

WG20

Gear Units and Geared Motors up to 18000 Nm

TECHNICAL CATALOGUE



Motors | Automation | Energy | Transmission & Distribution | Coatings



WEG Group - Transforming energy into solutions.

WEG is a leading global manufacturer and solutions provider of drive technology, energy production and distribution, and automation systems and switchgear construction. Founded in Brazil in 1961 by three entrepreneurs, WEG has grown to become one of the most important global manufacturers of electric motors. WEG has more than 37,000 employees around the world. The annual turnover of around 3 billion euro reflects its increasing success. The company's global presence is supported by branches in 39 countries, production facilities, and a network of authorised dealers on all five continents.

Your requirements - our expertise

As one of the leading global manufacturers and solutions providers of drive technology, WEG's aim was to expand its extensive range of products by gear units produced in its own facilities. Perfect coordination of products throughout the drive train has put WEG in a position to offer customers even more superior and efficient solutions.

Under the leadership of Watt Drive, the challenge was to develop a program which not only meets the current demands of the market, but also satisfied WEG's high quality requirements. The Group's own centre of excellence for geared motors in Austria, part of the WEG Group since 2011, can draw on more than 40 years of experience in development, production and sales of gear units and geared motors.

In order to satisfy the requirements of state-of-the-art geared motors the following market requirements were taken into account during the development phase:

Standard mounting dimensions

For users, the aim was to make the new range of geared motors as easy and effortless to use as possible. To ensure installation in an existing system or production line worked effortlessly without incurring unnecessary costs for conversions, the developers decided to adapt the

mounting dimensions of the new gear units to products already established on the market. The objective: worldwide, easy and cost-effective interchangeability.

Torque transmission

The gear units needed to be compact, efficient, robust and reliable. In order to achieve this goal a transmission had to be designed which allows large ratio ranges in a two-stage model while being able to integrate easily into the new design gear housing.

Efficiency

Energy efficiency has always been of paramount importance to WEG. The aim here was to live up to this demand when designing the new WG20 geared motors. This requires the perfect interaction of sophisticated technology and exclusive use of high quality components.

Worldwide use

To meet the requirements of global mechanical and plant engineering, it was vital that the new geared motors can be used worldwide, whilst maintaining a high level of flexibility for applications.

The solution is **WG20**.





www.cat4cad.com

Easy product selection

The “cat4CAD®” product configuration tool makes it easy to interactively select products. Comprehensive wizards, user-friendly navigation and many other extra features allow quick configuration of the required drive.

Advantages

- Extensive product library
- Fast configuration of motors and geared motors
- Creation of project files with comprehensive technical documentation
- Easy modification of generated product data by means of the project file
- Quick request times

Features

- The entire menu is available in many languages.
- To-scale 2D/3D drawings and PDF and DXF dimension sheet drawings of the previously selected drive.
- The 2D/3D data can be exported for use in standard CAD programs.
- Comprehensive technical data sheets of the configured gear unit and motor at the click of a button.
- The project file allows complete management of previously selected drives on one screen.
At the click of a button one can save or print this project file, create PDF and DXF dimension drawings, and send enquiries directly to our sales team.

Online version available at www.cat4cad.com

Offline version for download at www.wattdrive.com



WG20 - Gear units and Geared motors up to 18000 Nm

WG20 is the first geared motor range to be completely developed in-house at WEG. It comprises helical, parallel shaft and helical bevel gear units with torques between 50 and 18000 Nm. Already the two-stage units excel with their large ratio range, as well as being exceptionally efficient thanks to the sophisticated design. The light aluminium housings of the gear units up to 600 Nm and the robust cast iron housings from 800 Nm provide a highly versatile and reliable product, with a wide range of possible applications.

C

Helical gear units

Nominal torque: 50 - 18000 Nm

Power range: 0.12 - 75 kW

Ratio range: 2.44 - 22,405.25

**F**

Parallel shaft gear units

Nominal torque: 130 - 18000 Nm

Power range: 0.12 - 75 kW

Ratio range: 3.85 - 24,805.81

**K**

Helical bevel gear units

Nominal torque: 110 - 18000 Nm

Power range: 0.12 - 75 kW

Ratio range: 3.82 - 14,005.40



Table of Contents



i

Drive calculation	8
1. Drive power	8
2. Load types	10
3. Service factor.....	10
Thermal power limit	11
Input types	12
1. IEC Adapter I	12
2. NEMA Adapter N.....	13
3. SERVO Adapter S.....	13
4. Input Unit U	13
Explosion-proof gear units and geared motors.....	15
Table of lubricants.....	16
Lubricant expansion unit.....	17
Painting	17
Degrees of protection	18
Helical gear units and Helical geared motors C	19
Technical Data	20
General information	20
1. Nameplate.....	20
2. Type code.....	21
3. Range.....	22
4. Design	22
5. Venting the gear unit	22
6. Overhung and axial loads.....	22
7. Mounting positions, Position of the terminal box and Cable entry.....	24
Selection tables - Geared motors	29
Selection tables - Gear units.....	99
Dimension sheets Geared Motors.....	135
Dimension sheets Input types.....	173
Parallel shaft gear units and Parallel shaft geared motors F	179
Technical Data	180
General information	180
1. Nameplate.....	180
2. Type code.....	181
3. Range.....	182
4. Design	182
5. Venting the gear unit	182
6. Overhung and axial loads.....	182
7. Mounting positions, Position of the terminal box and Cable entry.....	184
Selection tables - Geared motors	187
Selection tables - Gear units.....	253
Dimension sheets Geared Motors.....	287
Dimension sheets Input types.....	323
Helical bevel gear units and Helical bevel geared motors K	329
Technical data	330
General information	330
1. Nameplate.....	330
2. Type code.....	331
3. Range.....	332
4. Design	332
5. Venting the gear unit	332

6. Overhung and axial loads.....	332
7. Mounting positions, Position of the terminal box and Cable entry.....	334
Selection tables - Geared motors	337
Selection tables - Gear units.....	397
Dimension sheets Geared Motors.....	431
Dimension sheets Input types.....	467
Modular System Motor	473
The modular motor system.....	475
The modular system motor.....	476
Type code.....	477
Options	478
1. Basic execution	478
2. Electrical options	478
3. Mechanical options.....	478
4. Options - motor modules.....	479
5. Additional options	479
General information	480
1. Nameplate.....	481
2. Voltage and frequency fluctuations.....	481
3. Modes of operation.....	482
4. Rated power according to VDE 0530-1	482
5. Power correction factors.....	483
6. Torque	483
7. Efficiency class	483
8. Motor protection	483
9. Overload protection (protection relay).....	483
10. Speed and rotation direction.....	483
11. Cable entry.....	483
12. Motors for the Ex area according to Directive 2014/34/EU.....	484
13. Cooling	484
14. Insulation	484
15. Noise levels	484
16. Balancing of rotors.....	484
17. Shaft ends	484
18. Voltage, current and frequency	484
19. Electrical connection.....	485
20. Variable speed drive application	486
Electrical basic data.....	487
Dimension sheets	496
Motor modules	501
High / Low temperature execution.....	501
Temperature control	501
Anti-condensation heating.....	501
Climatic protection	502
Drain	502
Terminal box designs.....	502
Brake system and Back stop	505
Encoder systems	516
Ventilation systems.....	519
Additional modules.....	521
Standards.....	522

Disclaimer

This catalogue contains information (descriptions and characteristics), which do not always apply as described in case of actual use. Data can also change due to product development. Characteristics are only binding if explicitly agreed to in the contract. Delivery opportunities and technical modifications subject to change without notice.

Drive calculation

1. Drive power

The required total power is divided into static and dynamic components. The static power is the component at constant speed (friction and lifting force). The dynamic component is the power for accelerating and decelerating of masses.

The selected rated motor power (P_N) must be bigger than the required static drive power. The required total power can be bigger than the rated motor power but it must be smaller than the maximum motor power.

