




**VARVEL®**

MOTION CONTROL SINCE 1955

  
technology made in Italy





## *Technology Made in Italy*

*Since 1955 Varvel has been making speed reducers and variators for light industry applications. Reliable partner in power transmission equipment offers also customized solutions always according to a socially responsible company values. Modularity and flexibility lead Varvel products by a unique kit form, common to all gearbox series. This feature allows distributors an easier job to set up required products in few minutes.*

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# RD

HELICAL GEARBOXES



# Gearboxes Series RD

## Product description

### Multipurpose housing

Foot & Foot/Flange Mountings  
One housing for 2- & 3-stages

### Housing & Covers

Aluminium die cast (5 sizes)  
Cast iron (2 sizes)

### Gearing

20MnCr5 alloy steel  
Case hardened  
Profile ground or shaved

### Bearings

Ball or roller types  
according to sizes  
and technical requirements



### Input

NEMA and IEC  
motor adapters and  
Universal elastic coupling

### Oil seals

Nitrile Butadiene Rubber -NBR  
as standard;  
Viton and Silicon on request

### Output

Solid shafts  
imperial and metric

### Lubrication

Synthetic long-life oil Grade ISO VG 320  
No oil plugs  
In-house filling

The helical gearboxes Series RD feature a one-piece cast housing complete with inner support to accommodate 2 or 3 gear stages into the same casing. Manufactured to latest ISO engineering design specifications the housing is checked by computer-aided structural analysis for deflection and stress distribution.

Significant strains caused by the effects of torque and external loads do not deflect the monolithic ribwork of the housing, which significantly improves the integrity of the sealed surfaces.

The helical gearboxes Series RD are manufactured in B3 base mounted configuration. They can be easily converted to B5 flange mounting by fitting of the appropriate additional adaptor flange.

Single-setup machining on state-of-the-art CNC production lines, the most recent calculation techniques and process controls give superior operational reliability, maximum output torques, high overhung and thrust load capacity, and long working life-time.

IEC or NEMA motor are easily mounted by fitting interchangeable bolted flanges and elastic couplings.

The elastic coupling, built-in inside the gearbox body, does not affect any dimensional length increase of the gearbox.

### Directive ATEX

The gearboxes VARVEL-ATEX, delivered on demand, are designed and manufactured according to Directive 94/9/CE "ATEX" and therefore, they are qualified for installation in potentially explosive atmospheres:


- Zones of Group II,
- Category 2 (or 3),
- Explosion hazard with gas presence (Zone 1 or 2),
- Explosion hazard with combustible dust presence (Zone 21 or 22).

The units VARVEL-ATEX are identified by the additional marking:  II 2 GD ck IP66 T<sub>max</sub>=135 °C

## Gearboxes Series RD

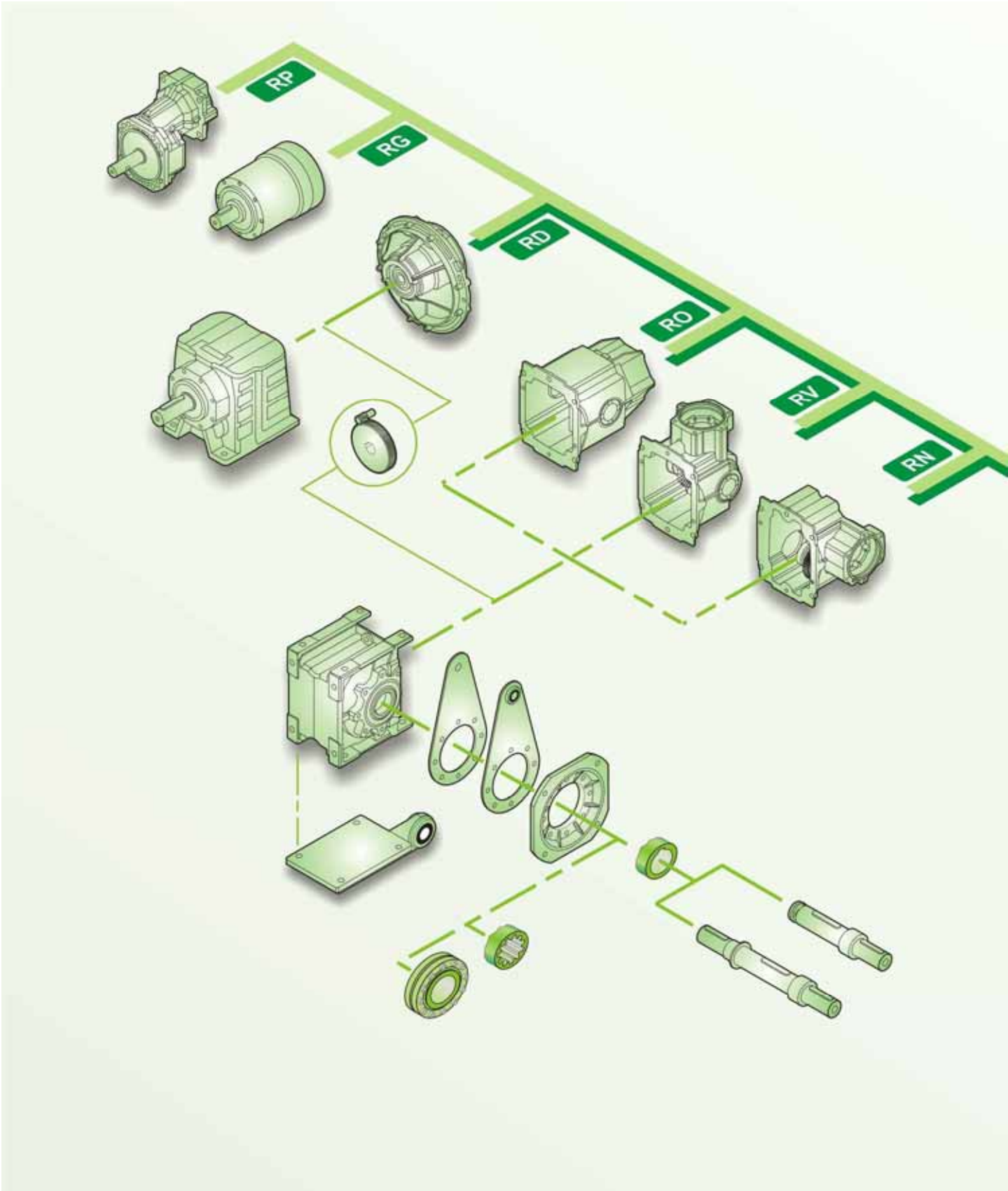
### Product description



	GENERAL SPECIFICATIONS
Range	7 sizes 28 ratios in 2 and 3 stages
Sizing	According to ISO6336/DIN3990. 15,000 hours average lifetime with service factor SF1
Housing, Covers	Pressure die cast aluminium AlSi12Cu2Fe up to size 4 and cast iron G25 from size 5.
Toothed parts	Steel 20MnCr5 case hardened. Tooth profile ground or shaved
Shafts & Keys	Steel 39NiCrMo3 Shafts h6 - Bores E8
Bearings	Ball- or roller-types according to sizes and technical requirements
Oilseals	Type NB - nitrile-butadiene with additional anti-dust lip
Lubricant	Synthetic long-life oil Grade ISO VG 320
Powder coating	Epoxy powder paint from size 5. Standard colour RAL 7012
Execution ATEX	 II 2 GD ck IP66 T <sub>max</sub> =135 °C

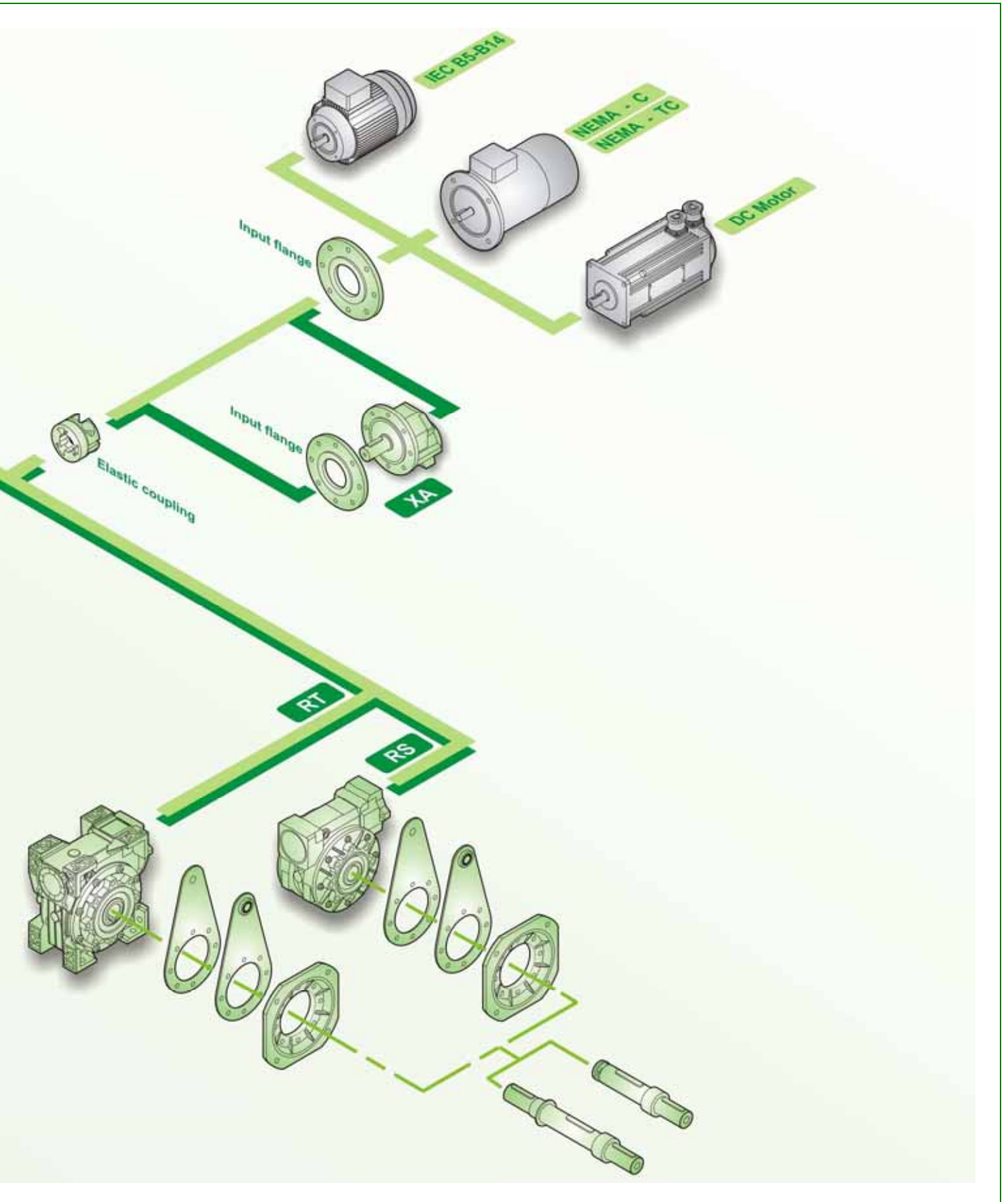
## Gearboxes Series RD

Modular system



# Gearboxes Series RD

Modular system



## Gearboxes Series RD

### Elastic coupling "G" description

#### Reducer half-coupling

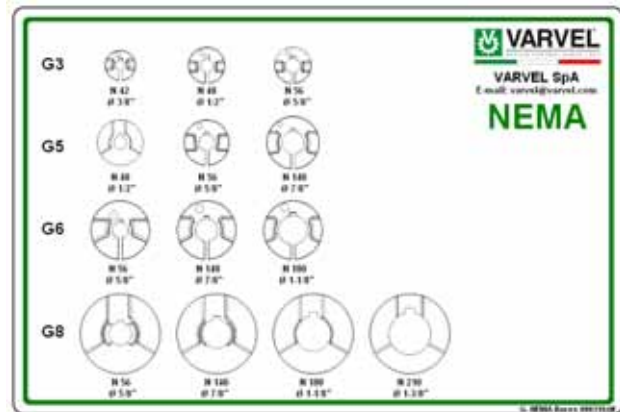
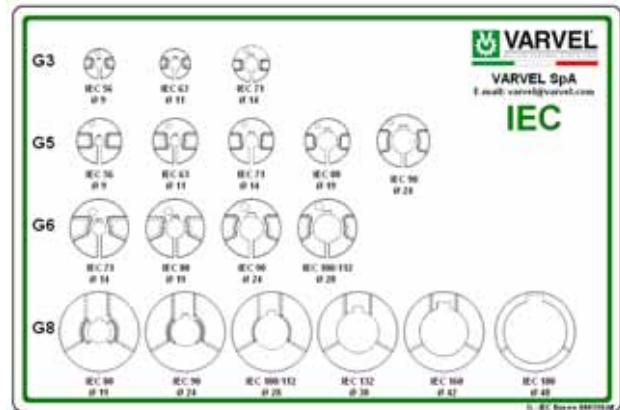
- Material: Alloy 20MnCr5
- Input shaft built-in
- Two bearing set
- Unchanged casing dimensions

#### Spider

- External tooth connection
- Material: Thermoplastic Elastomer
  - Elastollan<sup>®</sup> TPU - Polyurethane
  - Hytrel<sup>®</sup> TPE - Polyester
- Hardness
  - TPU 98 Shore A
  - TPE 72 Shore D
- Temperature
  - TPU -20/+75°C (-4 / +167°F)
  - TPE -30/+100°C (-22 / +212°F)

#### Motor half-coupling

- Material:
  - Aluminium die cast (G3, G5, G6)
  - Steel 36SMnPb14 (GS8)
  - Steel C43 on demand (GS3, Gs5, GS6)
- Dynamic balancing
- Fitting:
  - Clamp (G3, G5, G6)
  - Key (GS8)
- Bores:
  - IEC 72 / N42948
  - NEMA C y TC



#### Advantages:

- One gearbox only for each reduction ratio
- Greater flexibility
- Increased stock rotation
- Fretting corrosion elimination between key and keyway
- Zero backlash in gearbox/motor connection
- Allowed angular misalignment 1° max
- Torsional rigidity
- High vibration damping

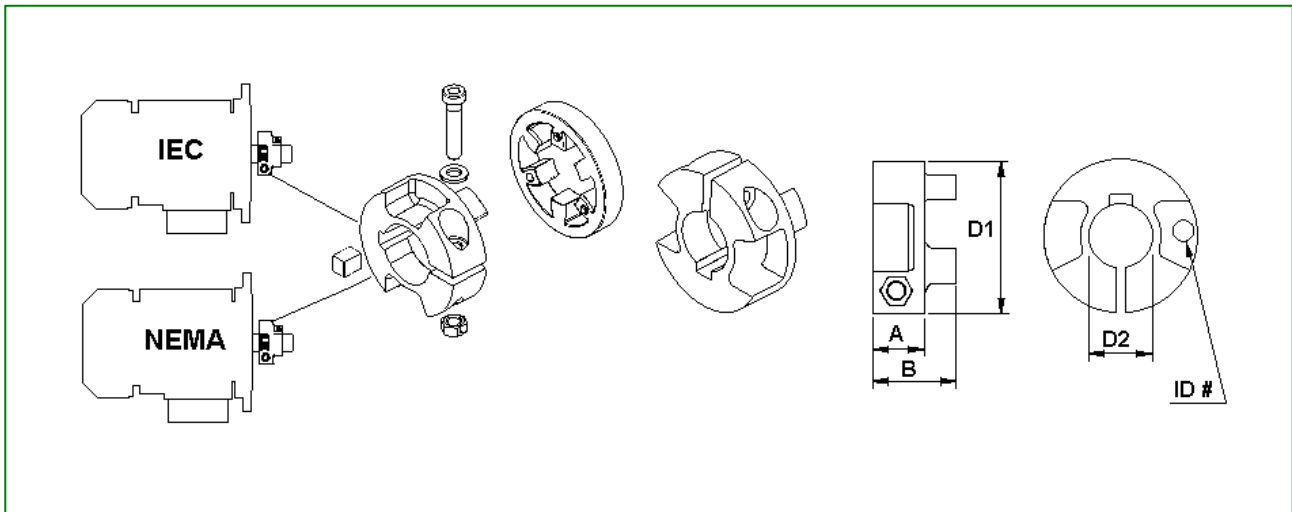
#### Input flanges:

- Material:
  - Aluminium up to IEC112 and NEMA TC180
  - Cast iron from IEC 132 and NEMA TC200



## Gearboxes Series RD

### Elastic coupling "G" selection



Type	IEC NEMA	Kit Part No.	RD	Mt [Nm]	Mt1 [Nm]	Mt2 [Nm]	A [mm]	B [mm]	D1 [mm]	D2 [mm/inch]	ID#
G3	IEC	KG3.009	03	4.5 - 6	15	8 - 10	11	19	30	9	309
		KG3.011	03	4.5 - 6	15	8 - 10			30	11	311
		KG3.014	03	7 - 8.5	28	18 - 22			36	14	314
	NEMA	KG3.N42	03	4.5 - 6	16	8 - 10			30	3/8"	3N42
		KG3.N48	03	4.5 - 6	18	10 - 12			36	1/2"	3N48
G5	IEC	KG5.009	02-12-13-23	8.9 - 10	14	8 - 10	14.5	23	45	9	509
		KG5.011	02-12-13-23		15	8 - 10			45	11	511
		KG5.014	02-12-13-23		30	12 - 17			45	14	514
		KG5.019	02-12-23		40	20 - 25			45	19	519
	KG5.024	12-23	70		30 - 40	52			24	524	
	NEMA	KG5.N48	02		30	20 - 24			40	1/2"	5N48
		KG5.N56	02-12-13-23	45	30 - 35	45	5/8"	5N56			
		KG5.N140	12-23	60	40 - 45	52	7/8"	5N140			
G6	IEC	KG6.014	22-32-33-42-43	15.3 - 18	60	30 - 40	19.5	31.5	58	14	614
		KG6.019	22-32-33-42-43		90	50 - 65				19	619
		KG6.024	22-32-33-42-43		130	85 - 100				24	624
	KG6.028	22-32-42	180		100 - 120	28				628	
NEMA	KG6.N56	22-32-33-42-43	50	---	5/8"	6N56					
		KG6.N140	22-32-33-42-43	85	---	7/8"	6N140				
		KG6.N180	22-32-42-43	200	---	1-1/8"	6N180				
G8	IEC	* KGS8.19	52-53-62-63	15	150	---	35	51	79	19	819
		* KGS8.24	52-53-62-63		250	---				24	824
		* KGS8.28	52-53-62-63		350	---				28	828
		* KGS8.38	52-62-63		500	---				38	838
	* KGS8.42	52-62	500		---	42				842	
	* KGS8.48	52-62	500		---	48				848	
	NEMA	* KGS8.N056	52-53-62-63		140	---				5/8"	8N56
		* KGS8.N140	52-53-62-63		200	---				7/8"	8N140
* KGS8.N180		52-53-62-63	300	---	1-1/8"	8N180					
* KGS8.N210		52-53-62-63	500	---	1-3/8"	8N210					

Mt - Screw locking torque

Mt1 - Transmissible torque with key

Mt2 - Transmissible torque without key

\* - Coupling GS8: steel and key fit

## Gearboxes Series RD

### IEC - Flanges and Elastic coupling selection

RS - RT	Flange Type	IEC	Kit Part No.		Elastic coupling	
			Flange B5	Flange B14	Type	Kit Part No.
RD 02	FM 40	IEC56	K531.206.120	K531.206.080	G5 ø9	KG5.009
		IEC63	K531.206.140	K531.206.090	G5 ø11	KG5.011
		IEC71	K531.206.160	K531.206.105	G5 ø14	KG5.014
		IEC80	---	K531.206.120	G5 ø19	KG5.019
RD 03	FM 40	IEC56	K531.206.120	K531.206.080	G3 ø9	KG3.009
		IEC63	K531.206.140	K531.206.090	G3 ø11	KG3.011
		IEC71	K531.206.160	K531.206.105	G3 ø14	KG3.014
RD 12	FM 50	IEC56	K532.206.120	---	G5 ø9	KG5.009
		IEC63	K532.206.140	K532.206.090	G5 ø11	KG5.011
		IEC71	K532.206.160	K532.206.105	G5 ø14	KG5.014
		IEC80	K532.206.200	K532.206.120	G5 ø19	KG5.019
		IEC90	K532.206.200	K532.206.140	G5 ø24	KG5.024
RD 13	FM 50	IEC56	K532.206.120	---	G5 ø9	KG5.009
		IEC63	K532.206.140	K532.206.090	G5 ø11	KG5.011
		IEC71	K532.206.160	K532.206.105	G5 ø14	KG5.014
RD 22	FM 70	IEC71	K533.206.160	K533.206.105	G6 ø14	KG6.014
		IEC80	K533.206.200	K533.206.120	G6 ø19	KG6.019
		IEC90	K533.206.200	K533.206.140	G6 ø24	KG6.024
		IEC 100/112	K533.206.250	K533.206.160	G6 ø28	KG6.028
RD 23	FM 70	IEC63	K533.206.140	---	G5 ø11	KG5.011
		IEC71	K533.206.160	K533.206.105	G5 ø14	KG5.014
		IEC80	K533.206.200	K533.206.120	G5 ø19	KG5.019
		IEC90	K533.206.200	K533.206.140	G5 ø24	KG5.024
RD 32 RD 33	FM 70	IEC71	K533.206.160	K533.206.105	G6 ø14	KG6.014
		IEC80	K533.206.200	K533.206.120	G6 ø19	KG6.019
		IEC90	K533.206.200	K533.206.140	G6 ø24	KG6.024
		* IEC 100/112	K533.206.250	K533.206.160	G6 ø28	KG6.028
RD 42 RD 43	FM 85	IEC71	K534.206.160	---	G6 ø14	KG6.014
		IEC80	K534.206.200	K534.206.120	G6 ø19	KG6.019
		IEC90	K534.206.200	K534.206.140	G6 ø24	KG6.024
		** IEC 100/112	K534.206.250	K534.206.160	G6 ø28	KG6.028
RD 52	FM 130 & FM 150	IEC 80	K536.206.200	---	*** GS8 ø19	KGS8.019
		IEC 90	K536.206.200	---	*** GS8 ø24	KGS8.024
		IEC 100/112	K536.206.250	---	*** GS8 ø28	KGS8.028
		IEC 132	K537.206.300	K536.206.200	*** GS8 ø38	KGS8.038
		IEC 160	K565.206.350	K536.206.250	*** GS8 ø42	KGS8.042
		IEC 180	K565.206.350	---	*** GS8 ø48	KGS8.048
RD 53	FM 130	IEC 80	K536.206.200	---	*** GS8 ø19	KGS8.019
		IEC 90	K536.206.200	---	*** GS8 ø24	KGS8.024
		IEC 100/112	K536.206.250	---	*** GS8 ø28	KGS8.028
RD 62	FM 130 & FM 150	IEC 80	K536.206.200	---	*** GS8 ø19	KGS8.019
		IEC 90	K536.206.200	---	*** GS8 ø24	KGS8.024
		IEC 100/112	K536.206.250	---	*** GS8 ø28	KGS8.028
		IEC 132	K537.206.300	K536.206.200	*** GS8 ø38	KGS8.038
		IEC 160	K565.206.350	K536.206.250	*** GS8 ø42	KGS8.042
IEC 180	K565.206.350	---	*** GS8 ø48	KGS8.048		
RD 63	FM 130 & FM 150	IEC 80	K536.206.200	---	*** GS8 ø19	KGS8.019
		IEC 90	K536.206.200	---	*** GS8 ø24	KGS8.024
		IEC 100/112	K536.206.250	---	*** GS8 ø28	KGS8.028
		IEC 132	K537.206.300	K536.206.200	*** GS8 ø38	KGS8.038

