23,6	71
2 800 000	40	160	200	200	200	170	132	118	125	75	60	63	90	140	190	180	125	20	67
	28	160	200	200	200	180	150	132	140	112	95	100	125	160	180	180	140	31,5	63
3 550 000	40	140	190	200	200	160	125	106	112	63	47,5	50	75	132	180	160	112	16	63
	28	150	180	200	190	160	140	125	132	100	80	85	112	140	170	160	132	26,5	60
4 500 000	40	132	180	200	190	150	112	95	100	50	37,5	40	63	118	160	150	95	12,5	60
	28	140	170	190	180	150	125	112	118	85	71	75	95	132	160	150	118	23,6	56
							max **200**											max **40**	max **80**

size **401**

355 000	95	200	200	200	200	200	200	200	200	200	180	190	200	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
450 000	95	200	200	200	200	200	200	200	200	200	150	160	200	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
560 000	95	200	200	200	200	200	200	200	200	170	125	132	200	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
710 000	95	200	200	200	200	200	200	200	200	140	100	106	170	200	200	200	200	40	80
	67	200	200	200	200	200	200	200	200	200	180	180	200	200	200	200	200	40	80
900 000	95	200	200	200	200	200	200	190	200	106	75	80	132	200	200	200	200	33,5	80
	67	200	200	200	200	200	200	200	200	190	150	160	200	200	200	200	200	40	80
	47,5	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	40	80
1 120 000	67	200	200	200	200	200	200	200	200	160	132	140	190	200	200	200	200	40	80
	47,5	200	200	200	200	200	200	200	200	200	180	190	200	200	200	200	200	40	80
1 400 000	67	200	200	200	200	200	200	190	200	140	112	118	170	200	200	200	200	40	80
	47,5	200	200	200	200	200	200	200	200	190	160	170	200	200	200	200	200	40	80
1 800 000	67	200	200	200	200	200	200	170	180	118	90	95	140	200	200	200	200	37,5	80
	47,5	200	200	200	200	200	200	200	200	170	140	150	190	200	200	200	200	40	80
2 240 000	67	200	200	200	200	200	180	150	170	100	71	75	118	200	200	200	180	30	80
	47,5	200	200	200	200	200	200	180	190	150	125	132	170	200	200	200	200	40	80
2 800 000	47,5	200	200	200	200	200	190	170	180	132	106	112	150	200	200	200	190	40	80
	33,5	200	200	200	200	200	200	190	190	170	150	150	180	200	200	200	200	40	80
3 550 000	47,5	200	200	200	200	200	170	150	160	118	90	95	132	200	200	200	170	37,5	80
	33,5	200	200	200	200	200	190	170	180	150	132	132	160	200	200	200	190	40	80
4 500 000	47,5	180	200	200	200	200	160	132	140	100	75	80	118	180	200	200	160	31,5	80
	33,5	190	200	200	200	200	170	160	160	132	118	118	150	190	200	200	180	40	80
							max **200**											max **40**	max **80**

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.
2) An unfavourable direction of load can limit F_{r2} to 0,9 · F_{r2max}.
3) For radial loads acting simultaneously on both sides of double extension low speed shaft or for hollow low speed shaft, consult us.

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30 - Accessories and non-standard designs

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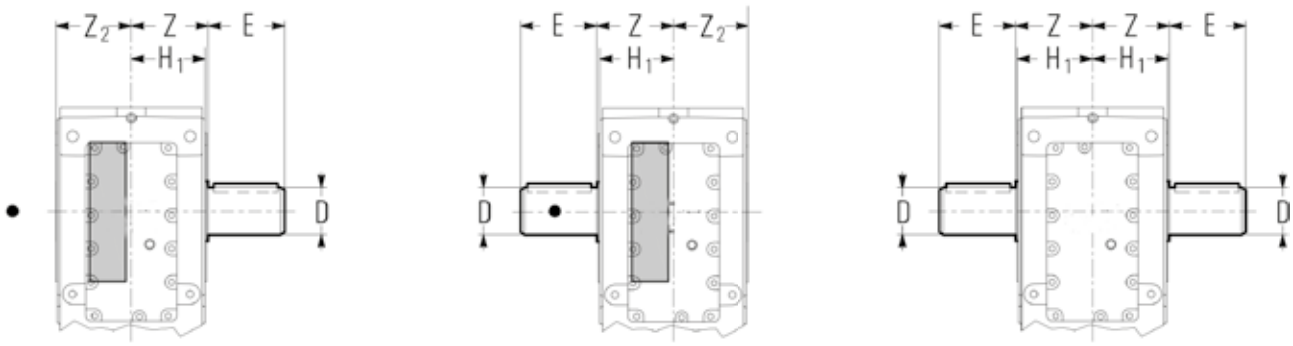
ATTENTION. The simultaneous presence on the same gear reducer of two or more accessories or non-standard designs is not always possible: consult us, if need be.

(2) Solid low speed shaft



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- Low speed wheel position (s. ch. 26 and 28) for the verification of radial load.

Size	**D** Ø	**E**	**Z**	**Z_2**	**H_1**	Δkg standard	Δkg double extension
400	190 m6	280	330	328	322	+150	+220
401	200 m6	280	330	328	322	+150	+230

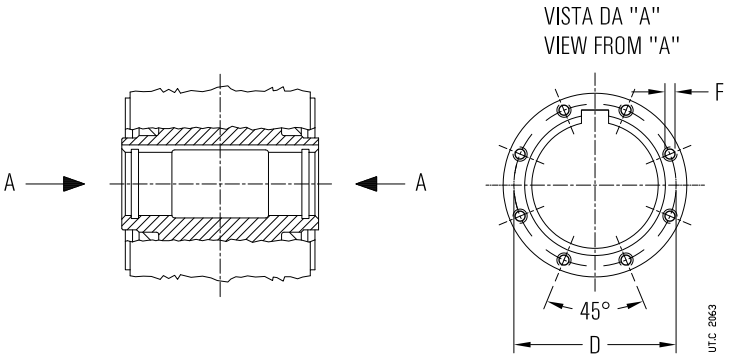
Standard mounting position is with solid low speed shaft end on opposite side to low speed wheel. For reverse mounting, specify in designation «**mounted on groove side**».

The external diameter of the element or of the spacer abutting with the gear reducer must be (1,25 ÷ 1,4) · D; hole tolerance D H7 ... K7.

Other dimensions at ch. 24 «High and low speed shaft end».

Supplementary description when ordering by designation: **standard**, or **double extension low speed shaft**.

(4) Hollow low speed shaft with front holes



Size	**D** Ø	**F**[1]		$F_{a\,max}$[2] kN
400, 401	234	M14	No. 8	525

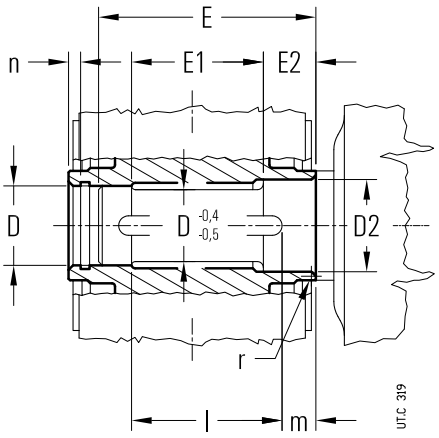
1) Thread depth 2 · F.
2) Maximum total axial load for screws class 8.8.

Hollow low speed shaft including tapped butt-end holes. The dimensions of threaded holes and the maximum axial load deriving from relevant screws in class 8.8 are stated in the table.

ATTENTION. This axial load cannot be sufficient to assure the dismounting of gear reducer from machine shaft end. In fact, according to coupling tolerances selected to realize the machine shaft end and according to coupling type suitable for installation environment and duty type (e.g.: alternate cycles, overloads, etc.) – the dismounting could require an extraction force much higher than threading capabilities, which would be in that case irremediably damaged. In these cases it is advised to adopt the extraction system through hollow low speed shaft washer (see ch. 30 (20)).

Supplementary description when ordering by **designation**: **hollow low speed shaft with front holes**.

(5) Stepped hollow low speed shaft



Size	D Ø	D_2 Ø	E 2)	E_1	E_2 2)	 1) 2)	l	m	n	r
400, 401	200 H7	210 H7	620	300	165	130	600	10	14	5

1) Values valid for **R 4I**.

2) In presence of «Low speed shaft seal with labyrinth and grease feeder» (ch. 30 (26)) it is necessary to increase the dimension E (E2) of quantity A stated in the table on ch. 30 (26).

Stepped hollow low speed shaft, with keyway; this design **facilitates** installation and removal and **affords a notable increase** in rigidity and resistance to bending and torsional stresses at the shaft end of the driven machine.

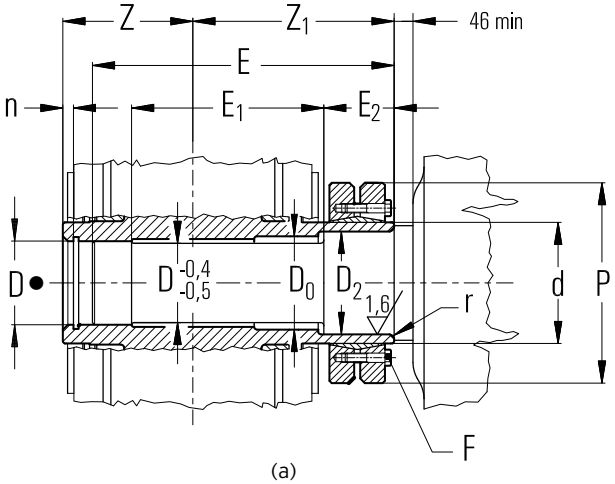
D_2 hole is always **opposite to groove side.**

Important: the shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,18 ÷ 1,25) · D.

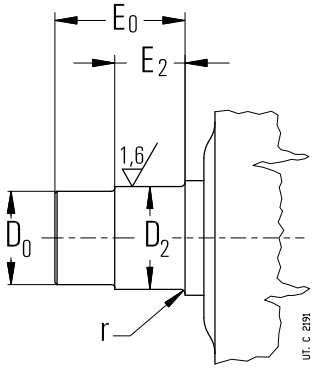
Supplementary description when ordering by **designation**: stepped hollow low speed shaft.

(6) Hollow low speed shaft with shrink disc

Side to machine



(a)
Stepped hollow low speed shaft with locking assembly and «long» machine shaft end



(b)
«Short» shaft end of driven machine

● Low speed wheel position (see ch. 26 and 28), except for train of gears 4I where the low speed wheel is on machine side

Gear reducer size	D Ø H7 / h6, j6	D_2 Ø H7 / h6, j6	D_0 Ø	E	E_0	E_1	E_2	E_2 1)	F 2)	M_S 3) N m	n	d Ø	P Ø	r	Z	Z_1	M_{2SD} 4) kN m	Δkg
400, 401	210	220	215	754	607	446	165	130	M20 n. 14	490	14	260	430	5	330	463	285	+100

1) Values valid for **R 4I**.
2) Screws UNI 5737-88 class 10.9
3) Screw tightening torque.
4) Maximum torque value transmissible by shrink disc.

Stepped hollow low speed shaft with shrink disc on **machine side** (interposed between gear reducer and machine); this design **facilitates** installation and removal and **affords** a notable increase in rigidity of keying, **reduces** the deformations of machine shaft end, **avoiding** the necessity of safety guards on the unit itself. Moreover, since deformability of keying area is greater ($d - D_2 < d - D$) and friction area acts on a greater diameter ($D_2 > D$), maximum transmissible torque increases by 18 ÷ 25% compared to the solution with shrink disc on opposite side to machine.

For a further axial fastening and in order to facilitate the assembling and disassembling operations (see ch. 31), it is possible to make use of hollow low speed shaft washer with retaining ring and bolt for axial fastening (on request).

For the shaft end of driven machine on which gear reducer stepped hollow low speed shaft must be keyed, it is possible to adopt both «long» and «short» shaft end of driven machine: dimensions as per table.

In the first case (fig. a), where the «long» shaft end of driven machine acts as a guide, mounting operations are facilitated.

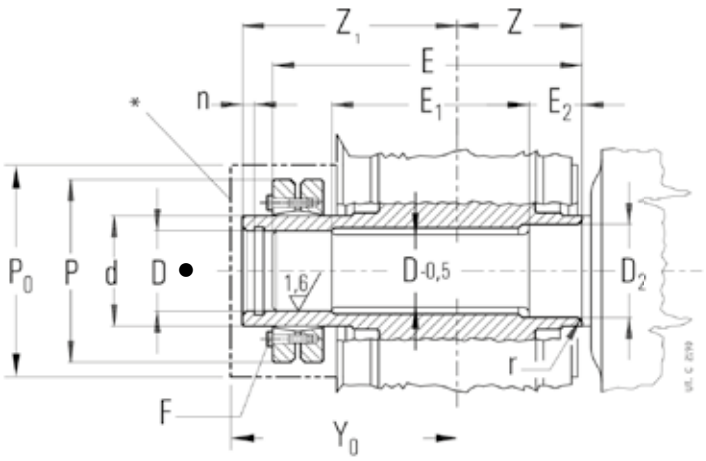
In the second case (fig. b), the reduced axial dimension of the «short» shaft end of driven machine, limits the mounting and removing overall dimensions at the very least.

In both cases the rigidity and the resistance to bending and torsional stresses at the shaft and of driven machine do not change, since the only surface through which torque transmission occurs is the D_2 one.

IMPORTANT. The shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,18 ÷ 1,25) · D.

Supplementary description when ordering by **designation: hollow low speed shaft with shrink disc, on machine side.**

Opposite side to machine



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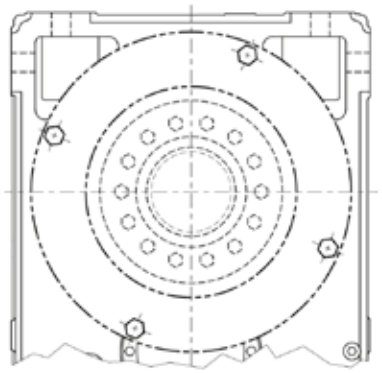


Safety guard
for shrink disc

● Low speed wheel position (see ch. 26 and 28), except for train of gears 4I where the low speed wheel is on machine side

Gear reducer size	D Ø H7 / h6, j6	D_2 Ø H7 / h6, j6	E 5)	E_1	E_2 5)	E_2 1) 5)	F 2)	M_S 3) N m	n	d Ø	P Ø	P_0 Ø	r	Z	Z_1	Y_0 ≈	M_{2SD} 4) kN m	Δkg
400, 401	210	220	788	480	165	130	M20 n. 14	490	14	260	430	450	5	330	497	522	254	+100

1) Values valid for **R 4I**.
2) Screws UNI 5737-88 class 10.9
3) Screw tightening torque.
4) Maximum torque value transmissible by shrink disc.
5) In presence of «Labyrinth seal and low speed shaft grease feeder» (ch. 30 (26)) it is necessary to increase the dimension E (E2) of quantity A stated in the table on ch. 30 (26).

* Protection for hollow low speed shaft with shrink disc, on request.

Stepped hollow low speed shaft with shrink disc on **machine opposite side**.

This design, compared with the machine side design, improves the accessibility to the shrink disc but it is more expensive and with a lower torsional stiffness; the shrink disc transmits a lower torque.

A protection for the shrink disc for personal safety-guard is supplied as standard, see chapter below for details.

IMPORTANT. The shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least (1,12 ÷ 1,18) · D.

Supplementary description when ordering by **designation: hollow low speed shaft with shrink disc, on machine opposite side.**

(7) Protection for hollow low speed shaft with shrink disc

Safety protections, made of steel, for gear reducers equipped with hollow low speed shaft with shrink disc on machine opposite side (groove side).

For dimensions and assembly sketch see «Low speed shaft with shrink disc on machine opposite side». «Hollow low speed shaft with shrink disc on machine opposite side».

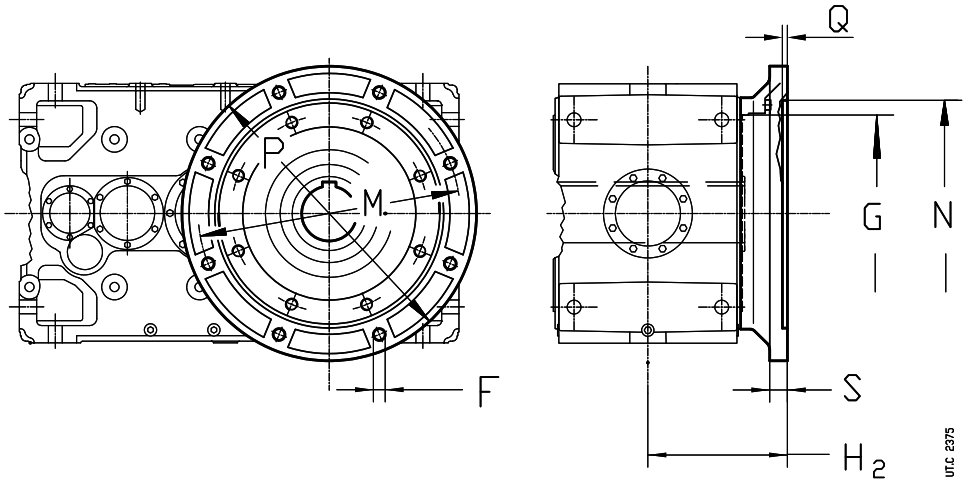
The accessory is supplied already fitted as standard when ordering the option «Hollow low speed shaft with shrink disc on machine opposite side» .

(8) Flange (sizes 400 ... 401)

Flange having clearance holes and spigot «recess».

The accessory is supplied fitted onto the gear reducer. Unless otherwise stated, the mounting position is on groove opposite side. For groove side mounting position (for bevel helical gear units only), state in the designation: «**mounting on groove side**». Locking adhesives such as LOCTITE are recommended both around threads and on mating surfaces.

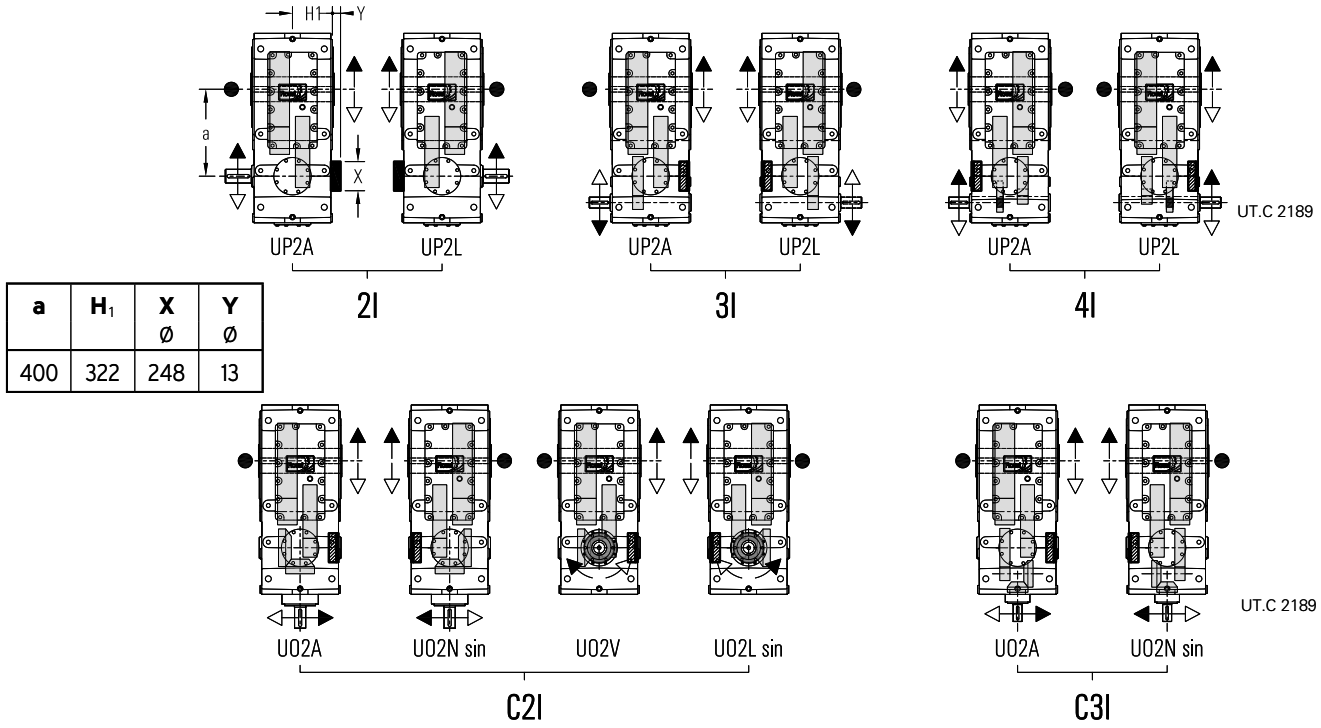
Supplementary description when ordering by **designation**: **flange B5** or **flange B5 type B** (see table).



● Position of the reference groove (see ch. 29) for radial load verification.