	Formula	Unit
Output speed of the gear unit	$n_2 = \frac{v \cdot 30}{\pi \cdot r}$	[min ⁻¹]

Static drive power		
Linear movement Horizontal movement (conveyor, travel drive)	$P_{\text{stat}} = \frac{m \cdot g \cdot \mu \cdot v}{1000 \cdot \eta}$	[kW]
Inclined movement (inclined conveyor, travel drive with inclination)	$P_{\text{stat}} = \frac{m \cdot g \cdot v \cdot (\sin\alpha + \mu \cdot \cos\alpha)}{1000 \cdot \eta}$	[kW]
Vertical movement (lifting drive, hoist, bucket elevator)	$P_{\text{stat}} = \frac{m \cdot g \cdot v}{1000 \cdot \eta}$	[kW]
Static output torque	$M_{2\text{stat}} = \frac{P_{\text{stat}} \cdot 9550}{n_2}$	[Nm]

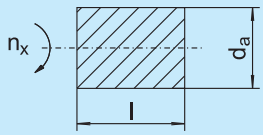
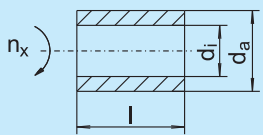
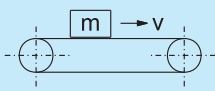
Dynamic drive power (acceleration/deceleration power)		
Horizontal movement	$P_{\text{dyn,A,(B)}} = \frac{m \cdot v^2}{1000 \cdot t_{A,(B)} \cdot \eta}$	[kW]
Rotary motion	$P_{\text{dyn,A,(B)}} = \frac{\Sigma J_{\text{red.}} \cdot n_1^2}{9,12 \cdot 10^4 \cdot t_{A,(B)} \cdot \eta}$	[kW]
Starting resp. braking time	$t_{A,(B)} = \frac{\Sigma J_{\text{red.}} \cdot n_1}{9,55 \cdot (M_{A,(B)} \pm M_L)}$	[s]
Minimum starting time against slipping	$t_{A\text{min}} = \frac{v}{\mu_0 \cdot g}$	[s]
Load torque of motor	$M_L = \frac{M_{2\text{stat}}}{i}$	[Nm]
Starting power	$P_A = P_{\text{dyn,A}} + P_{\text{stat}}$	[kW]
Braking power	$P_B = P_{\text{dyn,B}} \pm P_{\text{stat}}$	[kW]
Starting / braking torque	$M_{2,A,(B)} = \frac{P_{A,(B)} \cdot 9550}{n_2}$	[Nm]

+ M_L for braking when the load acts braking (e.g. lifts when going up)

- M_L for starting or for braking when the load acts accelerative (e.g. lifts when going down)

Mass moments of inertia

External load moments of inertia have to be reduced onto the motor shaft by squared ratios.

Reduced mass moment of inertia	$J_{ex.red.} = \frac{J_{ex}}{i^2}$	[kgm ²]
Solid cylinder 	$J_{ex.red.} = 98,2 \cdot \rho \cdot l \cdot d_a^4 \cdot \left(\frac{n_x}{n_1}\right)^2$	[kgm ²]
Hollow cylinder 	$J_{ex.red.} = 98,2 \cdot \rho \cdot l \cdot (d_a^4 - d_i^4) \cdot \left(\frac{n_x}{n_1}\right)^2$	[kgm ²]
Linear movement 	$J_{ex.red.} = 91,2 \cdot m \cdot \left(\frac{v}{n_1}\right)^2$	[kgm ²]

Approximate values for friction coefficients:

Rolling friction: $\mu_r = 0.005 - 0.02$ steel/steel
 $\mu_r = 0.02 - 0.06$ plastic/steel
 $\mu_r = 0.06 - 0.2$ rubber/steel

Friction coefficient for conveyors:
 $\mu_r = 0.13$ 10 m conveyor length
 $\mu_r = 0.08$ 25 m conveyor length
 $\mu_r = 0.06$ 50 m conveyor length
 $\mu_r = 0.05$ 100 m conveyor length

Static friction: $\mu_0 = 0.15$ steel/steel

Designation	Unit	Description
d_a	[m]	Outside diameter
d_i	[m]	Inside diameter
f_B		Service factor
F_I		Inertial factor
g	[m/s ²]	Acceleration due to gravity
i		Gear ratio
$J_{ex.red.}$	[kgm ²]	All external mass moments of inertia corrected to motor input
J_{ex}	[kgm ²]	All external mass moments of inertia
J_{mot}	[kgm ²]	Mass moment of inertia of the motor
$\Sigma J_{red.}$	[kgm ²]	Sum of all $J_{red.}$ values
l	[m]	Length
m	[kg]	Mass
$M_{2,A}$	[Nm]	Output torque of gear unit for starting
$M_{2,B}$	[Nm]	Output torque of gear unit for braking
M_{2Nenn}	[Nm]	Permissible output torque
M_{2stat}	[Nm]	Static output torque
M_A	[Nm]	Starting torque of the motor (see motor electric data sheets from page 487)
M_B	[Nm]	Brake torque

Designation	Unit	Description
M_L	[Nm]	Load torque of motor
n_1	[min ⁻¹]	Input speed (motor speed)
n_2	[min ⁻¹]	Output speed (gear unit)
n_x	[min ⁻¹]	Speed of calculated components
P_A	[kW]	Power of gear unit at start
P_B	[kW]	Power of gear unit at stop
P_{stat}	[kW]	Static power
$P_{dyn,A}$	[kW]	Dynamic acceleration power
$P_{dyn,B}$	[kW]	Dynamic deceleration power
r	[m]	Sprocket / roller radius
t_{Amin}	[s]	Minimum starting time with risk of slip
t_A	[s]	Starting time
t_B	[s]	Braking time
v	[m/s]	Linear velocity
α	[°]	Angle of inclination
η		Efficiency of the gear unit, system
μ		Coefficient of friction
μ_0		Coefficient of static friction
μ_r		Coefficient of rolling friction
ρ	[kg/dm ³]	Density (steel=7.85 kg/dm ³)

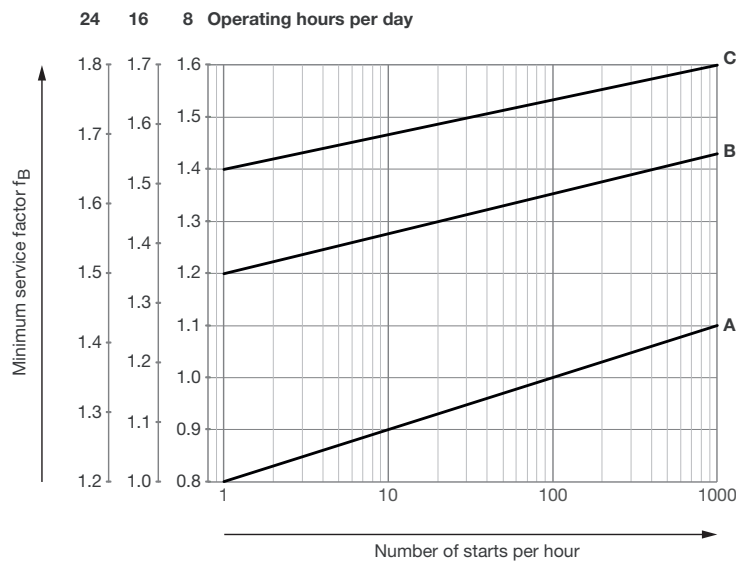
2. Load types

Load type A	Load type B	Load type C
Uniform load, small masses to be accelerated, no shocks	Non-uniform load, medium masses to be accelerated, medium shocks	Extremely rough conditions, high masses to be accelerated, heavy shocks and alternating load
Examples: Continuous conveyor for bulk goods, light conveyors, blowers, centrifugal pumps, light elevators, screw conveyors, fluid agitators	Examples: Bucket conveyors, rotary furnaces, printing and dyeing machines, conveyor drums, centrifugal pumps and semi-fluid good agitators, wood working machines, elevators, screw conveyors, concrete mixers	Examples: Ramming machines, calenders, duty rolling mills, presses, heavy mixer, stone crushers, shredders, heavy winches and lifts

3. Service factor

The gear unit required can be selected from the following tables showing the power, torque and output speed options. All our gear units are adequately dimensioned for long-life industrial applications and are designed for continuous loading under uniform operating conditions with small masses to be accelerated. Operating times of 8-10 hours a day are considered standard. No drive can be built to withstand all possible conditions, therefore the load conditions at the site have to be determined accurately and the proper load type identified. After determining the daily operating hours, selecting the type and establishing the number of starts (c/h), see the following diagram to find out the necessary service factor f_B . The inertial factor F_I assists in evaluating and attributing the masses to be accelerated. The service factor given in the tables indicates the reserve load in the rated torque for the specific gear unit.

In the tables you can usually choose between two types of gear units with the same or similar speeds, but different service factors. When you select the correct gear unit, the f_B from the diagram below should always be less than or equal to the available f_B (from the selection tables) for the chosen type. For short time operation, you can sometimes select a smaller gear unit, while for peak operation, a large number of starts or 24-hour continuous operation, a larger type is necessary. The output speed figures shown in the selection tables have been rounded up or rounded off. They may however vary due to the motor size and are valid for nominal load. Deviations of +/- 3 % are permissible.



	Formula	Unit
Service factor	$f_B = \frac{M_{2Nenn}}{M_{2stat}}$	
Inertial factor	$F_I = \frac{\sum J_{ex,red} + J_{mot}}{J_{mot}}$	[min ⁻¹]

Modes of operation DIN EN 60034-1 see page 482.

Legend see page 9.

Thermal power limit

The thermal power limit P_t must always be taken into account when designing a drive. It represents the maximum input power which can be transmitted by the gear unit at the given ambient temperature in a continuous operation mode (S1).

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20°C. Thermal power limits for other temperatures can be seen in the table below.

Parameters to be considered:

- Higher / lower temperatures
- Vertical mounting positions (M2 or M4)
- Higher speed (> 1800 min⁻¹) due to e.g. use of frequency inverter
- Small ratios
- Little mounting space

For such conditions we recommend consulting WEG. The geared motors can be adapted according to customer requirements by using e.g. lubricant expansion, optimised oil quantities, synthetic oils or Viton seal rings.