\* - IEC100/112: not for RD33

\*\* - IEC112: not for RD43

\*\*\* - Coupling GS8: steel and key fit

## Gearboxes Series RD

### Flanges and Elastic coupling selection - NEMA

RS - RT	Flange Type	NEMA	Kit Part No.	Elastic coupling	
				Type	Kit Part No.
RD 02	FM 40	48 C 56 C	K531.227.N48 K531.227.N56	G5 ø 1/2" G5 ø 5/8"	KG5.N48 KG5.N56
RD 03		42 C 48 C	K531.227.N48 K531.227.N48	G3 ø 3/8" G3 ø 1/2"	KG3.N42 KG3.N48
RD 12	FM 50	56 C 140 TC	K532.227.N56 K532.227.N56	G5 ø 5/8" G5 ø 7/8"	KG5.N56 KG5.N140
RD 13		56 C	K532.227.N56	G5 ø 5/8"	KG5.N56
RD 22	FM 70	56 C 140 C 180 C	K533.227.N56 K533.227.N56 K533.227.N180	G6 ø 5/8" G6 ø 7/8" G6 ø 1-1/8"	KG6.N56 KG6.N140 KG6.N180
RD 23		56 C 140 C	K533.227.N56 K533.227.N56	G5 ø 5/8" G5 ø 7/8"	KG5.N56 KG5.N140
RD 32	FM 70	56 C 140 TC 180 TC	K533.227.N56 K533.227.N56 K533.227.N180	G6 ø 5/8" G6 ø 7/8" G6 ø 1-1/8"	KG6.N56 KG6.N140 KG6.N180
RD 33		56 C 140 TC	K533.227.N56 K533.227.N56	G6 ø 5/8" G6 ø 7/8"	KG6.N56 KG6.N140
RD 42	FM 85	56 C 140 TC 180 TC	K534.227.N56 K534.227.N56 K534.227.N180	G6 ø 5/8" G6 ø 7/8" G6 ø 1-1/8"	KG6.N56 KG6.N140 KG6.N180
RD 43		56 C 140 TC 180 TC	K534.227.N56 K534.227.N56 K534.227.N180	G6 ø 5/8" G6 ø 7/8" G6 ø 1-1/8"	KG6.N56 KG6.N140 KG6.N180
RD 52	FM 150	56 C 140 TC 180 TC 210 TC	K537.227.N56 K537.227.N56 K537.227.N180 K537.227.N180	* GS8 ø 5/8" * GS8 ø 7/8" * GS8 ø 1-1/8" * GS8 ø 1-3/8"	KGS8.N56 KGS8.N140 KGS8.N180 KGS8.N210
RD 53		56 C 140 TC 180 TC 210 TC	K537.227.N56 K537.227.N56 K537.227.N180 K537.227.N180	* GS8 ø 5/8" * GS8 ø 7/8" * GS8 ø 1-1/8" * GS8 ø 1-3/8"	KGS8.N56 KGS8.N140 KGS8.N180 KGS8.N210
RD 62	FM 150	56 C 140 TC 180 TC 210 TC	K537.227.N56 K537.227.N56 K537.227.N180 K537.227.N210	* GS8 ø 5/8" * GS8 ø 7/8" * GS8 ø 1-1/8" * GS8 ø 1-3/8"	KGS8.N56 KGS8.N140 KGS8.N180 KGS8.N210
RD 63		56 C 140 TC 180 TC 210 TC	K537.227.N56 K537.227.N56 K537.227.N180 K537.227.N210	* GS8 ø 5/8" * GS8 ø 7/8" * GS8 ø 1-1/8" * GS8 ø 1-3/8"	KGS8.N56 KGS8.N140 KGS8.N180 KGS8.N210

\*\* - Coupling GS8: steel and key fit

## Gearboxes Series RD

### Symbols

D	[mm]	PCD of transmission element $k_{(t)}$	
$F_r$	[N]	Application radial load	
$F_{r1}$	[N]	Catalogue radial load (input)	
$F_{r2}$	[N]	Catalogue radial load (output)	
$F_{r2b(x)}$	[N]	Permissible radial load at position "X" on output shaft. Based on bearing	
$F_{r2s(x)}$	[N]	Permissible radial same as $F_{r2b(x)}$ . Based on shaft bending and torsional stress.	
FS		Service factor	$FS = \frac{M_2}{M_{(app)}}$
$i_n$		Nominal reduction ratio	
$i_r$		Actual reduction ratio	
$J_1$	[kgm <sup>2</sup> ]	Moment of inertia of the gearbox at gearbox input shaft	
$J_2$	[kgm <sup>2</sup> ]	Moment of inertia of the application	
$J_m$	[kgm <sup>2</sup> ]	Moment of inertia of the motor	
$k_{(a)}$		Mass acceleration factor	
$k_{(t)}$		Transmission element factor	
Lub H / V	[l]	Lubricant (litres): H - Horizontal mounting V - Vertical mounting	
$M_2$	[Nm]	Gearbox output torque	$M_2 = \frac{9550 * P_1 * \eta}{n_2}$
$M_{(app)}$	[Nm]	Application torque	
$n_1$	[min <sup>-1</sup> ]	Input speed	
$n_2$	[min <sup>-1</sup> ]	Output speed	
$P_1$	[kW]	Motor power	$P_1 = \frac{M_2 * n_2}{9550 * \eta}$
$P_{(kg)}$	[kg]	Weight: for mounting B3H and average reduction ratio	
$\eta$		$\eta = 0.96$ - 2 stages $\eta = 0.94$ - 3 stages	

# Gearboxes Series RD

## External loads

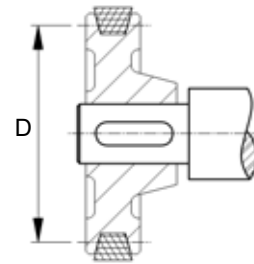
### OUTPUT RADIAL LOADS

Radial (overhung) loads have to be checked with the rating factor given in the RD gearbox selection tables. The  $k_{(t)}$  rating factor will vary according to the transmission element fitted on the gearbox output shaft according to the below table.

#### Application radial load

$$F_r = \frac{2000 * M_2}{D} * k_{(t)}$$

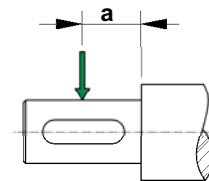
$k_{(t)}$	Transmission element
1,15	Gear - Tooth No. < 17
1,40	Chain sprocket - Tooth No. < 13
1,25	Chain sprocket - Tooth No. < 20
1,00	Chain sprocket - Tooth No. > 20
2,50	"V" belt pulley
1,25	Timing belt pulley



#### Catalogue radial load at shaft centre

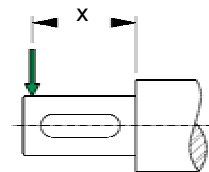
$$F_{r2} \geq F_r$$

RD	0	1	2	3	4	5	6
a	17.5	20	25	30	35	40	50 [mm]



#### Radial load offset from centre

RD	0	1	2	3	4	5	6
a	17.5	20	25	30	35	40	50
b	15.5	23	24	27	31	37	39
c	33	43	49	57	66	77	89



Check both (\*) and (\*\*) comparisons

$$(*) \quad F_{r2b(x)} \geq F_r$$

$$(**) \quad F_{r2b(x)} = F_{r2} * \frac{c}{x + b}$$

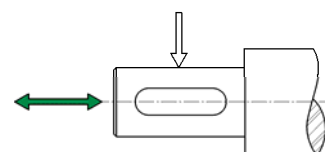
$$F_{r2s(x)} \geq F_r$$

$$F_{r2s(x)} = F_{r2} * \frac{a}{x}$$

### OUTPUT AXIAL LOADS

Axial load value, both on tensile and compressive stress, and with radial load.

$$F_{a2} = F_{r2} * 0.2$$



# Gearboxes Series RD

## Service factors

### SERVICE FACTOR of the gearbox

The performance quoted in MRD geared motor tables (pages 24 to 39) is set out by taking the following service factor range

$$0.8 \leq FS \leq 3.5$$

Service factor FS1.0 is meant as typical of 8 hours/day operation, uniform load, mass acceleration factor  $k_{(a)} \leq 0.2$ , starts/stops less than 300 per hour and ambient temperature between 15 and 35 Celsius.

The performance quoted in gearbox RD tables (pages 9 to 15) gives the service factor calculation as ratio between gearbox maximum output torque  $M_2$  and application torque  $M_{(app)}$ .

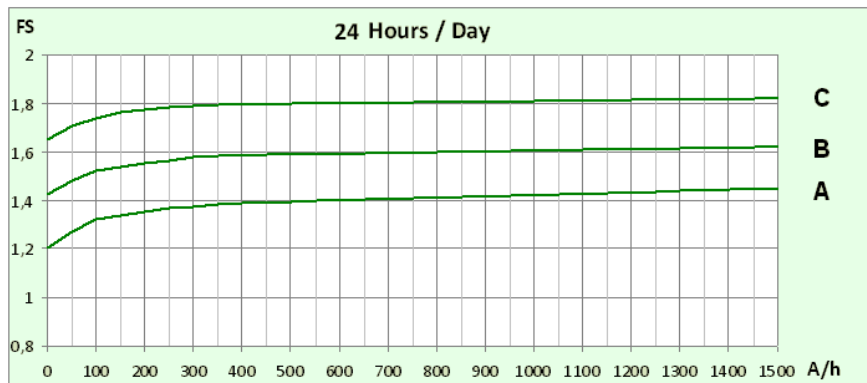
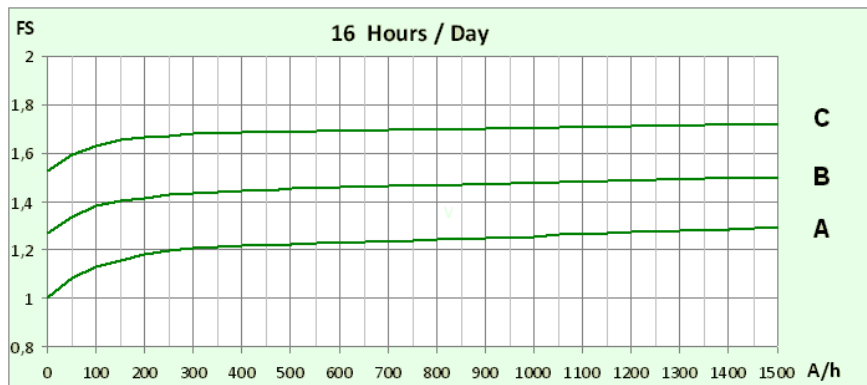
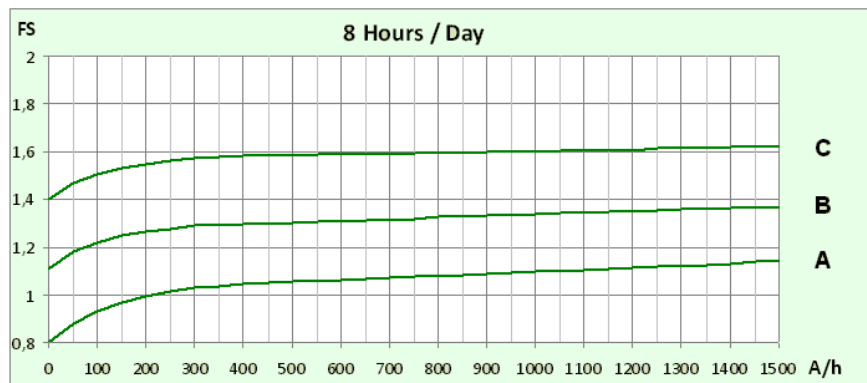
### Mass acceleration factor

$$k_{(a)} = \frac{\frac{J_2}{J_1} + J_1}{J_m}$$

Load classes

- A - Uniform load  
 $k_{(a)} \leq 0,2$
- B - Moderate shock load  
 $0,2 < k_{(a)} \leq 3$
- C - Severe shock load  
 $3 < k_{(a)} \leq 10A/h$

A/h - Number of start/stops per hour



## Gearboxes Series RD

### Service factors

#### SERVICE FACTOR of the motor

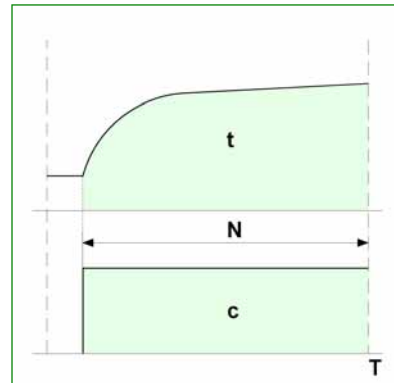
The specifications of various duty types are defined by the Standard CEI EN 60034-1 / IEC34-1.

#### S1 – Continuous duty

The specifications of various duty types are defined by the Standard CEI EN 60034-1 / IEC34-1

$$fs = 1.0$$

- N = Operation time
- c = Load
- t = Temperature



#### S3 – Periodic intermittent duty

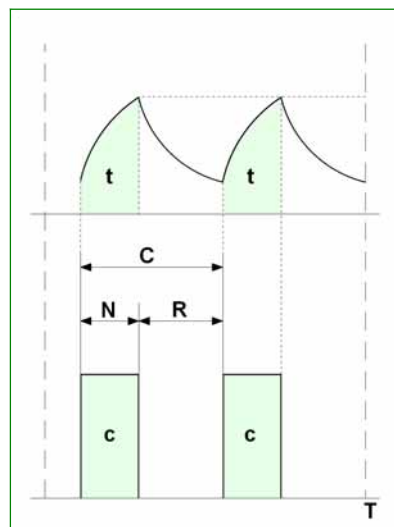
Operation according to cycle (C) including steady load time (N) and rest time (R).

Starts/stops do not affect temperature.

The reference cycle (C) is up to a total of 10 minutes. Intermittence ratio is calculated as follows:

$$\frac{N}{(N+R)} * 100 = \begin{matrix} 60\% & fs = 0.90 \\ 40\% & fs = 0.85 \\ 25\% & fs = 0.75 \\ 15\% & fs = 0.70 \end{matrix}$$

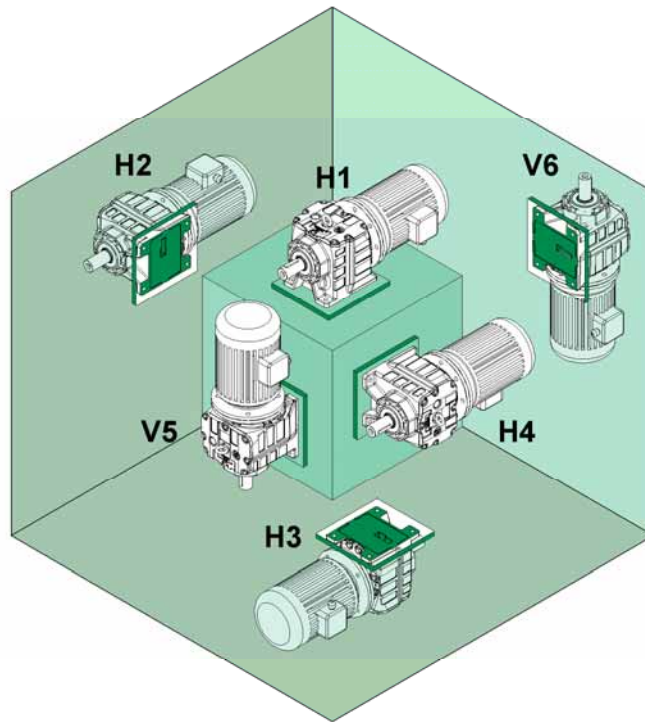
- N = Operation time
- R = Rest time
- C = Duty cycle



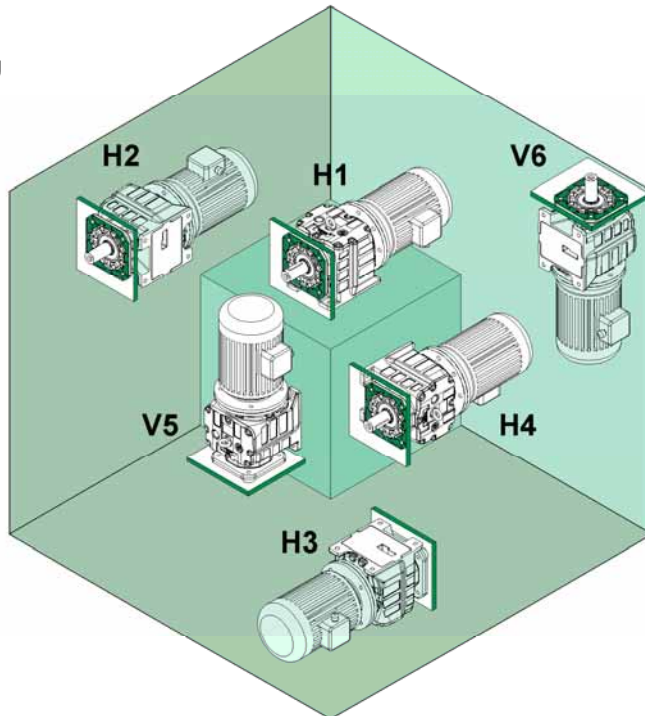
## Gearboxes Series RD

### Mounting positions

**B3**  
Foot mounting



**B5**  
Flange mounting



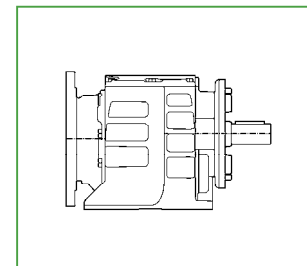


# Gearboxes Series RD

## Designation

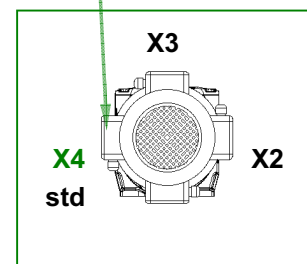
### GEARBOX DESIGNATION

<b>F</b>	<b>R</b>	<b>32</b>	<b>/B3</b>	<b>H</b>	<b>31.5</b>	<b>IEC71</b>	<b>-B14</b>	<b>AU30</b>	<b>DFU200</b>
									Output flange diameter $\varnothing$ ... mm
									Output shaft diameter $\varnothing$ ... mm
									B5, B14 = Electric motor format
									Electric motor frame
									Reduction ratio
									H, V = Gearbox mounting position
									B3, B5, B3/B5 = Gearbox format
									Gearbox size
									Gearbox type
<p>M = Geared motor          F = Gearbox with input flange IEC          S = Gearbox without input flange IEC          ... = (nihil) Gearbox with input free shaft</p>									



### MOTOR DESIGNATION

<b>MT</b>	<b>0.37 kW</b>	<b>71 B</b>	<b>4</b>	<b>B14</b>	<b>230/400/50</b>	<b>IP55</b>	<b>F</b>	<b>X4</b>	
									Terminal box position
									Class F (std) = Insulation class
									IP55 (std) = Protection class
									Voltage / Frequency
									B5 or B14 = Mounting format
									Number of poles
									IEC motor frame
									Motor power
<p>MT = Three-phase motor          MM = Single-phase motor          MA = Brake motor</p>									



## Gearboxes Series RD

### Electronic catalogue



Modularity and flexibility have been leading the design of Varvel products since the years 2000: this way, the gearbox-kit concept was carried out allowing anyone to assemble the unit in few minutes with standard tooling.

This feature provides the highest flexibility to Varvel's distributors and resellers who - thanks to a limited kit selection - are able to immediately configure the required product.

VARSIZE® selection programme - available from our site [www.varvel.com](http://www.varvel.com) - allows a friendly sizing of Varvel product range.

#### 3D-models and 2D-drawings

A guided selection lets 2D/3D models downloaded for the most popular CAD systems.

#### Guided selection

This option returns a list of applicable product configurations upon a given sequence of application parameters (power, output torque, rpm, service factor etc.).

A PDF data sheet featuring performance data and dimensional drawings is generated for each configuration, as well as the 3D-model and 2D-drawings.



# RD0 - 50 Nm

# Gearboxes Series RD

1400 rpm

Speed Reducer Selection

RD 0	$i_n$	$i_r$	$n_2$ [min]	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1$	Lub	Lub	P	56	63	71	80
<b>RD02</b> 2c	2.25	2.314	605	27	1.8	*	400	0.6467	0,20	0,28	3,0	⊙	⊙	⊙	⊙
	2.50	2,568	545	30	1.82	*	430	0.5251				⊙	⊙	⊙	⊙
	2.80	2.952	474	30	1.60	*	410	0.4835				⊙	⊙	⊙	⊙
	3.15	3,277	427	33	1.57	*	420	0.4443				⊙	⊙	⊙	⊙
	3.55	3.834	365	34	1.3	*	420	0.4253				⊙	⊙	⊙	⊙
	4.0	4,256	329	36	1.32	*	430	0.3884				⊙	⊙	⊙	⊙
	4.5	4.753	295	34	1.10	*	470	0.3674				⊙	⊙	⊙	⊙
	5.0	5,276	265	38	1.13	*	520	0.3587				⊙	⊙	⊙	⊙
	5.6	5.747	244	52	1.40	*	580	0.3841				⊙	⊙	⊙	⊙
	6.3	6,253	234	48	1.22	36	640	0.4296				⊙	⊙	⊙	⊙
	7.1	7.333	191	53	1.10	50	680	0.4015				⊙	⊙	⊙	⊙
	8.0	7,979	175	49	0.97	110	720	0.3856				⊙	⊙	⊙	⊙
	9.0	9.524	147	54	0.89	140	770	0.3618				⊙	⊙	⊙	⊙
	10.0	10,362	135	50	0.78	172	820	0.3536				⊙	⊙	⊙	⊙
	12.5	12,844	109	50	0.62	211	920	0,3361				⊙	⊙	⊙	⊙
	16.0	16,320	86	51	0.49	244	1020	0,3218				⊙	⊙	⊙	
	20.0	21,533	65	51	0.38	273	1170	0,3106				⊙	⊙	⊙	
	25.0	26,747	52	52	0.31	292	1200	0,3045				⊙	⊙	⊙	
	31.5	30,222	46	52	0.27	299	1200	0,3019				⊙	⊙		
	35.5	34,675	40	35	0.16	638	1430	0,3089				⊙	⊙		
40	43,070	33	35	0.13	646	1430	0,3033				⊙	⊙			
50	48,667	29	35	0.11	651	1420	0,3010				⊙	⊙			
<b>RD03</b> 3c	40	36.892	37	52	0.22	76	1200	0,3065	0,30	0,38	3,2	⊙	⊙	⊙	
	50	47,074	30	52	0.18	149	1200	0,6431				⊙	⊙	⊙	
	63	61,135	23	52	0.14	208	1200	0,6342				⊙	⊙	⊙	
	80	75,782	18	52	0.11	248	1200	0,6299				⊙	⊙		
	100	96,288	15	52	0.09	281	1200	0,6270				⊙			
	125	127,047	11	52	0.07	312	1200	0,6252				(⊙)			
	160	157,805	8.9	52	0.05	332	1200	0,6244				(⊙)			
	180	178,311	7.9	52	0.05	341	1200	0,6241				(⊙)			
	200	204,583	6.9	36	0.03	367	1420	0,6251				(⊙)			
	250	254,113	5.5	36	0.02	376	1420	0,6244				(⊙)			
	280	287,133	4.9	36	0.02	380	1420	0,6241				(⊙)			
	315	324,444	4.3	36	0.02	380	1420	0,6462				(⊙)			

2c & 3c - Number of reduction stages

(⊙) - Max. available power  $\leq P_1$

\* - Recommended coupling drive

IEC	56	63	71	80	90	100	112	132
∅ B5	120	140	160	---	---	---	---	---
∅ B14	80	90	105	120	---	---	---	---
∅ × l	9 × 20	11 × 23	14 × 30	19 × 40	---	---	---	---