Size	F Ø	G Ø	H_2 h12	M Ø	N Ø H7	P Ø	Q	S	Mass kg	Designation
40	9,5	60	80	115	95	140	4	11	0,8	**Flange B5**
50	9,5	70	80	130	110	160	4,5	12	1	**Flange B5**
63, 64	11,5	80	100	165	130	200	4,5	14	2	**Flange B5**
63, 64	14	80	107	176	152	210	6	14	2,9	**Flange B5 Typ B**
80, 81	14	110	112	215	180	250	5	16	3,2	**Flange B5**
80, 81	14	110	129	230	170	280	6	16	5,8	**Flange B5 Typ B**
100	14	130	132	265	230	300	5	18	5,5	**Flange B5**
125	18	180	154	300	250	350	6	20	8,5	**Flange B5**
140	18	230	165	350	300	400	6	22	13	**Flange B5**
160	18^{8}	230	191	400	350	450	6	22	15	**Flange B5**
180	18^{8}	250	191	400	350	450	6	22	20	**Flange B5**
200	18^{8}	300	231	500	450	550	6	25	25	**Flange B5**
225	22^{8}	350	231	500	450	550	6	25	31	**Flange B5**
250, 280	27^{8}	450	280	600	550	660	7	30	50	**Flange B5**
320 ... 360	33^{8}	550	345	740	680	800	7	37	80	**Flange B5**
400, 401	39^{8}	680	500	940	880	1020	7	45	160	**Flange B5**

(9) Backstop device

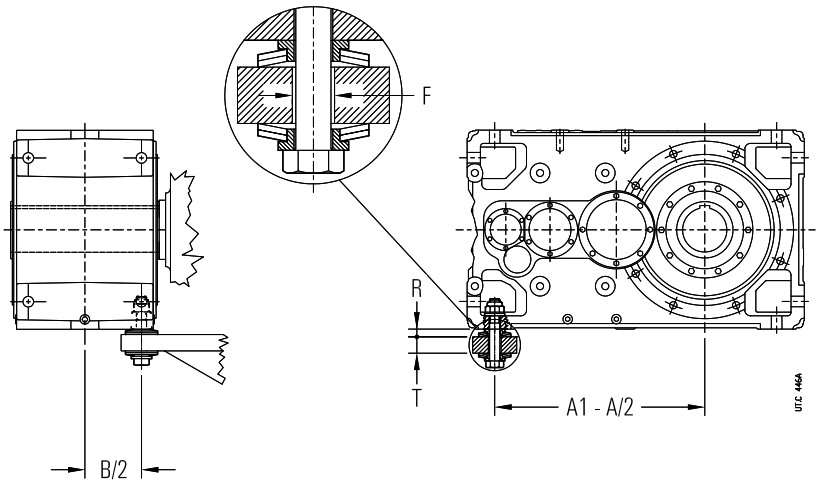


a	H_1	X Ø	Y Ø
400	322	248	13

- Low speed wheel position (s. ch. 26 and 28) for the verification of radial load.

Backstop device available for helical gear reducers with $i_N \geq$ **12,5** and bevel helical gear reducers with $i_N \geq$ **11,2**. The maximum overload capacity of device is equal to **1,7** · M_{N2}.
The possible designs and positions are stated in the fig.
Backstope device doesn't project from dimension H_1 (except train of gears 2I).
Supplementary description when ordering by **designation**: **backstop device, white or black arrow free-rotation**.

(10) Reaction bolt using disc springs



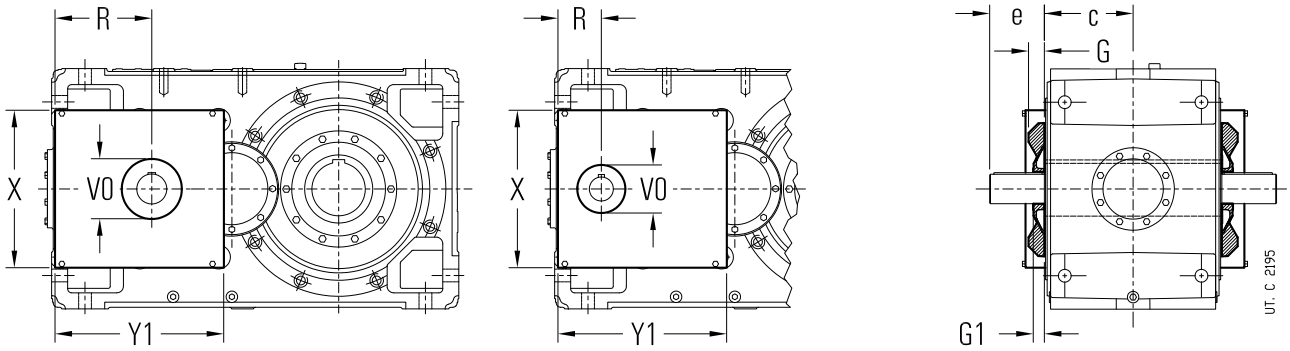
Gear reducer size	Screw UNI 5737-88	Disc spring DIN 2093	A1 - A/2	B/2	T	F Ø	R 1)
400, 401	M45 × 260	A 125 n. 2	950	256	55	50	31

1) Theoretical value: tolerance 0 ÷ -1.

Reaction arrangement for shaft mounting See technical explanations at ch. 18. Do not apply in the feet holes on short side.
Supplementary description when ordering by **designation**: **reaction bolt using disc springs**

(15) Fan cooling

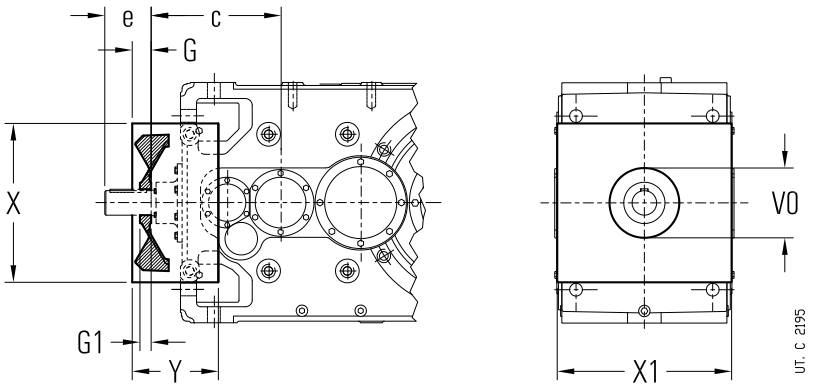
The **helical** gear reducers **R 2I** and **R 3I** can be supplied with **one** or **two** cooling fans keyed on high speed shafts. For dimensions **e**, and **c** see ch. 26.



Gear reducer size		2I			3I				
	G 1)	**G_1** 2)	**R**	**V_0** Ø	**G_1** 2)	**R**	**V_0** Ø	**X**	**Y_1**
400, 401	63	50	363	220	40	163	175	560	633

1) Bolts projecting 6 mm from **G** dimension.
2) The high speed shaft end length is equal to **e - G_1**.

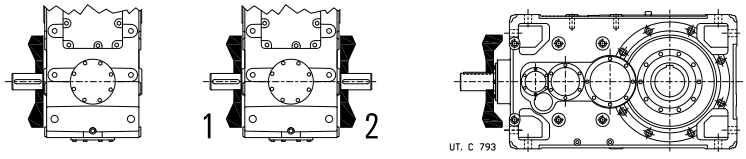
The **bevel helical** gear reducers **R C2I** can be supplied with **one** only cooling fan keyed onto high speed shaft.
For dimensions **e** and **c** see ch. 28.



Gear reducer size	**G**	**G_1** 2)	**V_0** Ø	**X**	**X_1** 1)	**Y**
400, 401	72	47	220	590	640	310

1) Bolts projecting 6 mm from dimension **X_1**.
2) The high speed shaft end length is equal to **e - G_1**.

With double extension high speed shaft designs both extensions are accessible even with fan fitted: personnel safety-guards are the Buyer's responsibility (2006/42/EEC).
Possible designs and positions are those illustrated below.

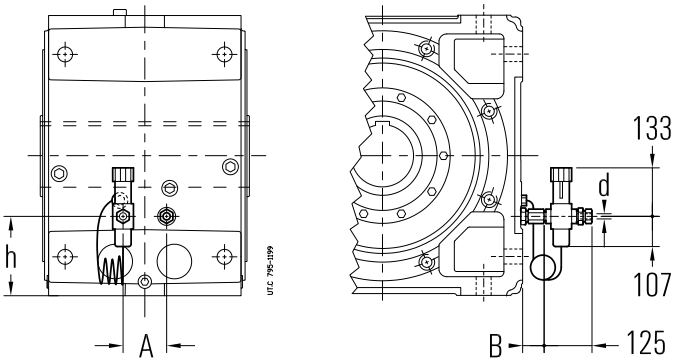


Temperature of cooling air must not exceed ambient temperature.
Supplementary description when ordering by **designation**: **fan cooling**; in design with double extension high speed shaft state if pos. **1** or **2** or – only for helical gear units – **1 and 2**.
Also available independent cooling unit with heat exchanger (see ch. 30 (29)); consult us if need be.

(16) Water cooling by coil

Coil made of copper alloy for gear reducer water cooling. On request, available also stainless steel coil (AISI 316) or cupro-nickel, consult us.

Design not possible for vertical mounting positions (V5, V6) with low speed shaft wheel positioned on the bottom.



Gear reducer size	A[1] ≈	B[1] ≈	d Ø	h
400, 401	140	45	16	255

1) Values valid for mounting position B3 and designs U ... A; for other mounting positions and/or designs, consult us.

Cooling water specifications:
- be not too hard ≤ 12 °F (French degrees);
- be at max temperature 20 °C;
- capacity 10 ÷ 20 dm³/min;
- pressure 0,2 ÷ 0,4 MPa (2 ÷ 4 bar).

A polished metallic pipe (with external diameter **d** stated on table) is sufficient for the connection.

The load loss of coil, according to capacity and water pressure, is approximately 0,6 ÷ 0,8 bar.

On request thermostatic valve which, automatically and without auxiliary supply need, permits water circulation when gear reducer oil reaches the set temperature; the valve sensor is equipped with immersion bulb. Mounting and setting, adjustable within 50 ÷ 90 °C, are Buyer's responsibility.

For ambient temperature lower than 0 °C consult us.

Supplementary description when ordering by **designation**: **water cooling by coil** or **water cooling by coil and thermostatic valve**.

(17) Cooling by internal exchanger

Gear reducers sizes 400, 401 helical type 2I and 3I, bevel helical type C2I and C3I design UO2A, UO2H, UO2V can be equipped with **internal** and **extractable** heat exchanger, made of aluminium, mounted on gear reducer inspection cover (facilitating the maintenance operations) for the water cooling of lubrication oil.

The value of thermal factor ft_{1b} according to mounting position is given in the table.

Dimensions on request: consult us.

Cooling water specifications:
- be not too hard ≤ 12 °F (French degrees);
- max temperature 20 °C;
- capacity 10 ÷ 20 dm³/min;
- pressure 0,2 ÷ 0,4 MPa (2 ÷ 4 bar).

Gear reducer size	ft_{1b} B3	B6, B7	B8, V5, V6
400, 401	2	2,24	2,12

A polished metallic pipe with external diameter **Ø16** is sufficient for the connection, paying attention to keep fixed the fillet using a second hexagon wrench, when fastening the pipe on the fillet.The load loss in the internal exchanger, according to capacity and water pressure, is 1,4 ÷ 1,8 bar for diameter Ød 16 and 1,8 ÷ 2 bar for Ød 12.

On request thermostatic valve which, automatically and without auxiliary supply need, permits water circulation when gear reducer oil reaches the set temperature (after technical technical feasibility verification, consult us); the valve sensor is equipped with immersion bulb. Mounting and setting, adjustable within 50 ÷ 90 °C, are Buyer's responsibility.

For ambient temperature lower than 0 °C consult us.

Supplementary description when ordering by **designation**: **independent cooling with internal exchanger**.

(18) Additional oversized diameter housing hole for oil cooling from external circuit

In the event of an oil cooling system through centralized external circuit (e.g.: paper plants) it is necessary to foresee an additional hole of proper dimensions on gear reducer housing in order to allow the lubricant flow for gravity.

The setting of oil flow at gear reducer input must be executed during running by the Customer.

The heat quantity dissipated by the system depends on oil flow and on input and output oil temperature difference.

Available only for mounting positions B3 and B8.

Tapped butt-end hole **G 2 1/2"**.

Supplementary description when ordering by **designation: additional oversized diameter housing holes.**

(19) Forced bearing lubrication

All gear reducers according to train of gears, design, transmission ratio, mounting position, input speed and duty cycle can be equipped with a non-oil-bath forced bearing lubrication system through **internal piston pump** or external **lubrication system with motorpump** (see ch. 24).

The following table resumes the cases (see at ch. 26, 28) where – **according to the only mounting position** and for continuous duty – it is necessary to foresee the bearing lubrication. For other operating conditions, consult us.

Train of gears	Designs	Presence of **lubrication pump** Mounting position					
		B3	**B6**	**B7**	**B8**	**V5**	**V6**
2I, 3I, 4I	**all**	–	–	–	n.a.	P	P
C2I	**U02A, U02N sin**	–	P	–	n.a.	P	P
	U02H, U02M sin	P	P	–	n.a.	P	P
	U02V, U02L sin	P	–	–	–	P	P
C3I	**all**	–	P	–	n.a.	P	P

– Forced bearing lubrication not necessary.
P Forced bearing lubrication necessary (with pump or motor pump).
n.a. Mounting position not foreseen.

For cases highlighted with ▲ ch. 25 and 27, foresee the lubrication with **motor pump** and possible heat exchanger (see ch. 22, 24, 30(29)).

IMPORTANT. For the running at cold starting ($T_{ambient} = T_{oil} \leqslant 25$ °C) and lubrication systems (see also ch. 24 and 30 (11)), **always foresee the oil heater** (see ch. 30 (25)).

In general, when the maximum system reliability is required, in presence of particulary heavy load cycles or hard ambient conditions, it is recommended to evaluate the possibility to install anyway the bearing lubrication motor pump; consult us.

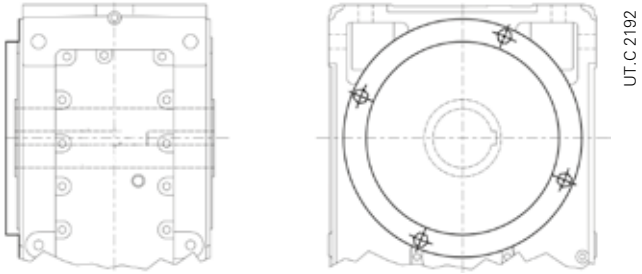
Supplementary description when ordering by **designation**: **bearing lubrication pump** or **bearing lubrication motor pump**.

(20) Hollow low speed shaft washer

Gear reducers with hollow low speed shaft or with hollow low speed shaft with shrink disc can be equipped with washer, retaining ring and screw for axial fastening (see ch. 31).

Supplementary description when ordering by **designation**: **hollow low speed shaft washer**.

(22) Hollow low speed shaft



UT.C 2192

Safety protections, made of steel, of the area not used of the hollow low speed shaft. The protection is to be mounted on low speed wheel side (on the opposite side for R 4I; see also ch. 26 and 28). Dimensions on request; consult us.

(24) Optional paint (sizes 400, 401)

The gear reducers and gearmotors can be supplied with optional painting cycles, according to following table
Additional description when ordering by **designation**: **optional paint ...** (see code stated in the table; i.e.: «**optional paint 2HRAL5010**».

Application field	Features	Corrosivity class ISO 12944-2	Durability classes ISO 12944-2	Description	Average final thickness on machined parts µm	Code
Applications in aggressive environments	Good resistance to atmospheric and aggressive agents	C4	Low	Dual-compound epoxy primer Water-soluble dual-compound enamel with acrylic-polyurethan resins	150	**1HRAL5010** (blue)
			Medium	Dual-compound epoxy primer (× 2) Water-soluble dual-compound enamel with acrylic-polyurethan resins	200	**2HRAL5010** (blue)
			High	Dual-compound epoxy primer (× 4) Water-soluble dual-compound enamel with acrylic-polyurethan resins	300	**3HRAL5010** (blue)
Outdoor applications in saline environment	Excellent resistance to atmospheric and aggressive agents Outdoor applications in saline environment	C 5 - M	Medium	Sand blasting Dual-compound antirust primer with zinc phosphates Dual-compound epoxy primer Water-soluble dual-compound enamel with acrylic-polyurethan resins	300	**2IRAL5010** (blue)
			High	Sand blasting Dual-compound antirust primer with zinc phosphates Recess sealing with polyurethan sealant Dual-compound epoxy primer Water-soluble dual-compound enamel with acrylic-polyurethan resins	400	**2KRAL5010** (blue)
Outdoor applications in chemically aggressive environment and high humidity industrial areas	Excellent resistance to atmospheric and aggressive agents Outdoor applications in chemically aggressive environment (fertilizers, etc.)	C 5 - I	Medium	Sand blasting Dual-compound antirust primer with zinc phosphates Dual-compound epoxy primer Water-soluble dual-compound enamel with epoxy resins	300	**2LRAL5010** (blue)
			High	Sand blasting Dual-compound antirust primer with zinc phosphates Recess sealing with polyurethan sealant Dual-compound epoxy primer Water-soluble dual-compound enamel with epoxy resins	400	**2YRAL5010** (blue)

Other colors are available on request, preferred RAL codes are as follows:

1000, 1003, 1004, 1013, 1014, 1015, 1016, 1018, 1021, 1023, 1028,

2000, 2001, 2002, 2003, 2004, 2009, 2010,

3000, 3001, 3002, 3003, 3005, 3007, 3011, 3016, 3020,

4003,

5000, 5001, 5002, 5003, 5005, 5007, 5008, 5009, 5011, 5012, 5013, 5015, 5017, 5018, 5019, 5021, 5022, 5023, 5024,

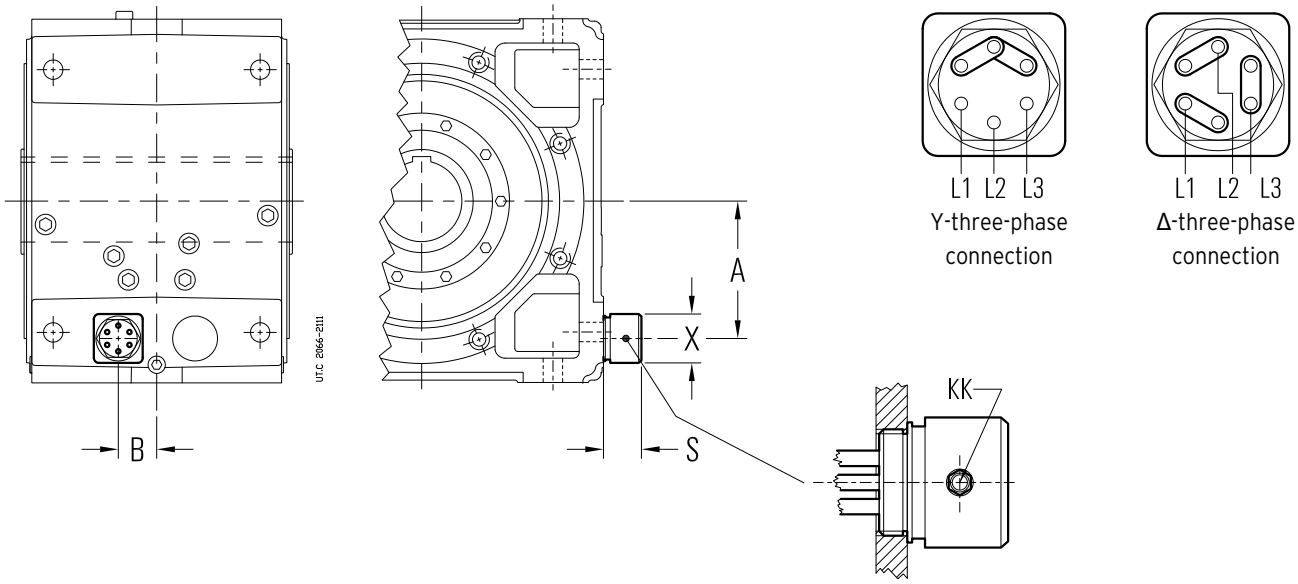
6000, 6001, 6003, 6004, 6005, 6010, 6011, 6012, 6017, 6018, 6019, 6020, 6021, 6024, 6025, 6026, 6027, 6028, 6029, 6032, 6033, 6037,

7000, 7001, 7004, 7006, 7011, 7012, 7015, 7016, 7021, 7022, 7023, 7024, 7030, 7031,7032, 7033, 7034, 7035, 7036, 7037, 7038, 7040, 7042, 7043, 7044, 7046, 7048,

8012, 8014,

9001, 9002, 9003, 9005, 9011, 9017, 9006, 9007, 9010, 9016, 9018, 9023

(25) Oil heater



Gear reducer size	A	B	S ≈	X	KK	Supply	P kW
400, 401	340	95	90	85	Pg13	~ 3 Δ230 Y400 V - 50 Hz	n. 1 × 2,1

Oil heater for gear reducer starting at low ambient temperature.

Specify the design «Oil temperature probe» together with this design.

The heater is piloted through proper control device (at customer's care e.g..: PLC or supplied by Rossi e.g. 2-threshold signalling device CT03 or three-threshold signalling device CT10) releasing when achieving the pre-set oil temperature.