Gear unit size	Ambient temperature								
	-20 °C	-10 °C	0 °C	+10 °C	+20 °C	+30 °C	+40 °C	+50 °C	+60 °C
C002	2.5	2.1	1.8	1.5	1.2	1.0	0.7	0.5	0.3
C012	5.0	4.3	3.6	3.0	2.5	2.0	1.5	1.1	0.7
C032	10	8.7	7.4	6.2	5.0	4.0	3.0	2.1	1.3
C033	6.1	5.2	4.5	3.7	3.0	2.4	1.8	1.3	0.8
C052	19	16	14	12	9.5	7.5	5.7	4.0	2.5
C053	11	9.8	8.4	7.0	5.7	4.5	3.4	2.4	1.5
C062	26	22	19	16	13	10	7.8	5.5	3.5
C063	16	14	11	9.6	7.8	6.2	4.7	3.3	2.1
C072	34	29	25	21	17	13	10	7.2	4.5
C073	20	17	15	12	10	8.1	6.1	4.3	2.7
C082	58	50	42	35	29	23	17	12	7.7
C083	35	30	26	21	17	14	11	7.4	4.7
C092	82	71	60	50	41	32	25	17	11
C093	49	43	36	30	25	20	15	11	6.6
C094	34	29	25	21	17	13	10	7.2	4.5
C102	103	89	75	63	51	41	31	22	14
C103	62	54	46	38	31	25	19	13	8.3
C104	42	36	31	26	21	17	13	9	5.6
C132	142	123	105	87	71	57	43	30	19
C133	86	74	63	53	43	34	26	18	12
C134	58	50	43	36	29	23	18	12	7.8
C142	191	165	140	117	96	76	57	41	26
C143	115	99	85	71	58	46	35	25	15
C144	78	68	57	48	39	31	24	17	11
C162	271	234	199	167	136	108	82	58	36
C163	164	141	120	101	82	65	49	35	22
C164	111	96	82	68	56	44	34	24	15
C165	81	70	59	50	41	32	24	17	11
F022	8.4	7.2	6.1	5.1	4.2	3.3	2.5	1.8	1.1
F032	11	9.7	8.3	6.9	5.7	4.5	3.4	2.4	1.5
F042	18	15	13	11	8.9	7.1	5.4	3.8	2.4
F043	11	9.3	7.9	6.6	5.4	4.3	3.2	2.3	1.4
F052	24	21	18	15	12	9.7	7.3	5.2	3.3
F053	15	13	11	9.0	7.4	5.8	4.4	3.1	2.0
F062	31	27	23	19	15	12	9.3	6.6	4.1
F063	19	16	14	11	9.3	7.4	5.6	4.0	2.5
F072	51	44	37	31	25	20	15	11	6.8
F073	31	26	23	19	15	12	9.2	6.6	4.1
F082	73	63	54	45	37	29	22	16	9.8
F083	44	38	32	27	22	18	13	9.4	5.9
F084	30	26	22	18	15	12	9	6.4	4.0
F092	107	92	78	65	53	42	32	23	14

F093	64	56	47	40	32	26	19	14	8.6
F094	44	38	32	27	22	17	13	9	5.9
F102	157	136	115	96	79	62	47	34	21
F103	95	82	70	58	48	38	29	20	13
F104	64	56	47	40	32	26	19	14	9
F122	220	190	162	135	110	87	66	47	30
F123	133	115	98	82	67	53	40	28	18
F124	90	78	66	55	45	36	27	19	12
F152	337	291	247	207	169	134	101	72	45
F153	203	176	149	125	102	81	61	43	27
F154	138	119	101	85	69	55	42	30	19
F155	100	87	74	62	50	40	30	21	13

Gear unit size	Ambient temperature								
	-20 °C	-10 °C	0 °C	+10 °C	+20 °C	+30 °C	+40 °C	+50 °C	+60 °C
K022	10	8.8	7.4	6.2	5.1	4.0	3.1	2.2	1.4
K033	10	8.6	7.3	6.1	5.0	4.0	3.0	2.1	1.3
K043	16	14	12	9.8	8.0	6.3	4.8	3.4	2.1
K053	21	18	15	13	10	8.3	6.3	4.5	2.8
K063	23	20	17	14	12	9.3	7.0	5.0	3.1
K073	37	32	27	23	19	15	11	8.0	5.0
K083	44	38	32	27	22	17	13	9.4	5.9
K084	30	26	22	18	15	12	9.0	6.4	4.0
K093	62	54	46	38	31	25	19	13	8.3
K094	42	36	31	26	21	17	13	9.0	5.7
K103	95	82	69	58	47	38	29	20	13
K104	64	55	47	39	32	26	19	14	8.6
K123	131	113	96	80	66	52	39	28	18
K124	89	77	65	55	45	35	27	19	12
K153	185	160	136	114	93	74	56	40	25
K154	126	109	92	77	63	50	38	27	17
K155	91	79	67	56	46	36	28	20	12

Thermal power limit P_t [kW]

Input types

1. IEC Adapter I

Standard motors complying with DIN EN 50347 IM B5 can be mounted on WG20 gear units with IEC adapters. The adapters are oil-tight. The motors are attached using different couplings, depending on the adapter size:

- **I63 to I100: Plug-in adapter**

The connecting coupling is one part; the motor shaft is inserted directly into the coupling shaft. Before mounting, the motor shaft is to be cleaned and coated with lubricating paste (e.g. Klüberpaste 46 MR 401).

This makes it easier to disassemble the shaft when servicing is required and protects the connection against frictional corrosion.

- **I112 to I132: Curved teeth coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of the internally toothed coupling sleeve.

- **I160 to I280: Claw coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of a flexible coupling star.



Plug-in adapter



Adapter with coupling

Complete drive systems with WEG IEC motors:

By mounting, for example, WEG W22 IEC motors or WEG roller table motors, complete packages can be supplied for a wide range of applications.

2. NEMA Adapter N

Standard motors complying with NEMA C-face standard can be mounted on WG20 gear units with NEMA adapters. The adapters are oil-tight. The motors are attached using different couplings, depending on the adapter size:

- **N56 to N182: Plug-in adapter**

The connecting coupling is one part; the motor shaft is inserted directly into the coupling shaft. Before mounting, the motor shaft is to be cleaned and coated with lubricating paste (e.g. Klüberpaste 46 MR 401).

This makes it easier to disassemble the shaft when servicing is required and protects the connection against frictional corrosion.

- **N184 to N215: Curved teeth coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of the internally toothed coupling sleeve.

- **N254 to N364: Claw coupling**

The connecting coupling comprises two parts; a coupling hub is mounted on the motor shaft and fixed using a threaded pin. Power is transmitted by means of a flexible coupling star.

Complete drive systems with WEG NEMA motors:

By mounting, for example, WEG W22 NEMA motors, complete packages can be supplied for a wide range of applications.

It is recommended that the motors are sealed with a sealant (e.g. Loctite 510) when IEC and NEMA adapters are mounted to the flange to prevent water or dust ingress. Use screws of strength class 8.8 (or higher) to fasten the motors to the flanges. Observe the corresponding tightening torques according to the mounting Instruction.



Plug-in adapter



Adapter with coupling

3. SERVO Adapter S

WG20 gear units with SERVO adapters can be fitted with servomotors from different manufacturers. The adapters are oil-tight, and the motors are mounted using flexible servo couplings. The backlash-free connection between the motor shaft and the adapter shaft is made by means of a clamp connection.

Both servo motors with smooth shaft and servo motors with feather key can be mounted. The mounting clearance between the motor shaft and coupling is reduced to 0 by means of a clamp ring.

- **S92 to S190: Servo coupling**



Servo coupling

4. Input Unit U

Gear unit versions with input unit enable the WG20 gear units to be operated by attaching drive elements such as couplings or belt drives. Permissible shear forces or thermal power limits must be checked accordingly.

- **Input unit sizes: U2, U3, U5, U6, U7**



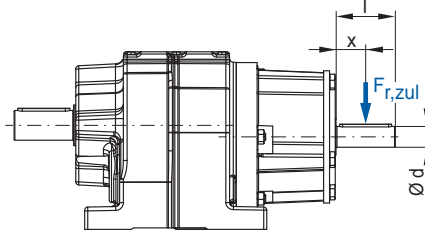
Input unit U2 and U3



Input unit U5 to U7

Size	U2	U3	U5			U6	U7
Input shaft [mm]	19x40	24x50	28x60	38x80	42x110	48x110	55x110

The shear forces given in the following table (Permissible shear forces - Input unit on page 14) apply to input units with force applied to the shaft centre $x = l/2$. When determining the permissible shear forces, the unfavourable rotating direction and the most unfavourable force direction is assumed, as well as an input speed $n_1 = 1400 \text{ min}^{-1}$ at a given rated power P_N . The calculation was made with a standard shaft and standard bearing. For exact determination of the permissible shear force $F_{r,zul}$, the direction of force and the rotating direction must be specified.