# Gearboxes Series RD

# RD1 - 100 Nm

## Speed Reducer Selection

1400 rpm

RD 1	$i_n$	$i_r$	$n_2$ [min]	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1$	Lub	Lub	P	56	63	71	80	90
<b>RD12</b> 2c	2.25	2.348	596	40	2.70	*	1200	1.2989	0,5	0,7	4,8	⊙	⊙	⊙	⊙	⊙
	2.50	2.534	560	45	2.50	*	1300	1.1152				⊙	⊙	⊙	⊙	⊙
	2.80	2.855	490	43	2.40	*	1350	0.1056				⊙	⊙	⊙	⊙	⊙
	3.15	3.081	445	45	2.21	*	1400	0.9332				⊙	⊙	⊙	⊙	⊙
	3.55	3.716	377	46	2.00	*	1450	0.8131				⊙	⊙	⊙	⊙	⊙
	4.0	4.011	350	50	1.84	*	1500	0.7691				⊙	⊙	⊙	⊙	⊙
	4.5	4.700	298	49	1.60	*	1550	0.7912				⊙	⊙	⊙	⊙	⊙
	5.0	5.073	280	55	1.55	*	1600	0.6732				⊙	⊙	⊙	⊙	⊙
	5.6	5.726	251	51	1.40	*	1650	0.7514				⊙	⊙	⊙	⊙	⊙
	6.3	6.686	220	90	2.06	*	1700	0.8357				⊙	⊙	⊙	⊙	⊙
	7.1	7.161	196	54	1.20	*	1750	0.7857				⊙	⊙	⊙	⊙	⊙
	8.0	8.129	175	90	1.71	*	1800	0.7441				⊙	⊙	⊙	⊙	⊙
	9.0	9.315	150	45	0.76	*	1850	0.7013				⊙	⊙	⊙	⊙	⊙
	10.0	10.581	140	90	1.33	*	1900	0.6575				⊙	⊙	⊙	⊙	⊙
	12.5	13.384	110	90	1.06	*	1900	0.6035				⊙	⊙	⊙	⊙	⊙
	16.0	16.309	90	90	0.88	20	1900	0.5710				⊙	⊙	⊙	⊙	
	20.0	20.391	70	90	0.71	55	1900	0.5435				⊙	⊙	⊙	⊙	
	25.0	26.522	55	95	0.56	75	2000	0.5211				⊙	⊙	⊙	⊙	
31.5	32.653	45	95	0.46	100	2000	0.5088				⊙	⊙	⊙			
40	39.083	35	70	0.27	590	2000	0.5184				⊙	⊙	⊙			
50	48.118	30	70	0.22	630	2000	0.5070				⊙	⊙	⊙			
63	61.670	22	70	0.17	640	2000	0.4975				⊙	⊙				
<b>RD13</b> 3c	40	40.103	35	95	0.38	120	1500	0.5267	0,5	0,7	4,8	[⊙]	⊙	⊙		
	50	52.201	30	95	0.29	210	1600	1,5521				[⊙]	⊙	⊙		
	63	66.028	22	95	0.23	270	1700	1,5394				[⊙]	⊙			
	80	80.432	18	100	0.19	320	1800	1,5333				[⊙]	⊙			
	100	100.596	14	100	0.16	350	1900	1,5288				[⊙]	⊙			
	125	130.843	11	100	0.12	400	2000	1,5260				[⊙]	⊙			
	160	165.075	9.0	100	0.10	410	2000	1,9460				[⊙]				
	200	206.460	7.0	100	0.08	420	2000	1,9423				[⊙]				
	250	268.538	5.5	100	0.06	430	2000	1,9401				[⊙]				
	315	330.615	4.5	100	0.05	450	2000	1,9391				(⊙)				
	400	395.719	3.5	70	0.03	480	2200	1,9401				(⊙)				
	500	487.197	2.8	70	0.02	490	2200	1,9391				(⊙)				
630	624.413	2.2	70	0.02	510	2200	1,9385				(⊙)					

2c & 3c - Number of reduction stages

\* - Recommended coupling drive

(⊙) - Max. available power ≤ P<sub>1</sub>

[⊙] - Only B5

IEC	56	63	71	80	90	100	112	132
∅ B5	120	140	160	200	200	---	---	---
∅ B14	---	90	105	120	140	---	---	---
∅ × l	9 × 20	11 × 23	14 × 30	19 × 40	24 × 50	---	---	---

# RD2 - 200 Nm

# Gearboxes Series RD

1400 rpm

Speed Reducer Selection

RD 2	$i_n$	$i_r$	$n_2$ [min]	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1$	Lub	Lub	P	71	80	90	100	112	
<b>RD22</b> 2c	2.25	2.336	599	79	5.30	*	1000	4.1128	0,8	1,0	7,9	⊙	⊙	⊙	⊙	⊙	
	2.50	2.548	560	85	4.99	*	1100	3.4569				⊙	⊙	⊙	⊙	⊙	
	2.80	2.875	487	85	4.60	*	1200	3.1032				⊙	⊙	⊙	⊙	⊙	
	3.15	3.133	445	90	4.37	*	1350	2.8995				⊙	⊙	⊙	⊙	⊙	
	3.55	3.594	390	91	4.00	*	1400	2.6305				⊙	⊙	⊙	⊙	⊙	
	4.0	3.917	350	100	3.75	*	1500	2.4858				⊙	⊙	⊙	⊙	⊙	
	4.5	4.600	304	97	3.30	*	1600	2.2505				⊙	⊙	⊙	⊙	⊙	
	5.0	5.013	280	105	3.12	*	1700	2.1816				⊙	⊙	⊙	⊙	⊙	
	5.6	5.665	247	102	2.80	*	1760	2.5308				⊙	⊙	⊙	⊙	⊙	
	6.3	6.717	220	175	4.13	*	1850	2.7248				⊙	⊙	⊙	⊙	⊙	
	7.1	7.188	195	99	2.20	*	1910	2.6423				⊙	⊙	⊙	⊙		
	8.0	8.267	175	180	3.39	*	2000	2.4162				⊙	⊙	⊙	⊙		
	9.0	9.296	151	83	1.40	*	2040	2.2654				⊙	⊙	⊙	⊙		
	10.0	10.333	140	180	2.74	*	2100	2.1765				⊙	⊙	⊙	⊙		
	12.5	13.227	110	180	2.17	*	2200	1.9928				⊙	⊙	⊙	⊙		
	16.0	16.290	90	185	1.78	*	2300	1.8826				⊙	⊙	⊙			
	20.0	20.667	70	190	1.42	*	2400	1.7924				⊙	⊙	⊙			
	25.0	26.729	55	190	1.11	40	2500	1.7234				⊙	⊙	⊙			
	31.5	31.477	45	190	0.95	50	2600	1.6937				⊙	⊙	⊙			
	40	39.388	35	140	0.53	720	2900	1.6604				⊙	⊙				
50	50.758	30	140	0.41	740	3050	1.6757				⊙						
63	62.127	22	140	0.34	760	3200	1.6537				⊙						
<b>RD23</b> 3c	40	40.759	35	200	0.75	140	2300	1,7501	0,8	1,0	8,5	⊙	⊙	⊙			
	50	52.172	30	200	0.59	280	2400	2,5709				⊙	⊙	⊙			
	63	64.256	22	200	0.48	380	2500	2,5490				⊙	⊙	⊙			
	80	81.519	18	200	0.39	460	2600	2,5337				⊙					
	100	105.431	14	200	0.30	550	2700	2,5230				⊙					
	125	124.159	11	200	0.25	590	2800	2,5195				⊙					
	160	164.938	9.0	200	0.19	430	2900	3,0999									IEC63-B5 solo
	200	209.250	7.0	200	0.15	520	3000	3,0889									IEC63-B5 solo
	250	270.630	5.5	200	0.12	580	3200	3,0816									IEC63-B5 solo
	315	318.704	4.5	200	0.10	600	3500	3,0796									(⊙) = IEC63-B5
	400	398.802	3.5	140	0.06	700	3500	3,0809									(⊙) = IEC63-B5
	500	513.920	2.8	140	0.04	730	3500	3,0790									(⊙) = IEC63-B5
	630	629.039	2.2	140	0.04	760	3500	3,0783									(⊙) = IEC63-B5

2c & 3c - Number of reduction stages

(⊙) - Max. available power ≤ P<sub>1</sub>

\* - Recommended coupling drive

IEC	56	63	71	80	90	100	112	132
∅ B5	---	140	160	200	200	250	250	---
∅ B14	---	---	105	120	140	160	160	---
∅ × l	---	11 × 23	14 × 30	19 × 40	24 × 50	28 × 60	28 × 60	---

# Gearboxes Series RD

# RD3 - 420 Nm

## Speed Reducer Selection

## 1400 rpm

RD 3	$i_n$	$i_r$	$n_2$ [min]	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1$	Lub	Lub	P	71	80	90	100	112
<b>RD32</b> 2c	2.25	2.420	579	171	11.20	800	2000	9.3605				⊙	⊙	⊙	⊙	⊙
	2.50	2.697	560	190	10.49	830	2100	7.5606	1,3	1,8	13,5	⊙	⊙	⊙	⊙	⊙
	2.80	2.983	469	184	9.80	840	2100	6.5382				⊙	⊙	⊙	⊙	⊙
	3.15	3.324	445	205	9.18	850	2200	5.9052				⊙	⊙	⊙	⊙	⊙
	4.5	3.733	375	198	8.40	860	2200	5.4374				⊙	⊙	⊙	⊙	⊙
	4.0	4.160	350	220	7.87	880	2300	4.6789				⊙	⊙	⊙	⊙	⊙
	4.5	4.783	293	211	7.00	890	2400	4.2591				⊙	⊙	⊙	⊙	⊙
	5.0	5.331	280	235	6.55	900	2500	3.7739				⊙	⊙	⊙	⊙	⊙
	6.3	6.261	220	370	9.31	920	2700	5.2968				⊙	⊙	⊙	⊙	⊙
	7.1	7.484	187	217	4.6	960	2900	4.6784				⊙	⊙	⊙	⊙	⊙
	8.0	7.717	175	370	7.63	980	3100	4.4149				⊙	⊙	⊙	⊙	⊙
	10.0	9.658	140	375	6.17	1030	3600	3.7274				⊙	⊙	⊙	⊙	⊙
	12.5	12.375	110	380	4.87	1070	3800	3,1944				⊙	⊙	⊙	⊙	⊙
	16.0	16.451	90	390	3.72	1110	4000	3,2491				⊙	⊙	⊙	⊙	⊙
	20.0	19.362	70	390	3.19	1110	4200	2,9048				⊙	⊙	⊙	⊙	
	25.0	25.255	55	395	2.48	1150	4500	2,3847				⊙	⊙	⊙	⊙	
	31.5	33.214	45	400	1.68	1210	4700	2,2448				⊙	⊙	⊙	⊙	
	40	38.571	35	285	1.10	1380	4900	2,3551				⊙	⊙	⊙		
50	50.727	30	285	0.85	1390	5000	2,2276				⊙	⊙				
63	63.333	22	285	0.69	1400	5000	2,1571				⊙	⊙				
<b>RD33</b> 3c	40	38.063	35	420	1.68	100	4000	2,3849	1,6	2,1	14,5	⊙	⊙	⊙		
	50	48.772	30	420	1.33	350	4100	4,8227				⊙	⊙	⊙		
	63	64.836	22	420	1.01	580	4200	5,2165				⊙	⊙	⊙		
	80	76.310	18	420	0.87	690	4400	5,0177				⊙	⊙			
	100	99.535	14	425	0.67	830	4500	4,6787				⊙	⊙			
	125	130.903	11	425	0.51	870	4600	4,6625				⊙	⊙			
	160	167.799	9.0	425	0.40	850	4700	6,8317				⊙	⊙			
	200	197.495	7.0	425	0.34	900	4100	6,6412				⊙	⊙			
	250	257.602	5.5	430	0.26	930	4300	6,3012				⊙	⊙			
	315	307.214	4.5	430	0.22	950	4500	6,3065				⊙	⊙			
	400	393.429	3.5	290	0.11	1150	5000	6,3129				(⊙)				
	500	517.418	2.8	290	0.09	1170	5000	6,3038				(⊙)				
630	646.000	2.2	290	0.07	1200	5000	6,2999				(⊙)					

2c & 3c - Number of reduction stages

(⊙) - Max. available power  $\leq P_1$

IEC	56	63	71	80	90	100	112	132
∅ B5	---	---	160	200	200	250	250	---
∅ B14	---	---	105	120	140	160	160	---
∅ × l	---	---	14 × 30	19 × 40	24 × 50	28 × 60	28 × 60	---

# RD4 - 700 Nm

# Gearboxes Series RD

1400 rpm

Speed Reducer Selection

RD 4	$i_n$	$i_r$	$n_2$ [min]	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$ [	$J_1$	Lub	Lub	P	80	90	100	112	132
<b>RD42</b> 2c	2.25	2.343	598	278	18.8	480	2000	22.729	2,2	3,0	20,0	⊙	⊙	⊙	⊙	⊙
	2.50	2.489	560	300	17.7	490	2300	18.663				⊙	⊙	⊙	⊙	⊙
	2.80	2.929	478	301	16.3	500	2400	16.454				⊙	⊙	⊙	⊙	⊙
	3.15	3.111	445	320	15.3	530	2500	14.976				⊙	⊙	⊙	⊙	⊙
	3.55	3.727	376	324	13.7	550	2600	13.145				⊙	⊙	⊙	⊙	⊙
	4.0	3.960	350	380	14.2	560	2700	12.317				⊙	⊙	⊙	⊙	⊙
	4.5	4.547	308	342	11.9	570	2800	12.115				⊙	⊙	⊙	⊙	⊙
	5.0	4.830	280	400	12.3	580	3000	10.808				⊙	⊙	⊙	⊙	⊙
	5.6	5.674	247	359	10.0	750	3000	12.483				⊙	⊙	⊙	⊙	⊙
	6.3	6.286	220	620	15.2	1000	3100	13.636				⊙	⊙	⊙	⊙	⊙
	7.1	7.321	191	329	7.1	1040	3300	12.434				⊙	⊙	⊙	⊙	⊙
	8.0	7.857	175	620	12.3	1070	3500	11.759				⊙	⊙	⊙	⊙	⊙
	9.0	9.124	153	282	4.9	1100	3600	10.943				⊙	⊙	⊙	⊙	⊙
	10.0	10.000	140	620	9.8	1140	3700	10.331				⊙	⊙	⊙	⊙	⊙
	12.5	12.199	110	620	8.0	1180	4600	9,4739				⊙	⊙	⊙	⊙	⊙
	16.0	15.223	90	650	6.6	1210	5700	8,7672				⊙	⊙	⊙	⊙	⊙
	20.0	19.643	70	650	5.7	1250	5800	8,1877				⊙	⊙	⊙	⊙	⊙
	25.0	24.478	55	650	4.2	1270	6000	7,8266				⊙	⊙	⊙	⊙	⊙
	31.5	29.643	45	650	3.5	1280	6100	7,6050				⊙	⊙	⊙		
40	41.538	35	450	1.5	1580	7000	7,7554				⊙	⊙				
50	50.303	30	450	1.2	1590	7500	7,5565				⊙	⊙				
63	62.963	22	450	1.1	1590	8000	7,3860				⊙	⊙				
<b>RD43</b> 3c	40	41.875	35	700	2.5	400	5000	7,5184	2,2	3,4	21,5	⊙	⊙	⊙		
	50	51.084	30	700	2.1	640	5100	9,8959				⊙	⊙	⊙		
	63	63.747	22	700	1.5	860	5200	10,279				⊙	⊙			
	80	82.254	18	700	1.7	1070	5200	10,062				⊙	⊙			
	100	102.502	14	700	1.1	1210	5300	9,7166				⊙	⊙			
	125	124.129	11	700	0.9	1310	5400	9,6972				⊙				
	160	160.689	9.0	700	0.7	1250	5500	11,857				⊙				
	200	207.341	7.0	700	0.6	1160	5600	11,663				⊙				
	250	258.379	5.5	700	0.4	1290	5800	11,324				⊙				
	315	312.297	4.5	700	0.35	1390	6000	11,326				⊙				
	400	438.462	3.5	460	0.22	1610	7000	11,333								
	500	530.976	2.8	460	0.12	1650	7500	11,324								
	630	664.609	2.2	460	0.11	1670	8000	11,319								

2c & 3c - Number of reduction stages

IEC	56	63	71	80	90	100	112	132
∅ B5	---	---	160	200	200	250	250	300
∅ B14	---	---	---	120	140	160	160	200
∅ × l	---	---	14 × 30	19 × 40	24 × 50	28 × 60	28 × 60	38 × 80

# Gearboxes Series RD

# RD5 - 1300 Nm

## Speed Reducer Selection

1400 rpm

RD 5	$i_n$	$i_r$	$n_2$ [min]	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1$	Lub	Lub	P	80	100	132	160	180
<b>RD52</b> 2c	2.25	2.323	603	574	39.1	720	3200	31.657	4.5	5.5	49	⊙	⊙	⊙	⊙	⊙
	2.50	2.557	548	630	34.0	750	3400	26.128				⊙	⊙	⊙	⊙	⊙
	2.80	2.945	475	624	33.5	770	3500	24.154				⊙	⊙	⊙	⊙	⊙
	3.15	3.241	432	690	30.0	790	3700	20.966				⊙	⊙	⊙	⊙	⊙
	3.55	3.568	392	662	29.3	820	3900	18.578				⊙	⊙	⊙	⊙	⊙
	4.0	3.926	357	750	29.0	850	4000	17.244				⊙	⊙	⊙	⊙	⊙
	4.5	4.398	318	698	25.1	860	4300	16.421				⊙	⊙	⊙	⊙	⊙
	5.0	4.840	289	850	26.8	870	4500	15.131				⊙	⊙	⊙	⊙	⊙
	5.6	5.561	252	713	20.3	1100	4500	17.750				⊙	⊙	⊙	⊙	⊙
	6.3	6.454	217	1160	27.4	1500	4600	23.290				⊙	⊙	⊙	⊙	⊙
	7.1	7.305	192	630	13.6	1550	4800	18.351				⊙	⊙	⊙	⊙	⊙
	8.0	8.185	171	1170	21.8	1600	5200	16.463				⊙	⊙	⊙	⊙	⊙
	9.0	9.353	150	512	8.7	1650	5300	15.154				⊙	⊙	⊙	⊙	⊙
	10.0	9.915	141	1180	18.1	1700	5500	14.463				⊙	⊙	⊙	⊙	⊙
	12.5	12.222	115	1190	14.8	1780	6900	13.264				⊙	⊙	⊙	⊙	
	16.0	15.452	91	1200	11.8	1820	8500	12.274				⊙	⊙	⊙	⊙	
	20.0	20.298	69	1220	9.1	1870	8700	11.463				⊙	⊙	⊙		
	25.0	25.989	54	1230	7.2	1900	9000	10.963				⊙	⊙	⊙		
31.5	31.429	45	1240	6.0	1920	9100	10.647				⊙	⊙				
40	40.476	35	850	3.2	2400	10500	10.858				⊙	⊙				
50	53.333	26	850	2.4	2450	11200	10.579				⊙	⊙				
63	66.667	21	850	1.9	2500	12000	10.340				⊙	⊙				
<b>RD53</b> 3c	40	39.333	36	1270	5.0	700	7600	10.526	4.5	6.5	52	⊙	⊙			
	50	47.984	29	1280	4.1	970	7800	13.854				⊙	⊙			
	63	59.878	23	1290	3.4	1290	7800	14.391				⊙	⊙			
	80	77.262	18	1300	2.6	1610	7900	14.087				⊙	⊙			
	100	96.280	15	1300	2.1	1820	7900	13.603				⊙				
	125	129.800	11	1300	1.6	1980	8100	13.576				⊙				
	160	157.143	8.9	1300	1.3	1450	8200	16.600				⊙				
	200	195.824	7.1	1300	1.1	1750	8400	16.328				⊙				
	250	264.000	5.3	1300	0.8	1930	8700	15.854				(⊙)				
	315	332.308	4.2	900	0.45	2100	9000	15.857				(⊙)				
	400	402.424	3.5	900	0.35	2400	10500	15.866				(⊙)				
	500	503.704	2.8	900	0.3	2500	11200	15.854				(⊙)				
630	629.630	2.2	900	0.25	2550	12000	15.847				(⊙)					

2c & 3c - Number of reduction stages

(⊙) - Max. available power  $\leq P_1$

IEC	80	90	100	112	132	160	180	---
∅ B5	200	200	250	250	300	350	350	---
∅ B14	---	---	---	---	200	---	---	---
∅ × l	19 × 40	24 × 50	28 × 60	28 × 60	38 × 80	42 × 110	48 × 110	---



# RD6 - 2300 Nm

# Gearboxes Series RD

1400 rpm

Speed Reducer Selection

RD 6	$i_n$	$i_r$	$n_2$ [min]	$M_2$	$P_1$	$F_{r1}$	$F_{r2}$	$J_1$	Lub	Lub	P	80	100	132	160	180
<b>RD62</b> 2c	2.25	2.323	603	1149	78.2	1100	4800	85.205	7	9	62	⊙	⊙	⊙	⊙	⊙
	2.50	2.616	535	1300	70.0	1100	5100	67.187				⊙	⊙	⊙	⊙	⊙
	2.80	2.945	475	1249	67.0	1100	5400	58.515				⊙	⊙	⊙	⊙	⊙
	3.15	3.318	422	1400	60.0	1150	5600	53.914				⊙	⊙	⊙	⊙	⊙
	3.55	3.568	392	1324	58.7	1200	5800	49.394				⊙	⊙	⊙	⊙	⊙
	4.0	4.019	348	1600	58.0	1220	6000	44.341				⊙	⊙	⊙	⊙	⊙
	4.5	4.398	318	1399	50.3	1250	6400	42.724				⊙	⊙	⊙	⊙	⊙
	5.0	4.955	283	1800	55.4	1270	6700	38.909				⊙	⊙	⊙	⊙	⊙
	5.6	5.561	252	1427	40.6	1500	6800	42.780				⊙	⊙	⊙	⊙	⊙
	6.3	6.571	213	2000	46.8	2180	6900	59.890				⊙	⊙	⊙	⊙	⊙
	7.1	7.305	192	1261	27.3	2200	7200	45.425				⊙	⊙	⊙	⊙	⊙
	8.0	8.333	168	2000	36.6	2340	7800	42.332				⊙	⊙	⊙	⊙	⊙
	9.0	8.700	161	1145	20.8	2400	8000	40.422				⊙	⊙	⊙	⊙	⊙
	10.0	10.095	139	2100	31.7	2500	8300	37.192				⊙	⊙	⊙	⊙	⊙
	12.5	12.444	113	2100	25.7	2600	10300	34.106				⊙	⊙	⊙	⊙	⊙
	16.0	15.733	89	2100	20.3	2650	12800	31.562				⊙	⊙	⊙	⊙	⊙
	20.0	20.667	68	2100	15.5	2700	13000	29.477				⊙	⊙	⊙	⊙	⊙
	25.0	24.615	57	2100	13.0	2750	13500	28.188				⊙	⊙	⊙	⊙	⊙
31.5	33.200	42	2220	10.0	2850	13700	27.378				⊙	⊙	⊙	⊙	⊙	
40	40.500	35	1600	6	3400	15700	27.919				⊙	⊙	⊙	⊙	⊙	
50	49.800	28	1600	4.9	3450	16800	27.203				⊙	⊙	⊙	⊙	⊙	
63	56.000	25	1600	4.3	3500	18000	26.590				⊙	⊙	⊙	⊙	⊙	
<b>RD63</b> 3c	40	39.708	35	2200	8.6	900	11400	27.066	7	11	70	⊙	⊙	⊙	⊙	⊙
	50	48.948	29	2200	7	1400	11700	35.625				⊙	⊙	⊙	⊙	⊙
	63	61.884	23	2200	5.5	1870	11700	37.004				⊙	⊙	⊙	⊙	⊙
	80	81.289	17	2300	4.4	2400	11900	36.223				⊙	⊙	⊙		
	100	104.082	13	2300	3.7	2600	11900	34.980				⊙	⊙	⊙		
	125	125.867	11	2300	3.4	2800	12000	34.910				⊙	⊙	⊙		
	160	157.333	9	2300	2.8	2100	12300	42.685				⊙	⊙	⊙		
	200	201.571	6.9	2300	1.8	2500	12600	41.987				⊙				
	250	265.600	5.3	2300	1.4	2800	13000	40.766				⊙				
	315	332.000	4.2	2300	1.1	3000	13500	40.774				⊙				
	355	373.333	3.1	2300	1.6	3500	15700	40.799				⊙				
	450	448.000	3.1	2300	0.8	3600	16800	40.766				⊙				
560	560.000	2.5	2300	0.7	3700	18000	40.748				⊙					

2c & 3c - Number of reduction stages

IEC	80	90	100	112	132	160	180	---
∅ B5	200	200	250	250	300	350	350	---
∅ B14	---	---	---	---	200	---	---	---
∅ × l	19 × 40	24 × 50	28 × 60	28 × 60	38 × 80	42 × 110	48 × 110	---