IMPORTANT. The data stated in the table refer to mounting positions **B3**; for other mounting positions, consult us.

The design can be not compatible with other designs, consult us.

Features:
- specific power 2W/cm$^{2;}$
- three-phase supply Δ230 Y400 V 50-60 Hz;
- stainless steel resistors AISI 321;
- metallic terminal box; cable gland Pg13; protection IP 65;
- horizontal mounting with oil bath lubrication;
- max oil temperature 90°C;
- threaded brass joint G 2"½;
- available also in ATEX design; dimension and power values change, please consult us.

Available also in a version equipped with integrated thermostat.

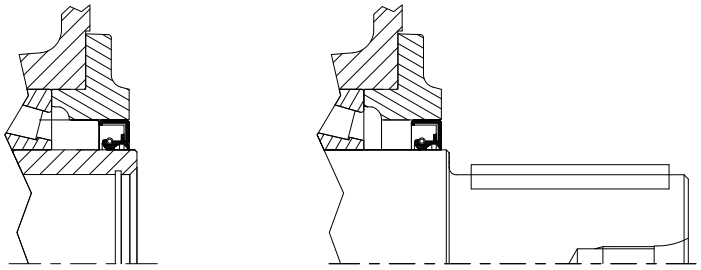
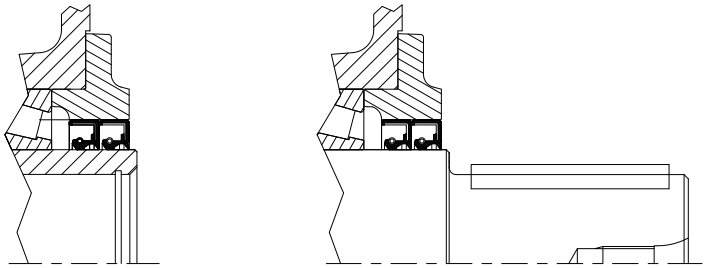
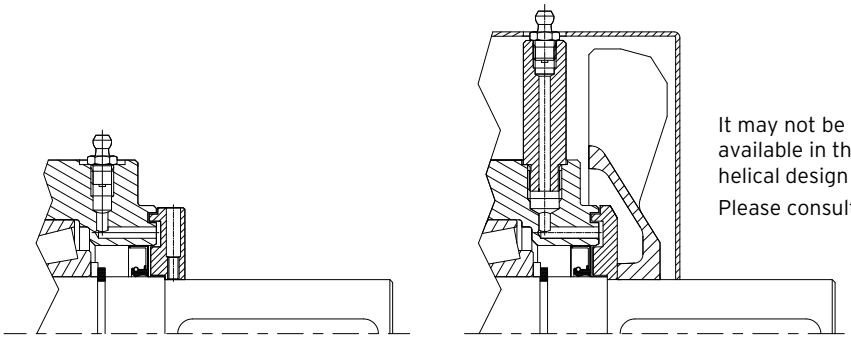
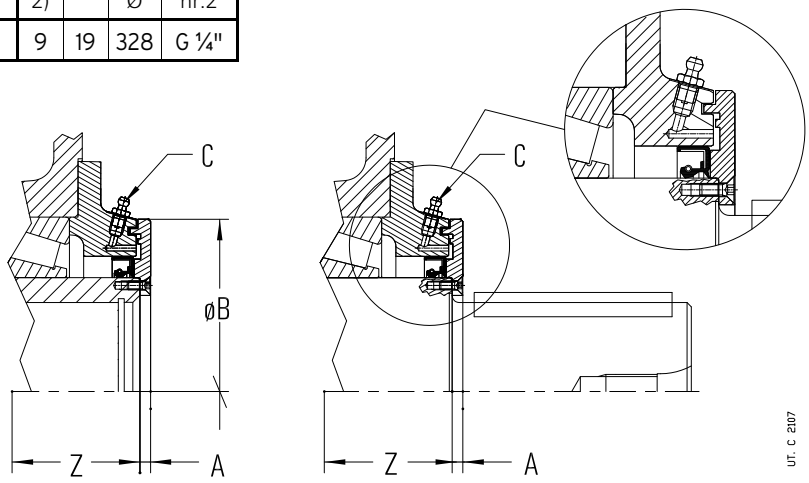
Supplementary description when ordering by **designation**: **oil heater** or **oil heater with thermostat.**

(26) High and low speed shaft seals

Available seal types (standard and on request) on high and low speed shafts are stated in the following table.

- Acrylonitrilic seal ring compound as standard; fluoro compound seal rings are available on request (e.g.: for high temperatures, for aggressive environments or for high rotation speeds, etc.); specify in the designation: **fluoro compound seal**.
- The **high speed shaft double seal** is usually not advised as the increased heating reduces the seal life.
- In case of **double seal**, the external seal ring can be mounted on the contrary (e.g. water jets); specify in the designation: external ring mounted on the contrary.
- The design **high speed shaft seal with labyrinth and greaser** can be supplied only after technical feasibility evaluation by Rossi S.p.A.: consult us.
- The **hollow shaft with shrink disc** (see ch. 30 (6)) can be supplied with labyrinth seal only on shrink disc **opposite side**; in this case, it is necessary to foresee «**hollow low speed shaft protection with shrink disc**» (see ch. 30 (7)); when this design is not available, consult us.

For the supplementary description when ordering by **designation**, see table.

Seal type	Scheme
Standard	
Double seal on high speed shaft Quite polluting environment and/or outdoor	
Low speed shaft double seal Quite polluting environment and/or outdoor	Supplementary description when ordering by **designation**: **double seal on high speed shaft**. **double seal on low speed shaft**.
High speed shaft seal with labyrinth and grease feeder («taconite») Very polluting environment (e.g.: mining industry)	 It may not be always available in the bevel helical design with fan. Please consult us. Supplementary description when ordering by **designation**: **high speed shaft seal with labyrinth and grease feeder.**
Low speed shaft double seal with labyrinth and grease feeder («taconite») Very polluting environment (e.g.: mining industry) 1)	 Supplementary description when ordering by **designation**: **low speed shaft seal with labyrinth and grease feeder.**

Gear reducer size	A 2)		B Ø	C nr.2
400, 401	9	19	328	G ¼"

1) The labyrinth disc overhangs from A dimension and from shaft shoulder; the working length of low speed shaft end will be therefore equal to E - A (for dimension C and E see ch. 26 and 28); for dimension Z see ch. 30 (1), (3).

2) Values valid for hollow shaft (with keyway or shrink disc).

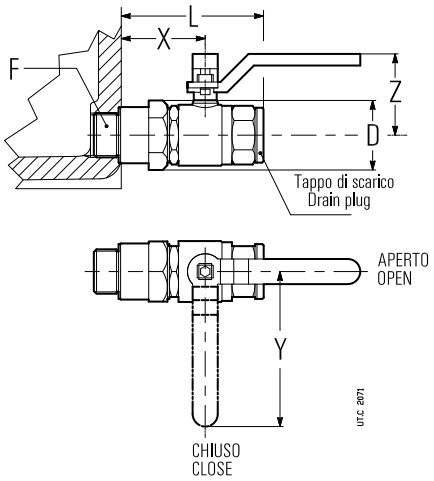
(27) Magnetic plug

Oil drain magnetic plug in order to reduce lubricant pollution and to increase the maintenance intervals.

In presence of oil drain tap (28) the oil drain magnetic plug is mounted in a second drain hole on housing and not in the tap.

Additional description when ordering by **designation**: **oil drain magnetic plug**.

(28) Oil drain tap

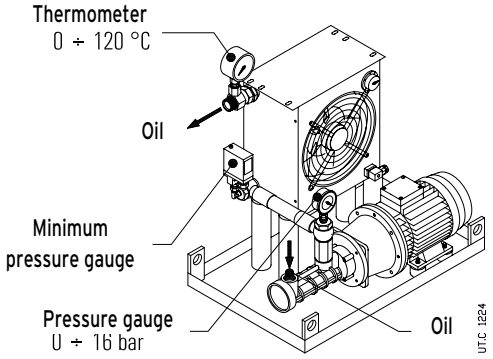


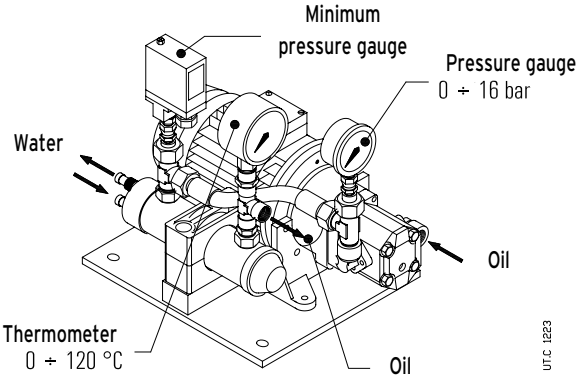
Gear reducer size	F	D Ø	L ≈	X	Y	Z
400, 401	G 1"	46	106	66	115	60

Accessory supplied already fitted.

Additional description when ordering by **designation**:
oil drain tap

(29) Independent cooling unit





Additional cooling device in the event that the other forced cooling systems are not sufficient anymore for the dissipation of thermal power produced by gear reducer during operation (see ch. 22).

Including:

- a **oil/air heat exchanger** (O/A; with thermostat 0 ÷ 90 °C) or **oil/water** (O/W);
- one **motor pump**: screw pump with fluoro rubber seals (gear pump for UR O/W4 ÷ UR O/W 21); 4 pole motor B3/B5 (three-phase 230 Y400 V 50 Hz); motor-pump connection with coupling;
- a **motor fan** (O/A) (three-phase supply 230 Y400 V 50 Hz or single phase supply 230 V 50, 60 Hz, see table on following page); 2-poles motor (UR O/A 5 and 7) and 4-poles motor (UR O/A 10 ... 46);
- one **analog manometer** (0 ÷ 16 bar) mounted between pump and exchanger;
- one **analog thermometer** (0 ÷ 120 °C) mounted at exchanger output;
- one **minimum pressure gauge** (with exchange contacts) mounted between pump and exchanger;
- one **supporting frame** with nameplate.

On request, several accessories are at disposal (supplied separately, assembly is Customer's responsibility) in order to satisfy all functionality and safety needs.

- **oil temperature probe Pt100**;
- **2-threshold signalling device CTN03** (necessary also the oil temperature probe Pt100) for the mounting to DIN EN 50022;
- **3-threshold signalling device CTN10** (necessary also the oil temperature probe Pt100) for the mounting to DIN EN 50022;
- **bi-metal type thermostat**;
- **flow gauge**;
- **filter** (with optical-electric blockage warning and one or two breathers M60).

30 - Accessories and non-standard designs

Connections realized by flexible pipes (type SAE 100 R1, maximum length 2 m) between gear reducer and cooling unit and the assembly of accessories and signalling devices are Buyer's responsibility.

For the heat exchanger power required by the independent cooling unit:

$$P_S \geq (P_1 - Pt_N \cdot ft_1 \cdot ft_2 \cdot ft_3 \cdot ft_4 \cdot ft_5) \cdot (1 - \eta) \cdot K_1$$

where:

P_S nominal power of unit [kW], i.e. the power dissipable with hot oil at approx. 80 °C and cooling air at 40 °C (O/A) or cooling water at 20 °C (O/W) with stated capacity (see following table);

P_1 power at gear reducer input [kW] (consider the power installed when being uncertain about the power absorbed).

Pt_N nominal thermal power of gear reducer [kW] (see ch. 22);

ft_1 thermal factor according to input speed (see ch. 22);

ft_2 thermal factor according to ambient temperature (see ch. 22);

ft_3 thermal factor according to mounting position (see ch. 22);

ft_4 thermal factor according to altitude (see ch. 22); for UR O/A it is necessary to derate also the exchanger power: multiply P_S by 0,85 (by 1 000 ÷ 2 500 m above sea level) or by 0,71 (by 2 500 ÷ 5 000 m above sea level);

ft_5 thermal factor according to air speed on the housing (see ch. 22);

η gear reducer efficiency (see ch. 24);

$K_1 = 1{,}18$ takes into account the decrease of the exchanger efficiency due to dirt on the external surface

Oil/air unit (UR O/A)

Designation	P_S	Exchanger	Oil motor pump		Motor fan			Oil connections		Exchanger capacity	Mass
			motor	load	motor		load	Intake	delivery		
	kW		3~ kW	dm³/min	kW		m³/h			dm³	kg
UR O/A 5	**5**	AP 300E	1,5	30	0,12	1~	900	1" (1"1/4)[2]	1" (1"1/4)[2]	2	60
UR O/A 7	**7**	AP 300/2E	1,5	30	0,12	1~	1300			3.6	65
UR O/A 10	**10**	AP 430E	1,5	30	0,21	3~	2750			3.6	70
UR O/A 13	**13**	AP 430/2E	1,5	30	0,18	3~	2700			5.5	75
UR O/A 16	**16**	AP 580 EB	2,2	56	0,18	3~	3500			15	96
UR O/A 21	**21**	AP 680 EB	2,2	56	0,69	3~	6300			16	118
UR O/A 26	**26**	AP 730 EB	2,2	56	0,69	3~	7450	1" 1/4	1" 1/2 (1")[1]	16	127
UR O/A 30	**30**	AP 730 EB	3	80	0,69	3~	7450			16	127
UR O/A 40	**40**	AP 830 EB	2,2	56	0,81	3~	9500			20	140
UR O/A 46	**46**	AP 830 EB	3	80	0,81	3~	9500			20	140

1) Connection for UR O/A 16 delivery.

2) Connection for the delivery in case of filter.

Oil/water unit (UR O/W)

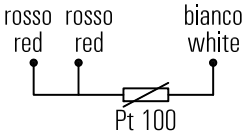
Designation	P_S	Exchanger	Oil motor pump		Water		Oil connections		Capacity exchanger	Mass
			motor	load	load	connect.	Intake	delivery		
	kW		3~ kW	dm³/min	dm³/min				dm³	kg
UR O/W 4	4	T60CB1	0,37	16	≥ 8 (< 30)	Ø 12	G 1/2"	G 1/2"	0,4	13
UR O/W 6	6	T60CB2	0,37	16	≥ 10 (< 30)	Ø 12	G 1/2"	G 1/2"	0,6	15
UR O/W 9	9	T80CB2	0,55	16	≥ 16 (< 30)	Ø 12	G 1/2"	G 1/2"	1	18
UR O/W 13	13	MS84P2	1,1	30	≥ 25 (< 45)	G 1/2"	G 3/4"	G 3/4"	1	31
UR O/W 21	21	MS134P1	1,5	30	≥ 40 (< 110)	G 1"	G 3/4"	G 3/4"	3	44
UR O/W 31	31	MS134P1	2,2	56	≥ 50 (< 110)	G 1"	G 1"1/4	G 1"1/4	3	55
UR O/W 50	50	MS134P2	3	80	≥ 80 (< 110)	G 1"	G 1"1/4	G 1"1/4	4,5	70

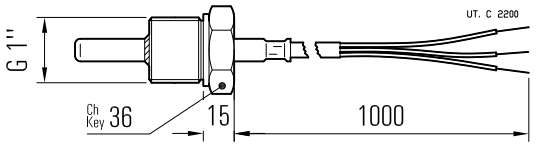
Supplementary description when ordering by **designation**:

independent oil-air cooling unit UR O/A ... or **independent oil-air cooling unit UR O/W ...**, possibly integrated, when required by the application, with the description: «**Forced lubrication ...**» and the statement of bearings and/or gears to be lubricated.

For dimensions, accessories, **low temperature starting** and further technical details, see specific documentation.

(30) Oil temperature probe





Remote oil temperature gauge; installation instead of drain plug, or into a hole properly pre-arranged by the Buyer. The temperature gauge is realized with a thermo-resistor Pt100 having following features:

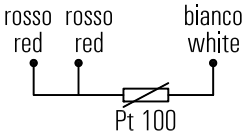
- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- operation temperature field -40 °C ÷ 200 °C;
- max current 3 mA;
- 3 wire connection according to IEC 751 (see fig. on the top);
- stainless steel probe AISI 316; diameter 6 mm;
- cable 1 m long with free end.

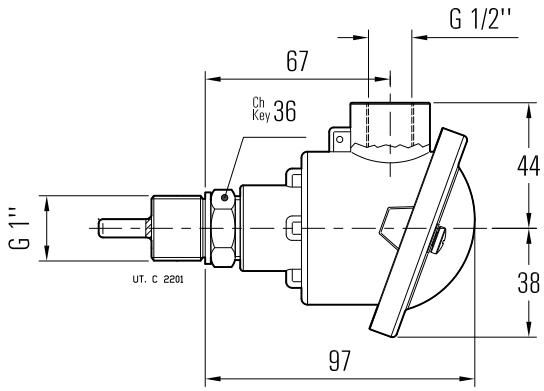
For the connection of probe to relevant signalling device CT03 or CT10 (on request, consult us) use a protected section cable ⩾ 1,5 mm^2 positioned separately from power cables.

In case of gear reducer supplied **filled with oil** foresee the probe equipped with **immersion bulb** (pre-mounted in the factory), its position is to be agreed with Rossi; consult us.

Supplementary description when ordering by **designation**: **oil temperature probe**.

(31) Oil temperature probe with terminal box and amperometric transducer 4 ÷ 20 mA





Remote oil temperature gauge, with terminal box and amperometric transducer; installation instead of drain plug, at Buyer's responsibility. The temperature gauge is realized with a thermo-resistor Pt100 having following features:

- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- operation temperature field -40 °C ÷ 200 °C;
- 3 wire connection according to IEC 751 (see fig. on the top);
- stainless steel probe AISI 316; diameter 6 mm;
- amperometric transducer with output signal 4 ÷ 20 mA;
- alluminium terminal block (supplied without cable gland);
- IP65 protection;
- input cables G ½'';

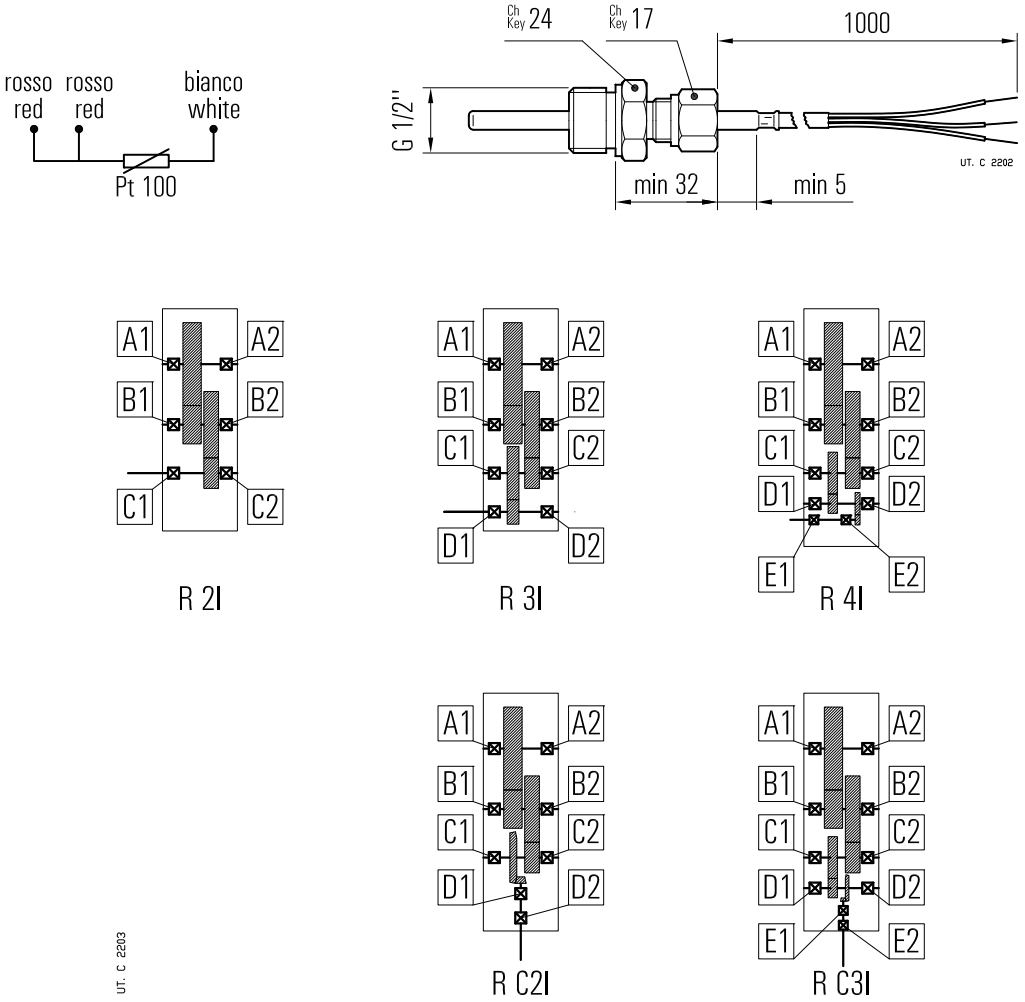
For the connection of probe to relevant signalling device CT03 or CT10 (on request, consult us) use a protected section cable ⩾ 1,5 mm^2 positioned separately from power cables.

ATTENTION. Accessory available only after technical feasibility evaluation by Rossi: consult us.