Input shaft unit [mm]	M _{max} [Nm] at F _r = 0		Nominal power P _N [kW]												
	Ø d	l	0.12	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	
U2	19	40	18	2600	2500	2400	2300	2000	1800	1600	1300	700	-	-	-
U3	24	50	100	5000	5000	5000	5000	5000	5000	4600	4200	3400	2500	2200	1700
U5	28	60	100	6500	6500	6500	6500	6500	6500	6500	6400	6400	6400	6300	6300
	38	80	170	11000	11000	11000	11000	11000	11000	11000	11000	10500	10500	10000	9500
	42	110	240	11000	11000	11000	11000	11000	11000	11000	11000	10500	10500	10000	9500
U6	48	110	490	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	14500	14500
U7	55	110	970	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000

Input shaft unit [mm]	M _{max} [Nm] at F _r = 0		Nominal power P _N [kW]											
	Ø d	l	7.5	9.2	11	15	18.5	22	30	37	45	55	75	
U2	19	40	18	-	-	-	-	-	-	-	-	-	-	-
U3	24	50	100	1000	500	-	-	-	-	-	-	-	-	-
U5	28	60	100	6200	6100	6000	-	-	-	-	-	-	-	-
	38	80	170	9000	8000	7500	6000	4500	-	-	-	-	-	-
	42	110	240	9000	8000	7500	6000	4500	3000	-	-	-	-	-
U6	48	110	490	14000	13500	13000	11500	10500	9500	7500	5500	3000	-	-
U7	55	110	970	25000	25000	25000	25000	25000	25000	25000	25000	24000	23000	21000

Permissible shear force - Input unit $F_{r,zul}$ at $x = l/2$

Explosion-proof gear units and geared motors

WG20 type series gear units meet the requirements of Directive 2014/34/EU on equipment for use in potentially hazardous areas. Both gear units and geared motors can be used.



WG20 geared motor for application in zones 2 + 22



WG20 geared motor for application in zones 1 + 21

General information

The operation of systems requires special measures in areas with explosive air/gas mixtures or air/dust mixtures. The Directive governs the possible uses of equipment within the existing danger zones, whereby both electrical and mechanical equipment, such as gear units, must meet the minimum requirements specified in the standard.

Zoning

Zoning takes into account whether the Ex atmosphere is a mixture of air with gas or with dust.

Relevant areas

- **Category 2G/2D and EPL Gb/Db units**

are intended for use in areas in which there is *occasionally* an explosive atmosphere. They are permitted for use in zone 1 (category 2G) and zone 21 (category 2D), and zone 2 (3G) and 22 (3D).

- **Category 3G/3D and EPL Gc/Dc units**

are intended for use in areas in which an explosive atmosphere caused by gases, vapours, mists or suspended dust is unlikely to occur. However, if this does occur, it will occur only *rarely or for a short period of time*. These units are permitted for use in zone 2 (category 3G) or zone 22 (category 3D).

Marking according to standards

Category	Equipment group I		Equipment group II					
	Mines		Other areas with dust or gas explosive atmosphere					
	M1	M2	1		2		3	
Presence of explosive atmospheres			continuous, frequent or for long periods		likely in normal operation		not likely in normal operation, only for short period of time	
Surrounding atmosphere			G	D	G	D	G	D
Zone			0	20	1	21	2	22
Equipment Protection Level	Ma	Mb	Ga	Da	Gb	Db	Gc	Dc
Type of protection (not electric)					h (c, k)	h (c, k)	h (c, k)	h (c, k)
Type of protection (electric)					d, eb	tb	ec	tc
Ex-marking gear unit					II 2G Ex h IIC T4 Gb	II 2D Ex h IIIC T125°C Db	II 3G Ex h IIC T4 Gc	II 3D Ex h IIIC T125°C Dc
Ex-marking motor					II 2G Ex d IIC T4 Gb	II 2D Ex tb IIIC T125 °C Db	II 3G Ex ec IIC T3 Gc	II 3D Ex tc IIIC T125°C Dc

Possible range of application for WG20 products

Types of ignition protection used

The ignition of an explosive mixture in the classified zones is to be prevented by the various types of ignition protection used for the equipment.

- **Types of ignition protection for non-electrical equipment: according to EN ISO 80079-36 and -37**

„c“: Protection by means of structural safety

„k“: Protection by means of fluid coupling

- **Types of ignition protection for electrical equipment: according to EN ISO 60079-07 and -31**

„ec“ and „eb“: Protection by means of increased safety

„tc“ and „tb“: Protection by means of housing

„d“: flameproof enclosure

Applicable explosive atmospheres

For the types of ignition protection used, parts which can be exposed to an explosive atmosphere without restriction must not reach excessively high temperatures.

Temperature classes for gas explosion protection (G)

Flammable gases and vapours are divided into temperature classes according to their flammability. The influence of ambient temperature and self-heating of the equipment must also be taken into account.

The maximum surface temperature of the equipment may only assume values that correspond to the temperature class for gases. In fact, the ignition temperature represents the lowest temperature value at which a hot surface can ignite the corresponding explosive atmosphere.

In addition, gases and vapours are classified in explosion groups IIA, IIB and IIC. The hazardousness of gases increases from explosion group IIA to IIC.

WG20 geared motors can be used in temperature class T3 (max. surface temperature 200 °C).

WG20 gear units with input types can be used in temperature class T4 (max. surface temperature 135 °C).

Temperature class	T1	T2	T3	T4	T5	T6
Max. permissible surface temperature	450 °C	300 °C	200 °C	135 °C	100 °C	85 °C

Possible range of application for WG20 products

Surface temperature for dust explosion protection (D)

Dusts are not divided into temperature classes, but the value of the minimum ignition temperature is specified.

WG20 gear units and geared motors are classified with a max. surface temperature of 125 °C.

Dust group	Description	Degree of protection	
		tb	tc
IIIA	Combustible flyings	IP5X	IP5X
IIIB	Non-conductive dust	IP6X	IP5X
IIC	Conductive dust	IP6X	IP6X

Necessary degree of protection for dust explosive atmospheres

Table of lubricants

Recommended ambient temperatures	-10 °C ... +60 °C	-20 °C ... +80 °C	-25 °C ... +60 °C	-40 °C ... +80 °C	-20 °C ... +40 °C
DIN (ISO)	CLP (mineral oil) ¹⁾	CLP PG (polyglycol oil)	CLP PG (polyglycol oil)	CLP-HC (polyalphaolefin oil) ²⁾	food grade
ISO VG	220	460	220	220	220
ARAL	Degol BG 220	Degol GS 460	Degol GS 220	Degol PAS 220	-
BP	Energol GR-XP 220	Energol SG-XP 460	Energol SG-XP 220	Energol HTX 220	-
Castrol	Alpha SP 220	Alphasyn PG 460	Alphasyn PG 220	Alphasyn HTX 220	Optileb GT 220
Klüber	Klüberoil GEM 1-220 N	Klübersynth GH 6-460	Klübersynth GH 6-220	Klübersynth GEM 4-220 N	Klüberoil 4UH1 220 N
Mobil	Mobilgear 600 XP 220	Glygoyle 460	Glygoyle 220	SHC 630	SHC Cibus 220
Shell	Omala S2 G 220	Omala S4 WE 460	Omala S4 WE 220	Omala S4 GX 220	-
Addinol	Gear Oil 220 F	Poly Gear PG 460	Poly Gear PG 220	Eco Gear 220 S	Ecoleb 220 FG

1) standard lubricant acc. to DIN 51517 part 3 - CLP ISO VG 220

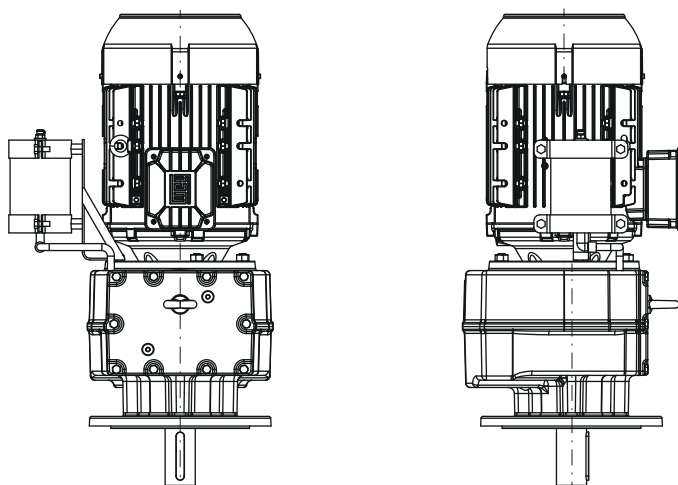
2) note critical starting behaviour at low temperatures

Lubricant expansion unit

For gear units and geared motors in M4 design, high oil levels are required for lubrication of the first gear stage. To prevent oil leaking from the gear unit during operation, expansion units are to be used at reductions $i < 20$ or at higher motor speeds (e.g. frequency drives operation $> 2000 \text{ min}^{-1}$).

The use of lubricant expansion units is recommended for gear unit sizes from C07 (helical gear unit), F06 (parallel shaft gear unit) and K06 (helical bevel gear unit) and for the conditions described above.

Example: CF082-11P-132S-04E-TH-TF



Painting

Standard colour geared motors: RAL 7011 (RAL 5009, RAL 9005 without additional costs)

In addition to the standard high-grade polyurethane-based surface finish other special finishes for applications that are subject to specific environmental conditions are offered. Paintwork is basically categorised according to the composition of the applied surface finish. The standard program contains 6 painting systems categorised from LA0 to LC5. Special colours are possible.