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
<b>0.06</b>	2,5	2,57	530	1,0	>3,5	MRD02	820	5,5	3,0	0,20	0,28	1,50	0,4044
	3,15	3,28	415	1,3	>3,5	MRD02	890	5,5	3,0	0,20	0,28	1,50	0,3235
	4,0	4,26	320	1,7	>3,5	MRD02	960	5,5	3,0	0,20	0,28	1,50	0,2677
	5,0	5,28	258	2,1	>3,5	MRD02	1020	5,5	3,0	0,20	0,28	1,50	0,2380
	6,3	6,25	217	2,5	>3,5	MRD02	1100	5,5	3,0	0,20	0,28	1,50	0,3088
	8,0	7,98	170	3,2	>3,5	MRD02	1180	5,5	3,0	0,20	0,28	1,50	0,2649
	10,0	10,36	131	4,2	>3,5	MRD02	1290	5,5	3,0	0,20	0,28	1,50	0,2329
	12,5	12,84	106	5,2	>3,5	MRD02	1370	5,5	3,0	0,20	0,28	1,50	0,2153
	16,0	16,32	83	6,6	>3,5	MRD02	1480	5,5	3,0	0,20	0,28	1,50	0,2010
	20,0	21,53	63	8,7	>3,5	MRD02	1590	5,5	3,0	0,20	0,28	1,50	0,1899
	25,0	26,75	51	10,8	>3,5	MRD02	1590	5,5	3,0	0,20	0,28	1,50	0,1837
	31,5	30,22	45	12,2	>3,5	MRD02	1580	5,5	3,0	0,20	0,28	1,50	0,1812
	35,5	34,68	40	13,9	>3,5	MRD02	1580	5,5	3,0	0,20	0,28	1,50	0,1881
	40	43,07	32	17,4	2,01	MRD02	1560	5,5	3,0	0,20	0,28	1,50	0,1826
		36,89	37	14,9	3,48	MRD03	1570	5,7	3,2	0,30	0,38	1,50	0,1530
	50	48,67	28	19,7	1,83	MRD02	1550	5,5	3,0	0,20	0,28	1,50	0,1803
		47,07	29	19,0	2,73	MRD03	1560	5,7	3,2	0,30	0,38	1,50	0,4897
	63	61,14	22	24,7	2,10	MRD03	1520	5,7	3,2	0,30	0,38	1,50	0,4807
		61,67	22	25,0	2,81	MRD12	1960	7,0	4,5	0,5	0,7	1,50	0,6681
	80	75,78	18	30,7	1,70	MRD03	1480	5,7	3,2	0,30	0,38	1,50	0,4764
		80,43	17	33	3,07	MRD13	1930	7,2	4,7	0,5	0,7	1,50	1,2905
	100	96,29	14	38,9	1,34	MRD03	1400	5,7	3,2	0,30	0,38	1,50	0,4735
		100,60	14	41	2,45	MRD13	1900	7,2	4,7	0,5	0,7	1,50	1,2861
	125	127,05	10,7	51,4	1,01	MRD03	1230	5,7	3,2	0,30	0,38	1,50	0,4717
		130,84	10,4	53	1,89	MRD13	1820	7,2	4,7	0,5	0,7	1,50	1,2833
	160	157,81	8,6	63,8	0,81	MRD03	970	5,7	3,2	0,30	0,38	1,50	0,4709
		165,08	8,2	67	1,50	MRD13	1710	7,2	4,7	0,5	0,7	1,50	1,7033
	180	178,31	7,6	72,1	0,80	MRD03	700	5,7	3,2	0,30	0,38	1,50	0,4706
	200	204,58	6,6	45,0	0,80	MRD03	1300	5,7	3,2	0,30	0,38	1,50	0,4716
		206,46	6,6	84	1,20	MRD13	1530	7,2	4,7	0,5	0,7	1,50	1,6996
	250	254,11	5,4	45,0	0,80	MRD03	1300	5,7	3,2	0,30	0,38	1,50	0,4709
	268,54	5,1	109	0,92	MRD13	1100	7,2	4,7	0,5	0,7	1,50	1,6974	
280	287,13	4,7	45,0	0,80	MRD03	1300	5,7	3,2	0,30	0,38	1,50	0,4706	
315	324,44	4,2	45,0	0,80	MRD03	1300	5,7	3,2	0,30	0,38	1,50	0,4927	
<b>0,09</b>	2,5	2,57	530	1,6	>3,5	MRD02	810	5,6	3,0	0,20	0,28	2,00	0,4044
	3,15	3,28	415	2,0	>3,5	MRD02	880	5,6	3,0	0,20	0,28	2,00	0,3235
	4,0	4,26	320	2,6	>3,5	MRD02	950	5,6	3,0	0,20	0,28	2,00	0,2677
	5,0	5,28	258	3,2	>3,5	MRD02	1010	5,6	3,0	0,20	0,28	2,00	0,2380
	6,3	6,25	217	3,8	>3,5	MRD02	1080	5,6	3,0	0,20	0,28	2,00	0,3088
	8,0	7,98	170	4,8	>3,5	MRD02	1170	5,6	3,0	0,20	0,28	2,00	0,2649
	10,0	10,36	131	6,3	>3,5	MRD02	1270	5,6	3,0	0,20	0,28	2,00	0,2329
	12,5	12,84	106	7,8	>3,5	MRD02	1350	5,6	3,0	0,20	0,28	2,00	0,2153
	16,0	16,32	83	9,9	>3,5	MRD02	1450	5,6	3,0	0,20	0,28	2,00	0,2010
	20,0	21,53	63	13,1	>3,5	MRD02	1570	5,6	3,0	0,20	0,28	2,00	0,1899
	25,0	26,75	51	16,2	3,20	MRD02	1570	5,6	3,0	0,20	0,28	2,00	0,1837
	31,5	30,22	45	18,3	2,84	MRD02	1560	5,6	3,0	0,20	0,28	2,00	0,1812
	35,5	34,68	40	20,9	1,68	MRD02	1540	5,6	3,0	0,20	0,28	2,00	0,1881
	40	43,07	32	26,1	1,34	MRD02	1510	5,6	3,0	0,20	0,28	2,00	0,1826
		36,89	37	22,4	2,32	MRD03	1540	5,8	3,2	0,30	0,38	2,00	0,1530
		39,08	35	23,7	2,95	MRD12	1940	7,0	4,4	0,5	0,7	2,00	0,6890

# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
0.09	50	48,67	28	29,5	1,22	MRD02	1490	5,6	3,0	0,20	0,28	2,00	0,1803
		47,07	29	28,6	1,82	MRD03	1500	5,8	3,2	0,30	0,38	2,00	0,4897
		48,12	28	29,2	2,40	MRD12	1940	7,0	4,4	0,50	0,70	2,00	0,6776
		52,20	26	32	3,12	MRD13	1940	7,2	4,6	0,50	0,70	2,00	1,3094
	63	61,14	22	37,1	1,40	MRD03	1420	5,8	3,2	0,30	0,38	2,00	0,4807
		61,67	22	37	1,88	MRD12	1900	7,1	4,5	0,50	0,70	2,00	0,6681
		66,03	21	40	2,50	MRD13	1900	7,3	4,7	0,50	0,70	2,00	1,2967
	80	75,78	18	46,0	1,13	MRD03	1310	5,8	3,2	0,30	0,38	2,00	0,4764
		80,43	17	49	2,05	MRD13	1850	7,3	4,7	0,50	0,70	2,00	1,2905
	100	96,29	14	58,4	0,89	MRD03	1100	5,8	3,2	0,30	0,38	2,00	0,4735
		100,60	14	61	1,64	MRD13	1760	7,3	4,7	0,50	0,70	2,00	1,2861
	125	130,84	10,4	79	1,26	MRD13	1580	7,3	4,7	0,50	0,70	2,00	1,2833
160	165,08	8,2	100	1,00	MRD13	1280	7,3	4,7	0,50	0,70	2,00	1,7033	
200	206,46	6,6	125	0,80	MRD13	1000	7,3	4,7	0,50	0,70	2,00	1,6996	
0.13	2,5	2,57	530	2,1	>3,5	MRD02	810	6,8	3,1	0,20	0,28	2,80	0,5356
	3,15	3,28	415	2,7	>3,5	MRD02	870	6,8	3,1	0,20	0,28	2,80	0,4548
	4,0	4,26	320	3,4	>3,5	MRD02	940	6,8	3,1	0,20	0,28	2,80	0,3989
	5,0	5,28	258	4,3	>3,5	MRD02	1000	6,8	3,1	0,20	0,28	2,80	0,3692
	6,3	6,25	217	5,1	>3,5	MRD02	1070	6,8	3,1	0,20	0,28	2,80	0,4401
	8,0	7,98	170	6,5	>3,5	MRD02	1160	6,8	3,1	0,20	0,28	2,80	0,3961
	10,0	10,36	131	8,4	>3,5	MRD02	1250	6,8	3,1	0,20	0,28	2,80	0,3641
	12,5	12,84	106	10,4	>3,5	MRD02	1330	6,8	3,1	0,20	0,28	2,80	0,3466
	16,0	16,32	83	13,2	>3,5	MRD02	1420	6,8	3,1	0,20	0,28	2,80	0,3323
	20,0	21,53	63	17,4	2,93	MRD02	1530	6,8	3,1	0,20	0,28	2,80	0,3211
	25,0	26,75	51	21,6	2,40	MRD02	1550	6,8	3,1	0,20	0,28	2,80	0,3150
	31,5	30,22	45	24,4	2,13	MRD02	1530	6,8	3,1	0,20	0,28	2,80	0,3124
	35,5	34,68	40	27,8	1,26	MRD02	1510	6,8	3,1	0,20	0,28	2,80	0,3194
	40	43,07	32	34,8	1,00	MRD02	1450	6,8	3,1	0,20	0,28	2,80	0,3138
		36,89	37	29,8	1,74	MRD03	1500	7,0	3,3	0,30	0,38	2,80	0,1499
		39,08	35	32	2,21	MRD12	1910	8,3	4,6	0,50	0,70	2,80	0,6867
		40,10	34	32	3,05	MRD13	1940	8,4	4,7	0,50	0,70	2,80	0,4521
	50	48,67	28	39,4	0,91	MRD02	1410	6,8	3,1	0,20	0,28	2,80	0,3115
		47,07	29	38,1	1,37	MRD03	1430	7,0	3,3	0,30	0,38	2,80	0,4865
		48,12	28	39	1,80	MRD12	1910	8,3	4,6	0,50	0,70	2,80	0,6753
		52,20	26	42	2,34	MRD13	1900	8,4	4,7	0,50	0,70	2,80	1,4775
	63	61,14	22	49,5	1,05	MRD03	1300	7,0	3,3	0,30	0,38	2,80	0,4775
		61,67	22	50	1,41	MRD12	1850	8,4	4,7	0,50	0,70	2,80	0,6658
		66,03	21	53	1,87	MRD13	1840	8,5	4,8	0,50	0,70	2,80	1,4648
	80	75,78	18	61,3	0,85	MRD03	1100	7,0	3,3	0,30	0,38	2,80	0,4733
		80,43	17	65	1,54	MRD13	1750	8,5	4,8	0,50	0,70	2,80	1,4586
	100	81,52	16,7	66	3,03	MRD23	3300	26,3	12,8	0,80	1,00	2,80	2,0939
		100,60	14	81	1,23	MRD13	1600	8,5	4,8	0,50	0,70	2,80	1,4542
		105,43	12,9	85	2,34	MRD23	3250	26,6	13,1	0,80	1,00	2,80	2,0832
	125	130,84	10,4	106	0,94	MRD13	1270	8,5	4,8	0,50	0,70	2,80	1,4513
		124,16	11,0	100	1,99	MRD23	3150	27,2	13,7	0,80	1,00	2,80	2,0798
	160	165,08	8,2	134	0,75	MRD13	1100	8,5	4,8	0,50	0,70	2,80	1,8714
164,94		8,2	133	1,50	MRD23	2950	32,4	18,9	0,80	1,00	2,80	2,6601	
200	209,25	6,5	169	1,18	MRD23	2650	27,2	13,7	0,80	1,00	2,80	2,6491	
250	270,63	5,0	219	0,91	MRD23	1980	33,5	20,0	0,80	1,00	2,80	2,6418	
315	318,70	4,3	258	0,78	MRD23	1600	33,6	20,1	0,80	1,00	2,80	2,6399	

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
<b>0.18</b>	2,5	2,57	533	3,1	>3,5	MRD02	800	7,4	3,1	0,20	0,28	4	0,5356
	3,15	3,28	418	3,9	>3,5	MRD02	860	7,4	3,1	0,20	0,28	4	0,4548
	4,0	4,26	322	5,1	>3,5	MRD02	920	7,4	3,1	0,20	0,28	4	0,3989
	5,0	5,28	260	6,4	>3,5	MRD02	980	7,4	3,1	0,20	0,28	4	0,3692
	6,3	6,25	219	7,5	>3,5	MRD02	1050	7,4	3,1	0,20	0,28	4	0,4401
	8,0	7,98	172	9,6	>3,5	MRD02	1130	7,4	3,1	0,20	0,28	4	0,3961
	10,0	10,36	132	12,5	>3,5	MRD02	1210	7,4	3,1	0,20	0,28	4	0,3641
	12,5	12,84	107	15,5	3,23	MRD02	1280	7,4	3,1	0,20	0,28	4	0,3466
	16,0	16,32	84	19,7	2,59	MRD02	1360	7,4	3,1	0,20	0,28	4	0,3323
	20,0	21,53	64	25,9	1,97	MRD02	1460	7,4	3,1	0,20	0,28	4	0,3211
	25,0	26,75	51	32,2	1,61	MRD02	1480	7,4	3,1	0,20	0,28	4	0,3150
			51	32	2,90	MRD12	1940	8,9	4,6	0,50	0,70	4	0,6894
	31,5	30,22	45	36,4	1,43	MRD02	1440	7,4	3,1	0,20	0,28	4	0,3124
			42	40	2,38	MRD12	1910	8,9	4,6	0,50	0,70	4	0,6771
	35,5	34,68	40	41,8	0,84	MRD02	1390	7,4	3,1	0,20	0,28	4	0,3194
			40	36,89	37	44,4	1,17	MRD03	1370	7,6	3,3	0,30	0,38
	50	39,08	35	47	1,48	MRD12	1800	8,9	4,6	0,50	0,70	4	0,6867
			34	49	2,03	MRD13	1870	9,0	4,7	0,50	0,70	4	0,4521
			29	56,7	0,92	MRD03	1200	7,6	3,3	0,30	0,38	4	0,4865
	63	48,12	28	58	1,20	MRD12	1800	8,9	4,6	0,50	0,70	4	0,6753
			26	63	1,56	MRD13	1770	9,0	4,7	0,50	0,70	4	1,4775
			26,1	63	3,15	MRD23	3330	34,0	18,5	0,80	1,00	4	2,1312
	80	61,14	22	73,6	0,80	MRD03	800	7,6	3,3	0,30	0,38	4	0,4775
			22	75	0,94	MRD12	1670	9,0	4,7	0,50	0,70	4	0,6658
21			80	1,25	MRD13	1630	9,1	4,8	0,50	0,70	4	1,4648	
21,2			78	2,57	MRD23	3280	35,5	20,0	0,80	1,00	4	2,1092	
100	80,43	17	98	1,02	MRD13	1420	9,1	4,8	0,50	0,70	4	1,4586	
		16,7	99	2,02	MRD23	3190	35,7	20,2	0,80	1,00	4	2,0939	
125	100,60	14	122	0,82	MRD13	1200	9,1	4,8	0,50	0,70	4	1,4542	
		12,9	128	1,56	MRD23	3000	26,6	7,6	0,80	1,00	4	2,0832	
160	124,16	11,0	151	1,33	MRD23	2850	26,6	7,6	0,80	1,00	4	2,0798	
		8,2	200	1,00	MRD23	2280	26,6	7,6	0,80	1,00	4	2,6601	
200	209,25	6,5	254	0,79	MRD23	1500	32,1	13,1	0,80	1,00	4	2,6491	
<b>0.25</b>	2,5	2,57	533	4,3	>3,5	MRD02	780	9,0	3,2	0,20	0,28	5	0,5251
	3,15	3,28	418	5,5	>3,5	MRD02	840	9,0	3,2	0,20	0,28	5	0,4443
	4,0	4,26	322	7,1	>3,5	MRD02	900	9,0	3,2	0,20	0,28	5	0,3587
	5,0	5,28	260	8,8	>3,5	MRD02	960	9,0	3,2	0,20	0,28	5	0,3587
	6,3	6,25	219	10,5	>3,5	MRD02	1020	9,0	3,2	0,20	0,28	5	0,4296
	8,0	7,98	172	13,3	>3,5	MRD02	1100	9,0	3,2	0,20	0,28	5	0,3856
	10,0	10,36	132	17,3	2,88	MRD02	1170	9,0	3,2	0,20	0,28	5	0,3536
	12,5	12,84	107	21,5	2,33	MRD02	1230	9,0	3,2	0,20	0,28	5	0,3361
	16,0	16,32	84	27,3	1,87	MRD02	1300	9,0	3,2	0,20	0,28	5	0,3218
			85	27	3,36	MRD12	1960	10,5	4,7	0,50	0,70	5	0,7295
	20,0	21,53	64	36,0	1,42	MRD02	1370	9,0	3,2	0,20	0,28	5	0,3106
			68	34	2,72	MRD12	1930	10,5	4,7	0,50	0,70	5	0,7019
	25,0	26,75	51	44,7	1,16	MRD02	1370	9,0	3,2	0,20	0,28	5	0,3045
			52	44	2,12	MRD12	1890	10,5	4,7	0,50	0,70	5	0,6796
	31,5	32,65	42	54	1,74	MRD12	1840	10,5	4,7	0,50	0,70	5	0,6672
			40	36,89	37	61,7	0,84	MRD03	1140	9,2	3,4	0,30	0,38
		39,08	35	65	1,08	MRD12	1630	10,5	4,7	0,50	0,70	5	0,6769

# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
0.25	40	40,10	34	67	1,49	MRD13	1750	10,6	4,8	0,50	0,70	5	0,4422
		39,39	35	65	2,11	MRD22	3320	13,5	7,7	0,80	1,00	5	1,2877
		40,76	34	68	2,94	MRD23	2000	13,9	8,1	0,80	1,00	5	1,3104
	50	48,12	29	80	0,88	MRD12	1630	10,5	4,7	0,50	0,70	5	0,6654
		52,20	26	87	1,14	MRD13	1580	10,6	4,8	0,50	0,70	5	1,4676
		50,76	27	84	1,64	MRD22	3250	13,5	7,7	0,80	1,00	5	1,3030
	63	52,17	26	87	2,30	MRD23	3250	14,0	8,2	0,80	1,00	5	2,1312
		50,73	27	84	3,37	MRD32	7950	19,1	13,3	1,30	1,80	5	1,8570
		66,03	21	110	0,91	MRD13	1260	10,7	4,9	0,50	0,70	5	1,4549
	80	62,13	22	103	1,35	MRD22	3170	13,6	7,8	0,80	1,00	5	1,2810
		64,26	21	107	1,87	MRD23	3150	14,0	8,2	0,80	1,00	5	2,1092
		63,33	22	105	2,71	MRD32	7850	19,1	13,3	1,30	1,80	5	1,7865
	100	80,43	17	134	0,75	MRD13	1020	10,7	4,9	0,50	0,70	5	1,4487
		81,52	17	135	1,48	MRD23	2950	14,0	8,2	0,80	1,00	5	2,0939
		76,31	18	127	3,33	MRD33	7800	20,1	14,3	1,60	2,10	5	4,6584
	125	105,43	13	175	1,14	MRD23	2650	14,0	8,2	0,80	1,00	5	2,0832
		99,54	14	165	2,56	MRD33	7600	20,2	14,4	1,60	2,10	5	4,3194
		124,16	11	206	0,97	MRD23	2250	14,0	8,2	0,80	1,00	5	2,0798
	160	130,90	10,5	217	1,95	MRD33	7200	20,2	14,4	1,60	2,10	5	4,3033
		128,71	10,7	214	2,95	MRD43	7700	28,2	9,2	2,20	3,40	5	6,6730
		164,94	8,4	274	0,73	MRD23	2000	14,0	8,2	0,80	1,00	5	2,6601
	200	167,80	8,2	279	1,53	MRD33	6500	20,2	14,4	1,60	2,10	5	6,4724
		157,36	8,8	261	2,68	MRD43	9800	33,8	14,8	2,20	3,40	5	8,8326
		197,50	7,0	328	1,30	MRD33	5900	20,2	14,4	1,60	2,10	5	6,2820
250	206,95	6,7	344	1,84	MRD43	9600	33,8	14,8	2,20	3,40	5	8,6391	
	257,60	5,4	428	1,00	MRD33	3600	20,3	14,5	1,60	2,10	5	5,9420	
	258,38	5,3	429	1,63	MRD43	9100	28,3	9,3	2,20	3,40	5	8,2999	
315	307,21	4,5	510	0,84	MRD33	2700	20,3	14,5	1,60	2,10	5	5,9472	
	318,46	4,3	529	1,37	MRD43	8000	39,6	20,6	2,20	3,40	5	8,3020	
	0.37	2,5	2,57	537	6,3	>3,5	MRD02	760	9,4	3,2	0,20	0,28	8
3,15		3,28	421	8,1	>3,5	MRD02	820	9,4	3,2	0,20	0,28	8	0,4443
4,0		4,26	324	10,5	3,44	MRD02	870	9,4	3,2	0,20	0,28	8	0,3587
5,0		5,28	260	13,1	2,91	MRD02	920	9,4	3,2	0,20	0,28	8	0,3587
6,3		6,25	221	15,4	3,12	MRD02	980	9,4	3,2	0,20	0,28	8	0,4296
8,0		7,98	173	19,6	2,50	MRD02	1040	9,4	3,2	0,20	0,28	8	0,3856
10,0		10,36	133	25,5	1,96	MRD02	1100	9,4	3,2	0,20	0,28	8	0,3536
		10,58	130	26	3,42	MRD12	1960	10,8	4,6	0,50	0,70	8	0,8159
12,5		12,84	107	31,6	1,62	MRD02	1140	9,4	3,2	0,20	0,28	8	0,3361
		13,38	103	33	2,74	MRD12	1940	10,8	4,6	0,50	0,70	8	0,7619
16,0		16,32	85	40,1	1,27	MRD02	1180	9,4	3,2	0,20	0,28	8	0,3218
		16,30	85	40	2,27	MRD12	1910	10,9	4,7	0,50	0,70	8	0,7295
20,0		21,53	64	52,9	0,96	MRD02	1220	9,4	3,2	0,20	0,28	8	0,3106
		20,39	68	50	1,84	MRD12	1860	10,9	4,7	0,50	0,70	8	0,7019
25,0		26,75	52	65,7	0,80	MRD02	1020	9,4	3,2	0,20	0,28	8	0,3045
		26,52	52	65	1,43	MRD12	1760	10,9	4,7	0,50	0,70	8	0,6796
		26,73	52	66	2,85	MRD22	3320	13,8	7,6	0,80	1,00	8	1,3507
31,5		32,65	42	80	1,17	MRD12	1630	10,9	4,7	0,50	0,70	8	0,6672
		31,48	44	77	2,44	MRD22	3280	13,8	7,6	0,80	1,00	8	1,3210
40		39,08	35	96	0,73	MRD12	1630	10,9	4,7	0,50	0,70	8	0,6769
		40,10	34	99	1,00	MRD13	1580	11,0	4,8	0,50	0,70	8	0,4422