In case of gear reducer supplied **filled with oil** foresee the probe equipped with **immersion bulb** (pre-mounted in the factory), its position is to be agreed with Rossi; consult us.

Supplementary description when ordering by **designation**: **oil temperature probe with amperometric transducer.**

(32) Bearing temperature probe



Probe for the remote monitoring of bearing temperature; installation (Buyer's responsibility) in a hole properly pre-arranged, next to a bearing **to be agreed during order phase** (for the most common cases, in order to facilitate the identification of bearing to be monitored, refer to following scheme).

The temperature gauge is realized with a thermo-resistor Pt100 having following features:

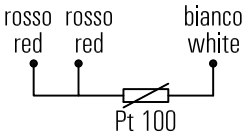
- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- operation temperature field -40 °C ÷ 200 °C;
- max current 40 mA;
- 3 wire connection according to IEC 751 (see fig. on the top);
- stainless steel AISI 316 flat probe; diameter 6 mm;
- stainless steel **sliding** steel .
- cable 1 m long with free end.

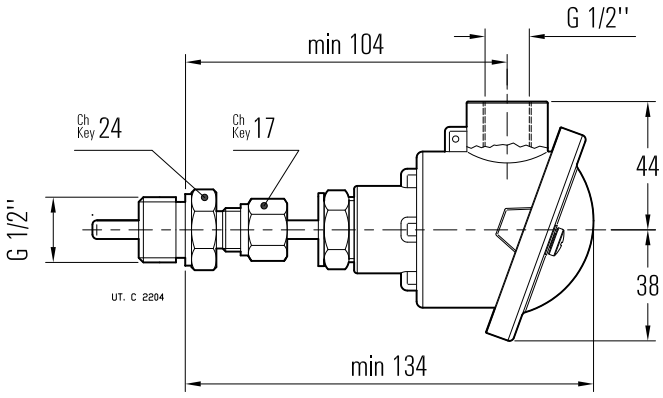
For the connection of probe to relevant signalling device CT03 or CT10 (on request, consult us) use a protected section cable ⩾ 1,5 mm^2 positioned separately from power cables.

ATTENTION. Accessory available only after technical feasibility evaluation by Rossi: consult us.

Supplementary description when ordering by **designation**: **bearing temperature probe**

(33) Bearing temperature probe with terminal box and amperometric transducer 4 ÷ 20 m





Probe for remote bearing temperature monitoring, with terminal box and amperometric transducer; installation (at Buyer's responsibility) in a threaded hole properly pre-arranged next to a bearing **to be agreed when ordering** (for the most common cases, in order to facilitate the identification of the bearing to be monitored, it is possible to refer to the scheme at (32)).

The temperature gauge is realized with a thermo-resistor Pt100 having following features:

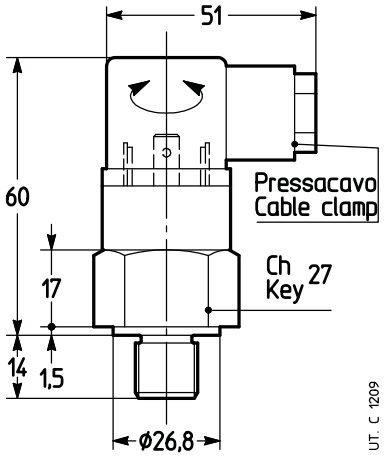
- platinum wire with 100 Ω at 0 °C according to EN 60751;
- precision class B according to EN 60751;
- operation temperature field -40 °C ÷ 200 °C;
- 3 wire connection according to IEC 751 (see fig. on the top);
- amperometric transducer with output signal 4 ÷ 20 mA;
- alluminium terminal block (supplied without cable gland);
- IP65 protection;
- input cables G ½'';
- stainless steel AISI 316 flat probe; diameter 6 mm;
- stainless steel **sliding** steel .
- cable 1 m long with free end.

For the connection of probe to relevant signalling device CT03 or CT10 (on request, consult us) use a protected section cable ⩾ 1,5 mm^2 positioned separately from power cables.

ATTENTION. Accessory available only after technical feasibility evaluation by Rossi: consult us.

Supplementary description when ordering by **designation**: bearing temperature probe with **amperometric transducer.**

(34) Bi-metal type thermostat



Bi-metal type thermostat for the control of the maximum admissible oil temperature.

Thermostat specifications:

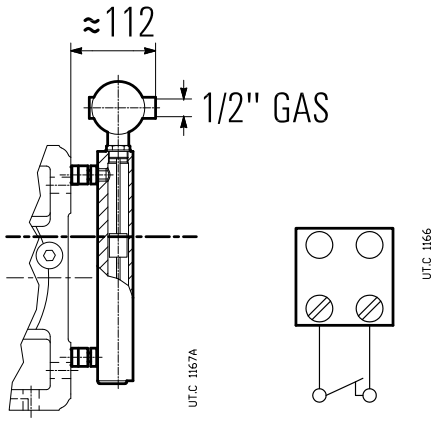
- NC contact with maximum current 10 A 240 V a.c. (5 A - 24 V d.c.);
- G 1/2" thread connection;
- Pg09 DIN 43650 cable cland;
- IP65 protection;
- setting temperature 90 °C ± 5 °C (other setting temperatures are possible, on request);
- differential temperature 15 °C.

Mounting into a threaded plug (position to be defined according to mounting position and mounting arrangement: consult us) and oil bath lubrication is Buyer's responsibility.

ATTENTION. Accessory available only after technical feasibility evaluation by Rossi: consult us.

Supplementary description when ordering by **designation**: **bi-metal type thermostat**.

(35) Oil level switch with float



It is a level control device with reed contacts in a supporting stem moved by the magnetic field activated by the magnets included in the float.

The float and the supporting stem are included in a hollow column of not magnetic material connected to the gear reducer housing through communicating vessels.

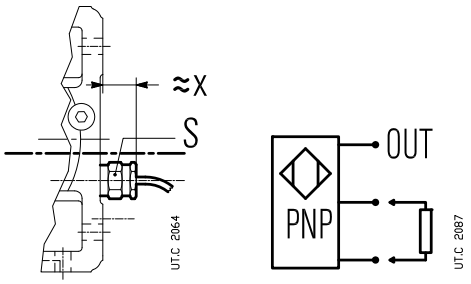
Connecting features:
- 2 wires connection;
- maximum voltage: 350 V
- maximum current: 1.5 A
- 1 cable input 1/2" UNI 6125 – IP65;
- G 1" brass joint.

The switch is supplied ready for use; when level goes down approx 5 mm, the switch goes on and contact opens.

When filling oil in the gear reducer it is necessary to verify that device is properly calibrated. If any problems occur during this operation contact Rossi.

ATTENTION. Accessory available only after technical feasibility evaluation by Rossi S.p.A.: consult us.
Supplementary description when ordering by **designation: oil level switch with float**

(36) Oil optical probe



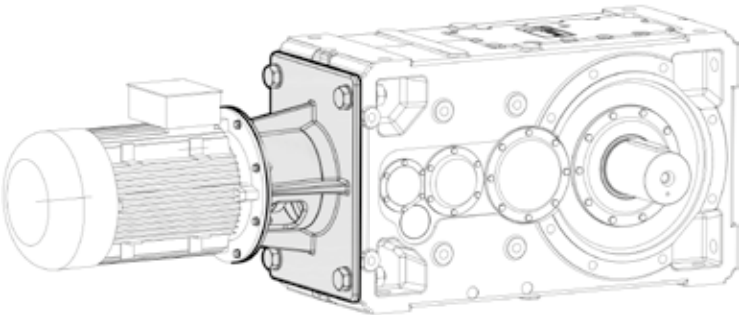
Optical scanner, without mobile parts, for the constant control of oil level, inside the gear reducer at rest (e.g. control before starting the machine or the plant).

Features:
- Stainless steel probe.
- operation temperature range -40 °C ÷ 125 °C;
- d.c. supply 12 ÷ 28 V (other types on request; consult us);
- PNP output (other types on request, consult us), max 100 mA;
- G 1" thread connection;

Supplementary description when ordering by **designation**: **oil optical probe.**

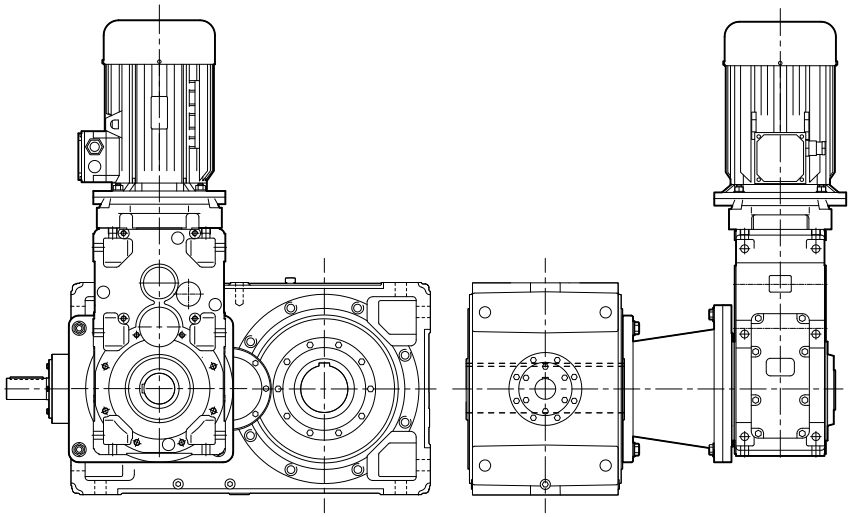
Miscellaneous

- Motor bell housings



Nodular cast iron bell housing for eletric motor-gear reducer connection through flexible coupling. Available for motor size IEC 100 ... 400; on request also with NEMA motor coupling dimensions.

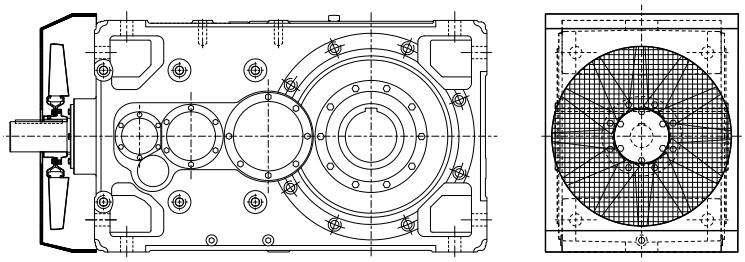
- Auxiliary drive

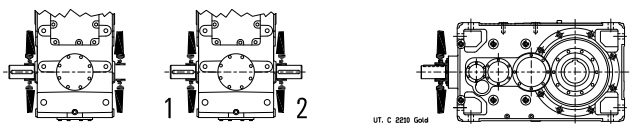


UT.C 2209_Gold

Additional motor drive with bevel helical gearmotor, trains of gears CI, ICI, C2I, connected with main gear reducer through bell, coupling and free wheel.

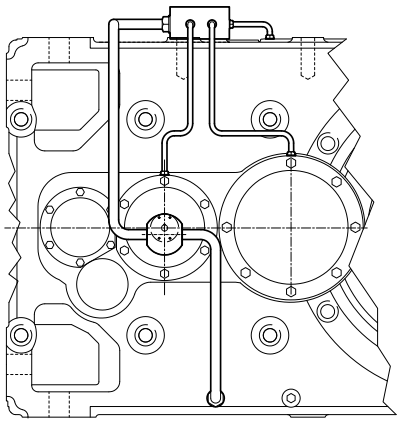
- Axial fan cooling





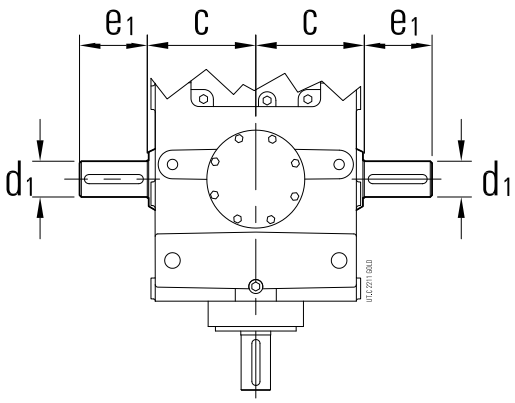
Forced cooling by axial fan for applications with one direction of rotation only (to be specified when ordering); for thermal factor values ft_{1b} see ch. 22. The possible designs are those illustrated below. Dimensions on request: consult us.

- Pump driven by gear reducer



External gear pump driven directly by a gear reducer high speed shaft for the forced lubrication of bearings and/or gears. Self-priming operation, with non-return valve, single acting (one-way applications) or double-acting (bidirectional applications); absence of electrical power; flow rate proportional to the shaft rotational speed of the gear unit. Dimensions and other specifications, on request: consult us.

- Additional intermediate shaft overhung for bevel helical gear reducers



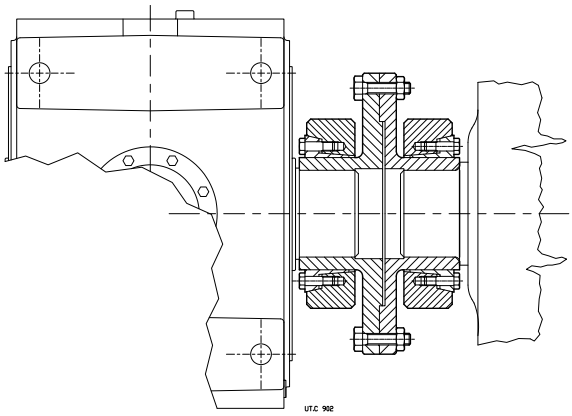
Train of gears	u_{N1} 1)	Nominal transmission ratio i_N	Shaft end dimensions		
			c	**d_1** Ø	**e_1**
C2I	**2**	$i_N \leqslant 25$	335	90	170
	2,5	$28 \leqslant i_N \leqslant 40$			
	3,15	$45 \leqslant i_N \leqslant 50$			
	4	$56 \leqslant i_N \leqslant 80$			
	5	$i_N \geqslant 90$			
C3I	**2**	–	325	65	140
	2,5	$i_N = 125$			
	3,15	$160 \leqslant i_N \leqslant 200$			
	4	$i_N \geqslant 250$			
	5	–			

1) Nominal transmission ratio of first reduction stage.

Bevel helical gear reducers can be equipped with a (single or double) shaft overhung on wheel shaft of first reduction stage (bevel wheel) in order to allow the realization of combined units or the application of auxiliary devices (i.e.: external backstop device). Main dimensions of shaft end as per following table (for other dimensions see ch. 24).

In the table are stated the nominal transmission ratios of first reduction stage – according to total transmission ratios – with which it is possible to calculate the rotation speed of the auxiliary overhung.

- Low speed shaft with flange coupling for shaft mounting arrangements



Low speed cylindrical shaft without keyway for application of a flange coupling for drive unit shaft mounting.

- Pre-arrangement for vibration monitoring devices

Position, number and dimension of holes to be agreed when ordering.

- Ⓔx Gear reducer design ATEX II 2 GD and 3 GD (sizes 400, 401)

Helical and bevel helical gear reducers and gearmotors may be supplied according to Directive ATEX in order to be used in potentially explosive atmospheres – category **2 GD** (for operation in zones 1 (gas), 21 (dust): **probable** presence of explosive atmosphere) and **3 GD** (for operation in zones 2 (gas), 22 (dust): **improbable** presence of explosive atmosphere) – with surface temperature T 135 °C (T4).

These are the main variations of the product:

– fluoro-rubber seal rings;
– metal plugs; filler plug with filter and valve;
– special name plate with ATEX mark and indication of application limits;
– external protection based on a water-soluble dual-compound polyrethane **conductive** enamel, **color grey** RAL 7040, corrosivity class C3 ISO 12944-2;
– «ATEX instructions» manual.

For category **2 GD**[1] (**quarterly control**) also:

– double seal rings on low speed shaft;
– oil temperature probe;
– possible bearing temperature probes.

Temperature range: -20 ÷ +40 °C (0 ÷ +40 °C for gear reducers supplied with bearing lubrication pump).

The «**ATEX instructions**» (with the additional documentation, if any) are **integral part of the supply of each gear reducer**; every indication stated in it must be carefully applied. Consult us if need be.

Attention. In the following cases ATEX design of gear reducer is incompatible with accessories and non-standard designs:

Gear reducer size selection

Accessory or non-standard design	Gear reducer ATEX II design	
	2 GD	**3 GD**
Hollow low speed shaft with shrink disc (6)	●	●
Optional paint according to cycles 3H..., 2I..., 2L... (24)	○	○
Heater (25)	○	○
Independent cooling unit (29)	–	–
Oil temperature probes (30) (31)	○	○
Bearing temperature probes (32) (33)	○	○
Bi-metal type thermostat (34)	–	–
Oil level switch with float (35)	2)	●

– Not available.
● Available.
○ Available but in ATEX design suitable for gear reducer's ATEX design and for use purpose and area.
1) The presence of bearing lubrication pump requires one or more additional bearing temperature probes.
2) This accessory is available for category 2 G (zone 1) only.
3) When determining ft_1 consider a value of ft_{1a} (see page 28) **never exceeding 1**.

Determine the size of gear reducer as indicated in ch. 5 considering following additional indications:

- **maximum input speed** $n_1 \leq$ **1 500 min**$^{-1}$; for other input speed, consult us.
- **service factor required** determined as per ch. 3, increased by table correction factor fs_{ATEX} (see table 1) and anyway **never lower than 1**; inpresence of a hollow shaft with shrink disc (6) verify that maximim peak torque is always lower than $M_{2SD} / f_{S\ ATEX}$ (for M_{2SD} values see ch. 17(6)).
- thermal power Pt verified as per ch. 4 according to nominal thermal power Pt_N increased by thermal factors ft_1[1] ... ft_4 and ft_{ATEX} corrective factor(see table 1).

Table 1 - Corrective factors for ATEX design of service factor required and of nominal thermal power

Category	fs_{ATEX}	ft_{ATEX}
2 GD	1,18	0,8 (0,71 for I and CI)
3 GD	1,06	0,9 (0,8 for I and CI)

1) When determining ft_1 consider a value of ft_{1a} (see page 28) **never exceeding 1**

Supplementary description when ordering by **designation**[2]:
design ATEX II ...
... 3 GD T4
... 2 GD T4 quarterly control

2) This designation, in case of gearmotor, refers to the gear reducer part only.

31 - Installation and maintenance

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31.2 Application conditions and use limits 450
31.3 General 450
31.4 Shaft end of driven machine 451
31.5 Fitting of components to shaft end 452
31.6 Hollow low speed shaft 452
31.7 Lubrication 453
31.8 Gear reducer starting at low ambient temperature ($T_{amb} = T_{oil} \leq 25$ °C) 453
31.9 Shaft-mounting arrangements 454
31.10 Tightening torque 454

31 - Installation and maintenance

31.1 - Safety

IMPORTANT: gear reducers and gearmotors supplied by Rossi are **components** and must be incorporated into machinery and **should not be commissioned before the machinery in which the components have been incorporated conforms to:**

- **Machinery directive 2006/42/EC and subsequent updatings; in particular, possible safety guards for shaft ends not being used and for eventually accessible fan cover passages (or other) are the Buyer's responsibility;**
- **«Electromagnetic compatibility (EMC)» 2004/108/EC and subsequent updatings.**

Attention! It is recommended to pay attention to all instructions of present handbook, all existing safety laws and standards concerning correct installation. Whenever personal injury or property damage may occur, foresee adequate supplementary protection devices against:

- **release or breakage of fastening screws;**
- **rotation or unthreading of the gear reducer from shaft end of driven machine following to accidental breakage of the reaction arrangement;**
- **the accidental breakage of shaft end of driven machine.**

If deviations from normal operation occur (temperature increase, unusual noise, etc.) immediately switch off the machine.

Installation

An incorrect installation, an improper use, the removing or disconnection of protection devices, the lack of inspections and maintenance, improper connections may cause severe personal injury or property damage. Therefore the component must be moved, installed, commissioned, handled, controlled, serviced and re-paired **exclusively by responsible qualified personnel specifically instructed** and have the necessary experience to **recognize** any **risks** connected with present products avoiding any possible emergencies.

Gear reducers and gearmotors of present handbook are normally suitable for installations in industrial areas: additional protection measures, if necessary, must be adopted and assured by the personnel responsible for the installation.

Attention! Components in non-standard design or with special executions or with constructive variations may differ in the details from the ones described here following and may require additional information.

Attention! For the installation use and maintenance of the **electric motor** of the possible motor-variator and/or the electric supply device (frequency converter, soft-start, etc.), and/or any optional electric devices (e.g.: independent cooling unit, etc.), consult the specific attached documentation.

If necessary, require it.

Maintenance

When operating on gear reducer or on components connected to it the machine must be at rest: disconnect motor (including auxiliary equipments) from power supply, gear reducer from load, be sure that safety systems are on against any accidental starting and, if necessary, pre-arrange mechanical locking devices (to be removed before commissioning).

Attention! During the running the gear reducers could have hot surfaces; Always wait that the gear reducer or the gearmotor to cool before carrying out any operations.

Further technical documentation can be downloaded from our website www.rossi-group.com.