Painting system	Application	Layering	NDFT Nominal dry film thickness	Temperature range	Corrosion category DIN EN ISO 12944-5
not painted					
LA0	Primer	Dip primer Base coat (2 pack PUR)		-40 °C - +120 °C	
LC1 (Standard)	Indoor installation, neutral atmosphere	Dip primer Varnish (1K-AY-PUR*) or (2 pack PUR**)	40 µm	-40 °C - +120 °C	C1
LC2	Protected outdoor installation, neutral atmosphere	Dip primer 2x Varnish (2 pack PUR)	140 µm	-40 °C - +120 °C	C2
LC3	Outdoor installation, industrial atmosphere	Dip primer Base coat (2 pack PUR) Varnish (2 pack PUR)	160 µm	-40 °C - +120 °C	C3
LC4	Outdoor installation, aggressive atmosphere	Dip primer Base coat (2 pack EP) Intermediate base coat (2 pack PUR) Varnish (2 pack PUR)	240 µm	-40 °C - +120 °C	C4
LC5	Coast or offshore, very aggressive atmosphere, under water	Dip primer Base coat (2 pack EP) Intermediate base coat (2 pack PUR) 2x Varnish (2 pack PUR)	320 µm	-40 °C - +120 °C	C5

*) Colours RAL 7011, RAL 5009, RAL 9005, RAL 9007

**) All other colours

Degrees of protection

Degree of protection according to DIN EN 60034-5.

The designation to indicate the degrees of protection consists of the characteristic letters IP followed by two numerals.

Code figure 1: degree of protection against contact with live or moving parts and against ingress of solid foreign objects

Code figure 2: degree of protection against harm for ingress of water

Code figure 1	
	Description
0	No protection
1	Protected against solid foreign objects of 50 mm diameter and larger: the probe (50 mm ball) may not fully penetrate.
2	Protected against solid foreign objects of 12.5 mm diameter and larger: the probe (ball 12.5 mm) shall not fully penetrate.
3	Protected against solid foreign objects of 2.5 mm diameter: the probe (ball 2.5 mm) must not penetrate at all.
4	Protected against solid foreign objects of 1 mm and larger: the probe (1 mm ball) must not penetrate at all.
5	Dust protected: ingress of dust is not totally prevented, but dust shall not penetrate in a quantity that the operation of the device is affected or to impair safety.
6	Dustproof: no ingress of dust at underpressure of 20 mbar in the housing

Code figure 2	
	Description
0	No protection
1	Protected against dripping water: vertically falling drops may not have any harmful effects.
2	Protected against dripping water when the housing is inclined up to 15°: vertically falling drops may not have any harmful effects when the housing is inclined up to 15° from the vertical.
3	Protected against water spray: water sprayed at an angle up to 60° on both sides of the vertical may not have any harmful effects.
4	Protected against splash water: water splashed against the housing from any direction may not have any harmful effects.
5	Protected against water jets: water that is from any direction in jets against the housing may not have any harmful effects.
6	Protected against strong water jets: water that is from any direction in powerful jets against the housing may not have any harmful effects.
7	Protected against the effects of temporary (1m for 30 min) immersion in water: water must not enter in quantities causing harmful effects, if the housing is under standardised conditions of pressure and time temporarily submerged in water.
8	Protected against the effects of continuous immersion in water: water must not enter in quantities causing harmful effects when the enclosure is permanently submerged in water under conditions to be agreed between manufacturer and user. The conditions must be more stringent than for index 7.

Degree of protection:

Modular system motor: IP55 (standard) to IP67

Brake: IP55 (standard) to IP66

Gear unit: IP65 (standard) to IP68



Helical gear units and Helical geared motors C

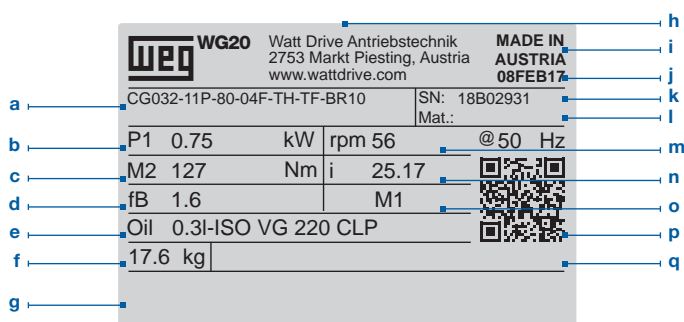


Technical Data

Size	C00	C01	C03	C05	C06	C07	C08	C09	C10	C13	C14	C16
Power [kW]	0.12 - 0.75	0.12 - 1.5	0.12 - 3 kW	0.12 - 7.5	0.12 - 9.2	0.12 - 15	0.18 - 22	0.55 - 30	1.1 - 30	4 - 55	4 - 55	11 - 75
Torque [Nm]	50	85	200	400	600	820	1550	3000	4500	8000	13000	18000
Ratio	2.44 47.44	3.09 66.5	3.34 286.32	3.69 328.43	3.73 375.71	5.30 351.33	5.12 368.94	4.22 3282.02	4.19 2636.78	4.00 1891.77	5.17 2162.84	5.96 22405.25
Number of stages	2	2	2 / 3	2 / 3	2 / 3	2 / 3	2 / 3	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4 / 5
Housing material	aluminium						cast iron					
Solid shaft	Type	with key acc. to DIN 6885.1 and threaded bore acc. to DIN 332 sheet 2										
	Tolerance	< Ø 55: k6 / ≥ Ø 55: m6										
	Material	standard: C45E (1.1191) / stainless steel on request										
Flanges	Tolerance	centring ≤ 250: j6 / > 250: h6 acc. to DIN EN 50347										
	Material	cast iron										
Gear wheels	Type	honed - designed and produced according to DIN 3990/3991 - Q7										
	Material	16MnCr5 (1.7131) case hardened - minimum 58HRC										
Shaft seals	Type	type AS acc. to DIN 3760										
	Material	standard NBR / special FKM										
Bearing	standard / reinforced											
Lubricants	Type	standard CLP 220 / special CLP HC 220										
	Quantity	depending on mounting position										
Axle height	acc. to DIN 747: ≤ 50: -0.4; > 50 to ≤ 250: -0.5; > 250: -1 for foot-mounted gear motors, the motor may extend below the mounting surface											

General information

1. Nameplate



a	Type code	j	Production date
b	Motor power	k	Serial number
c	Output torque	l	Material number
d	Service factor	m	Output speed and Frequency
e	Type and quantity of lubricant	n	Total gear ratio
f	Weight	o	Mounting position
g	Space for ATEX code (if applicable)	p	QR-Code linked online to additional information
h	Manufacturer address	q	Space for additional information
i	Country of origin		

2. Type code

CG083-EX-11P-90S/L-04F ...

1 2 3 4 5 6 7 8 9 10

CG083-EX-I112-HT

1 2 3 4 5 11 12

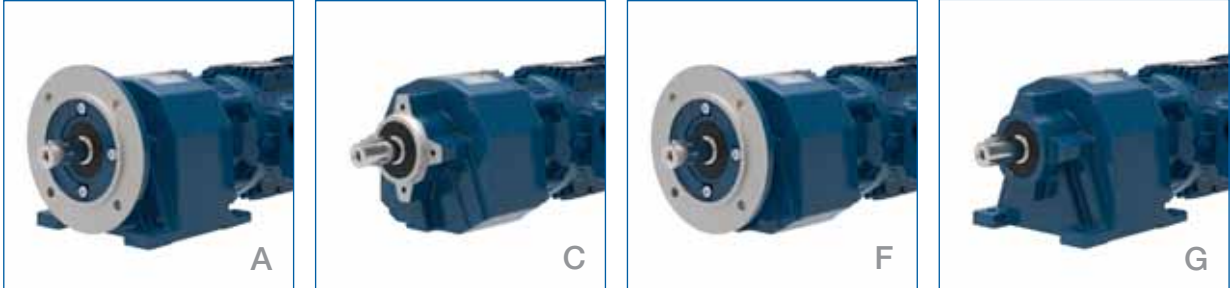
1	Type:	C = Helical gear unit
2	Design:	A = Foot mounted and B5 flange execution with output shaft C = B14 flange execution with output shaft F = Flange execution with output shaft G = Foot mounted with output shaft W = Foot mounted and B14 flange execution with output shaft
3	Size:	00 01 03 05 06 07 08 09 10 13 14 16
4	Number of stages:	2 = 2 gear stages 3 = 3 gear stages 4 = 4 gear stages 5 = 5 gear stages
5	ATEX execution:	when operated in explosive atmospheres, see page 15
6	Motor type:	14P = Integral motor aluminium IE3 11P = Integral motor aluminium IE3 22P = Integral motor cast iron IE3
7	Motor frame size:	63 71 80 L80 90S/L 100L L100L 112M 132S 132M L132M 160M 160L 180M 180L 200L 225S/M 250S/M
8	Number of poles:	04 = 4 poles 06 = 6 poles
9	Power indicator:	D E F G
10	Motor modules:	see from page 501
11	Adapters, Input unit:	IEC adapter I63 I71 I80 I90 I100 I112 I132 I160 I180 I200 I225 I250 I280 NEMA adapter N56 N143 N182 N184 N213 N254 N284 N324 N364 SERVO adapter S92 S105 S114 S115 S130 S141 S142 S180 S189 S190 Input unit U2 U3 U5 U6 U7 Direct mounting (IEC): IEC63 IEC71 IEC80 IEC90 IEC100 IEC112 IEC132 IEC160 IEC180 IEC200 IEC225 IEC250
12	High/Low temperature execution:	HT LT

Type code Motor see page 477

3. Range

Size	C00	C01	C03	C05	C06	C07	C08	C09	C10	C13	C14	C16
Housing material	Aluminium					Cast iron						

4. Design



A	Foot mounted and B5 flange execution with output shaft
C	B14 flange execution with output shaft
F	Flange execution with output shaft
G	Foot mounted with output shaft
W	Foot mounted and B14 flange execution with output shaft

5. Venting the gear unit

The helical gear unit sizes C00 to C06 are neither equipped with a venting nor an oil drain screw. They are supplied with lifetime-lubrication.