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
<b>0.37</b>	40	39,39	35	97	1,43	MRD22	3200	13,9	7,7	0,80	1,00	8	1,2877
		40,76	34	100	1,99	MRD23	2000	14,3	8,1	0,80	1,00	8	1,3104
		38,57	36	95	2,99	MRD32	7900	19,5	13,3	1,30	1,80	8	1,9845
	50	52,20	26	128	0,77	MRD13	1500	11,0	4,8	0,50	0,70	8	1,4676
		50,76	27	125	1,11	MRD22	3040	13,9	7,7	0,80	1,00	8	1,3030
		52,17	26	128	1,56	MRD23	2800	14,4	8,2	0,80	1,00	8	2,1312
	63	50,73	27	125	2,28	MRD32	7800	19,5	13,3	1,30	1,80	8	1,8570
		62,13	22	153	0,91	MRD22	2820	14,0	7,8	0,80	1,00	8	1,2810
		64,26	21	158	1,27	MRD23	2350	14,4	8,2	0,80	1,00	8	2,1092
	80	63,33	22	156	1,83	MRD32	7600	19,5	13,3	1,30	1,80	8	1,7865
		64,84	21	159	2,64	MRD33	7600	20,5	14,3	1,60	2,10	8	4,8573
		81,52	17	200	1,00	MRD23	1500	14,4	8,2	0,80	1,00	8	2,0939
	100	76,31	18	188	2,25	MRD33	7400	20,5	14,3	1,60	2,10	8	4,6584
		82,25	18,4	184	3,80	MRD43	9900	43,4	14,4	2,20	3,40	8	7,0373
		105,43	13	259	0,77	MRD23	1200	14,4	8,2	0,80	1,00	8	2,0832
	125	99,54	14	245	1,73	MRD33	6900	20,6	14,4	1,60	2,10	8	4,3194
		102,50	14,1	241	2,90	MRD43	9800	43,5	14,5	2,20	3,40	8	6,6923
		130,90	10,5	322	1,32	MRD33	6000	20,6	14,4	1,60	2,10	8	4,3033
	160	124,13	10,7	316	2,21	MRD43	7700	41,0	12,0	2,20	3,40	8	6,6730
		167,80	8,2	413	1,03	MRD33	4100	20,6	14,4	1,60	2,10	8	6,4724
160,69		8,8	387	1,80	MRD43	9400	43,7	14,7	2,20	3,40	8	8,8326	
200	197,50	7,0	486	0,88	MRD33	3500	20,6	14,4	1,60	2,10	8	6,2820	
	207,34	6,7	509	1,37	MRD43	8100	43,8	14,8	2,20	3,40	8	8,6391	
	258,38	5,3	635	1,10	MRD43	6000	49,4	20,4	2,20	3,40	8	8,2999	
315	312,90	4,3	783	0,90	MRD43	5000	43,8	14,8	2,20	3,40	8	8,3020	
<b>0.55</b>	2,5	2,57	541	9,3	3,22	MRD02	730	11,5	3,0	0,20	0,28	14	0,6362
	3,15	3,28	424	11,9	2,78	MRD02	780	11,5	3,0	0,20	0,28	14	0,5554
	4,0	4,26	327	15,4	2,33	MRD02	820	11,5	3,0	0,20	0,28	14	0,4995
		4,01	344	14,7	3,39	MRD12	1889	13,3	4,8	0,50	0,70	14	1,2685
	5,0	5,28	262	19,3	1,97	MRD02	870	11,5	3,0	0,20	0,28	14	0,4698
		5,07	272	18,5	2,85	MRD12	1980	13,3	4,8	0,50	0,70	14	1,1726
	6,3	6,25	222	22,7	2,12	MRD02	910	11,5	3,0	0,20	0,28	14	0,5407
	8,0	7,98	174	28,9	1,69	MRD02	960	11,5	3,0	0,20	0,28	14	0,4967
		8,13	170	30	2,96	MRD12	1950	13,4	4,9	0,50	0,70	14	1,2435
	10,0	10,36	134	37,6	1,33	MRD02	980	11,5	3,0	0,20	0,28	14	0,4647
		10,58	130	39	2,30	MRD12	1920	13,4	4,9	0,50	0,70	14	1,1569
	12,5	12,84	108	46,6	1,07	MRD02	1010	11,5	3,0	0,20	0,28	14	0,4472
		13,38	103	49	1,84	MRD12	1870	13,4	4,9	0,50	0,70	14	1,1028
	16,0	16,32	85	59,2	0,86	MRD02	1010	11,5	3,0	0,20	0,28	14	0,4329
		16,30	85	60	1,53	MRD12	1800	13,5	5,0	0,50	0,70	14	1,0704
	20,0	16,29	85	60	3,07	MRD22	3253	16,4	7,9	0,80	1,00	14	2,0125
		20,39	68	75	1,23	MRD12	1660	13,5	5,0	0,50	0,70	14	1,0429
	25,0	20,67	67	76	2,45	MRD22	3290	16,4	7,9	0,80	1,00	14	1,9223
		26,52	52	97	0,96	MRD12	1430	13,5	5,0	0,50	0,70	14	0,6741
	31,5	26,73	52	98	1,92	MRD22	3200	16,4	7,9	0,80	1,00	14	1,8534
32,65		42	119	0,79	MRD12	1020	13,5	5,0	0,50	0,70	14	0,6741	
40	31,48	44	115	1,64	MRD22	3100	16,4	7,9	0,80	1,00	14	1,8236	
	33,21	42	121	3,30	MRD32	7800	21,8	13,3	1,30	1,80	14	2,3727	
	39,39	35	144	0,96	MRD22	2900	16,5	8,0	0,80	1,00	14	1,7903	
	40,76	34	149	1,34	MRD23	1870	16,9	8,4	0,80	1,00	14	1,7099	

# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
0.55	40	38,57	36	141	2,01	MRD32	7700	22,1	13,6	1,30	1,80	14	2,4830
		41,54	33	152	2,96	MRD42	10700	28,8	20,3	2,20	3,00	14	4,5875
		38,06	36	139	3,01	MRD33	1940	23,0	14,5	1,60	2,10	14	2,5282
	50	50,76	27	186	0,75	MRD22	2700	16,5	8,0	0,80	1,00	14	1,8056
		52,17	26	191	1,05	MRD23	2450	17,0	8,5	0,80	1,00	14	2,5308
		50,73	27	185	1,53	MRD32	7400	22,1	13,6	1,30	1,80	14	2,3555
		50,30	27	184	2,20	MRD42	10600	28,8	20,3	2,20	3,00	14	4,3886
	63	48,77	28	178	2,36	MRD33	7500	23,0	14,5	1,60	2,10	14	4,8058
		64,26	21	235	0,85	MRD23	1800	17,0	8,5	0,80	1,00	14	2,5088
		63,33	22	231	1,23	MRD32	7000	22,1	13,6	1,30	1,80	14	2,2850
		62,96	22	230	1,95	MRD42	10300	28,9	20,4	2,20	3,00	14	4,2181
		64,84	21	237	1,78	MRD33	7000	23,1	14,6	1,60	2,10	14	4,8220
	80	63,75	21,6	233	2,69	MRD43	9800	30,0	21,5	2,20	3,40	14	7,2550
		66,67	20,8	242	3,51	MRD52	12000	57,5	49	4,50	5,50	14	10,340
		76,31	18	279	1,51	MRD33	6500	23,1	14,6	1,60	2,10	14	4,9660
	100	82,25	18,4	274	2,55	MRD43	9700	30,1	21,6	2,20	3,40	14	7,0373
		99,54	14	364	1,16	MRD33	5200	23,2	14,7	1,60	2,10	14	5,1610
	125	102,50	14,1	358	1,95	MRD43	9500	30,3	21,8	2,20	3,40	14	6,6923
		130,90	10,5	478	0,89	MRD33	4200	23,2	14,7	1,60	2,10	14	5,3598
		124,13	10,7	470	1,49	MRD43	7200	30,4	21,9	2,20	3,40	14	6,6730
	160	129,80	10,7	461	2,82	MRD53	8100	60,5	52	4,50	6,50	14	13,576
		160,69	8,8	575	1,21	MRD43	7000	30,2	21,7	2,20	3,40	14	8,8326
		157,14	8,8	558	2,33	MRD53	8200	60,5	52	4,50	6,50	14	16,600
	200	207,34	6,7	756	0,92	MRD43	9000	30,3	21,8	2,20	3,40	14	8,6391
		195,82	7,1	696	1,87	MRD53	8400	50,5	52	4,50	6,50	14	16,328
		201,57	6,9	716	3,21	MRD53	12600	78,5	70	7,00	11	14	41,987
250	264,00	5,3	938	1,39	MRD53	8700	60,5	52	4,50	6,50	14	14,854	
	265,50	5,2	943	2,44	MRD63	13000	78,5	70	7,00	11	14	40,766	
315	332,31	4,2	1180	0,76	MRD53	9000	60,5	52	4,50	6,50	14	15,856	
	332,00	4,2	1179	1,95	MRD63	13500	78,5	70	7,00	11	14	40,774	
355	373,33	3,7	1326	1,73	MRD63	15700	78,5	70	7,00	11	14	40,799	
	450	3,1	1591	1,45	MRD63	16800	78,5	70	7,00	11	14	40,766	
560	560,00	2,5	1989	1,16	MRD63	18000	78,5	70	7,00	11	14	40,748	
0.75	2,5	2,57	541	12,7	2,36	MRD02	700	12,8	3,0	0,20	0,28	17	0,6362
		2,53	546	12,6	3,39	MRD12	1680	14,6	4,8	0,50	0,70	17	1,6146
	3,15	3,28	424	16,2	2,04	MRD02	730	12,8	3,0	0,20	0,28	17	0,5554
		3,08	450	15,3	2,99	MRD12	1713	14,6	4,8	0,50	0,70	17	1,4326
	4,0	4,26	327	21,1	1,71	MRD02	760	12,8	3,0	0,20	0,28	17	0,4995
		4,01	345	19,9	2,50	MRD12	1842	14,6	4,8	0,50	0,70	17	1,2685
	5,0	5,28	263	26,1	1,46	MRD02	810	12,8	3,0	0,20	0,28	17	0,4698
		5,07	273	25	2,10	MRD12	1958	14,6	4,8	0,50	0,70	17	1,1726
	6,3	6,25	222	30,9	1,55	MRD02	840	12,8	3,0	0,20	0,28	17	0,5407
		6,69	207	33	2,62	MRD12	1940	14,7	4,9	0,50	0,70	17	1,3350
	8,0	7,98	174	39,5	1,24	MRD02	860	12,8	3,0	0,20	0,28	17	0,4967
		8,13	170	40	2,18	MRD12	1910	14,7	4,9	0,50	0,70	17	1,2435
	10,0	10,36	134	51,3	0,98	MRD02	860	12,8	3,0	0,20	0,28	17	0,4647
		10,58	131	53	1,69	MRD12	1850	14,7	4,9	0,50	0,70	17	1,1569
	12,5	12,84	108	63,5	0,80	MRD02	850	12,8	3,0	0,20	0,28	17	0,4472
		13,38	103	66	1,36	MRD12	1750	14,7	4,9	0,50	0,70	17	1,1028
		13,23	105	66	2,76	MRD22	2970	17,6	7,8	0,80	1,00	17	2,1227

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
<b>0.75</b>	16,0	16,30	85	81	1,12	MRD12	1620	14,8	5,0	0,50	0,70	17	1,0704
		16,29	85	81	2,26	MRD22	3120	17,7	7,9	0,80	1,00	17	2,0125
	20,0	20,39	68	101	0,91	MRD12	1360	14,8	5,0	0,50	0,70	17	1,0429
		20,67	67	103	1,80	MRD22	3170	17,7	7,9	0,80	1,00	17	1,9223
	25,0	26,52	52	132	0,71	MRD12	1380	14,8	5,0	0,50	0,70	17	0,6741
		26,73	52	133	1,41	MRD22	2980	17,7	7,9	0,80	1,00	17	1,8534
		25,26	55	125	3,15	MRD32	7550	23,1	13,3	1,30	1,80	17	2,5126
	31,5	31,48	44	156	1,21	MRD22	2790	17,7	7,9	0,80	1,00	17	1,8236
		33,21	42	165	2,43	MRD32	7350	23,1	13,3	1,30	1,80	17	2,3727
		40	39,39	35	196	0,71	MRD22	2600	17,8	8,0	0,80	1,00	17
	40	40,76	34	202	0,98	MRD23	1750	18,2	8,4	0,80	1,00	17	1,7099
		38,57	36	192	1,48	MRD32	6800	23,4	13,6	1,30	1,80	17	2,4830
		41,54	33	206	2,18	MRD42	10480	30,1	20,3	2,2	3,0	17	4,5875
	50	38,06	36	189	2,22	MRD33	5000	24,3	14,5	1,6	2,1	17	2,5282
		37,42	37,0	186	3,76	MRD43	9900	31,2	21,4	2,2	3,4	17	4,4941
		52,17	27	259	0,77	MRD23	1500	18,3	8,5	0,8	1,0	17	2,5308
		50,73	27	252	1,13	MRD32	5950	23,4	13,6	1,3	1,8	17	2,3555
		50,30	28	250	2,41	MRD42	9500	30,1	20,3	2,2	3,0	17	4,3886
		48,77	28	242	1,74	MRD33	6900	24,3	14,5	1,6	2,1	17	4,8058
	63	47,95	28,9	238	2,94	MRD43	9800	31,2	21,4	2,2	3,4	17	6,8717
		53,33	26,1	264	3,22	MRD52	11200	58,8	49	4,5	5,5	17	10,579
		63,33	22	315	0,91	MRD32	5000	23,4	13,6	1,3	1,8	17	2,2850
		62,96	22	313	1,43	MRD42	8500	30,2	20,4	2,2	3,0	17	4,2181
		64,84	21	322	1,31	MRD33	5900	24,4	14,6	1,6	2,1	17	4,8220
		63,75	21,7	317	2,20	MRD43	9700	31,3	21,5	2,2	3,4	17	7,2550
	80	66,67	20,8	330	2,58	MRD52	12000	58,8	49	4,5	5,5	17	10,240
		76,31	18	379	1,11	MRD33	4900	24,4	14,6	1,6	2,1	17	4,9660
		75,03	18,5	373	1,87	MRD43	9200	31,4	21,6	2,2	3,4	17	7,0373
		77,26	18,0	374	3,47	MRD53	7900	61,8	52	4,5	6,5	17	14,087
	100	99,54	14	494	0,86	MRD33	3500	24,5	14,7	1,6	2,1	17	5,1610
97,86		14,2	486	1,44	MRD43	8100	31,6	21,8	2,2	3,4	17	6,6923	
96,28		14,4	466	2,79	MRD53	7900	61,8	52	4,5	6,5	17	13,603	
125	124,13	10,8	639	1,10	MRD43	6000	31,7	21,9	2,2	3,4	17	6,6730	
	129,80	10,7	629	2,07	MRD53	8100	61,8	52	4,5	6,5	17	13,576	
	160	160,69	8,8	781	0,9	MRD43	5000	31,5	21,7	2,2	3,4	17	8,8326
160	157,14	8,8	761	1,71	MRD53	8200	61,8	52	4,5	6,5	17	16,600	
	157,33	8,8	762	3,02	MRD63	12300	79,8	70	7,0	11	17	42,685	
	200	195,82	7,1	949	1,37	MRD53	8400	61,8	52	4,5	6,5	17	13,328
200	201,57	6,9	976	2,36	MRD63	12600	79,8	70	7,0	11	17	41,987	
	250	264,00	5,3	1279	1,02	MRD53	8700	61,8	52	4,5	6,5	17	15,854
	265,50	5,2	1286	1,79	MRD63	13000	79,8	70	7,0	11	17	40,766	
315	332,00	4,2	1608	1,43	MRD63	13500	79,8	70	7,0	11	17	40,774	
	355	373,33	3,7	1808	1,27	MRD63	15700	79,8	70	7,0	11	17	40,799
	450	448,00	3,1	2170	1,06	MRD63	16800	79,8	70	7,0	11	17	40,766
560	560,00	2,5	2712	0,85	MRD63	18000	79,8	70	7,0	11	17	40,748	
	<b>1.1</b>	2,5	2,53	548	18,4	2,34	MRD12	1569	16,8	4,8	0,5	0,7	33
3,15		3,08	451	22,4	2,05	MRD12	1650	16,8	4,8	0,5	0,7	33	1,3036
4,0		4,01	347	29	1,71	MRD12	1761	16,8	4,8	0,5	0,7	33	1,1395
5,0		5,07	274	37	1,43	MRD12	1855	16,8	4,8	0,5	0,7	33	1,0436
5,01		277	36	2,89	MRD22	2160	19,6	7,6	0,8	1,0	33	2,1816	



# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
1.1	6,3	6,69	208	49	1,79	MRD12	1870	16,9	4,9	0,5	0,7	33	1,2060
	8,0	8,13	171	59	1,49	MRD12	1800	16,9	4,9	0,5	0,7	33	1,1144
		8,27	168	60	2,95	MRD22	2510	19,8	7,8	0,8	1,0	33	2,4162
	10,0	10,58	131	77	1,16	MRD12	1660	16,9	4,9	0,5	0,7	33	1,0278
		10,33	135	75	2,39	MRD22	2650	19,8	7,8	0,8	1,0	33	2,1765
	12,5	13,38	104	97	0,93	MRD12	1420	16,9	4,9	0,5	0,7	33	0,9738
		13,23	105	96	1,89	MRD22	2790	19,8	7,8	0,8	1,0	33	1,9928
	16,0	16,30	85	118	0,77	MRD12	1030	17,0	5,0	0,5	0,7	33	0,9414
		16,29	85	118	1,55	MRD22	2900	19,9	7,9	0,8	1,0	33	1,8826
		16,45	84	119	3,24	MRD32	6290	25,2	13,2	1,3	1,8	33	3,2491
20,0	20,67	67	150	1,23	MRD22	2850	19,9	7,9	0,8	1,0	33	1,7924	
	19,36	72	141	2,77	MRD32	6560	25,2	13,2	1,3	1,8	33	2,9048	
25,0	26,73	52	194	0,97	MRD22	2380	19,9	7,9	0,8	1,0	33	1,7234	
	25,26	55	183	2,15	MRD32	7020	25,3	13,3	1,3	1,8	33	2,3847	
	24,48	57	178	3,65	MRD42	8820	31,9	19,9	2,2	3,0	33	8,3681	
	31,5	31,48	44	228	0,83	MRD22	1820	19,9	7,9	0,8	1,0	33	1,6937
		33,21	42	241	1,66	MRD32	6900	25,3	13,3	1,3	1,8	33	2,2448
		29,64	47	215	3,00	MRD42	9290	31,9	19,9	2,2	3,0	33	8,0069
40	38,57	36	280	1,01	MRD32	6470	25,6	13,6	1,3	1,8	33	2,3551	
	41,54	33	301	1,50	MRD42	9860	32,3	20,3	2,2	3,0	33	7,9357	
	38,06	37	276	1,52	MRD33	3800	26,5	14,5	1,6	2,1	33	2,3981	
	41,88	37,1	272	2,57	MRD43	9700	33,4	21,4	2,2	3,4	33	7,8832	
50	40,48	34,8	292	2,92	MRD52	10500	61	49	4,5	5,5	33	10,858	
	50,73	27	368	0,77	MRD32	5800	25,6	13,6	1,3	1,8	33	2,2276	
	50,30	28	365	1,23	MRD42	9310	32,3	20,3	2,2	3,0	33	7,7368	
	48,77	28	354	1,19	MRD33	5400	26,5	14,5	1,6	2,1	33	4,8359	
	51,08	29,0	348	1,80	MRD43	9500	33,4	21,4	2,2	3,4	33	10,261	
	53,33	26,3	384	2,21	MRD52	11200	61	49	4,5	5,5	33	10,579	
63	62,96	22	457	0,98	MRD42	8200	32,4	20,4	2,2	3,0	33	7,5664	
	64,84	21	471	0,90	MRD33	4000	26,6	14,6	1,6	2,1	33	5,2297	
	63,75	21,8	463	1,51	MRD43	8700	33,5	21,5	2,2	3,4	33	10,644	
	66,67	21,0	480	1,77	MRD52	12000	61	49	4,5	5,5	33	10,340	
80	59,88	23,4	422	3,05	MRD53	7800	64	52	4,5	6,5	33	14,391	
	76,31	18	554	0,76	MRD33	3000	26,6	14,6	1,6	2,1	33	5,0309	
	82,25	18,5	545	1,28	MRD43	6700	33,6	21,6	2,2	3,4	33	10,426	
	77,26	18,1	545	2,39	MRD53	7900	64	52	4,5	6,5	33	14,087	
100	102,50	14,2	710	0,98	MRD43	5500	33,8	21,8	2,2	3,4	33	10,081	
	96,28	14,5	679	1,91	MRD53	7900	64	52	4,5	6,5	33	13,603	
	104,08	13,5	734	3,13	MRD63	11900	82	70	7,0	11	33	34,980	
	125	129,80	10,8	916	1,42	MRD53	8100	64	52	4,5	6,5	33	13,576
	125,87	11,1	888	2,59	MRD63	12000	82	70	7,0	11	33	34,910	
	160	157,14	8,9	1108	1,17	MRD53	8200	64	52	4,5	6,5	33	16,600
	157,33	8,9	1110	2,07	MRD63	12300	82	70	7,0	11	33	42,685	
	200	195,82	7,1	1381	0,94	MRD53	8400	64	52	4,5	6,5	33	16,328
	201,57	6,9	1422	1,62	MRD63	12600	82	70	7,0	11	33	41,987	
	250	264,00	5,3	1862	0,70	MRD53	8700	64	52	4,5	6,5	33	15,854
	265,50	5,3	1873	1,23	MRD63	13000	82	70	7,0	11	33	40,766	
	315	332,00	4,2	2342	0,98	MRD63	13500	82	70	7,0	11	33	40,777
	355	373,33	3,8	2633	0,87	MRD63	15700	82	70	7,5	11	33	40,799
	450	448,00	3,1	3160	0,73	MRD63	16800	82	70	7,0	11	33	40,766

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
<b>1.5</b>	2,5	2,55	550	25	3,42	MRD22	1950	21,1	7,6	0,8	1,0	40	3,4569
	3,15	3,13	447	31	2,99	MRD22	1840	21,1	7,6	0,8	1,0	40	2,8995
	4,0	3,92	357	38	2,56	MRD22	1950	21,1	7,6	0,8	1,0	40	2,4858
	5,0	5,01	279	49	2,14	MRD22	2060	21,1	7,6	0,8	1,0	40	2,1816
	6,3	6,72	208	66	2,65	MRD22	2280	21,1	7,6	0,8	1,0	40	2,7248
	8,0	8,27	169	81	2,18	MRD22	2380	21,3	7,8	0,8	1,0	40	2,4162
	10,0	10,33	135	102	1,76	MRD22	2490	21,3	7,8	0,8	1,0	40	2,1765
	12,5	13,23	106	130	1,39	MRD22	2580	21,3	7,8	0,8	1,0	40	1,9928
		12,38	113	122	3,13	MRD32	5500	26,6	13,1	1,3	1,8	40	3,1944
	16,0	16,29	86	160	1,14	MRD22	2650	21,4	7,9	0,8	1,0	40	1,8826
		16,45	85	162	2,39	MRD32	6080	26,7	13,2	1,3	1,8	40	3,2491
	20,0	20,67	68	203	0,91	MRD22	2230	21,4	7,9	0,8	1,0	40	1,7924
		19,36	72	190	2,05	MRD32	6310	26,7	13,2	1,3	1,8	40	2,9048
		19,64	71	193	3,36	MRD42	8050	33,3	19,8	2,2	3,0	40	8,3681
	25,0	26,73	52	263	0,71	MRD22	2100	21,4	7,9	0,8	1,0	40	1,7234
		25,26	55	248	1,59	MRD32	6705	26,8	13,3	1,3	1,8	40	2,3847
		24,48	57	241	2,70	MRD42	8510	33,4	19,9	2,2	3,0	40	8,3681
	31,5	33,21	42	326	1,23	MRD32	5700	26,8	13,3	1,3	1,8	40	2,2448
		29,64	47	291	2,23	MRD42	8920	33,4	19,9	2,2	3,0	40	8,0069
	40	38,57	36	379	0,75	MRD32	5000	27,1	13,6	1,3	1,8	40	2,3551
		41,54	34	408	1,10	MRD42	8830	33,8	20,3	2,2	3,0	40	7,9357
		38,06	37	374	1,12	MRD33	3000	28,0	14,5	1,6	2,1	40	2,3981
		41,88	37,4	368	1,90	MRD43	9200	34,9	21,4	2,2	3,4	40	7,8832
		40,48	34,6	398	2,14	MRD52	10500	62,5	49,0	4,5	5,5	40	10,858
		39,33	35,6	378	3,36	MRD53	7600	65,5	52,0	4,5	6,5	40	10,526
	50	50,30	28	494	0,91	MRD42	7850	33,8	20,3	2,2	3,0	40	7,7368
		48,77	29	479	0,88	MRD33	4500	28,0	14,5	1,6	2,1	40	4,8359
		51,08	29,2	471	1,49	MRD43	8100	34,9	21,4	2,2	3,4	40	10,261
		53,33	26,3	524	1,62	MRD52	11200	62,5	49,0	4,5	5,5	40	10,579
		47,98	29,2	462	2,77	MRD53	7800	65,5	52,0	4,5	6,5	40	13,854
		49,80	28,1	489	3,27	MRD62	16800	75,5	62,0	7,0	9,0	40	27,203
	63	63,75	22,0	626	1,11	MRD43	6000	35,0	21,5	2,2	3,4	40	10,644
		66,67	21,0	655	1,30	MRD52	12000	62,5	49,0	4,5	5,5	40	10,340
		59,88	23,4	576	2,24	MRD53	7800	65,5	52,0	4,5	6,5	40	14,391
		56,00	25,0	550	2,91	MRD62	18000	75,5	62,0	7,0	9,0	40	25,590
	80	82,25	18,7	737	0,95	MRD43	6100	35,1	21,6	2,2	3,4	40	10,426
	77,26	18,1	743	1,75	MRD53	7900	65,5	52,0	4,5	6,5	40	14,087	
	81,29	17,2	782	2,94	MRD63	11900	83,5	70,0	7,0	11	40	36,223	
100	96,28	14,5	926	1,40	MRD53	7900	65,5	52,0	4,5	6,5	40	13,603	
	104,08	13,5	1001	2,30	MRD63	11900	83,5	70,0	7,0	11	40	34,980	
125	129,80	10,8	1248	1,04	MRD53	8100	65,5	52,0	4,5	6,5	40	13,576	
	125,87	11,1	1211	1,90	MRD63	12000	83,5	70,0	7,0	11	40	34,910	
160	157,14	8,9	1511	0,86	MRD53	8200	65,5	52,0	4,5	6,5	40	16,600	
	157,33	8,9	1513	1,52	MRD63	12300	83,5	70,0	7,0	11	40	42,685	
200	201,57	6,9	1939	1,18	MRD63	12600	83,5	70,0	7,0	11	40	41,987	
250	265,50	5,3	2554	0,90	MRD63	13000	83,5	70,0	7,0	11	40	40,766	
315	332,00	4,2	3193	0,72	MRD63	13500	83,5	70,0	7,0	11	40	40,774	
<b>1.8</b>	2,5	2,55	550	31	2,79	MRD22	1710	23,1	7,6	0,8	1,0	50	3,4569
	3,15	3,13	447	38	2,44	MRD22	1795	23,1	7,6	0,8	1,0	50	2,8995
	4,0	3,92	357	47	2,09	MRD22	1885	23,1	7,6	0,8	1,0	50	2,4858

# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>	
1.8	5,0	5,01	279	60	1,74	MRD22	1978	23,1	7,6	0,8	1,0	50	2,1816	
	6,3	6,72	208	81	2,16	MRD22	2194	23,1	7,6	0,8	1,0	50	2,7248	
	8,0	8,27	169	100	1,78	MRD22	2270	23,3	7,8	0,8	1,0	50	2,4162	
	10,0	10,33	135	125	1,44	MRD22	2346	23,3	7,8	0,8	1,0	50	2,1765	
			9,66	145	116	3,23	MRD32	5000	28,6	13,1	1,3	1,8	50	3,7274
	12,5	13,23	106	159	1,14	MRD22	2402	23,3	7,8	0,8	1,0	50	1,9928	
			12,38	113	149	2,56	MRD32	5490	28,6	13,1	1,3	1,8	50	3,1944
	16,0	16,29	86	196	0,93	MRD22	2300	23,4	7,9	0,8	1,0	50	1,8826	
			16,45	85	198	1,95	MRD32	5890	28,7	13,2	1,3	1,8	50	3,2491
			15,22	92	183	3,12	MRD42	7000	35,2	19,7	2,2	3,0	50	8,9476
	20,0	20,67	68	249	0,74	MRD22	2100	23,4	7,9	0,8	1,0	50	1,7924	
			19,36	72	233	1,67	MRD32	6010	28,7	13,2	1,3	1,8	50	2,9048
			19,64	71	237	2,45	MRD42	7850	35,3	19,8	2,2	3,0	50	8,3681
	25,0	25,26	55	304	1,30	MRD32	6050	28,8	13,3	1,3	1,8	50	2,3847	
			24,48	57	295	2,20	MRD42	8270	35,4	19,9	2,2	3,0	50	8,0069
	31,5	33,21	42	400	1,00	MRD32	3950	28,8	13,3	1,3	1,8	50	2,2448	
			29,64	47	357	1,82	MRD42	8620	35,4	19,9	2,2	3,0	50	7,7854
			31,43	44.5	370	3.35	MRD52	9100	64.5	49.0	4.5	5.5	50	10.647
	40	41,54	34	501	0,90	MRD42	7100	35,8	20,3	2,2	3,0	50	7,7368	
			38,06	37	459	0,91	MRD33	4000	30,0	14,5	1,6	2,1	50	2,3981
			41,88	37,4	451	1,55	MRD43	8000	36,9	21,4	2,2	3,4	50	7,8832
			40,48	34,6	477	1,78	MRD52	10500	64,5	49,0	4,5	5,5	50	10,858
			39,33	35,6	454	2,80	MRD53	7600	67,5	52,0	4,5	6,5	50	10,523
			40,50	34,6	477	3,35	MRD62	15700	77,5	62,0	7,0	9,0	50	27,919
	50	48,77	29	588	0,72	MRD33	3500	30,0	14,5	1,6	2,1	50	4,8359	
			47,95	29,2	578	1,21	MRD43	6100	36,9	21,4	2,2	3,4	50	10,2607
			53,33	26,3	629	1,35	MRD52	11200	64,5	49,0	4,5	5,5	50	10,579
			47,98	29,2	554	2,31	MRD53	7800	67,5	52,0	4,5	6,5	50	13,854
			49,80	28,1	587	2,73	MRD62	16800	77,5	62,0	7,0	9,0	50	27,203
	63	63,75	22,0	768	0,91	MRD43	5000	37,0	21,5	2,2	3,4	50	10,6441	
			66,67	21,0	786	1,08	MRD52	12000	64,5	49,0	4,5	5,5	50	10,340
			59,88	23,4	691	1,87	MRD53	7800	67,5	52,0	4,5	6,5	50	14,391
		56,00	25,0	660	2,42	MRD62	18000	77,5	62,0	7,0	9,0	50	26,590	
		61,88	22,6	714	3,08	mrd63	11700	85,5	70,0	7,0	11	50	37,004	
80	82,25	18,7	904	0,78	MRD43	4000	37,1	21,6	2,2	3,4	50	10,4264		
		77,26	18,1	892	1,46	MRD53	7900	67,5	52,0	4,5	6,5	50	14,087	
		81,29	17,2	938	2,45	MRD63	11900	85,5	70,0	7,0	11	50	36,223	
100	96,28	14,5	1111	1,17	MRD53	7900	67,5	52,0	4,5	6,5	50	13,603		
		104,08	13,5	1201	1,91	MRD63	11900	85,5	70,0	7,0	11	50	34,980	
125	129,80	10,8	1498	0,87	MRD53	8100	67,5	52,0	4,5	6,5	50	13,576		
		125,87	11,1	1453	1,58	MRD63	12000	85,5	70,0	7,0	11	50	34,910	
160	157,14	8,9	1814	0,72	MRD53	8200	67,5	52,0	4,5	6,5	50	16,600		
		157,33	8,9	1816	1,27	MRD63	12300	85,5	70,0	7,0	11	50	42,685	
200	201,57	6,9	2327	0,99	MRD63	12600	85,5	70,0	7,0	11	50	41,987		
250	265,50	5,3	3064	0,75	MRD63	13000	85,5	70,0	7,0	11	50	40,766		
2.2	2,5	2,55	558	36	2,36	MRD22	1670	26,6	7,6	0,8	1,0	75	3,8842	
	3,15	3,13	453	45	2,07	MRD22	1740	26,6	7,6	0,8	1,0	75	3,3268	
	4,0	3,92	363	56	1,77	MRD22	1820	26,6	7,6	0,8	1,0	75	2,9131	
	5,0	5,01	283	71	1,48	MRD22	1890	26,6	7,6	0,8	1,0	75	2,6089	
		5,33	266	76	3,10	MRD32	4250	32,6	13,6	1,3	1,8	75	4,2003	

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
<b>2.2</b>	6,3	6,72	211	95	1,83	MRD22	2100	26,6	7,6	0,8	1,0	75	3,1521
	8,0	8,27	172	117	1,51	MRD22	2160	26,8	7,8	0,8	1,0	75	2,8435
		7,72	184	110	3,39	MRD32	4800	32,8	13,8	1,3	1,8	75	4,8413
	10,0	10,33	137	147	1,22	MRD22	2200	26,8	7,8	0,8	1,0	75	2,6037
		9,66	147	137	2,74	MRD32	5050	32,9	13,9	1,3	1,8	75	4,1539
	12,5	13,23	107	188	0,96	MRD22	2220	26,8	7,8	0,8	1,0	75	2,4201
		12,38	115	176	2,17	MRD32	5360	32,9	13,9	1,3	1,8	75	3,6208
		12,20	116	173	3,58	MRD42	6800	39,5	20,5	2,2	3,0	75	9,4739
	16,0	16,29	87	231	0,79	MRD22	1650	26,9	7,9	0,8	1,0	75	2,3099
		16,45	86	234	1,65	MRD32	5710	33,0	14,0	1,3	1,8	75	3,6755
		15,22	93	216	3,00	MRD42	7180	39,6	20,6	2,2	3,0	75	8,7672
	20,0	19,36	73	275	1,42	MRD32	5890	33,0	14,0	1,3	1,8	75	3,3312
		19,64	72	279	2,32	MRD42	7620	39,7	20,7	2,2	3,0	75	8,1877
	25,0	25,26	56	359	1,10	MRD32	5000	33,1	14,1	1,3	1,8	75	2,8112
		24,48	58	348	1,86	MRD42	7990	39,8	20,8	2,2	3,0	75	7,8266
		25,99	54	372	3,31	MRD52	9000	68,0	49,0	4,5	5,5	75	10,962
	31,5	33,21	43	472	0,85	MRD32	4200	33,1	14,1	1,3	1,8	75	2,6712
		29,64	48	421	1,54	MRD42	8290	39,8	20,8	2,2	3,0	75	7,6050
		31,43	45	450	2,76	MRD52	9100	68,0	49,0	4,5	5,5	75	10,547
	40	41,88	38	532	1,31	MRD43	6800	41,2	22,2	2,2	3,4	75	7,6977
		40,48	35	579	1,47	MRD52	10500	68,0	49,0	4,5	5,5	75	10,858
		39,33	36	551	2,31	MRD53	7600	71,0	52,0	4,5	6,5	75	10,526
		40,50	35	579	2,76	MRD62	15700	81,0	62,0	7,0	9,0	75	27,919
	50	51,08	29,6	681	1,02	MRD43	5500	41,2	22,2	2,2	3,4	75	10,753
		53,33	26	763	1,11	MRD52	11200	68	49	4,5	5,5	75	10,579
		47,98	29	672	1,90	MRD53	7800	71	52	4,5	6,5	75	13,854
		49,80	28	712	2,25	MRD62	16800	81	62	7,0	9,0	75	27,203
		48,95	29	686	3,21	MRD63	11700	89	70	7,0	11	75	35,625
63	66,67	21	954	0,89	MRD52	12000	68	49	4,5	5,5	75	10,340	
	59,88	24	839	1,54	MRD53	7800	71	52	4,5	6,5	75	14,391	
	56,00	25	801	2,00	MRD62	18000	81	62	7,0	9,0	75	26,590	
	61,88	23	867	2,54	MRD63	11700	89	70	7,0	11	75	37,004	
80	77,26	18	1082	1,20	MRD53	7900	71	52	4,5	6,5	75	14,087	
	81,29	17	1139	2,02	MRD63	11900	89	70	7,0	11	75	36,223	
100	96,28	15	1349	0,96	MRD53	7900	71	52	4,5	6,5	75	13,603	
	104,08	14	1458	1,58	MRD63	11900	89	70	7,0	11	75	34,980	
125	129,80	11	1818	0,72	MRD53	8100	71	52	4,5	6,5	75	13,576	
	125,87	11	1763	1,30	MRD63	12000	89	70	7,0	11	75	34,910	
160	157,33	9,0	2204	1,04	MRD63	12300	89	70	7,0	11	75	42,685	
200	201,57	7,0	2823	0,81	MRD63	12600	89	70	7,0	11	75	41,987	
<b>3.0</b>	2,5	2,55	562	49	1,75	MRD22	1570	28,6	7,6	0,8	1,0	85	3,8842
	3,15	3,13	456	60	1,53	MRD22	1620	28,6	7,6	0,8	1,0	85	3,3268
		3,32	430	64	3,21	MRD32	3630	34,5	13,5	1,3	1,8	85	6,3316
	4,0	3,92	365	75	1,31	MRD22	1660	28,6	7,6	0,8	1,0	85	2,9131
		4,16	344	80	2,75	MRD32	3850	34,6	13,6	1,3	1,8	85	5,1053
	5,0	5,01	285	96	1,09	MRD22	1700	28,6	7,6	0,8	1,0	85	2,6089
		5,33	268	103	2,29	MRD32	4080	34,6	13,6	1,3	1,8	85	4,2003
	6,3	6,72	213	129	1,35	MRD22	1890	28,6	7,6	0,8	1,0	85	3,1521
		6,26	228	120	3,06	MRD32	4360	32,1	11,1	1,3	1,8	85	5,7232
	8,0	8,27	173	159	1,11	MRD22	1900	28,8	7,8	0,8	1,0	85	2,8435

# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>	
3.0	8.0	7,72	185	148	2,51	MRD32	4580	34,8	13,8	1,3	1,8	85	4,8413	
	10,0	10,33	138	199	0,90	MRD22	1880	28,8	7,8	0,8	1,0	85	2,6037	
		9,66	148	186	2,03	MRD32	4800	34,9	13,9	1,3	1,8	85	4,1539	
		10,00	143	192	2,91	MRD42	6200	41,4	20,4	2,2	3,0	85	10,331	
		12,5	13,23	108	254	0,71	MRD22	1600	28,8	7,8	0,8	1,0	85	2,4201
	12,5	12,38	116	238	1,60	MRD32	5040	34,9	13,9	1,3	1,8	85	3,6208	
		12,20	117	235	2,63	MRD42	6500	41,5	20,5	2,2	3,0	85	9,4739	
		16,0	16,45	87	317	1,22	MRD32	5300	35,0	14,0	1,3	1,8	85	3,6755
		15,22	94	293	1,96	MRD42	6810	41,6	20,6	2,2	3,0	85	8,7672	
	20,0	19,36	74	373	1,05	MRD32	4500	35,0	14,0	1,3	1,8	85	3,3312	
		19,64	73	378	1,71	MRD42	7150	41,7	20,7	2,2	3,0	85	8,1877	
		20,30	70	393	3,10	MRD52	8700	70,0	49,0	4,5	5,5	85	11,463	
		25,0	25,26	57	486	0,81	MRD32	4000	35,1	14,1	1,3	1,8	85	2,8112
	25,0	24,48	58	471	1,38	MRD42	7400	41,8	20,8	2,2	3,0	85	7,8266	
		25,99	55	503	2,44	MRD52	9000	70,0	49,0	4,5	5,5	85	10,962	
		31,5	29,64	48	570	1,14	MRD42	6110	41,8	20,8	2,2	3,0	85	7,6050
		31,43	45	609	2,04	MRD52	9100	70,0	49,0	4,5	5,5	85	10,647	
	40	33,20	43	643	3,45	MRD62	13700	83,0	62,0	7,0	9,0	85	27,378	
		41,88	38,2	720	0,97	MRD43	5800	43,2	22,2	2,2	3,4	85	7,6977	
		40,48	35	784	1,08	MRD52	10500	70,0	49,0	4,5	5,5	85	10,858	
		39,33	36	746	1,70	MRD53	7600	73,0	52,0	4,5	6,5	85	10,526	
	50	40,50	35	784	2,04	MRD62	15700	83,0	62,0	7,0	9,0	85	27,920	
		39,71	36	753	2,92	MRD63	11400	91,0	70,0	7,0	11	85	27,066	
		53,33	27	1033	0,82	MRD52	11200	70,0	49,0	4,5	5,5	85	10,579	
		47,98	30	910	1,41	MRD53	7800	73,0	52,0	4,5	6,5	85	13,854	
	63	49,80	29	965	1,66	MRD62	16800	83,0	62,0	7,0	9,0	85	27,203	
		48,95	29	928	2,37	MRD63	11700	91,0	70,0	7,0	11	85	35,625	
		59,88	24	1136	1,14	MRD53	7800	73,0	52,0	4,5	6,5	85	14,391	
56,00		25	1085	1,48	MRD62	18000	83,0	62,0	7,0	9,0	85	26,590		
80	61,88	23	1174	1,87	MRD63	11700	91,0	70,0	7,0	11	85	37,004		
	77,26	18	1465	0,89	MRD53	7900	73,0	52,0	4,5	6,5	85	14,087		
	81,29	18	1542	1,49	MRD63	11900	91,0	70,0	7,0	11	85	36,223		
	100	96,28	15	1826	0,71	MRD53	7900	73,0	52,0	4,5	6,5	85	13,603	
100	104,08	14	1974	1,17	MRD63	11900	91,0	70,0	7,0	11	85	34,980		
	125	125,87	11	2387	0,96	MRD63	12000	91,0	70,0	7,0	11	85	34,910	
	160	157,33	9,0	2984	0,77	MRD63	12300	91,0	70,0	7,0	11	85	42,685	
4.0	2,5	2,70	528	69	2,74	MRD32	3330	36,5	13,5	1,3	1,8	130	7,9870	
	3,15	3,32	429	86	2,40	MRD32	3500	42,5	13,5	1,3	1,8	130	6,3316	
	4,0	4,16	343	107	2,05	MRD32	3690	42,6	13,6	1,3	1,8	130	5,1053	
		3,96	360	102	3,72	MRD42	4000	48,8	19,8	2,2	3,0	130	12,317	
	5,0	5,33	267	137	1,71	MRD32	3880	42,6	13,6	1,3	1,8	130	4,2003	
		4,83	295	124	3,06	MRD42	4850	48,8	19,8	2,2	3,0	130	10,808	
	6,3	6,26	228	161	2,29	MRD32	4160	40,1	11,1	1,3	1,8	130	5,7232	
		6,29	227	162	3,50	MRD42	5340	49,3	20,3	2,2	3,0	130	13,636	
	8,0	7,72	185	199	1,87	MRD32	4330	42,8	13,8	1,3	1,8	130	4,8413	
		7,86	181	202	3,06	MRD42	5620	49,3	20,3	2,2	3,0	130	11,758	
	10,0	9,66	148	249	1,51	MRD32	4500	42,9	13,9	1,3	1,8	130	4,1539	
		10,00	143	257	2,41	MRD42	5920	49,4	20,4	2,2	3,0	130	10,331	
	12,5	12,38	115	319	1,20	MRD32	4650	42,9	13,9	1,3	1,8	130	3,6208	
		12,20	117	314	1,97	MRD42	6150	49,5	20,5	2,2	3,0	130	9,4739	

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
4.0	16,0	16,45	87	424	0,91	MRD32	2900	43,0	14,0	1,3	1,8	130	3,6755
		15,22	94	392	1,65	MRD42	6380	49,6	20,6	2,2	3,0	130	8,7672
		15,45	92	398	3,02	MRD52	8500	72,0	49,0	4,5	5,5	130	12,274
	20,0	19,36	74	498	0,78	MRD32	2500	43,0	14,0	1,3	1,8	130	3,3312
		19,64	73	506	1,28	MRD42	6590	49,7	20,7	2,2	3,0	130	8,1877
		20,30	70	522	2,34	MRD52	8700	72,0	49,0	4,5	5,5	130	11,463
	25,0	24,48	58	630	1,03	MRD42	4290	49,8	20,8	2,2	3,0	130	7,8266
		25,99	55	669	1,84	MRD52	9000	72,0	49,0	4,5	5,5	130	10,962
		24,62	58	633	3,32	MRD62	13500	85,0	62,0	7,0	9,0	130	28,188
	31,5	29,64	48	763	0,85	MRD42	4000	49,8	20,8	2,2	3,0	130	7,6050
		31,43	45	809	1,53	MRD52	9100	72,0	49,0	4,5	5,5	130	10,647
		33,20	43	854	2,60	MRD62	13700	85,0	62,0	7,0	9,0	130	27,378
	40	40,48	35	1042	0,82	MRD52	10500	72,0	49,0	4,5	5,5	130	10,858
		39,33	36	991	1,28	MRD53	7600	75,0	52,0	4,5	6,5	130	10,526
		40,50	35	1042	1,54	MRD62	15700	85,0	62,0	7,0	9,0	130	27,919
	50	39,71	36	1001	2,20	MRD63	11400	93,0	70,0	7,0	11,0	130	27,066
		47,98	30	1209	1,06	MRD53	7800	75,0	52,0	4,5	6,5	130	13,854
		49,80	29	1282	1,25	MRD62	16800	85,0	62,0	7,0	9,0	130	27,203
	63	48,95	29	1233	1,78	MRD63	11700	93,0	70,0	7,0	11	130	35,625
		59,88	24	1509	0,85	MRD53	7800	75,0	52,0	4,5	6,5	130	14,391
56,00		25	1441	1,11	MRD62	18000	85,0	62,0	7,0	9,0	130	26,590	
80	61,88	23	1559	1,41	MRD63	11700	93	70,0	7,0	110	130	37,004	
	81,29	18	2048	1,12	MRD63	11900	93,0	70,0	7,0	11	130	36,223	
	100	104,08	14	2623	0,88	MRD63	11900	93,0	70,0	7,0	11	130	34,980
125	125,87	11	3172	0,73	MRD63	12000	93,0	70,0	7,0	11,0	130	34,910	
5.5	2,5	2,49	579	87	3,50	MRD42	3950	58,0	23,0	2,2	3,0	240	17,505
	3,15	3,11	463	109	2,94	MRD42	4167	58,0	23,0	2,2	3,0	240	13,818
	4,0	3,96	364	139	2,73	MRD42	4400	58,1	23,1	2,2	3,0	240	11,159
	5,0	4,83	298	169	2,36	MRD42	4580	58,1	23,1	2,2	3,0	240	9,6510
	6,3	6,29	229	220	2,81	MRD42	5050	58,6	23,6	2,2	3,0	240	12,479
	8,0	7,86	183	275	2,25	MRD42	5270	58,6	23,6	2,2	3,0	240	10,601
	10,0	10,00	144	350	1,77	MRD42	5480	58,7	23,7	2,2	3,0	240	9,1738
		9,92	145	347	3,40	MRD52	5500	84,0	49,0	4,5	5,5	240	14,463
		12,5	12,20	118	427	1,45	MRD42	5610	58,8	23,8	2,2	3,0	240
	16,0	12,22	118	428	2,78	MRD52	6900	84,0	49,0	4,5	5,5	240	13,264
		15,22	95	533	1,22	MRD42	5710	58,9	23,9	2,2	3,0	240	7,6100
		15,45	93	541	2,22	MRD52	8500	84,0	49,0	4,5	5,5	240	12,274
	20,0	19,64	73	688	0,95	MRD42	5260	59,0	24,0	2,2	3,0	240	7,0305
		20,30	71	711	1,72	MRD52	8700	84,0	49,0	4,5	5,5	240	11,463
		20,67	70	724	2,90	MRD62	13000	97,00	62,00	7,0	9,0	240	29,476
	25,0	25,99	55	910	1,35	MRD52	9000	84,0	49,0	4,5	5,5	240	10,962
		24,62	59	862	2,44	MRD62	13500	97,0	62,0	7,0	9,0	240	28,188
		31,5	31,43	46	1101	1,13	MRD52	9100	84,0	49,0	4,5	5,5	240
	40	33,20	43	1163	1,91	MRD62	13700	97,0	62,0	7,0	9,0	240	27,378
		39,33	37	1349	0,94	MRD53	7600	87,0	52,0	4,5	6,5	240	10,526
40,50		36	1418	1,13	MRD62	15700	97,0	62,0	7,0	9,0	240	27,919	
50	39,71	36	1361	1,62	MRD63	11400	105	70,0	7,0	11	240	27,066	
	47,98	30	1645	0,78	MRD53	7800	87,0	52,0	4,5	6,5	240	13,854	
	49,80	29	1744	0,92	MRD62	16800	97,0	62,0	7,0	9,0	240	27,203	
48,95	29	1678	1,31	MRD63	11700	105	70,0	7,0	11,0	240	35,625		

# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
5.5	63	56.00	26	1961	0.82	MRD62	18000	97.0	62.0	7.0	9.0	240	26.590
		61.88	23	2122	1.04	MRD63	11700	105	70.0	7.0	11	240	37.004
	80	81.29	18	2787	0.83	MRD63	11900	105	70.0	7.0	11	240	36.223
7.5	2,5	2,49	583	118	2,50	MRD42	3760	75,0	23,0	2,2	3,0	330	17,505
		3,11	466	148	2,17	MRD42	3940	75,0	23,0	2,2	3,0	330	13,818
	4,0	3,96	366	188	2,02	MRD42	4110	75,1	23,1	2,2	3,0	330	11,159
		4,83	300	229	1,74	MRD42	4230	75,1	23,1	2,2	3,0	330	9,6510
	6,3	6,29	231	298	2,10	MRD42	4690	75,6	23,6	2,2	3,0	330	12,479
		7,86	185	373	1,66	MRD42	4820	75,6	23,6	2,2	3,0	330	10,601
	8,0	8,19	176	391	2,99	MRD52	5200	101	49,0	4,5	5,5	330	16,463
		10,00	145	474	1,30	MRD42	4900	75,7	23,7	2,2	3,0	330	9,1738
	12,5	9,92	145	473	2,49	MRD52	5500	101	49,0	4,5	5,5	330	14,463
		12,20	119	579	1,10	MRD42	4590	75,8	23,8	2,2	3,0	330	8,3166
	16,0	12,22	118	584	2,04	MRD52	6900	101	49,0	4,5	5,5	330	13,264
		12,44	116	594	3,53	MRD62	10300	114	62,0	7,0	9,0	330	34,106
	20,0	15,22	95	722	0,90	MRD42	5100	75,9	23,9	2,2	3,0	330	7,6100
		15,45	93	738	1,63	MRD52	8500	101	49,0	4,5	5,5	330	12,274
	25,0	15,73	92	751	2,80	MRD62	12800	114	62,0	7,0	9,0	330	31,562
		20,30	71	969	1,26	MRD52	8700	101	49,0	4,5	5,5	330	11,463
	31,5	20,67	70	987	2,13	MRD62	13000	114	62,0	7,0	9,0	330	29,476
		25,99	55	1241	0,99	MRD52	9000	101	49,0	4,5	5,5	330	10,962
	40	24,62	59	1175	1,79	MRD62	13500	114	62,0	7,0	9,0	330	28,188
		31,43	46	1501	0,83	MRD52	9100	101	49,0	4,5	5,5	330	10,647
50	33,20	43	1585	1,40	MRD62	13700	114	62,0	7,0	9,0	330	27,378	
	40,50	36	1934	0,83	MRD62	15700	114	62,0	7,0	9,0	330	27,919	
63	39,71	36	1857	1,18	MRD63	11400	122	70,0	7,0	11	330	27,066	
	48,95	29	2289	0,96	MRD63	11700	122	70,0	7,0	11	330	35,625	
	61,88	23	2893	0,76	MRD63	11700	122	70,0	7,0	11	330	37,004	
9.2	2,5	2,49	587	144	2,05	MRD42	3610	77,0	23,0	2,2	3,0	340	17,506
		3,11	469	180	1,78	MRD42	3750	77,0	23,0	2,2	3,0	340	13,818
	4,0	3,96	369	229	1,65	MRD42	3870	77,1	23,1	2,2	3,0	340	11,160
		3,93	369	228	3,28	MRD52	4000	103	49,0	4,5	5,5	340	17,244
	5,0	4,83	302	279	1,43	MRD42	3940	77,1	23,1	2,2	3,0	340	9,6510
		4,84	300	282	3,02	MRD52	4500	103	49,0	4,5	5,5	340	15,131
	6,3	6,29	232	363	1,70	MRD42	4380	77,6	23,6	2,2	3,0	340	12,479
		6,45	225	375	3,09	MRD52	4600	103	49,0	4,5	5,5	340	23,290
	8,0	7,86	186	454	1,36	MRD42	4430	77,6	23,6	2,2	3,0	340	10,602
		8,19	177	476	2,46	MRD52	5200	103	49,0	4,5	5,5	340	16,463
	10,0	10,00	146	578	1,07	MRD42	3700	77,7	23,7	2,2	3,0	340	9,1738
		9,92	146	577	2,05	MRD52	5500	103	49,0	4,5	5,5	340	14,463
	12,5	10,10	144	587	3,58	MRD62	8300	116	62,0	7,0	9,0	340	37,192
		12,20	120	705	0,88	MRD42	3000	77,8	23,8	2,2	3,0	340	8,3166
	16,0	12,22	119	711	1,67	MRD52	6900	103	49,0	4,5	5,5	340	13,264
		12,44	117	724	2,90	MRD62	10300	116	62,0	7,0	9,0	340	34,106
	20,0	15,45	94	899	1,34	MRD52	8500	103	49,0	4,5	5,5	340	12,274
		15,73	92	915	2,29	MRD62	12800	116	62,0	7,0	9,0	340	31,562
	25,0	20,30	71	1181	1,03	MRD52	8700	103	49,0	4,5	5,5	340	11,463
		20,67	70	1202	1,75	MRD62	13000	116	62,0	7,0	9,0	340	29,476
	25,99	56	1512	0,81	MRD52	9000	103	49,0	4,5	5,5	340	10,962	
	24,62	59	1432	1,47	MRD62	13500	116	62,0	7,0	9,0	340	28,188	

## Gearboxes Series RD

## MRD - 4 poles

Geared motor selection

1400 rpm

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
9.2	31.5	33.20	44	1931	1.15	MRD62	13700	116	62.0	7.0	9.0	340	27.378
	40	39.71	37	2262	0.97	MRD63	11400	124	70.0	7.0	11	340	27.066
	50	48.95	30	2788	0.79	MRD63	11700	124	70.0	7.0	11	340	35.625
11	2.5	2.56	571	185	3.41	MRD52	3400	117	49	4.5	5.5	620	26.128
	3.15	3.24	451	234	2.95	MRD52	3700	117	49	4.5	5.5	620	20.966
	4.0	3.93	372	284	2.65	MRD52	4000	117	49	4.5	5.5	620	17.244
	5.0	4.84	302	350	2.43	MRD52	4500	117	49	4.5	5.5	620	15.131
	6.3	6.45	226	466	2.49	MRD52	4600	117	49	4.5	5.5	620	23.290
	8.0	8.19	178	591	1.98	MRD52	5200	117	49	4.5	5.5	620	16.463
		8.33	175	602	3.32	MRD62	7800	130	62	7.0	9.0	620	42.332
	10.0	9.92	147	716	1.65	MRD52	5500	117	49	4.5	5.5	620	14.463
		10.10	145	729	2.88	MRD62	8300	130	62	7.0	9.0	620	37.192
	12.5	12.22	120	883	1.35	MRD52	6900	117	49	4.5	5.5	620	13.264
		12.44	117	899	2.34	MRD62	10300	130	62	7.0	9.0	620	34.106
	16.0	15.45	95	1116	1.08	MRD52	8500	49	117	4.5	5.5	620	12.274
		15.73	93	1136	1.85	MRD62	12800	130	62	7.0	9.0	620	31.562
	20.0	20.30	72	1466	0.83	MRD52	8700	117	49	4.5	5.5	620	11.463
		20.67	70	1492	1.41	MRD62	13000	130	62	7.0	9.0	620	29.476
25.0	24.62	59	1778	1.18	MRD62	13500	130	62	7.0	9.0	620	28.188	
31.5	33.20	44	2397	0.93	MRD62	13700	130	62	7.0	9.0	620	27.378	
40	39.71	37	2808	0.78	MRD63	11400	138	70	7.0	11	620	27.066	
15	2.5	2.56	571	241	2.62	MRD52	3400	127	49	4.5	5.5	740	26.128
	3.15	3.24	451	305	2.26	MRD52	3700	127	49	4.5	5.5	740	20.966
	4.0	3.93	372	370	2.03	MRD52	4000	127	49	4.5	5.5	740	17.244
	5.0	4.84	302	456	1.86	MRD52	4500	127	49	4.5	5.5	740	15.131
	6.3	6.45	226	608	1.91	MRD52	4600	127	49	4.5	5.5	740	23.290
		6.57	222	619	3.23	MRD62	6900	140	62	7.0	9.0	740	59.890
	8.0	8.19	178	771	1.52	MRD52	5200	127	49	4.5	5.5	740	16.463
		8.33	175	785	2.55	MRD62	7800	140	62	7.0	9.0	740	42.332
	10	9.92	147	934	1.26	MRD52	5500	127	49	4.5	5.5	740	14.463
		10.10	145	951	2.21	MRD62	8300	140	62	7.0	9.0	740	37.192
	12.5	12.22	120	1151	1.03	MRD52	6900	127	49	4.5	5.5	740	13.264
		12.44	117	1172	1.79	MRD62	10300	140	62	7.0	9.0	740	34.106
	16.0	15.45	95	1455	0.82	MRD52	8500	127	49	4.5	5.5	740	12.274
		15.73	93	1482	1.42	MRD62	12800	140	62	7.0	9.0	740	31.562
	20.0	20.67	71	1947	1.08	MRD62	13000	140	62	7.0	9.0	740	29.476
25.0	24.62	59	2319	0.91	MRD62	13500	140	62	7.0	9.0	740	28.188	
31.5	33.20	44	3127	0.71	MRD62	13700	140	62	7.0	9.0	740	27.378	
18.5	2.5	2.56	575	295	2.14	MRD52	3400	159	49	4.5	5.5	900	26.128
	3.15	3.24	454	374	1.85	MRD52	3700	159	49	4.5	5.5	900	20.966
	4.0	3.93	374	453	1.66	MRD52	4000	159	49	4.5	5.5	900	17.244
		4.02	366	464	3.45	MRD62	6000	172	62	7.0	9.0	900	44.341
	5.0	4.84	304	558	1.52	MRD52	4500	159	49	4.5	5.5	900	15.131
		4.96	297	572	3.15	MRD62	6700	172	62	7.0	9.0	900	39.909
	6.3	6.45	228	745	1.56	MRD52	4600	159	49	4.5	5.5	900	23.290
		6.57	224	758	2.64	MRD62	6900	172	62	7.0	9.0	900	59.890
	8.0	8.19	180	944	1.24	MRD52	5200	159	49	4.5	5.5	900	16.463
		8.33	176	961	2.08	MRD62	7800	172	62	7.0	9.0	900	42.332
	10.0	9.92	148	1144	1.03	MRD52	5500	159	49	4.5	5.5	900	14.463
		10.10	146	1165	1.80	MRD62	8300	172	62	7.0	9.0	900	37.192



# MRD - 4 poles

# Gearboxes Series RD

1400 rpm

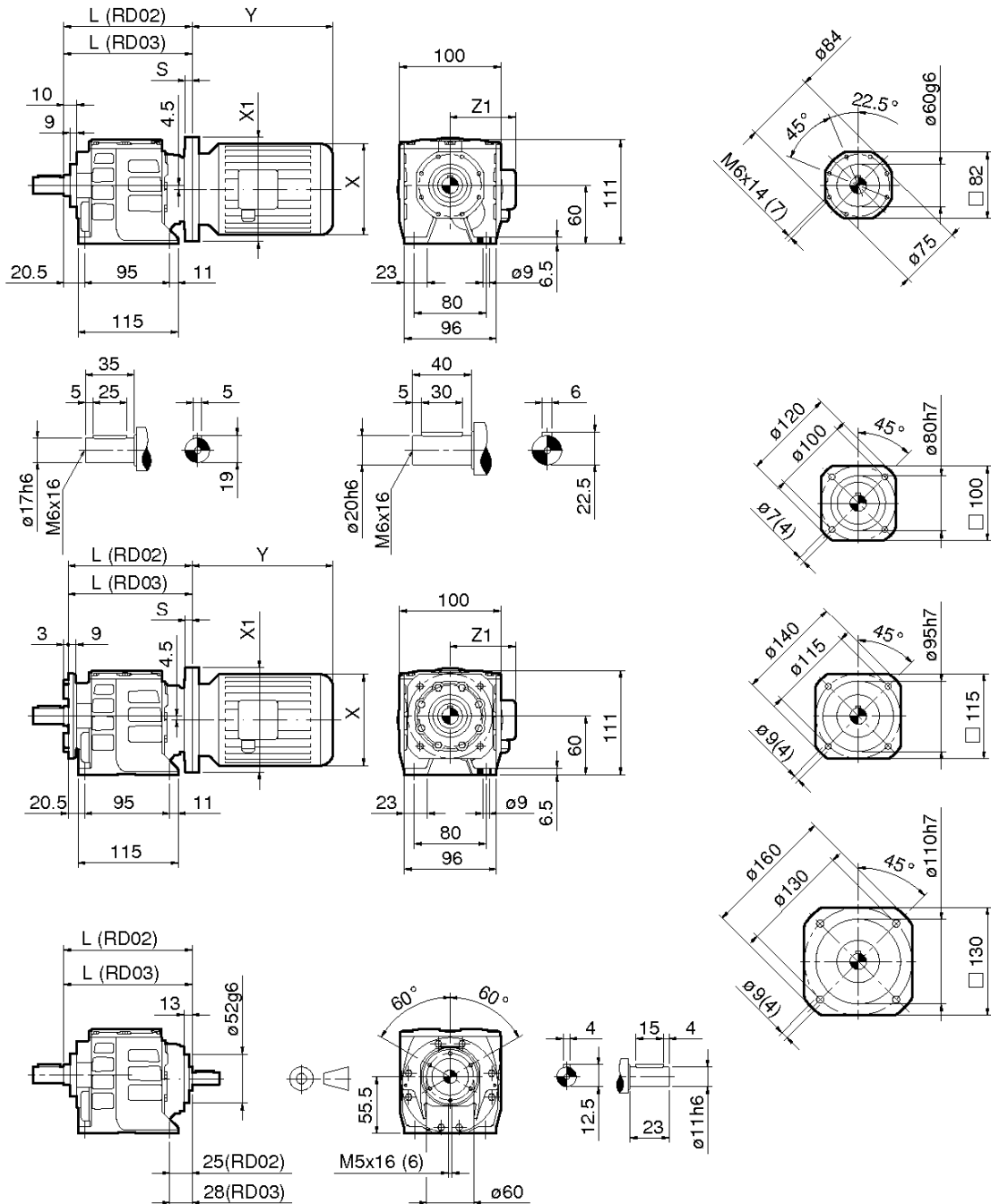
Geared motor selection

P <sub>1</sub> [kW]	i <sub>n</sub>	i <sub>r</sub>	n <sub>2</sub> [min <sup>-1</sup> ]	M <sub>2</sub> [Nm]	FS	TYPE	F <sub>r2</sub> [N]	MRD [kg]	FRD [kg]	Lub H	Lub V	J <sub>m</sub> × 10 <sup>-4</sup>	J <sub>1</sub> × 10 <sup>-4</sup>
18.5	12.5	12.22	120	1410	0.84	MRD52	6900	159	49	4.5	5.5	900	13.264
		12.44	118	1436	1.46	MRD62	10300	172	62	7.0	9.0	900	34.106
	16.0	15.73	93	1815	1.16	MRD62	12800	172	62	7.0	9.0	900	31.562
		20.67	71	2385	0.88	MRD62	13000	172	62	7.0	9.0	900	29.476
		24.62	60	2840	0.74	MRD62	13500	172	62	7.0	9.0	900	28.188
22	2.5	2.56	575	351	1.80	MRD52	3400	168	49	4.5	5.5	1150	26.128
		3.24	454	445	1.55	MRD52	3700	168	49	4.5	5.5	1150	20.966
	3.15	3.32	443	455	3.08	MRD62	5600	181	62	7.0	9.0	1150	53.914
		3.93	374	539	1.39	MRD52	4000	168	49	4.5	5.5	1150	17.244
	4.0	4.02	366	551	2.90	MRD62	6000	181	62	7.0	9.0	1150	44.341
		4.84	304	664	1.28	MRD52	4500	168	49	4.5	5.5	1150	15.131
	5.0	4.96	297	680	2.65	MRD62	6700	181	62	7.0	9.0	1150	39.909
		6.45	228	886	1.31	MRD52	4600	168	49	4.5	5.5	1150	23.290
	6.3	6.57	224	902	2.22	MRD62	6900	181	62	7.0	9.0	1150	59.890
		8.33	176	1143	1.75	MRD62	7800	181	62	7.0	9.0	1150	42.332
	8.0	10.10	146	1385	1.52	MRD62	8300	181	62	7.0	9.0	1150	37.192
		12.44	118	1707	1.23	MRD62	10300	181	62	7.0	9.0	1150	34.106
	16.0	15.73	93	2159	0.97	MRD62	12800	181	62	7.0	9.0	1150	31.562
20.67		71	2836	0.74	MRD62	13000	181	62	7.0	9.0	1150	29.476	

# Gearboxes Series RD

## RD02 - RD03

### Dimensions

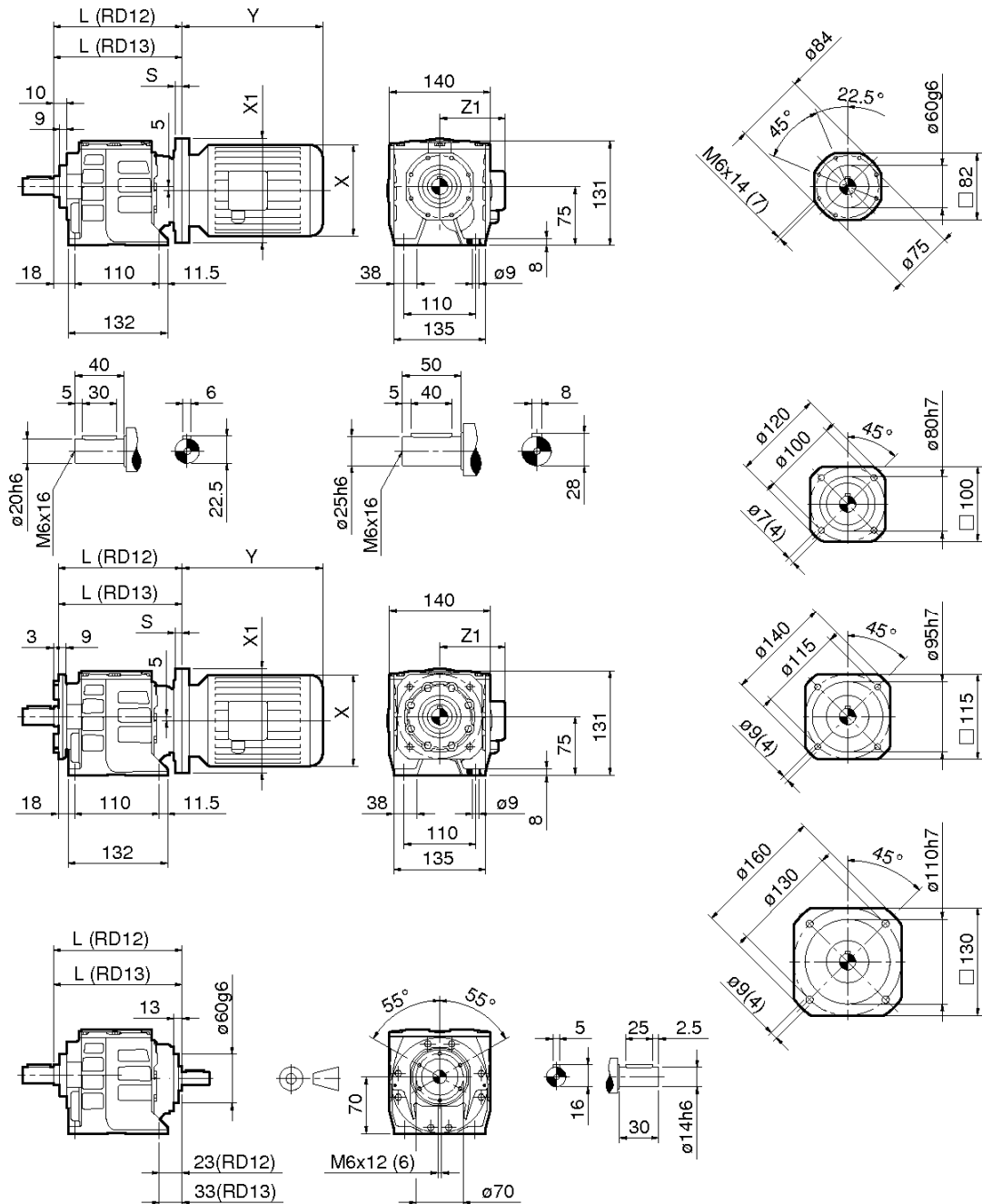


RD	02 / 03	02 / 03	02 / 03	02	---	---	---	---
IEC	56	63	71	80	---	---	---	---
X / Y / Z1	110/168/108	123/185/110	140/220/121	159/238/138	---	---	---	---
X1 (B5) / S	120/11	140/10	160/11.5	---	---	---	---	---
X1 (B14) / S	80/8	90/10	105/10	120/11	---	---	---	---
L (RD02)	140	140	140	140	---	---	---	---
L (RD03)	143	143	143	---	---	---	---	---

# RD12 - RD13

# Gearboxes Series RD

## Dimensions

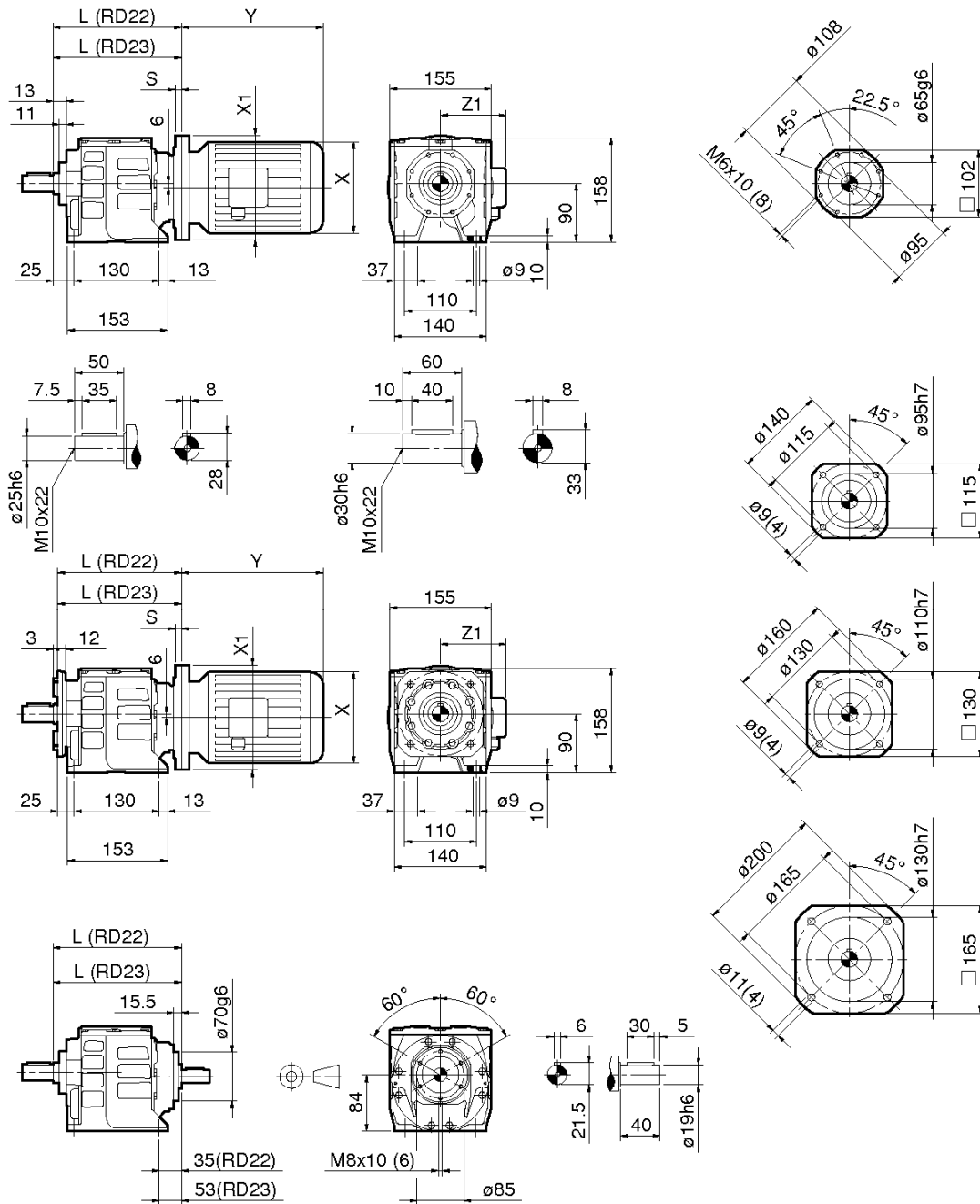


RD	12 / 13	12 / 13	12 / 13	12	12	12	---	---
IEC	56	63	71	80	90 S	90 L	---	---
X / Y / Z1	110/168/108	123/185/110	140/220/121	159/238/138	176/255/149	176/280/149	---	---
X1 (B5) / S	120/11	140/10	160/11.5	200/11	200/11	200/11	---	---
X1 (B14) / S	---	90/8	105/10	120/11	140/10	140/10	---	---
L (RD12)	151	151	151[155-	151	151	151	---	---
L (RD13)	161	161	161[155-	161	161	161	---	---