31.2 - Application conditions and use limits

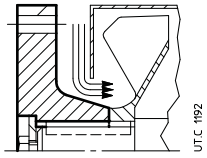
Gear reducers are designed for **industrial applications according to name plate data**, when no vibrations (permissible vibration velocity: $v_{eff} < 3{,}5$ mm/s for $P_1 \leq 15$ kW, $v_{eff} < 4{,}5$ mm/s for $P_1 > 15$ kW), no nuclear radiations and important magnetic fields, with **ambient temperature -20 ÷ +40 °C** (with peaks at +50 °C), with air velocity ⩾ 1,25 m/s, maximum altitude 1 000 m, and max relative humidity 80 % .

For continuative ambient temperature higher than 40 °C or lower than -20 °C consult us.

31.3 - General

Be sure that the structure on which gear reducer or gearmotor is fitted is plane, levelled and sufficiently dimensioned in order to assure fitting stability and vibration absence, keeping in mind all transmitted forces due to the masses, to the torque, to the radial and axial loads.

Position the gear reducer or gearmotor so as to allow a free passage of air for cooling both gear reducer and motor (especially at gear reducer and motor fan sides).



If there is fan on the gear reducer verify that there is sufficient space allowing for adequate circulation of cooling air also after fitting coupling protection. If a coupling protection is fitted, smooth the coupling hub, if necessary.

Avoid: any obstruction to the air-flow; heat sources near the gear reducer that might affect the temperature of cooling-air and of gear reducer for radiation; insufficient air recycle or any other factor hindering the steady dissipation of heat.

Mount the gear reducer so as not to receive vibrations.

When external loads are present use pins or locking blocks, if necessary.

When fitting gear reducer and machine it is recommanded to use **locking adhesives** such as LOCTITE on the fastening screws (also on flange mating surfaces).

For outdoor installation or in a hostile environment protect the gear reducer or gearmotor with anticorrosion paint. Added protection may be afforded by water-repellent grease (especially around the rotary seating of seal rings and the accessible zones of shaft end).

Gear reducers should be protected wherever possible, and by whatever appropriate means, from solar radiation and extremes of weather; weather protection **becomes essential** when high or low speed shafts are vertically disposed.

For ambient temperatures higher than 40 °C or lower than 0 °C, consult us.

If overloads are imposed for long periods or if shocks or danger of jamming are envisaged, then motor-protection, electronic torque limiters, fluid couplings, safety couplings, control units or other similar devices should be fitted.

Attention! Bearing life, good shaft and coupling running depend on alignment precision between the shafts. Carefully align the gear reducer with the motor and the driven machine (with the aid of shims if need be), interposing flexible couplings whenever possible.

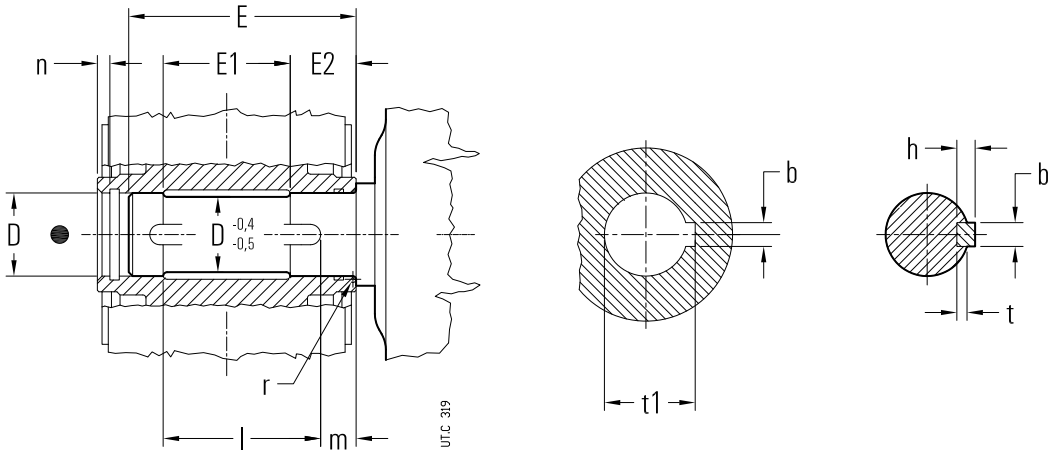
Whenever a leakage of lubricant could cause heavy damages, increase the frequency of inspections and/or envisage appropriate control devices (e.g.: remote oil level gauge, lubricant for food industry, etc.).

In polluting surroundings, take suitable precautions against lubricant contamination through seal rings or other.

31.4 - Shaft machine of driven machine

Dimensions of **machine shaft end**, which the gear reducers's hollow shaft is to be fitted to, are those recommended in the table and shown in the figure.

Important: the shoulder diameter of the driven machine shaft end abutting with the gear reducer must be at least **(1,18 ÷ 1,25) · D.**



Gear reducer size	Hollow shaft		Shaft end of driven machine						Parallel key	Keyway		
	D	**n**	**E**	**E_1**	**E_2**		**m**	**r**	**b × h × l**	**b**	**t**	**t_1**
	Ø H7 / h6, j6		2)		2)	1) 2)			h9 h11	$H9_{hub}$ $N9_{shaft}$	shaft	hub
400, 401	200	14	620	300	165	130	10	5	45 × 25 × 600	45	15	210,4

1) Values valid for **R 4I**.

2) In presence of «Low speed shaft seal with labyrinth and grease feeder» (ch. 30 (26)) it is necessary to increase the dimension E (E2) of quantity A stated in the table on ch. 30 (26).

31.5 - Mounting of components on high and low speed shaft

Generally, it is recommended to machine the hole of parts keyed onto shaft end, tolerance H7. For high speed shaft end with D ⩾ 55mm, tolerance can be G7, provided that load is uniform and light. Further data according to the table «High and low speed shaft end» (ch. 24).

Before mounting, thoroughly clean mating surfaces with proper antirust products, and lubricate against seizure and fretting corrosion.

With hollow low speed shaft with **shrink disc on machine opposite side** it is necessary to protect the cylindrical portion of machine shaft end on **shrink disc opposite side** using adequate products against fretting corrosion.

Installation and removal operations should be carried out with the aid of jacking screws and pullers using the tapped hole at the shaft butt-end (see table in fig. 2) taking care to avoid impacts and shocks which may irreparably damage the bearings, the circlips or other parts or cause sparks; for H7/m6 and K7/j6 fits it is advisable that the part to be keyed is preheated to a temperature of 80 ÷ 100 °C.

The couplings having a tip speed on external diameter up to 20 m/s must be statically balanced; for higher tip speeds they must be dynamically balanced.

Where the transmission link between gear reducer and machine or motor generates shaft end loads, ensure that: loads do not rise above catalog values:

- loads do not rise above the values stated at ch. 29 and loads do not rise above the values of the application design;
- transmission overhang is kept to a minimum;
- drive-chains should not be tensioned (if necessary – alternating loads and/or motion – foresee suitable chain tighteners); if the peripheral speed of the chain is greater than 1 m/s it is necessary to install proper malfunction markers such as aligning sensors, etc.
- in the gear transmission there is an adequate gear mesh (≈ 0,03 ÷ 0,04 · m) between pinion and rack (bushing).
- drive-belts should not be over-tensioned.

For splined couplings apply adequate products against oxydation.

31.6 - Hollow low speed shaft

In order to have an easier installing and removing, proceed as per the drawings a, b, respectively.

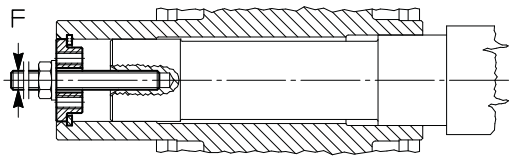
For the axial fastening it is possible to adopt the system as per fig. c, d. When shaft end of driven machine has no shoulder, a spacer may be located between the retaining ring and the shaft end itself.

The machine shaft end must be as stated at ch. 31.4 (ch. 30 (5) and 30 (6) in case of stepped hollow low speed shaft or shrink disc). For vertical ceiling-type mounting, contact us.

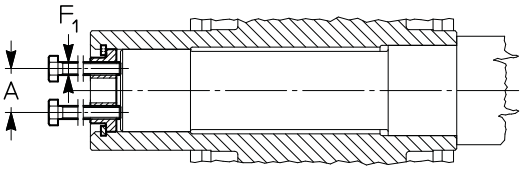
On request it is possible to supply (ch. 30 (20)) a washer for the mounting, disassembling and the axial fastening of gear reducer. Parts in contact with the retaining ring must have sharp edges. When tightening the bolt, we recommend the use of a locking adhesive LOCTITE 601.

Whenever **personal injury** or **property damage** may occur, foresee **adequate supplementary protection devices against**:

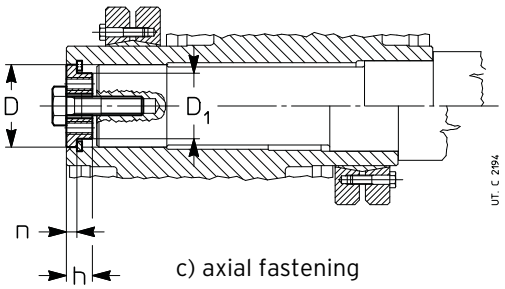
- **the rotation or unthreading of gear reducer** from machine shaft end following to accidental breakage of the reaction arrangement;
- **accidental breakage of shaft end of driven machine.**



a) installing



b) removing



c) axial fastening

Gear reducer size	A	A 1)	D Ø	D Ø 1)	D_1 Ø	D_1 1)	F	F_1	h	n	Bolt for axial fastening UNI 5737-88
400, 401	144	134	210	200	180	170	M30	M24	34	14	M30 × 90

1) Dimension valid for design with hollow low speed shaft with keyway.

31.7 - Lubrication

Gear pairs are oil-bath lubricated.

Bearings are either oil-bathed or splashed with the exception of the top bearings which are lubricated with a pump (see ch. 30 (19)) or lubricated «for life» with grease (with or without NILOS ring according to speed).

Gear reducers are supplied **without oil**; before putting into service, fill to the specified level with **mineral oil** with **EP** (extreme pressure) **additives**, having the ISO viscosity grade given in the table, according to ambient temperature and output speed. Under normal conditions the first and the second speed range are for train of gears **2I**, the third is for trains of gears **3I**, **4I**, **C2I**, **C3I** and the fourth is for particular applications.

When it is required to increase oil change interval («long life»), the ambient temperature range, and/or to reduce oil temperature, use PAO polyalphaolefine based **synthetic oil** with **EP** (extreme pressure) **additives**, having ISO viscosity grade as indicated in the table.

For continuous duty, the use of synthetic oil is recommended in the following case of gear reducers with size and mounting position marked with (see ch. 26, 28) and bevel helical gear reducers with double extension high speed shaft. An overall guide to oil-change interval is given in the table, and assumes pollution-free surroundings. When heavy overloads are present, halve the values.

Apart from running hours:
- replace mineral oil at least each 3 years;
- replace or regenerate synthetic oil each 5 ÷ 8 years according to gear reducer size, running and environmental conditions.

Never mix different makes of synthetic oil; if oil-PAO polyalphaolefine based **synthetic oil** with **EP** (extreme pressure) **additives**, change involves switching to a type different from that used hitherto, then give the gear reducer a through clean-out.

Seal rings: duration depends on several factors such as dragging speed, temperature, ambient conditions, etc.: as a rough guide, it can vary from 3 150 to 25 000 h.

ISO viscosity grade
Mean kinematic viscosity [cSt] at 40 °C.

Speed n_2 min^{-1}	Ambient temperature[1] [°C]				
	mineral oil			synthetic oil	
	-20 ÷ 0	0 ÷ 20	20 ÷ 40	-20 ÷ 0	0 ÷ 40
› 224	150	150	150	150	150
224 ÷ 22,4	150	150	220	150	220
22.4 ÷ 5,6	150	220	320	220	320
‹ 5,6	220	320	460	320	460

Oil temperature °C	Oil-change interval [h]	
	mineral oil	oil synthetic
⩽ 65	8 000	25 000
65 ÷ 80	4 000	18 000
80 ÷ 95	2 000	12 500
95 ÷ 110[2]	-	9 000

Oil list table

Manufacturer	**PAO synthetic oil** ISO VG 150 ... 460	Mineral Oil ISO VG 150 ... 460
ENI	Blasia SX	Blasia
ARAL	Degol PAS	Degol BG
BP	Enersyn EPX	Energol GR XP
CASTROL	Alphasyn EP	Alpha SP
FUCHS	Renolin Unisys CLP	Renolin CLP
KLÜBER	Klübersynth GEM4	Klüberoil GEM 1
MOBIL	Mobil SHC Gear	Mobilgear 600 XP
SHELL	Omala S4 GX / S4 GXV	Omala S2 G/ S2GV
CHEVRON	Pinnacle	Meropa
TOTAL	Carter SH	Carter EP

Warning: before unscrewing the filler plug with valve (symbol) wait until the unit has cooled and then open with caution.

31.8 - Gear reducer starting at low ambient temperature ($T_{amb} = T_{oil} \leqslant 25$ °C)

The **minimum** ambient temperature (matching with the oil temperature) to which it is allowed to start the gear reducer depends from lubrication system and from lubricant type.

Gear reducers with splash lubrication

The gear reducer can be started with oil/ambient temperature ⩾ - 20 °C, keeping in mind to follow all lubricant viscosity instructions as per previous paragraph («Lubrication»).

In presence of an eventual independent cooling unit with heat exchanger (but without forced lubrication), it is necessary to start the motor pump when achieving the oil temperature of 60 °C.

Gear reducers with forced bearing lubrication

In presence of forced bearing lubrication systems (s. ch. 24 and ch. 30 (8) and (9)), the gear reducer can be started only if oil temperature is ⩾ 25 °C, respecting all lubricant viscosity instructions as per ch. 31.6.

Therefore, before starting the gear reducer it is necessary to preheat the oil bath using heaters (see ch. 30 (10)) up to achieving a temperature of 25 °C.

1) Peaks of 10 °C below and 10 °C above the ambient temperature range are acceptable. For the running at **low temperature starting** ($T_{amb} = T_{oil} \leqslant 25$ °C) and **forced lubrication**, **foresee always the heater** of **oil pre-heating** (see ch. 31.7).
2) Values admitted only for non continuous duty.

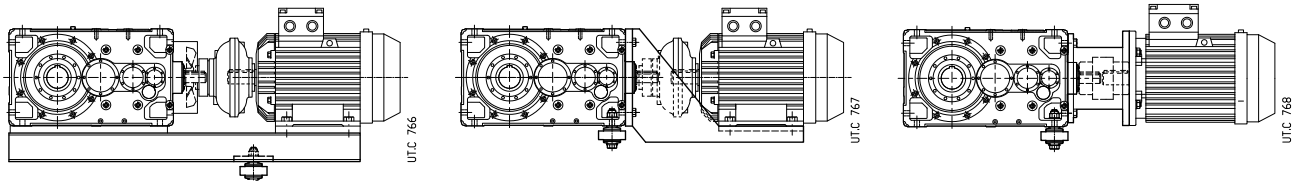
31.9 - Shaft mounting arrangements

The strength and shape of the housing offer **advantageous** possibilities for shaft mounting even – for instance – in the case of gearmotor with belt drive, hydraulic coupling, etc.

A few possible examples of shaft mounting arrangements are shown.

IMPORTANT. When shaft mounted, the gear reducer must be supported both axially and radially (also for mounting positions B3 ... B8) by the machine shaft end, as well as anchored against rotation only, by means of a reaction having **freedom of axial movement** and **sufficient clearance** in its couplings to permit minor oscillations always in evidence without provoking dangerous overloading on the gear reducer. Lubricate with proper products the hinges and the parts subject to sliding; when mounting the screws it is recommended to apply locking adhesives type LOCTITE 601.

In case of axial fastening with elastic constraint, in B3 or B8 mounting position, ensure that housing oscillation while running does not exceed the perfectly horizontal position.



Semi flexible and economic reaction arrangement (see ch. 30.7): with bolt using disc springs.

31.10 - Tightening torque

Unless otherwise stated, usually it is sufficient to use screws in class 8.8;

Before tightening the bolt be sure that the eventual centering of flanges are inserted properly

In general, the bolts are to be diagonally tightened with the maximum tightening torque.

The bolts of shrink disc must be gradually and uniformly tightened, with continuous sequence (not diagonally!) and in several phases up to the reaching of maximum tightening torque.

Before tightening, carefully degrease the screws; in the event of heavy vibrations, heavy duties, frequent drive inversions apply a proper thread-locking sealant Loxeal 23-18 or equivalent.

Screws UNI 5737-88 UNI 5931-84	Tightening torques ***M***s [N m]			
	Feet, flanges and tapped butt-end holes			Shrink disc
	Class 8.8	Class 10.9	Class 12.9	Class 10.9
M10	50	70	85	-
M12	85	120	145	-
M16	205	290	350	-
M20	400	560	680	490
M24	710	1 000	1 200	840
M30	1 380	1 950	2 350	-
M36	2 500	3 550	4 200	-
M45	5 000	7 000	8 400	-
M56	9 800	13 800	16 500	-

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G series
Drive units on swing base

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32 - Drive units on swing base

Specifications

Drive units are composed of an **electric motor** and a **right angle shaft gearbox** both in B3 mounting position (horizontal shafts), assembled on a **swing base** made of electrically-welded and annealed steel properly sized, and connected through a coupling.

The **coupling** can be of different types: flexible, basic hydraulic, or hydraulic with simple or double delayed fill chamber. Both types of coupling can be supplied with drum pulley for **failsafe shoe brake**. On request the option with disc brake is also available.

Both the coupling and the safety or parking brake (if any) are protected with a steel **guard** fixed to the swing base.

The swing base includes the reaction point with elastic bush for shaft-mounting. The **reaction point**, complete with screws kit for fixing to the swing base, is supplied separately, and assembling is up to Customer.

Drive unit painting is realized with synthetic paint suitable for resistance to normal industrial environments, and for the application of further coats of synthetic paint; final colour blue RAL 5010 DIN 1843.

Gear reducer

The right angle shaft gear reducer belongs to the standard Rossi production program, characterized by:

- Manufacturing and product management flexibility
- High manufacturing quality standard
- High, reliable and tested performances
- Wide range of sizes and trains of gears in order to meet Customer and application needs
- Strength, accuracy and reliability enhanced through modern design, manufacturing and operating criteria
- Reduced maintenance

Performance, dimensions and design features can be found on the relevant pages of this catalog.

All the gearboxes are designed to transmit high nominal and maximum output torque, and to withstand high external loads.

The standard arrangement for this type of drive units is shaft mounted, with gearbox with hollow low speed shaft. Connection between gearbox and machine shaft is possible with keyway or shrink disc. On request it is possible to supply covers for rotating parts.

As alternative the option for shaft mounting with solid cylindrical low speed shaft, complete with rigid flanged coupling, is available.

For further details about dimensions, matching features and available options please refer to specific catalogs.

Swing base

The swing base structure is made of hollow profiles (gearbox sizes 140 ... 225) or beams (gearbox sizes 250 ... 360), appropriately combined, treated and machined.

The project is made to maximize the swing base strength, in order to optimize costs and performance.

All swing bases have been verified for bending, considering the highest load condition among the ones foreseen on this catalog.

On each swing plate there are machined surfaces for fitting and jacking screws for alignment of the components of the drive unit. All Rossi components are supplied already assembled and aligned on the swing base.

The matching point for the reaction arm has been defined in order to optimize the swing base fixing, so to minimize the stress on swing base and transmission components.

The standard supply includes the reaction point with elastic bush supplied separately (assembly is up to Customer). If necessary the complete reaction arm can be quoted and supplied, subject to agreement with Customer about characteristics and dimensions.

Selection

The motor - gear reducer combinations have been made considering a minimum service factor 1,4. For further details about the relation between service factor, nature of load and life time of the gear reducer please refer to the selection tables of this catalog.

In any case **gear reducer selection has to be realized according to descriptions and prescriptions contained in Rossi catalogs for each specific application.**

Dimensions and masses

In order to calculate the overall dimensions of the drive unit first of all it is necessary to identify type and size of the transmission components.

The drive unit has been considered as composed of two sub-groups:

- **motor sub-group**, including electric motor, coupling with brake drum (if any), brake (if any) and protection guard for coupling and brake
- **gear reducer sub-group**, including gear reducer and swing base with reaction point

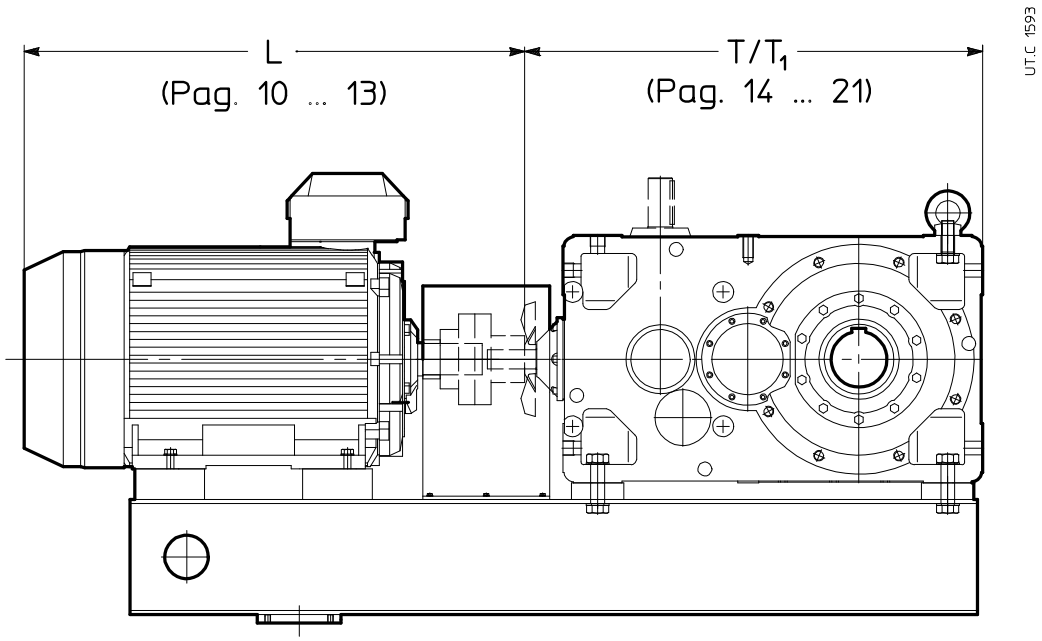
From page 460 to page 463 the motor sub-group dimensions can be found in all the available options, according to coupling type, size and type of motor.