By default, the helical gear units from C07 are equipped with venting screws with a safety strap for transportation (see illustration). The rubber strap (a) of the venting screw must be removed entirely before the initial startup. The venting screw is placed accordingly to the mounting position (see chapter Mounting positions, page 26).



6. Overhung and axial loads

The overhung loads (F_{rN}) indicated in the respective selection tables apply to gear units with the force acting on the shaft center ($x=l/2$). The permissible overhung loads listed are based on the least favourable loading direction and calculated for standard shafts and standard bearings. Other load directions and action can be calculated with equations Q1 to Q3. If transmission elements are placed on the output shaft, an appropriate factor (f_z) has to be taken into consideration when determining the overhung load.

Gear wheels	Sprockets		V-belts	Flat belts
$f_z=1.1$ ($z \leq 17$)	$f_z=1.2$ ($z \leq 13$)	$f_z=1.1$ ($z > 13$)	$f_z=1.8$	$f_z=2.5$

Use the following equations Q1 and Q2 to calculate the permissible radial loads on the output shaft. Q3 is to calculate the real existing shaft loads for your application. The results are to be compared by using the equation Q4.

Q1	$F_{zL} = F_{rN} \cdot a_1$
Q2	$F_{zW} = F_W \cdot a_2$
Q3	$F_{Qvorh} = \frac{2 \cdot M_2}{d_0} \cdot f_z$
Q4	$F_{Qvorh} \leq F_{zL}$
	$F_{Qvorh} \leq F_{zW}$

Variable	Unit	Description
a1		Load action factor - output shaft bearing from Table 1
a2		Load action factor - output shaft from Table 1
d0	[m]	Effective diameter of the transmission element
M2	[Nm]	Geared motor output torque (from selection tables) or required calculated output torque
FzL	[N]	Permissible overhung load for output shaft bearings
FzW	[N]	Permissible overhung load for output shaft
FrN	[N]	Permissible overhung load from selection tables
Fw	[N]	Permissible overhung load - Output shaft x=l/2 from Table 2
FQvorh	[N]	Existing overhung load at gear shaft
fz		Factor for transmission element
Mmax	[Nm]	Highest possible output torque for coupling operation (Table 2)

Always use both equations Q1 and Q2 for your calculations.

		x / l						
		0	0.25	0.5	0.75	1	1.5	2
		a1 → Equation Q1						
		1.39	1.18	1.00	0.85	0.73	0.52	0.38
		a2 → Equation Q2						
		2.00	2.00	1.00	0.55	0.38	0.23	0.17

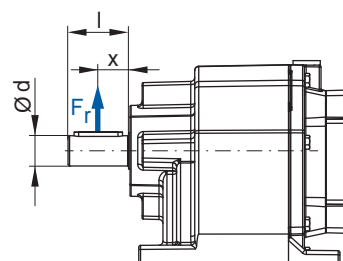


Table 1: Load action factors a1, a2

Intermediate values can be interpolated linearly. Combined load ($F_r \neq 0$; $F_a = 0$) on request.

Output shaft [mm]		Mmax at Fr = 0	Output torque M2 [Nm]													
			50	85	200	400	600	820	1550	3000	4500	8000	13000	18000		
Ø d	l		Fw [kN] at x/l = 0.5 → Equation Q2													
20	40	160	3.4	3.1												
25	50	300	5.9	5.7	4.8											
30	60	500		7.6	7.1	5.0										
35	70	800			11.0	10.0	8.3									
40	80	1170				13.0	12.0	10.7								
50	100	2250				24.0	24.0	23.0	20.0							
60	120	3740						31.0	30.0	23.0						
70	140	5850						44.0	41.0	36.0						
90	170	11700							72.0	70.0	61.0					
110	210	20800								106.0	103.0	93.0				
120	210	26700									129.0	121.0	109.0			

Table 2: Permissible overhung load - output shaft x = l/2

The axial loads (F_{aN}) for execution with output shaft, given in the following selection tables, are valid at radial force $F_{rN} = 0$. If there are axial loads or radial and axial components acting on the drive which are extraordinarily high, we recommend to contact the manufacturer.

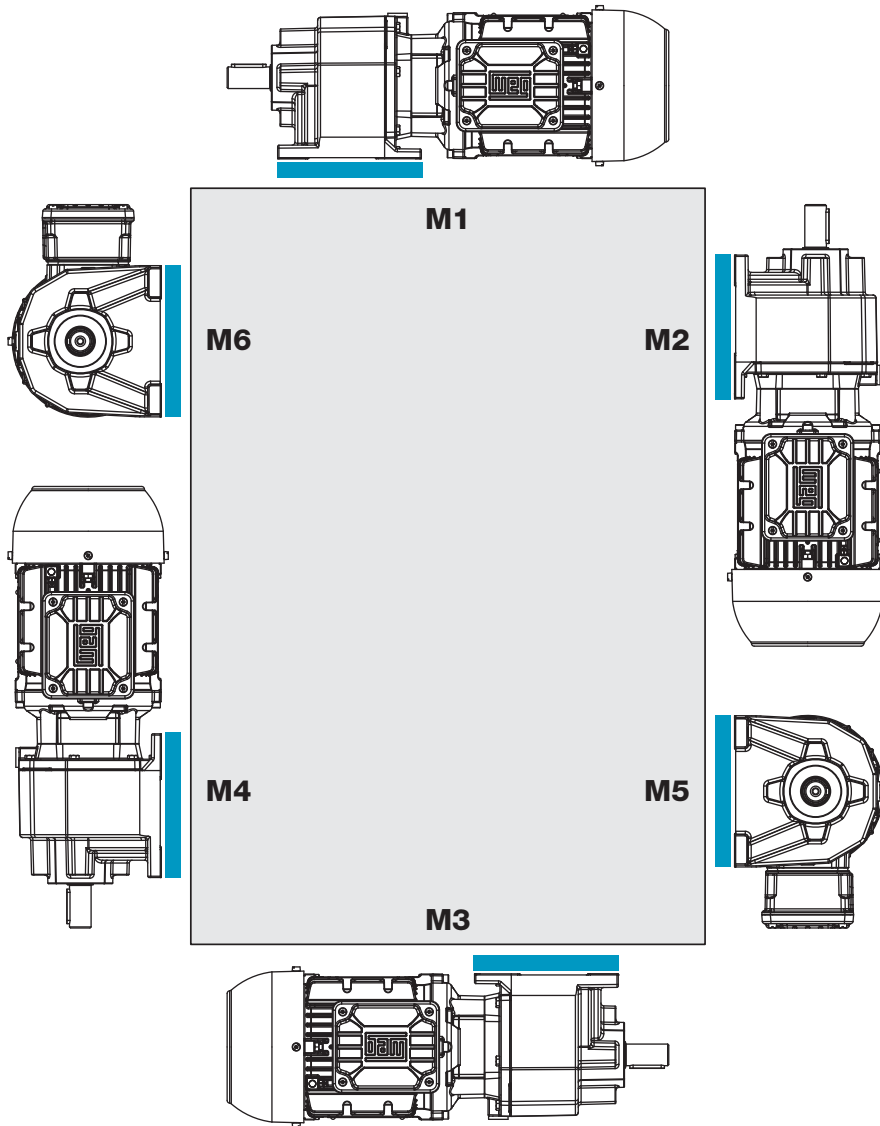
7. Mounting positions, Position of the terminal box and Cable entry