# Gearboxes Series RD

# RD22 - RD23

## Dimensions

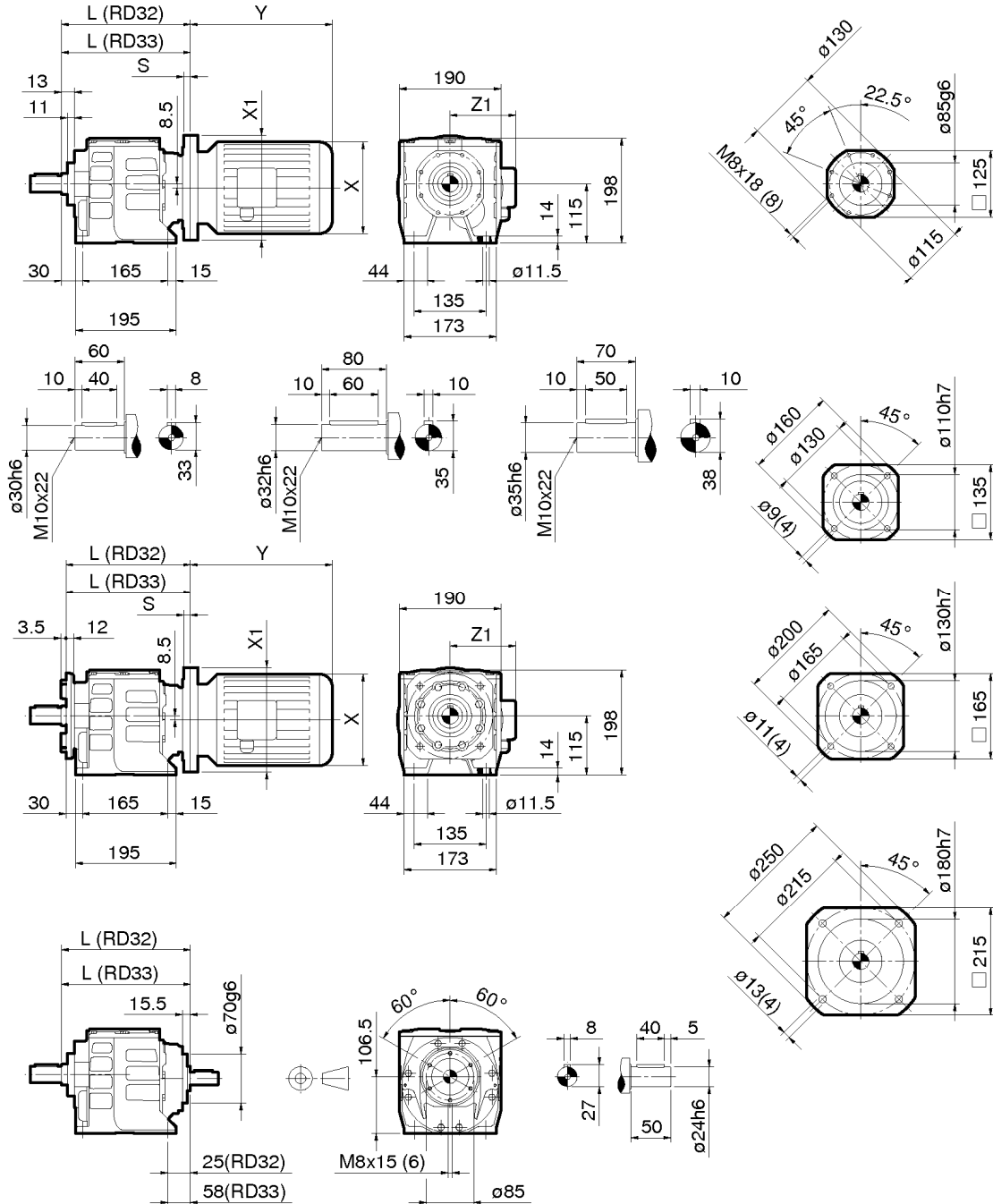


RD	22 / 23	22 / 23	22 / 23	22 / 23	22 / 23	22	22	---
IEC	63	71	80	90 S	90 L	100	112	---
X / Y / Z1	123/185/110	140/220/121	159/238/138	176/255/149	176/280/149	195/314/160	219/328/172	---
X1 (B5) / S	140/10	160/11.5	200/11	200/11	200/11	250/13	250/13	---
X1 (B14) / S	---	105/10.5	120/10	140/10	140/10	160/11.5	160/11.5	---
L (RD22)	192	190	190[192-B14]	190[192-B14]	190[192-B14]	191[190-B14]	191[190-B14]	---
L (RD23)	240	208	208[210-B14]	208[210-B14]	208[210-B14]	---	---	---

# RD32 - RD33

# Gearboxes Series RD

## Dimensions

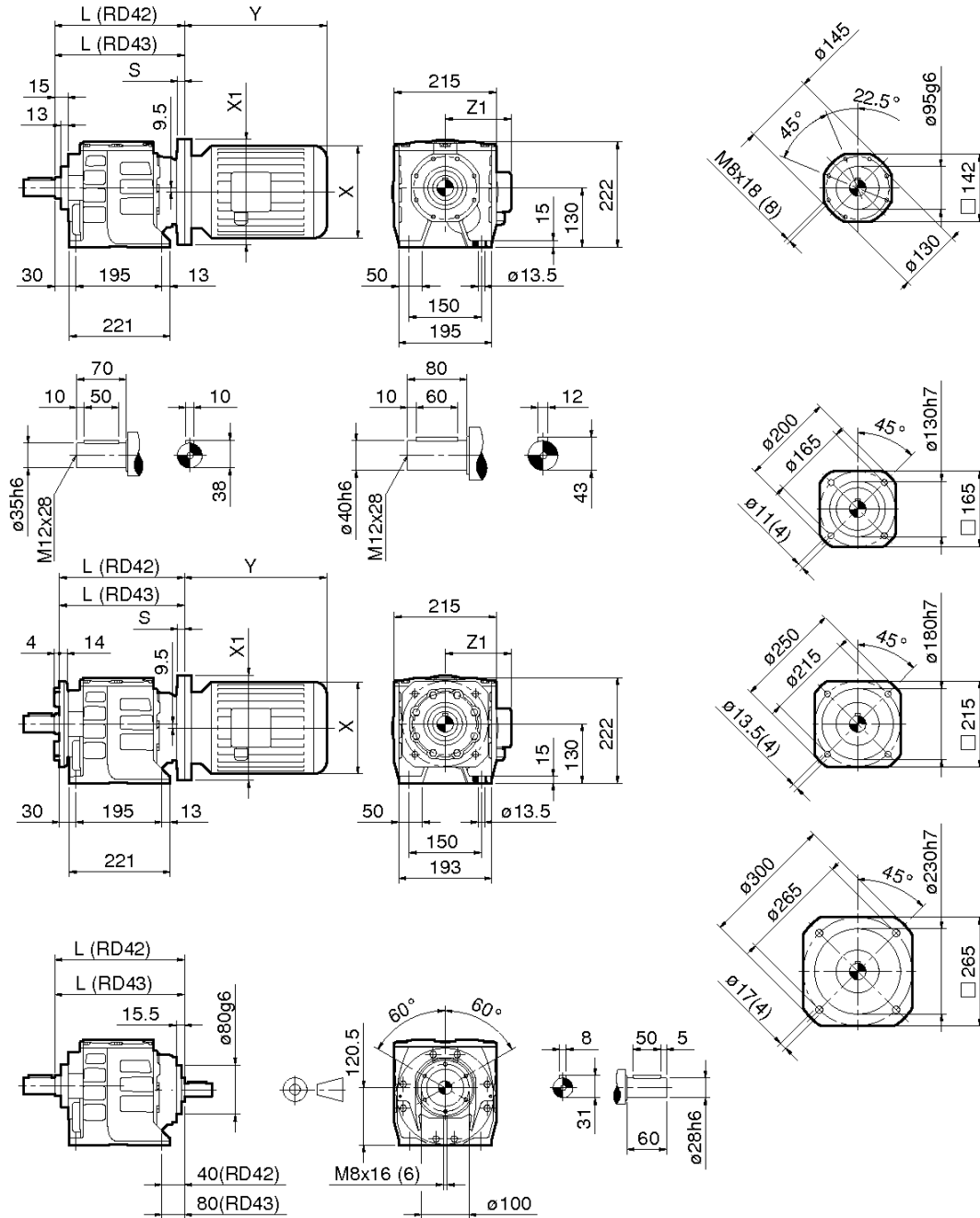


RD	32 / 33	32 / 33	32 / 33	32 / 33	32	32	---	---
IEC	71	80	90 S	90 L	100	112	---	---
X / Y / Z1	140/220/121	159/238/138	176/255/149	176/280/149	195/314/160	219/328/172	---	---
X1 (B5) / S	160/11.5	200/11	200/11	200/11	250/13	250/13	---	---
X1 (B14) / S	105/10.5	120/10	140/10	140/10	160/11.5	160/11.5	---	---
L (RD32)	220	220[222-B14]	220[222-B14]	220[222-B14]	228[221-B14]	228[221-B14]	---	---
L (RD33)	253	253[255-B14]	253[255-B14]	253[255-B14]	---	---	---	---

# Gearboxes Series RD

# RD42 - RD43

## Dimensions

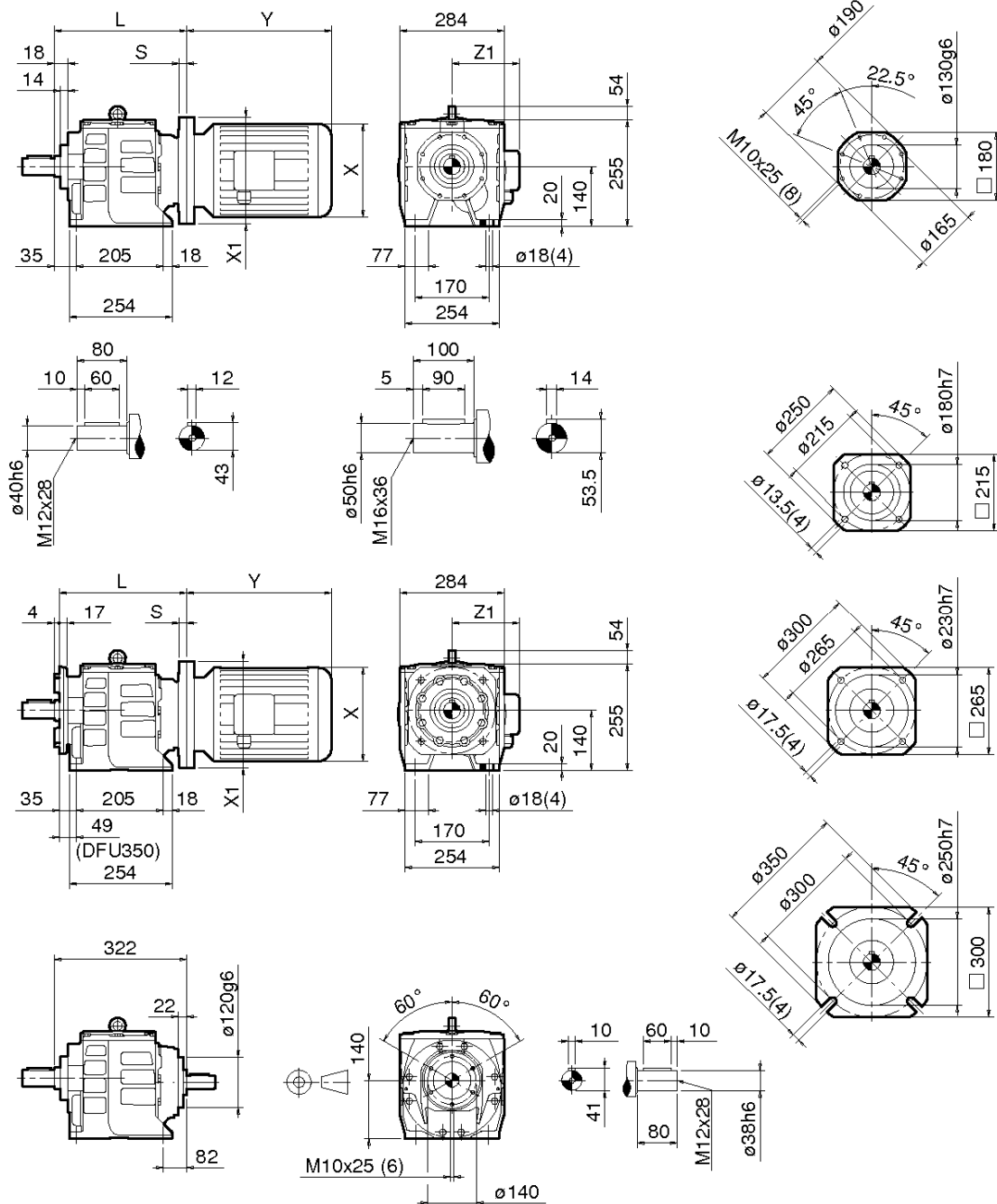


RD	43	42 / 43	42 / 43	42 / 43	42 / 43	42	42	42
IEC	71	80	90 S	90 L	100	112	132 S	132 M
X / Y / Z1	140/220/121	159/238/138	176/255/149	176/280/149	195/314/160	219/328/172	258/368/192	258/410/192
X1 (B5) / S	160/11.5	200/11.5	200/11.5	200/11.5	250/14	250/14	300/15	300/15
X1 (B14) / S	---	120/10	140/10	140/10	160/11.5	160/11.5	200/11.5	200/11.5
L (RD42)	---	265	265[268-B14]	265[268-B14]	266[264-B14]	266[264-B14]	268	268
L (RD43)	305	305	305[308-B14]	305[308-B14]	306[304-B14]	---	---	---

# RD52 - RD53

# Gearboxes Series RD

## Dimensions

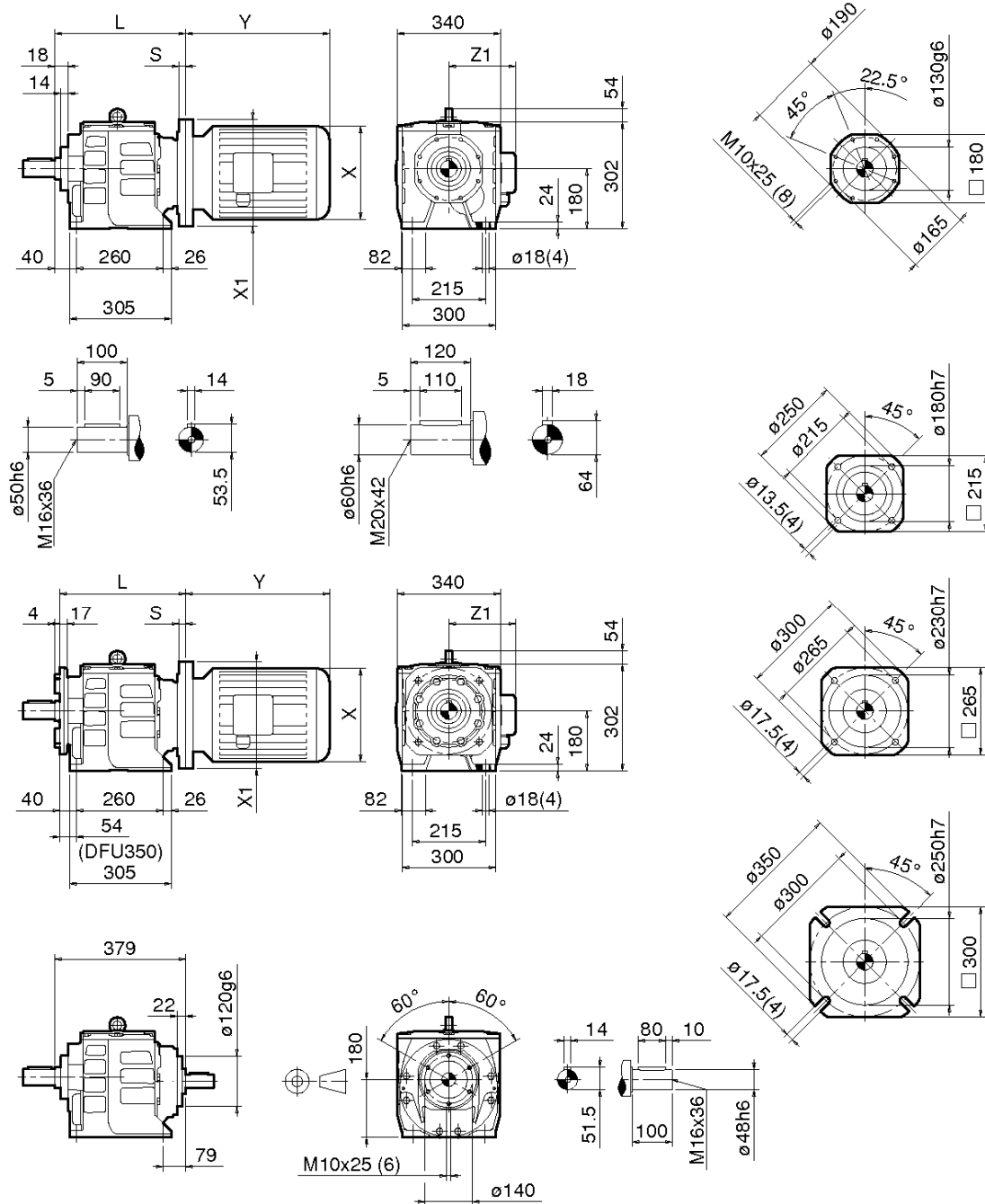


RD	52 / 53	52 / 53	52 / 53	52/53	52/53	52/53	52	52
IEC	80	90 S	90 L	100	112	132 S/M	160	180
X / Y / Z1	159/238/138	176/255/14	176/280/149	195/314/16	219/328/172	258/368[410-M]/192	310/486/2	320/580/24
X1 (B5) / S	200/16	200/16	200/16	250/16	250/16	300/16	350/25	350/25
X1 (B14) / S	---	---	---	---	---	200/16	---	---
L	322	322	322	322	322	322	353	353
L1 / L1	322/336	322/336	322/336	322/336	322/336	322/336	353/367	353/367

# Gearboxes Series RD

# RD62 - RD63

## Dimensions



RD	62 / 63	62 / 63	62 / 63	62 / 63	62 / 63	62 / 63	62	62
IEC	80	90 S	90 L	100	112	132 S/M	160	180
X / Y / Z1	159/238/138	176/255/149	176/280/149	195/314/160	219/328/172	258/368[410-M]/192	310/486/235	320/580/245
X1 (B5) / S	200/16	200/16	200/16	250/16	250/16	300/16	350/25	350/25
X1(B14) / S	---	---	---	---	---	200/16	---	---
L	379	379	379	379	379	379	410	410
L1 / L1(ø350)	379/393	379/393	379/393	379/393	379/393	379/393	410/424	410/424

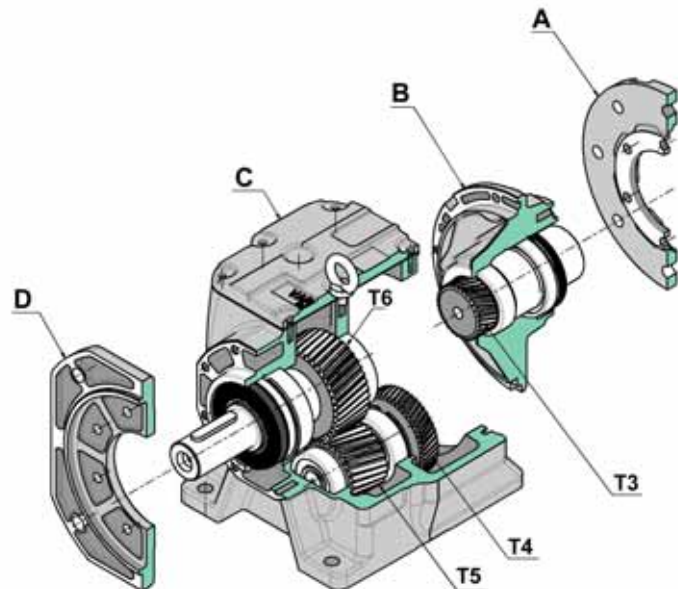


## Gearboxes Series RD

### Component parts

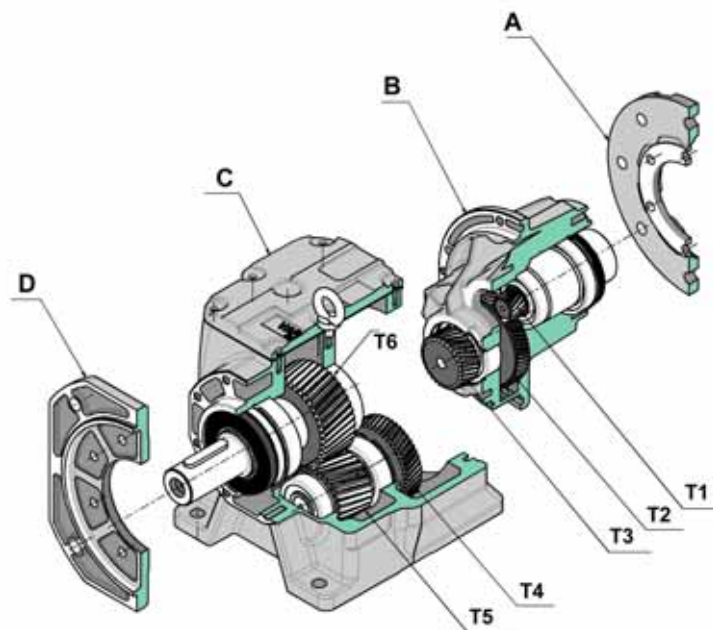
#### TWO GEAR STAGE REDUCER

- A - IEC motor flange
- B - 2-stage input cover  
& T3 pinion
- C - Housing  
& T4, T5, T6 gears
- D - Output flange



#### THREE GEAR STAGE REDUCER

- A - IEC motor flange
- B - 3-stage input cover  
& T1, T2, T3 gears
- C - Housing  
& T4, T5, T6 gears
- D - Output flange



## Gearboxes Series RD

### Abstract of OPERATION AND MAINTENANCE INSTRUCTIONS

(complete manual on [www.varvel.com](http://www.varvel.com))

Variable speed and reduction gearboxes are not part of the field of application of the Machinery Directive, art.1(2), and they must not be put into service until the machinery into which they are to be incorporated, has been declared in conformity with the provision of art. 4(2), annex II(B) of Machinery Directives 98/37/CEE/22.6.98 and for Italy only, of DL 459/24.7.96.

#### Installation

Check if the unit to be installed, is properly selected to perform the required function and that its mounting position complies with the order.

The nameplate reports such information.

Check mounting stability to ensure the unit runs without vibrations or overloads.

#### Running

The unit may be connected for clockwise or counter-clockwise rotation.

The unit must be stopped as soon as defective running or unexpected noise occur, remove the faulty part or return the unit to the factory for checking.

If the faulty part is not replaced, other parts can also be affected, causing more severe damage and making the identification of initial cause more difficult.

#### Maintenance

Although the units are no-load run tested in the factory before despatch, it is recommended not to run them at maximum load for the first 20-30 running hours to allow the proper running in.

The gearboxes are delivered already filled with long-life synthetic oil and, in case of replacement or topping, do not mix with mineral lubricants.

#### Handling

When hoisting, use relevant housing locations or eyebolts if provided, or foot or flange holes.

Never hoist on any moving part.

#### Painting

Carefully protect oil seals, coupling faces and shafts when units are re-painted.

#### Long-term storage

For storage longer than 3 months, apply anti-oxidants onto shafts and machined surfaces, and protective grease on oil seal lips.

#### Product's Environmental Management

In conformity with Environmental Certification ISO 14001, we recommend the following to dispose of our products:

- scraped components of the units to be delivered to authorized centres for metal object collection;
- oils and lubricants drained from the units to be delivered to Exhausted Oil Unions;
- packages (pallets, carton boxes, paper, plastic, etc.) to lead into regeneration/recycling circuits as far as possible, by delivering separate waste classes to authorized companies.



## *A socially responsible company*

*To the scope of intensifying our commitment to society, Varvel since 2004 started an ongoing support programme with three non-profit institutions: UNICEF (United Nations Children's Fund), MSF (Médecins sans Frontières) and ANT (National Cancer Association). Environmental respect and protection are also part of Varvel's values and this is why Varvel certified in 2001 its Environmental System to standard UNI EN ISO 14001.*

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**RN/RO/RV**



**RS/RT**



**RD**



**RG**



**RP**



**VR/VS**



**VARVEL®**  
MOTION CONTROL SINCE 1955

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