From page 464 to page 467 the gear reducer sub-group dimensions can be found, according to train of gears and gear reducer size, and considering a possible fan fitted on the gearbox high speed shaft.

In same case, according to motor number of poles and to nominal supply frequency, a different choice of the hydraulic coupling becomes necessary and therefore A dimensions change consequently; details are given at page 468.

The dimensional data reported in the above mentioned two sections, combined according to picture below, allow the complete identification of the drive unit overall dimensions.

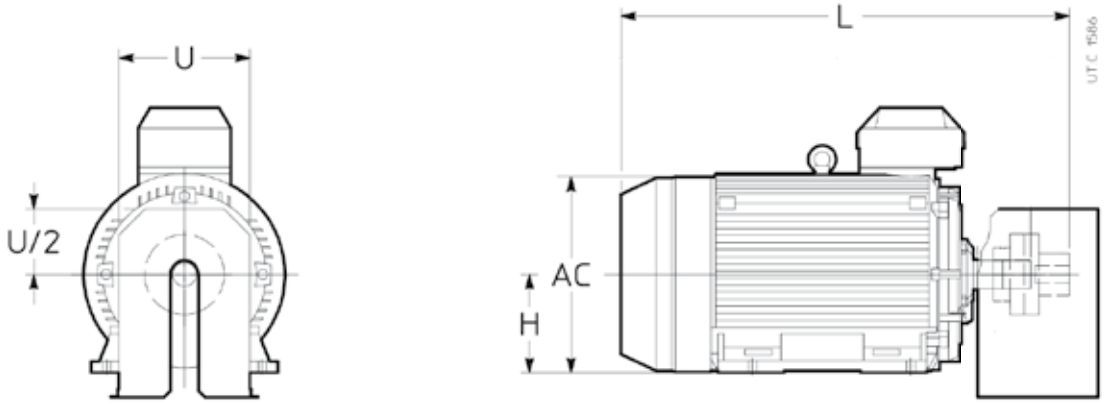
The masses stated in the dimensional tables, in both motor and gear reducer subgroups separately, are indicative, and then the total drive unit mass has to be considered only as a reference to identify the suitable and needed tools to lift the complete drive unit. **We strongly recommend to size the lifting tools with a safety margin of 25% in relation to the indicative value reported on the catalog.** Concerning the lifting please follow instructions given on page 470.



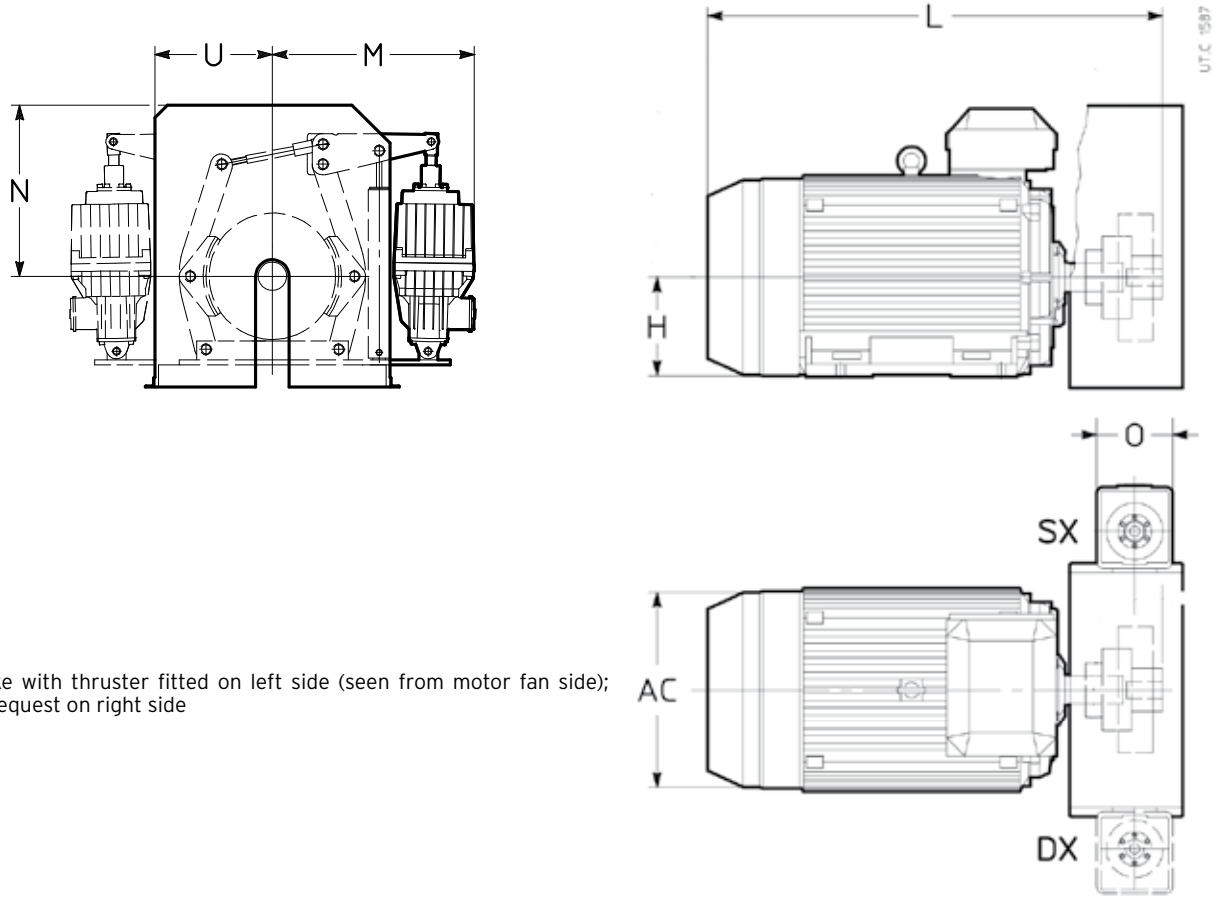
32 - Drive units on swing base

Dimensions and masses - **Motor sub-group**

With **flexible coupling**



With **flexible coupling** and **shoe brake**



Brake with thruster fitted on left side (seen from motor fan side); on request on right side

Dimensions and masses - Motor sub-group

4 poles with flexible coupling

P_N 50 Hz kW	P_N 60 Hz kW	Motor		AC Ø ~	H 2)	M	N	O	U	L ~	Mass kg 1)
5,5	6,6	**132**	**4**	258	132	-	-	-	190	537	60
7,5	9	**132**	**4**	258	132	-	-	-	190	537	70
9,2	11	**132**	**4**	258	132	-	-	-	190	575	80
11	13,2	**160**	**4**	314	160	427	320	160	190	720	140
15	18	**160**	**4**	314	160	427	320	160	190	720	150
18,5	22,2	**180**	**4**	314	180	427	320	160	190	731	160
22	26,4	**180**	**4**	354	180	427	320	160	190	806	180
30	36	**200**	**4**	354	200	427	393	160	260	816	230
37	44,4	**225**	**4**	411	225	474	393	160	260	923	300
45	54	**225**	**4**	411	225	502	393	190	260	923	330
55	44,4	**250**	**4**	411	250	502	393	190	260	923	370
75	90	**280**	**4**	490	280	568	412	190	260	1 062	510
90	108	**280**	**4**	490	280	568	412	190	260	1 062	580
110	132	**315**	**4**	490	315	642	542	190	330	1 112	680
132	158	**315**	**4**	604	315	642	542	190	330	1 255	970
160	192	**315**	**4**	604	315	642	542	240	330	1 255	1 050
200	240	**315**	**4**	604	315	642	542	240	330	1 366	1 250
250	300	**355**	**4**	770	355	642	542	240	330	1 679	1 950
315	378	**355**	**4**	770	355	-	-	-	440	1 700	2 000
355	426	**355**	**4**	770	355	-	-	-	440	1 900	2 200
400	480	**355**	**4**	770	355	-	-	-	440	1 900	2 350
450	540	**355**	**4**	770	355	-	-	-	440	1 900	2 450
500	600	**355**	**4**	770	355	-	-	-	440	1 900	2 550
560	672	**400**	**4**	850	400	-	-	-	440	2 155	2 850

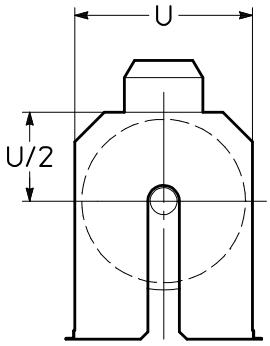
6 poles with flexible coupling

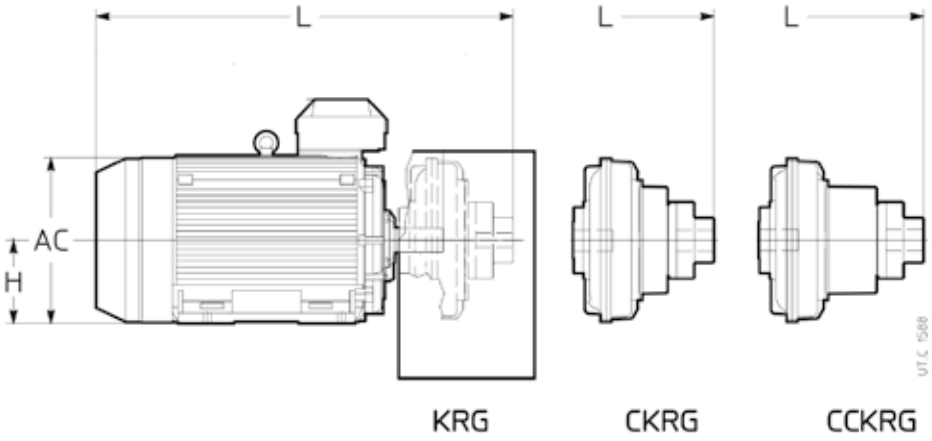
P_N 50 Hz kW	P_N 60 Hz kW	Motor		AC Ø ~	H 2)	M	N	O	U	L ~	Mass kg 1)
4	4,8	**132**	**6**	258	132	-	-	-	190	537	70
5,5	6,6	**132**	**6**	258	132	-	-	-	190	575	80
7,5	9	**160**	**6**	314	160	427	320	160	190	720	130
11	13,2	**160**	**6**	314	160	427	320	160	190	720	140
15	18	**180**	**6**	354	180	474	393	160	190	806	190
22	26,4	**200**	**6**	354	200	474	393	160	260	816	230
30	36	**225**	**6**	411	225	568	412	190	260	923	350
37	44,4	**250**	**6**	411	250	568	412	190	260	923	400
45	54	**280**	**6**	490	280	568	412	190	260	1062	460
55	66	**280**	**6**	490	280	642	542	190	260	1062	560
75	90	**315**	**6**	490	315	642	542	190	330	1 112	660
90	108	**315**	**6**	604	315	642	542	190	330	1 255	940
132	158	**315**	**6**	604	315	642	542	240	330	1 255	1 100
160	192	**315**	**6**	604	315	642	542	-	330	1 366	1 200
200	240	**355**	**6**	770	355	-	-	-	330	1 679	1 750
250	300	**355**	**6**	770	355	-	-	-	440	1 700	2 000
315	378	**355**	**6**	770	355	-	-	-	440	1 900	2 450
355	426	**355**	**6**	770	355	-	-	-	440	1 900	2 500
400	480	**400**	**6**	850	400	-	-	-	440	2 155	2 850
450	540	**400**	**6**	850	400	-	-	-	440	2 155	3 000
500	600	**400**	**6**	850	400	-	-	-	440	2 155	3 250

1) Masses are indicative. In order to obtain the total mass of the drive unit add to this value the mass relative to the gear reducer sub-group.
2) Tolerance: up to size 250 $^{-0,5}$ mm, for sizes > 280 $^{-1}$ mm.

Dimensions and masses - Motor sub-group

With **hydraulic coupling**



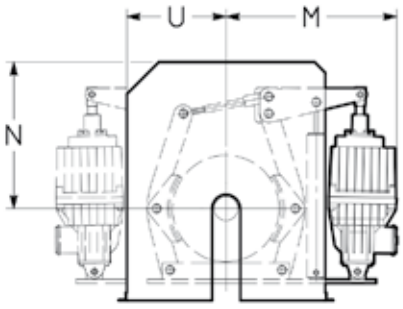


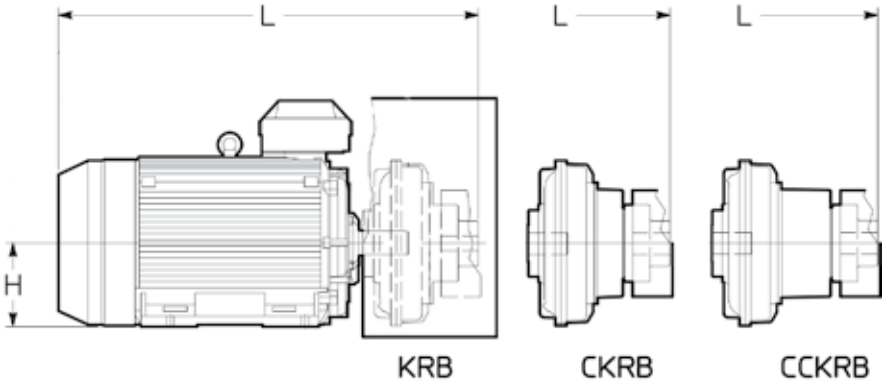
KRG — basic type, with no delayed fill chamber

CKRG — with simple delayed fill chamber

CCKRG — with double delayed fill chamber

With **hydraulic coupling** and **shoe brake**

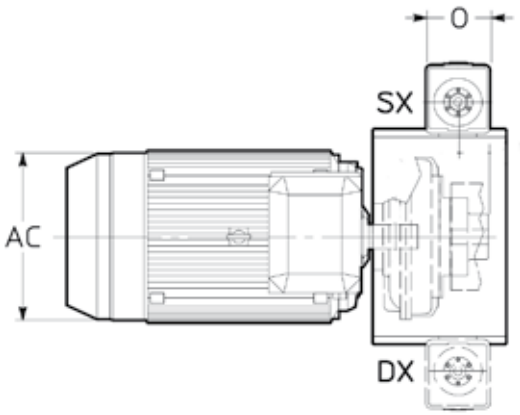




KRB — basic type, with no delayed fill chamber, with brake drum

CKRB — with simple delayed fill chamber and brake drum

CCKRB — with double delayed fill chamber and brake drum



Dimensions and masses - Motor sub-group

4 poles with hydraulic coupling

P_N 50 Hz kW	P_N 60 Hz kW	Motor		AC Ø ~	H 2)	M	N	O	U	L ~ KR...	L ~ CKR... 50 Hz	L ~ CCKR...	L ~ KR...	L ~ CKR... 60 Hz	L ~ CCKR...	Mass kg 1)
5,5	6,6	**132**	**4**	258	132	-	-	-	330	631	-	-	631	-	-	80
7,5	9	**132**	**4**	258	132	-	-	-	330	631	-	-	631	-	-	90
9,2	11	**132**	**4**	258	132	-	-	-	440	678	724	-	669	-	-	100
11	13,2	**160**	**4**	314	160	427	320	160	440	793	839	-	793	839	-	120
15	18	**160**	**4**	314	160	427	320	160	440	793	839	-	793	839	-	130
18,5	22,2	**180**	**4**	314	180	427	320	160	440	793	860	-	793	860	-	140
22	26,4	**180**	**4**	354	180	427	320	160	440	868	935	-	868	935	-	170
30	36	**200**	**4**	354	200	427	393	160	440	898	958	-	898	958	-	200
37	44,4	**225**	**4**	411	225	474	393	160	440	975	1 035	-	975	1 035	-	260
45	54	**225**	**4**	411	225	502	393	190	560	1 033	1 101	1 149	1 033	1 101	1 149	390
55	44,4	**250**	**4**	411	250	502	393	190	560	1 033	1 101	1 149	1 033	1 101	1 149	420
75	90	**280**	**4**	490	280	568	412	190	560	1 181	1 261	1 341	1 181	1 261	1 341	590
90	108	**280**	**4**	490	280	568	412	190	560	1 181	1 261	1 341	1 181	1 261	1 341	660
110	132	**315**	**4**	490	315	642	542	190	660	1 181	1 261	1 341	1 181	1 261	1 341	750
132	158	**315**	**4**	604	315	642	542	190	660	1 324	1 404	1 484	1 324	1 404	1 484	1 050
160	192	**315**	**4**	604	315	642	542	240	660	1 395	1 495	1 585	1 395	1 495	1 588	1 200
200	240	**315**	**4**	604	315	642	542	240	660	1 495	1 595	1 685	1 495	1 595	1 685	1 350
250	300	**355**	**4**	770	355	642	542	240	820	1 803	1 903	1 993	1 803	1 903	1 993	2 100
315	378	**355**	**4**	770	355	-	-	-	820	1 803	1 903	1 993	1 803	1 903	1 993	2 100
355	426	**355**	**4**	770	355	-	-	-	820	2 024	2 142	2 241	2 024	2 142	2 241	2 450
400	480	**355**	**4**	770	355	-	-	-	820	2 024	2 142	2 241	2 024	2 142	2 241	2 600
450	540	**355**	**4**	770	355	-	-	-	820	2 024	2 142	2 241	2 024	2 142	2 241	2 700
500	600	**355**	**4**	770	355	-	-	-	820	2 024	2 142	2 241	2 024	2 142	2 241	2 750
560	672	**400**	**4**	850	400	-	-	-	1 050	2 288	2 406	2 505	2 259	2 377	2 476	3 100