Mounting positions foot type - Sizes C00 to C06

Gear units C00 to C06 are not ventilated and supplied with lifetime lubrication

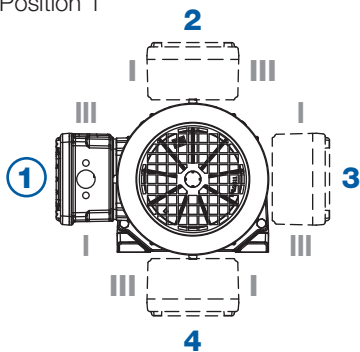
 Reference area

C



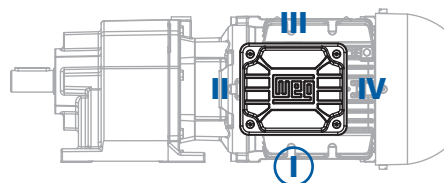
Position of the terminal box

Standard: Position 1



Cable entry

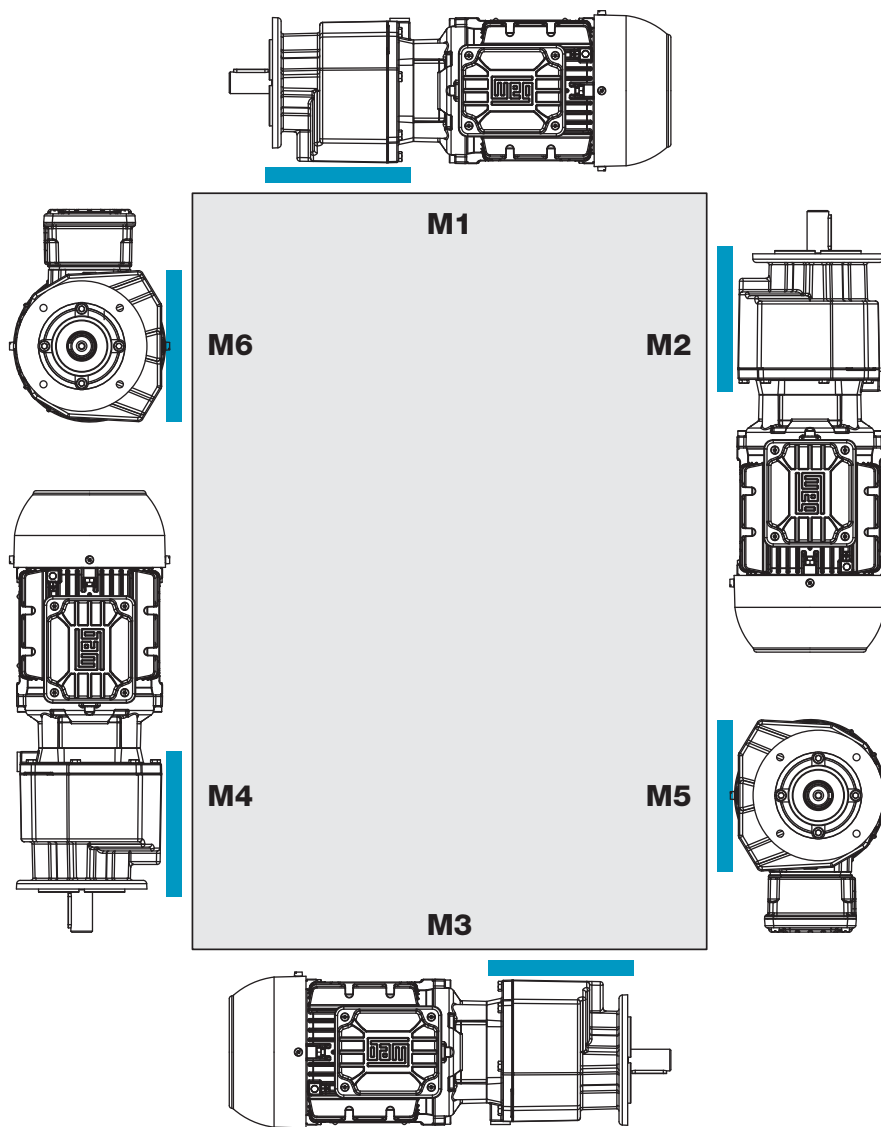
Standard: Position I



Mounting positions flange type - Sizes C00 to C06

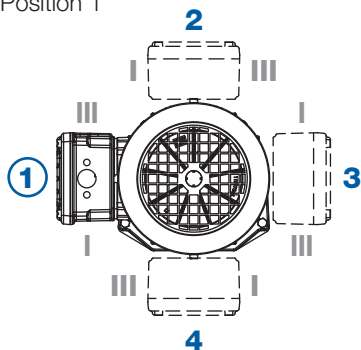
Gear units C00 to C06 are not ventilated and supplied with lifetime lubrication.

■ Reference area



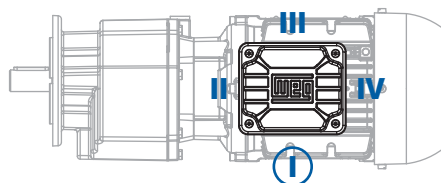
Position of the terminal box

Standard: Position 1



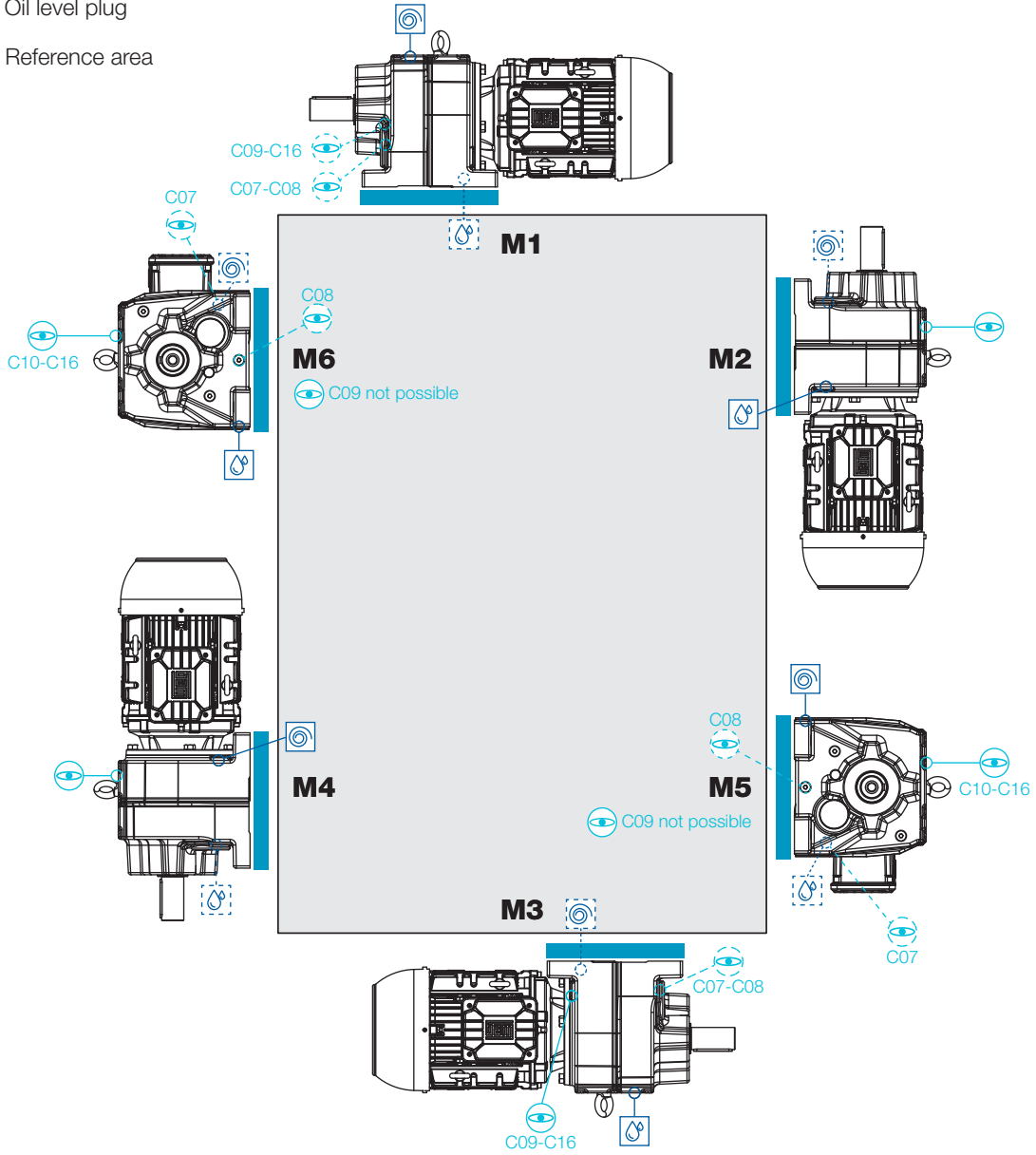
Cable entry

Standard: Position I



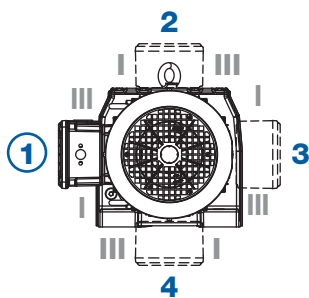
Mounting positions foot type - Sizes C07 to C16

- Venting screw
- Oil drain screw
- Oil level plug
- Reference area
- Position visible on this side
- Position covered or on the far side of the gear unit