6 poles with hydraulic coupling

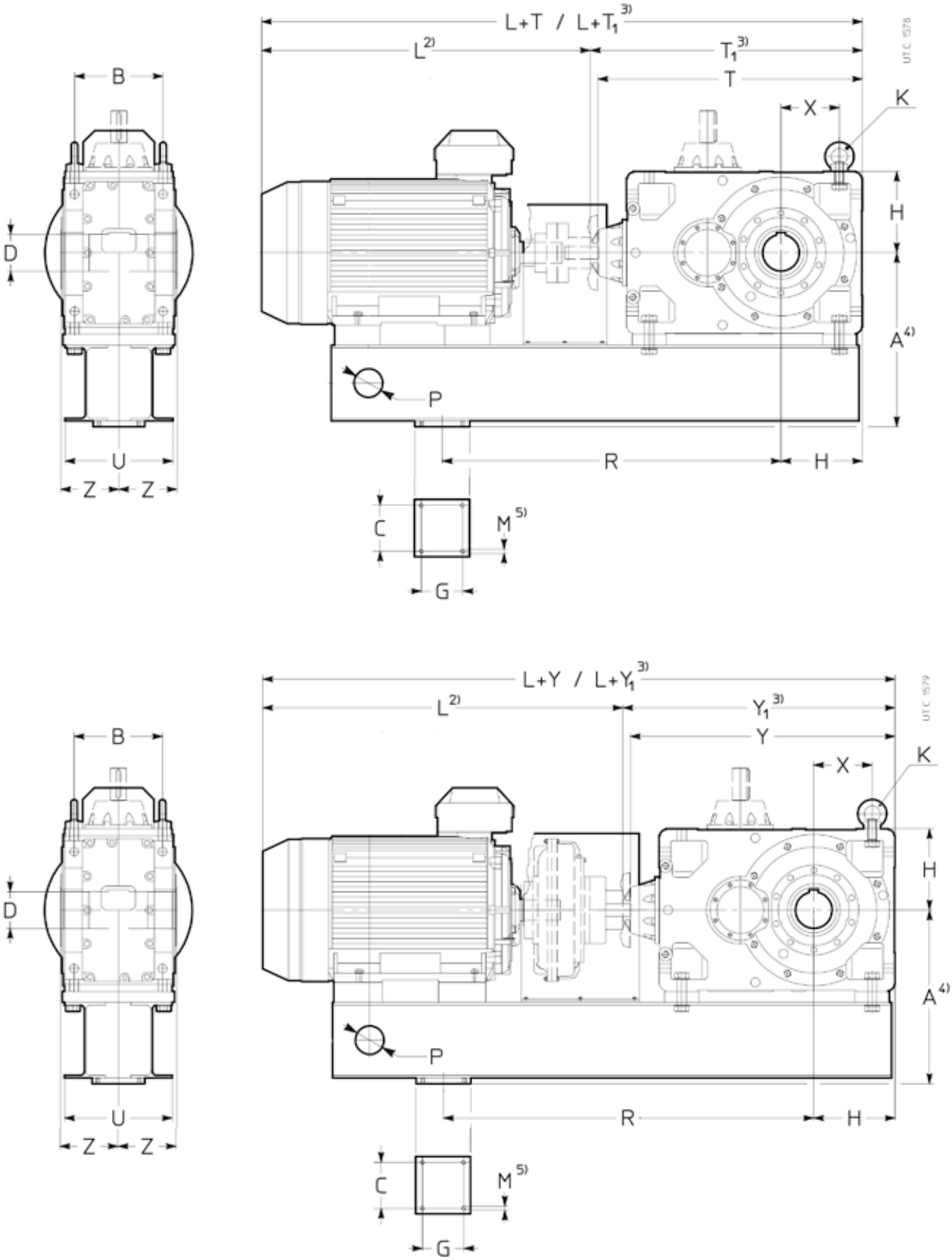
P_N 50 Hz kW	P_N 60 Hz kW	Motor		AC Ø ~	H 2)	M	N	O	U	L ~ KR...	L ~ CKR... 50 Hz	L ~ CCKR...	L ~ KR...	L ~ CKR... 60 Hz	L ~ CCKR...	Mass kg 1)
4	4,8	**132**	**6**	258	132	-	-	-	440	640	686	-	640	686	-	100
5,5	6,6	**132**	**6**	258	132	-	-	-	440	678	745	-	678	724	-	110
7,5	9	**160**	**6**	314	160	427	320	160	440	793	860	-	793	860	-	110
11	13,2	**160**	**6**	314	160	427	320	160	440	823	883	-	823	883	-	140
15	18	**180**	**6**	354	180	474	393	160	560	956	1 024	1 072	898	958	-	250
22	26,4	**200**	**6**	354	200	474	393	160	560	956	1 024	1 072	956	1 024	1 072	290
30	36	**225**	**6**	411	225	568	412	190	560	1 052	1 132	1 212	1 052	1 132	1 212	440
37	44,4	**250**	**6**	411	250	568	412	190	660	1 052	1 132	1 212	1 052	1 132	1 212	490
45	54	**280**	**6**	490	280	568	412	190	660	1 181	1 261	1 341	1 181	1 261	1 341	550
55	66	**280**	**6**	490	280	642	542	190	660	1 252	1 352	1 442	1 181	1 261	1 341	700
75	90	**315**	**6**	490	315	642	542	190	660	1 252	1 352	1 442	1 252	1 352	1 442	780
90	108	**315**	**6**	604	315	642	542	190	820	1 395	1 495	1 585	1 395	1 495	1 585	1 050
132	158	**315**	**6**	604	315	642	542	240	820	1 395	1 495	1 585	1 395	1 495	1 585	1 250
160	192	**315**	**6**	604	315	642	542	-	820	1 551	1 669	1 768	1 495	1 595	1 685	1 450
200	240	**355**	**6**	770	355	-	-	-	1 050	1 853	1 971	2 070	1 824	1 942	2 041	2 050
250	300	**355**	**6**	770	355	-	-	-	1 050	1 853	1 971	2 070	1 853	1 971	2 070	2 300
315	378	**355**	**6**	770	355	-	-	-	1 050	2 053	2 171	2 270	2 053	2 171	2 270	2 700
355	426	**355**	**6**	770	355	-	-	-	1 050	2 053	2 171	2 270	2 053	2 171	2 270	2 800
400	480	**400**	**6**	850	400	-	-	-	1 050	2 408	2 519	2 628	2 408	2 519	2 628	3 300
450	540	**400**	**6**	850	400	-	-	-	1 050	2 408	2 519	2 628	2 408	2 519	2 628	3 450
500	600	**400**	**6**	850	400	-	-	-	1 050	2 408	2 519	2 628	2 408	2 519	2 628	3 650

1) Masses are indicative. In order to obtain the total mass of the drive unit add the mass relative to the gear reducer sub-group.
2) Tolerance: up to size 250 $^{0}_{-0,5}$ mm, for sizes > 280 $^{0}_{-1}$ mm.

Dimensions and masses - **Gear reducer sub-group**

R CI 140 ... 360

With **flexible coupling**[1)]



Dimensions and masses - Gear reducer sub-group

R CI 140 ... 360

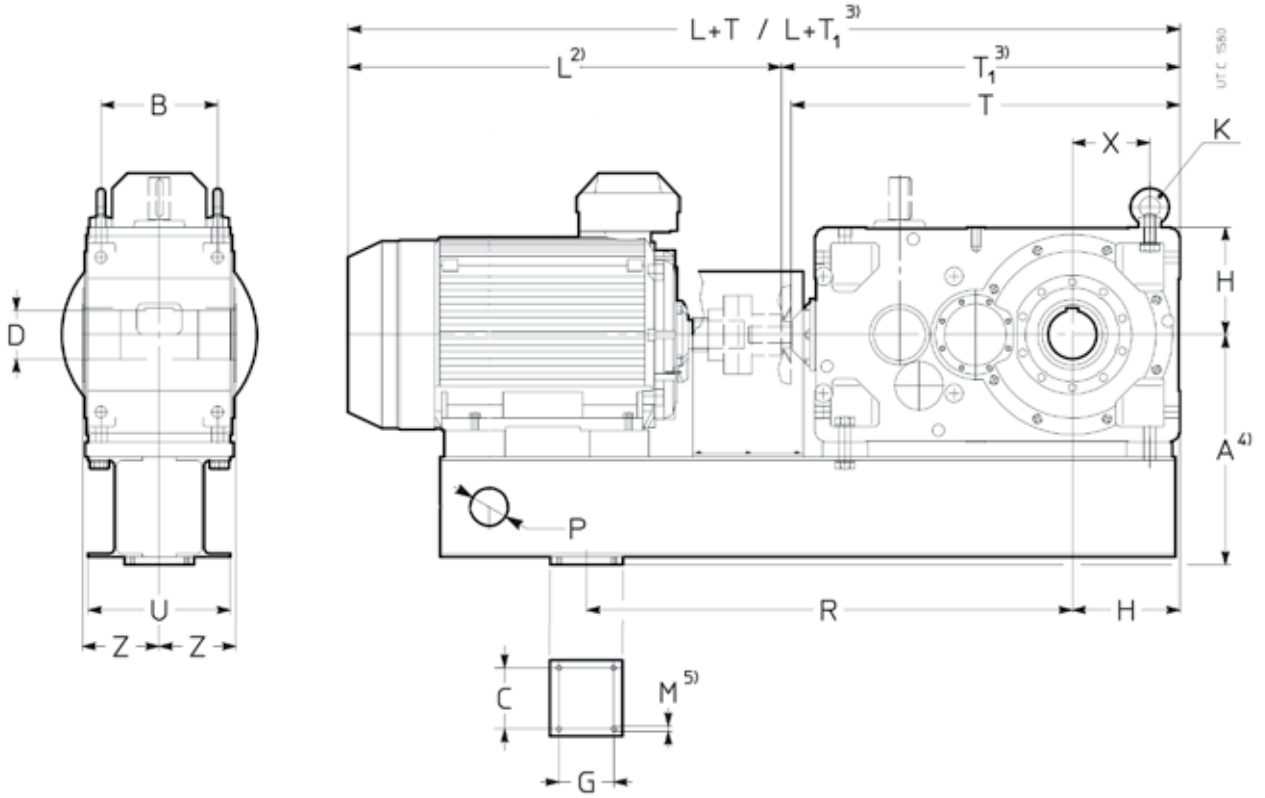
Size Gear	Mot. B3	A 4)	B C	D ∅ H7	G	H H11 K DIN 582	M 5)	P ∅ R	U X	Z 6)	T	T1 3)	T	T1 3)	T	T1 3)	Y	Y1 3)	Y	Y1 3)	Y	Y1 3)	Mass kg 7)
											$i_N \leq 9$		$i_N = 10 \dots 16$		$i_N \geq 18$		$i_N \leq 9$		$i_N = 10 \dots 16$		$i_N \geq 18$	
140	160	339	162	70	160	150	M16	48	120	125	-	-	478	-	478	-	-	-	478	-	478	-	171
	180		70			M16		700	106		492	507	478	-	478	-	492	507	478	-	478	-	181
	200	359									492	507	478	-	-	-	492	507	478	-	-	-	181
	225	384									492	507	478	-	-	-	492	507	478	-	-	-	186
											$i_N \leq 8$		$i_N = 9 \dots 16$		$i_N \geq 18$		$i_N \leq 8$		$i_N = 9 \dots 16$		$i_N \geq 18$	
160	132	374	201	80	160	180	M16	60	150	136	-	-	-	-	576	-	-	-	-	-	566	-	263
	160		100			M20		900	126		-	-	-	-	576	-	-	-	-	-	566	-	273
	180										-	-	566	581	566	-	-	-	566	581	566	-	287
	200	394									-	-	566	581	566	-	-	-	566	581	566	-	288
	225	419									606	606	566	581	-	-	616	616	566	581	-	-	298
	250	444									606	606	566	581	-	-	586	606	566	581	-	-	303
	280	474									596	606	566	581	-	-	586	606	566	581	-	-	319
											$i_N \leq 9$		$i_N = 10 \dots 16$		$i_N \geq 18$		$i_N \leq 9$		$i_N = 10 \dots 16$		$i_N \geq 18$	
180	180	419	201	90	160	180	M16	60	150	150	-	-	586	601	586	-	-	-	586	601	586	-	312
	200		100			M20		900	126		-	-	586	601	586	-	-	-	586	601	586	-	312
	225										626	626	586	601	586	-	606	626	586	601	586	-	322
	250	444									626	626	586	601	-	-	606	626	586	601	-	-	340
	280	474									616	626	586	601	-	-	606	626	586	601	-	-	360
											$i_N \leq 8$		$i_N = 9 \dots 16$		$i_N \geq 18$		$i_N \leq 8$		$i_N = 9 \dots 16$		$i_N \geq 18$	
200	160	454	250	100	190	225	M16	80	180	167	-	-	-	-	717	-	-	-	-	-	707	-	437
	180		130			M24		1 100	160		-	-	-	-	707	-	-	-	-	-	707	-	453
	200										-	-	-	-	707	-	-	-	-	-	707	-	453
	225										-	-	727	727	707	-	-	-	737	737	707	-	466
	250	479									-	-	727	727	707	-	-	-	707	727	707	-	471
	280	509									740	750	717	727	707	-	730	750	707	727	707	-	494
	315	544									730	750	707	727	-	-	730	750	707	727	-	-	530
											$i_N \leq 9$		$i_N = 10 \dots 16$		$i_N \geq 18$		$i_N \leq 9$		$i_N = 10 \dots 16$		$i_N \geq 18$	
225	225	509	250	110	190	225	M16	80	180	180	-	-	-	-	732	-	-	-	-	-	732	-	507
	250		130			M24		1 100	160		-	-	752	752	732	-	-	-	732	752	732	-	516
	280										765	775	742	752	732	-	755	775	732	752	732	-	538
	315	544									755	775	732	752	-	-	755	775	732	752	-	-	574
											$i_N \leq 10$		$i_N = 11,2 \dots 16$		$i_N \geq 18$		$i_N \leq 10$		$i_N = 11,2 \dots 16$		$i_N \geq 18$	
250	180	600	310	125	230	280	M20	100	380	206	-	-	-	-	917	917	-	-	-	-	917	917	773
	200		250			M30		1 300	198		-	-	-	-	907	907	-	-	-	-	917	917	773
	225										-	-	-	-	907	907	-	-	-	-	917	917	786
	250										-	-	-	-	907	907	-	-	-	-	887	907	794
	280										-	-	897	912	897	907	-	-	887	912	887	907	824
	315	635									930	935	887	912	887	907	940	940	887	912	887	907	880
	355	675									920	935	-	-	-	-	910	935	-	-	-	-	921
											$i_N \leq 11,5$		$i_N = 12,5 \dots 16$		$i_N \geq 18$		$i_N \leq 11,5$		$i_N = 12,5 \dots 16$		$i_N \geq 18$	
280	280	675	310	140	230	280	M20	100	380	222	-	-	-	-	927	937	-	-	-	-	917	937	901
	315		250			M30		1 300	198		960	965	917	942	917	937	940	965	917	942	917	937	957
	355										950	965	-	-	-	-	940	965	-	-	-	-	998
											$i_N \leq 10$		$i_N = 11,2 \dots 16$		$i_N \geq 18$		$i_N \leq 10$		$i_N = 11,2 \dots 16$		$i_N \geq 18$	
320	315	755	386	160	230	355	M20	100	450	254	1 195	1 195	1 175	1 187	1 175	1 187	1 185	1 187	1 185	1 187	1 185	1 187	1 430
321	355		250			M36		1 600	255		1 175	1 187	1 165	1 187	1 165	1 187	1 185	1 187	1 155	1 187	1 155	1 187	1 483
											$i_N \leq 11,5$		$i_N = 12,5 \dots 16$		$i_N \geq 18$		$i_N \leq 11,5$		$i_N = 12,5 \dots 16$		$i_N \geq 18$	
360	315	850	386	180	230	355	M20	100	450	273	-	-	1 215	1 227	1 215	1 227	-	-	1 195	1 227	1 195	1 227	1 569
	355		250			M36		1 600	255		1 235	1 235	1 205	1 227	1 205	1 227	1 225	1 227	1 195	1 227	1 195	1 227	1 622

1) Dimensions are valid also with shoe brake.
2) For L dimension see page 461 (motor subground).
3) With fan cooling.
4) Dimensions to be checked at page 468 according to train of gear and power supply.
5) Working length of thread 2·M.
6) In case of seals protected with labyrinth cover and greaser Z dimensions can be increased up to 15 mm, according to gea reducer size, consult us.
7) Masses are indicative. In order to obtain the total mass of the drive unit add the mass relative to the motor sub-group.

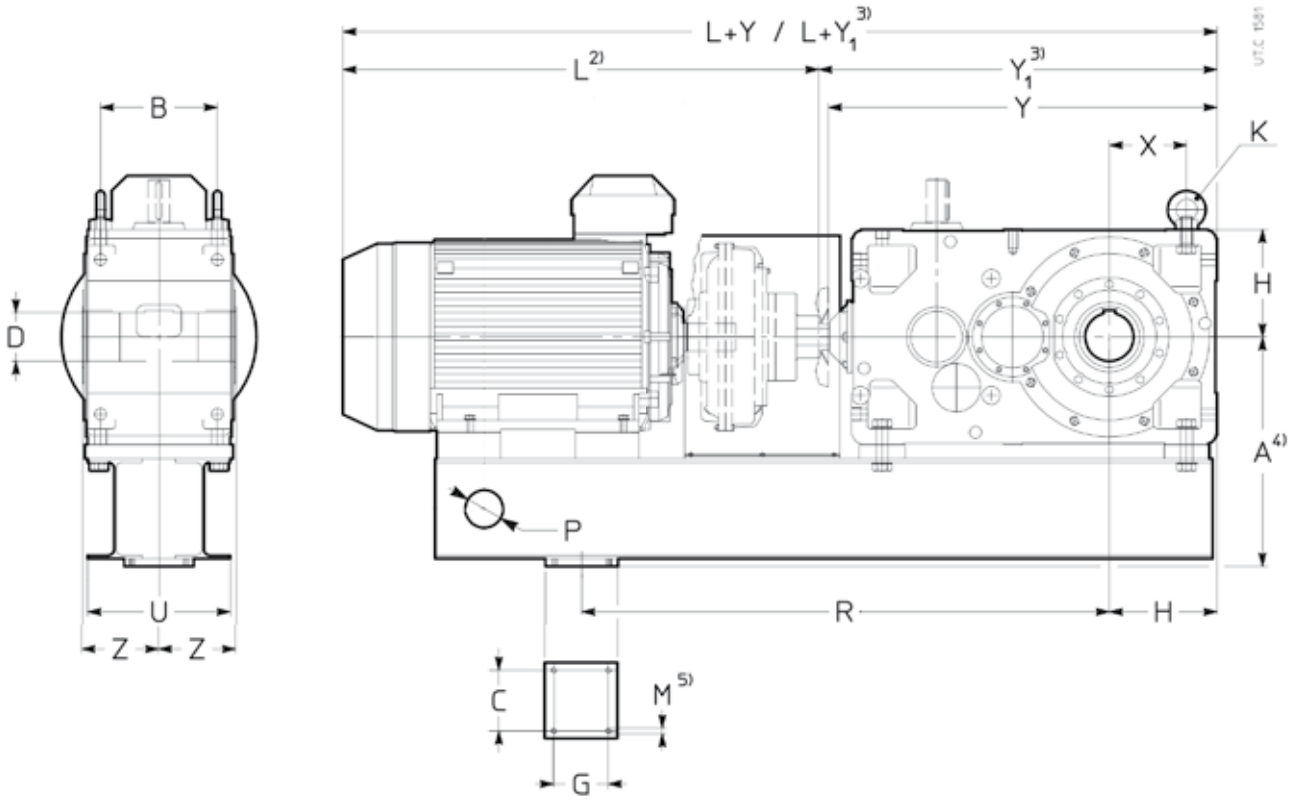
Dimensions and masses - Gear reducer sub-group

R C2I 140 ... 360

With **flexible coupling**[1)]



With **hydraulic coupling**[1)]



Dimensions and masses - Gear reducer sub-group

R C2I 140 ... 360

Size Gear	Mot. B3	A 4)	B C	D H7 Ø	G	H H11 K DIN 582	M 5)	P Ø R	U X	Z 6)	T $i_N \leq 31,5$	T_1 $i_N \leq 31,5$ 3)	T $i_N = 35,5 \dots 63$	T_1 $i_N = 35,5 \dots 63$ 3)	T $i_N \geq 71$	T_1 $i_N \geq 71$ 3)	Y $i_N \leq 31,5$	Y_1 $i_N \leq 31,5$ 3)	Y $i_N = 35,5 \dots 63$	Y_1 $i_N = 35,5 \dots 63$ 3)	Y $i_N \geq 71$	Y_1 $i_N \geq 71$ 3)	Mass kg 7)
140	132	309	162	70	160	150	M16	48	120	125	-	558	547	-	547	-	558	-	547	-	547	-	178
	160	319	70			M16		700	106		-	558	547	-	-	-	558	-	547	-	-	-	184
	180	339									-	558	-	-	-	-	558	-	-	-	-	-	193
160	132	374	201	80	160	180	M16	60	150	136	-	-	653	-	653	-	-	-	653	-	653	-	294
	160		100			M20		900	126		677	682	653	-	-	-	667	682	653	-	-	-	307
	180										667	682	653	-	-	-	667	682	653	-	-	-	320
	200	394									667	682	-	-	-	-	667	682	-	-	-	-	320
180	132	374	201	90	160	180	M16	60	150	150	-	-	673	-	673	-	-	-	673	-	673	-	314
	160		100			M20		900	123		697	702	673	-	673	-	687	702	673	-	673	-	326
	180										687	702	673	-	-	-	687	702	673	-	-	-	340
	200	394									687	702	673	-	-	-	687	702	673	-	-	-	340
	225	419									687	702	-	-	-	-	687	702	-	-	-	-	348
200	132	454	250	100	190	225	M16	80	180	167	-	-	-	-	821	-	-	-	-	-	811	-	474
	160		130			M24		1100	160		-	-	821	-	821	-	-	-	811	-	811	-	487
	180										861	-	811	-	811	-	861	861	811	-	811	-	508
	200										851	-	811	-	-	-	861	861	811	-	-	-	508
	225										851	-	811	-	-	-	861	861	811	-	-	-	518
	250	479									851	-	-	-	-	-	831	851	-	-	-	-	523
	280	509									841	-	-	-	-	-	831	851	-	-	-	-	543
225	132	454	250	110	190	225	M16	80	180	167	-	-	-	-	846	-	-	-	-	-	836	-	508
	160		130			M24		1100	160		-	-	846	-	846	-	-	-	836	-	836	-	520
	180										-	-	836	-	836	-	-	-	836	-	836	-	537
	200										876	876	836	-	836	-	886	886	836	-	836	-	542
	225										876	876	836	-	-	-	886	886	836	-	-	-	551
	250	479									876	876	836	-	-	-	856	876	836	-	-	-	557
	280	509									866	876	-	-	-	-	856	876	-	-	-	-	577
250	132	600	310	125	230	280	M20	100	380	206	-	-	-	-	1 022	-	-	-	-	-	1 012	-	813
	160		250			M30		1300	198		-	-	-	-	1 022	-	-	-	-	-	1 012	-	831
	180										-	-	1 042	-	1 012	-	-	-	1 042	-	1 012	-	859
	200										-	-	1 032	-	1 012	-	-	-	1 042	-	1 012	-	859
	225										1 055	1 055	1 032	-	1 012	-	1 035	1 055	1 042	-	1 012	-	874
	250										1 055	1 055	1 032	-	-	-	1 035	1 055	1 012	-	-	-	883
	280										1 045	1 055	1 022	-	-	-	1 035	1 055	1 012	-	-	-	913
	315	635									1 035	1 055	-	-	-	-	1 035	1 055	-	-	-	-	965
280	160	600	310	140	230	280	M20	100	380	222	-	-	-	-	1 052	-	-	-	-	-	1 042	-	890
	180		250			M30		1300	198		-	-	-	-	1 042	-	-	-	-	-	1 042	-	914
	200										-	-	1 062	1 062	1 042	-	-	-	1 072	1 072	1 042	-	918
	225										-	-	1 062	1 062	1 042	-	-	-	1 072	1 072	1 042	-	932
	250										1 085	1 085	1 062	1 062	1 042	-	1 065	1 085	1 042	1 062	1 042	-	943
	280										1 075	1 085	1 052	1 052	-	-	1 065	1 085	1 042	1 062	-	-	973
	315	635									1 065	1 085	1 042	1 062	-	-	1 065	1 085	1 042	1 062	-	-	1 024
320	160	755	386	160	230	355	M20	100	450	254	-	-	-	-	1 322	-	-	-	-	-	1 312	-	1 398
321	180		250			M36		1600	255		-	-	-	-	1 312	-	-	-	-	-	1 312	-	1 429
	200										-	-	-	-	1 302	-	-	-	-	-	1 312	-	1 429
	225										-	-	1 302	1 307	1 302	-	-	-	1 282	1 307	1 312	-	1 445
	250										-	-	1 302	1 307	1 302	-	-	-	1 282	1 307	1 282	-	1 457
	280										1 345	1 345	1 292	1 307	1 292	-	1 335	1 337	1 282	1 307	1 282	-	1 502
	315										1 325	1 337	1 282	1 307	-	-	1 335	1 337	1 282	1 307	-	-	1 568
	355										1 315	1 337	-	-	-	-	1 305	1 337	-	-	-	-	1 622
360	180	755	386	180	230	355	M20	100	450	273	-	-	-	-	1 352	-	-	-	-	-	1 352	-	1 532
	200		250			M36		1600	255		-	-	-	-	1 342	-	-	-	-	-	1 352	-	1 532
	225										-	-	-	-	1 342	-	-	-	-	-	1 352	-	1 549
	250										-	-	1 342	1 347	1 342	-	-	-	1 322	1 347	1 322	-	1 560
	280										-	-	1 332	1 347	1 332	-	-	-	1 322	1 347	1 322	-	1 599
	315										1 365	1 377	1 322	1 347	1 322	-	1 375	1 377	1 322	1 347	1 322	-	1 671
	355										1 355	1 377	-	-	-	-	1 345	1 377	-	-	-	-	1 724

1) Dimensions are valid also with shoe brake.
2) For L dimension see page 461 (motor sub-group).
3) With fan cooling.
4) Dimensions to be checked at page 468 according to train of gear and power supply.
5) Working length of thread 2·M.
6) In case of seals protected with labyrinth cover and greaser Z dimensions can be increased up to 15 mm, according to gear reducer size, consult us.
7) Masses are indicative. In order to obtain the total mass of the drive unit add the mass relative to the motor sub-group.

Dimensions and masses

A dimension for particular cases

The following tables show - according to the gear reducer train of gear, the motor number of poles and the nominal supply frequency - the change in A dimensions caused by the choice of hydraulic coupling different from that given in the tables of pages 465 to 467.

CI - 50 Hz

Size		A
Gear	Mot.	
	B3	
140	160 6	350
	180 6	380
	200 6	380
	225 6	410
160	180 6	410
	200 6	410
	225 6	440
	250 6	460
	280 6	490
180	225 6	440
	250 6	460
	280 6	490
200	225 6	470
	250 6	490
	280 6	520
	315 6	570
	315 6	610
225	280 6	520
	315 6	570
	315 6	610
250	355 4	690
	315 6	660
	315 6	690
	355 6	730
280	355 4	690
	315 6	690
	355 6	730
320	355 6	800
400	400 6	940

CI - 60 Hz

Size		A
Gear	Mot.	
	B3	
140	160 6	350
	180 6	350
	200 6	380
	225 6	410
160	200 6	410
	225 6	440
180	225 6	440
200	225 6	470
	315 6	570
225	315 6	570
250	355 4	690
	315 6	660
	355 6	690
	355 6	730
280	355 4	690
	355 6	690
	355 6	730
320	355 6	800
400	400 6	940

C2I - 50 Hz

Size		A
Gear	Mot.	
	B3	
140	132 6	335
	160 6	335
	160 6	350
	180 6	380
160	160 6	380
	180 6	410
	200 6	410
180	160 6	380
	180 6	410
	200 6	410
	225 6	440
200	225 6	470
	250 6	490
	280 6	520
225	225 6	470
	250 6	490
	280 6	520
250	280 6	610
	315 6	660
280	280 6	610
	315 6	660
	315 6	690
320	355 6	800
360	355 6	800

C2I - 60 Hz

Size		A
Gear	Mot.	
	B3	
140	160 6	335
	160 6	350
	180 6	350
160	160 6	380
	180 6	380
	200 6	410
180	160 6	380
	180 6	380
	200 6	410
	225 6	440
200	225 6	470
225	225 6	470
250	315 6	660
280	315 6	660
320	355 6	800
360	355 6	800

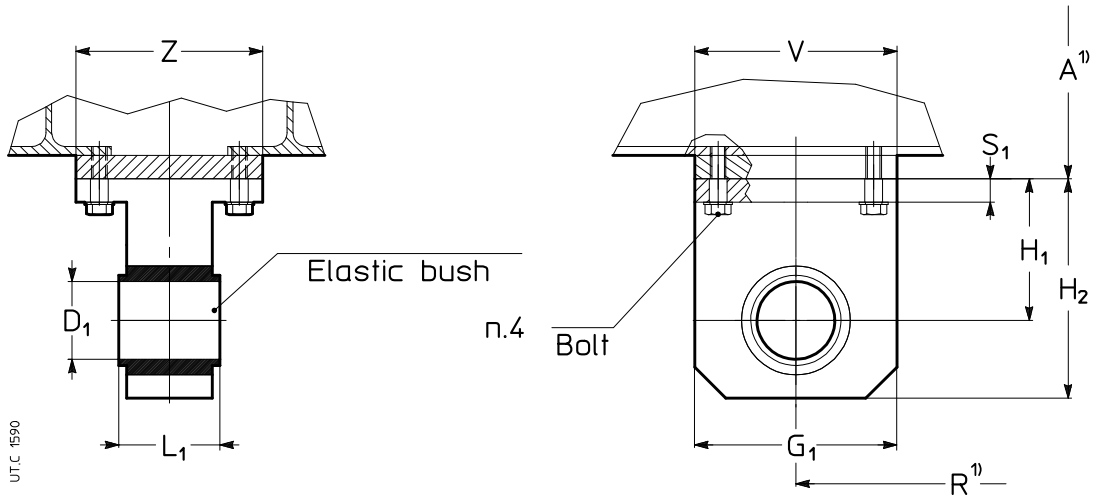
Accessories

Reaction point with elastic bush

Before mounting accurately clean the mating surfaces and provide a roughness sufficiently high to ensure a proper friction coefficient; if necessary, remove by a scraper or solvent the possible paint from the mating surfaces.

Fasten the screws with a dynamometric wrench to the tightening torque given in the table; check the tightening torque after the first running period and then at regular intervals.

It is recommended to use locking adhesives (such as LOCTITE) on the fastening screws and mating surfaces.



Size	G_1	H_1	H_2	D_1 H9	L_1 ± 0,5	S_1	V	Z	**Bolt** UNI 5937-65 8.8	M 2) N m
140	100	80	130	40	88	17	200	130	M16	205
160, 180	100	80	130	40	88	17	200	140	M16	205
200, 225	125	95	157,5	50	110	17	230	170	M16	205
250... 360	250	165	290	100	120	22	280	300	M20	400

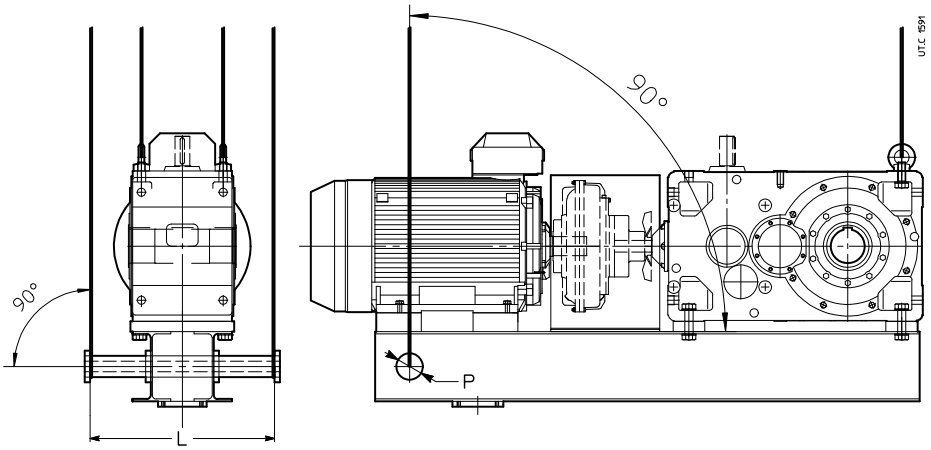
1) For A dimensions see tables at pages 465 and 467.
2) Tightening torque.

Installation and maintenance

The drive unit is supplied complete with the relevant Installation and Maintenance Instructions for all the components of the drive unit.
Gear reducer are supplied without oil. For quantities and type of oil, as well as oil change intervals, please follow the relative catalog instructions or in the gear reducers Installation and Maintenance manual.
Hydraulic couplings are supplied without oil. For quantities and type of oil please follow the relevant catalog instructions or in the specific Installation and Maintenance manual.

Lifting

Lift the drive unit through the lifting points as shown on fig. 1a, using chains or lifting streps.
The drive unit is supplied including no.2 lifting lugs fitted on the gear reducer, while the lifting bar is up to Customer.
We strongly recommend to size the lifting tools with a safety margin of 25% with respect to the total mass given on the catalog and/or on the nameplate of the drive unit.



Size	L	P Ø
140	500	48
160, 180	650	60
200, 225	700	80
250 ... 360	850	100

Fig. 1a - **Right** way of lifting

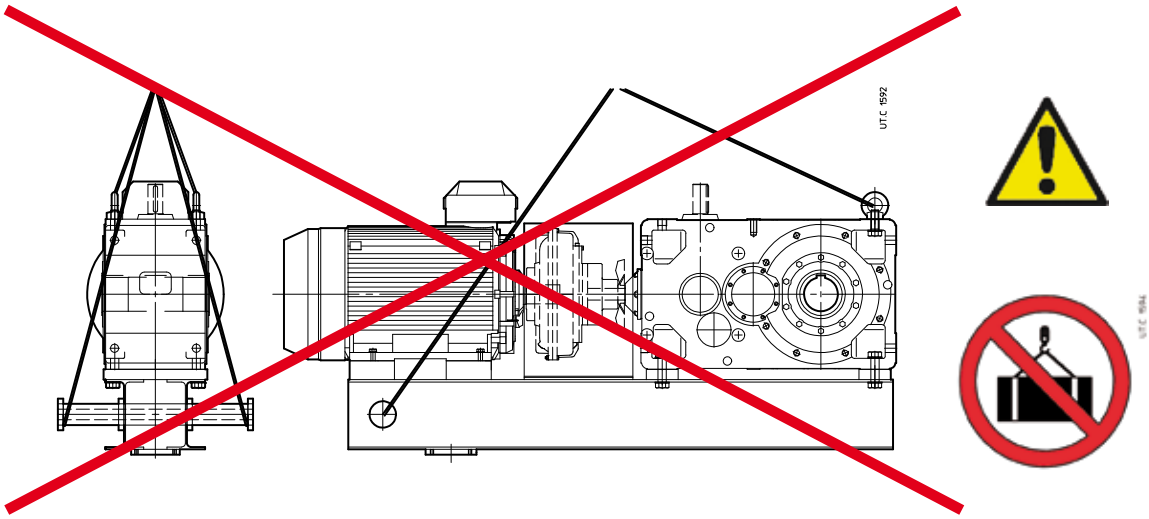


Fig. 1b - **Wrong** way of lifting

Miscellaneous

Drive unit with:

- **Special painting** for hard ambient conditions,consult us
- **Torque arm**: features and dimensions to be agreed with the Customer
- Gearmotor arrangements made by means of **bell housing and elastic coupling** are available for all gearbox sizes
- **Emergency units** including auxiliary drives connected to the main drive unit
  Different types of gear units can be used as auxiliary drive and connected directly to the main drive through a freewheel or an overrunning clutch which allows to keep the second drive idle during normal running
- **External belt drives**, together with motor support
- **Electromagnetic clutch**
- **Positive brakes**
- **All-steel couplings**
- **Gear couplings**, standard or disengageable type
- Torque limiters
- **Arrangement according to ATEX II 2GD and 3GD**, with necessary accessories for control and setting
- **Swing base for fixing to ground**

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Technical formulae

Main formulae concerning mechanical drives, according to the Technical System and International Unit System (SI).

Size	With Technical System units	With SI units
starting or stopping **time** as a function of an acceleration or deceleration, of a starting or braking torque	$t = \frac{Gd^2 \cdot n}{375 \cdot M}$ [s]	$t = \frac{J \cdot \omega}{M}$ [s] $t = \frac{v}{a}$ [s]
velocity in rotary motion	$v = \frac{\pi \cdot d \cdot n}{60} = \frac{d \cdot n}{19,1}$ [m/s]	$v = \omega \cdot r$ [m/s]
speed	$n = \frac{60 \cdot v}{\pi \cdot d} = \frac{19,1 \cdot v}{d}$ [min^{-1}]	$\omega = \frac{v}{r}$ [rad/s]
acceleration or deceleration as a function of starting or stopping time	$a = \frac{v}{t}$ [m/s^2]	
angular acceleration or deceleration as a function of a starting or stopping time, of a starting or braking torque	$\alpha = \frac{n}{9,55 \cdot t}$ [rad/s^2] $\alpha = \frac{39,2 \cdot M}{Gd^2}$ [rad/s^2]	$\alpha = \frac{\omega}{t}$ [rad/s^2] $\alpha = \frac{M}{J}$ [rad/s^2]
starting or stopping **distance** as a function of a starting or stopping time, of a starting or braking velocity	$s = \frac{a \cdot t^2}{2}$ [m] $s = \frac{v \cdot t}{2}$ [m]	
starting or stopping **angle** as a function of an angular acceleration or deceleration, of a final or initial angular velocity	$\varphi = \frac{\alpha \cdot t^2}{2}$ [rad] $\varphi = \frac{n \cdot t}{19,1}$ [rad]	$\varphi = \frac{\omega \cdot t}{2}$ [rad]
mass	$m = \frac{G}{g}$ [$\frac{kgf\ s^2}{m}$]	m is the unit of mass [kg]
weight (weight force)	G is the unit of weight (weight force) [kgf]	$G = m \cdot g$ [N]
force in vertical (lifting), horizontal, inclined motion of translation (μ = coefficient of friction; φ = angle of inclination)	$F = G$ [kgf] $F = \mu \cdot G$ [kgf] $F = G\ (\mu \cdot \cos\varphi + \text{sen}\ \varphi)$ [kgf]	$F = m \cdot g$ [N] $F = \mu \cdot m \cdot g$ [N] $F = m \cdot g\ (\mu \cdot \cos\varphi + \text{sen}\ \varphi)$ [N]
dynamic moment Gd^2, moment of inertia J due to a motion of translation (numerically $J = \frac{Gd^2}{4}$)	$Gd^2 = \frac{365 \cdot G \cdot v^2}{n^2}$ [kgf m^2]	$J = \frac{m \cdot v^2}{\omega^2}$ [kg m^2]
torque as a function of a force, of a dynamic moment or of a moment of inertia, of a power	$M = \frac{F \cdot d}{2}$ [kgf m] $M = \frac{Gd^2 \cdot n}{375 \cdot t}$ [kgf m] $M = \frac{716 \cdot P}{n}$ [kgf m]	$M = F \cdot r$ [N m] $M = \frac{J \cdot \omega}{t}$ [N m] $M = \frac{P}{\omega}$ [N m]
work, energy in motion of translation, in rotary motion	$W = \frac{G \cdot v^2}{19,6}$ [kgf m] $W = \frac{Gd^2 \cdot n^2}{7160}$ [kgf m]	$W = \frac{m \cdot v^2}{2}$ [J] $W = \frac{J \cdot \omega^2}{2}$ [J]
power in motion of translation, in rotary motion	$P = \frac{F \cdot v}{75}$ [CV] $P = \frac{M \cdot n}{716}$ [CV]	$P = F \cdot v$ [W] $P = M \cdot \omega$ [W]
power available at the shaft of a single-phase motor ($\cos\varphi$ = power factor)	$P = \frac{U \cdot I \cdot \eta \cdot \cos\varphi}{736}$ [CV]	$P = U \cdot I \cdot \eta \cdot \cos\varphi$ [W]
power available at the shaft of a three-phase motor	$P = \frac{U \cdot I \cdot \eta \cdot \cos\varphi}{425}$ [CV]	$P = 1,73 \cdot U \cdot I \cdot \eta \cdot \cos\varphi$ [W]

Note. Acceleration or deceleration are understood constant; motion of translation and rotary motion are understood rectilinear and circular respectively.

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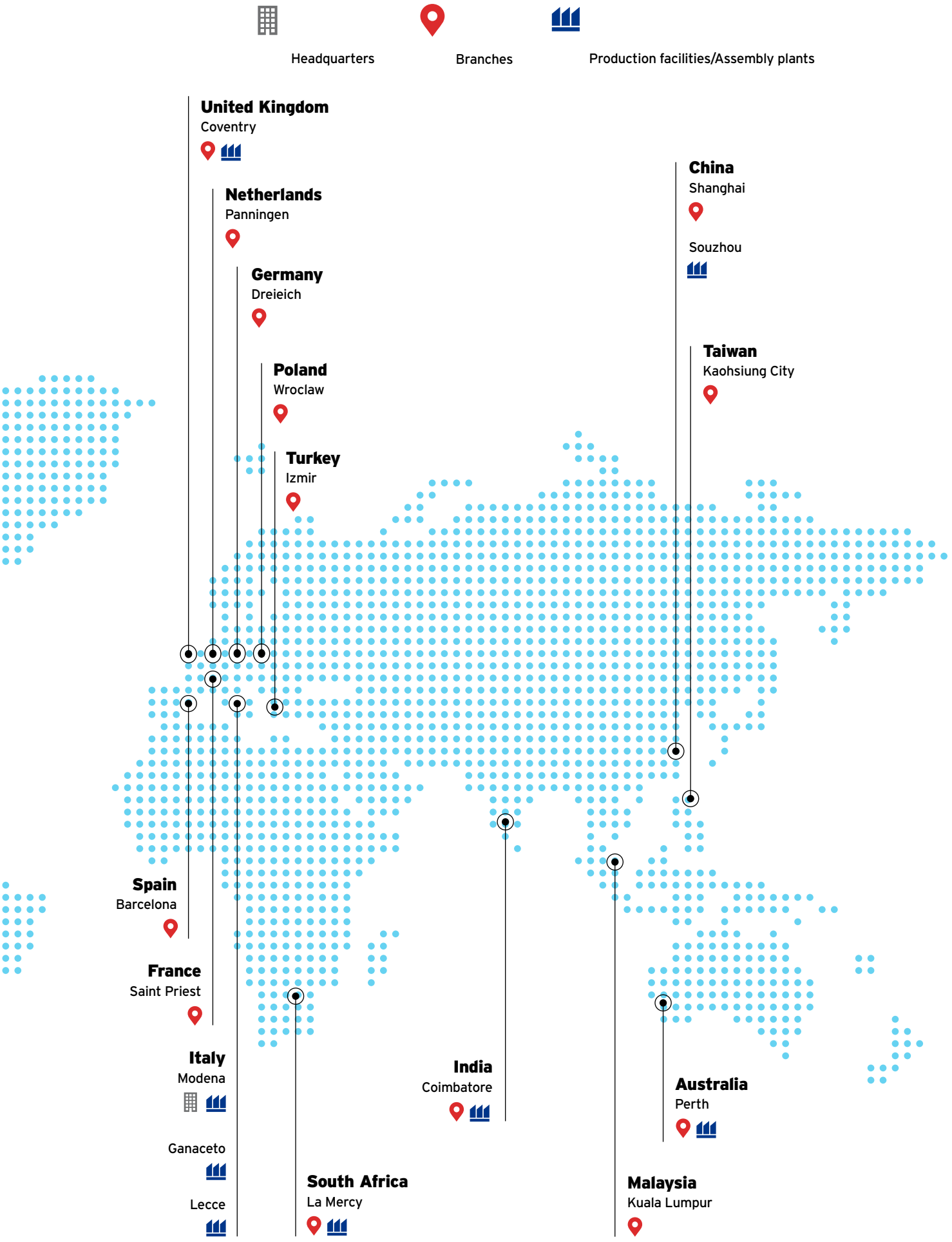
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Added former catalogs:
G Addition (sizes 400, 401)
RE drive units on swing base for the contents relevant to G drives

Added the "long version" for sizes 80, 81 MR 2I and 3I

page. 447: removed monthly control option for category 2 GD

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page. 430: Flange added (for sizes 400 and 401)

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