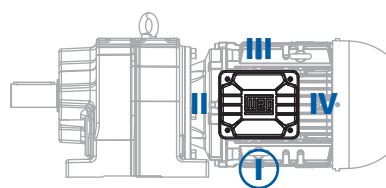
Position of the terminal box

Standard: Position 1



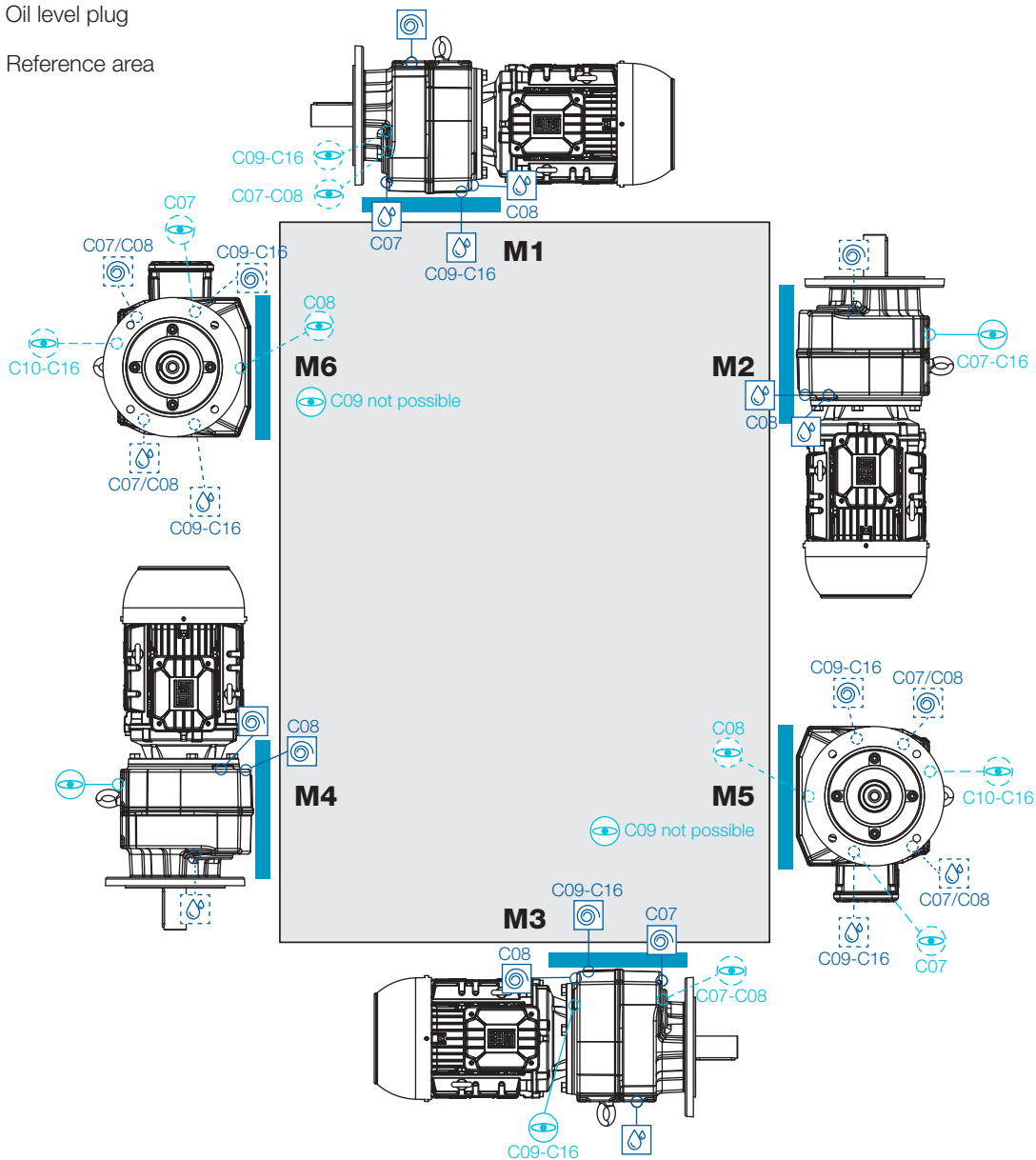
Cable entry

Standard: Position I



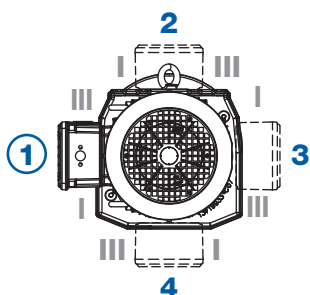
Mounting positions flange type - Sizes C07 to C16

- Position visible on this side
- Position covered or on the far side of the gear unit
- ⦿
 Venting screw
- ⦿
 Oil drain screw
- ⦿
 Oil level plug
- Reference area



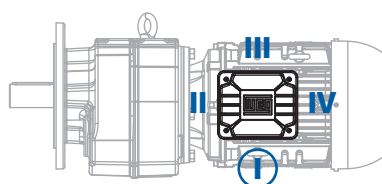
Position of the terminal box

Standard: Position 1



Cable entry

Standard: Position I



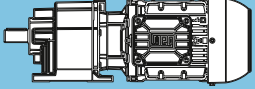
Selection tables - Geared motors

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20 °C.

The selection tables are calculated with following motor data:

Power (IEC frame size)	Motor series (IE class)
up to 0.55 kW (63 - 80)	14P (IE3) - aluminium
0.75 - 9.2 kW (80 - 132)	11P (IE3) - aluminium
11 - 75 kW (160 - 250)	22P (IE3) - cast iron

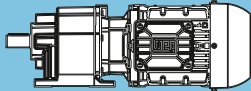
Structure of the selection tables

1 $P_N = 0.12 \text{ kW}$										2 IE3	
50 Hz		60 Hz				at 50 Hz				11 m kg	12 Dimension sheet see page
0.12 kW		0.14 kW									
3 n_{50} min ⁻¹	4 n_{60} min ⁻¹	5 M_2 Nm	6 f_B	7 i	8 F_{rH} kN	9 F_{aH} kN					

- 1 Rated power of the motor
- 2 Given values are based on the respective efficiency class
- 3 Output speed at 50 Hz
- 4 Output speed at 60 Hz
- 5 Output torque
- 6 Service factor
- 7 Total ratio
- 8 Permissible radial load at midpoint of the output shaft extension (standard bearing) at axial load=0
- 9 Permissible axial load (standard bearing) at radial load=0
- 10 Geared motor type
- 11 Weight
- 12 Page reference for dimension sheet

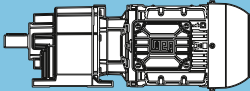
*) Increased rated power at 60 Hz can only be reached together with increased voltage within the wide range (for details see page 485).

Increased rated power
1.2 x P_N

P _N = 0.12 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.12 kW		0.14 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b						
0.05	0.06	20103	0.90	18322.05	106.8	22.2	CG165-14P-63-06F CF165-14P-63-06F	695 718	170
0.06	0.07	16816	1.10	15484.09	116.5	25.2			
0.07	0.09	13576	1.35	12662.22	123.8	28.2			
0.08	0.10	11904	1.55	11217.58	126.8	29.7			
0.09	0.11	10501	1.75	9998.22	129.0	31.0			
0.10	0.12	9568	1.90	9181.16	130.3	31.8			
0.12	0.15	7913	2.30	7752.38	132.3	33.3			
0.13	0.16	7120	2.55	7067.08	133.1	34.0			
0.15	0.18	6277	2.90	6345.03	133.8	34.8			
0.06	0.08	15979	1.15	22405.25	118.6	26.0	CG165-14P-63-04E CF165-14P-63-04E	695 718	170
0.08	0.09	12900	1.40	18322.05	125.1	28.8			
0.09	0.11	10734	1.70	15484.09	128.7	30.7			
0.10	0.12	9952	1.85	14467.28	129.8	31.5			
0.11	0.14	8598	2.10	12662.22	131.5	32.7			
0.13	0.15	7480	2.45	11217.58	132.7	33.7			
0.14	0.17	6563	2.75	9998.22	133.6	34.5			
0.35	0.43	2880	1.60	2636.78	41.7	23.5	CG104-14P-63-06F CF104-14P-63-06F	170 174	156
0.41	0.51	2405	1.90	2229.16	42.9	24.1			
0.43	0.53	2321	1.95	2156.24	43.1	24.2			
0.51	0.63	1930	2.35	1822.91	43.9	24.7			
0.54	0.67	1788	2.55	1702.59	44.1	24.9			
0.28	0.35	3697	0.85	3282.02	16.4	24.5	CG094-14P-63-06F CF094-14P-63-06F	128 126	152
0.34	0.42	3005	1.00	2683.89	22.9	25.6			
0.36	0.44	2902	1.05	2597.68	23.6	25.7			
0.41	0.50	2519	1.20	2268.18	25.9	26.3			
0.44	0.54	2349	1.30	2124.27	26.7	26.5			
0.50	0.61	2034	1.50	1854.82	28.1	27.0			
0.55	0.68	1828	1.65	1677.34	28.9	27.3			
0.56	0.69	1787	1.70	1643.20	29.0	27.4			
0.63	0.78	1580	1.90	1464.58	29.6	27.7			
0.69	0.85	1439	2.10	1344.90	30.0	27.9			
0.71	0.88	1386	2.20	1300.57	30.2	28.0			
0.81	1.0	1192	2.55	1135.60	30.6	28.2			
0.87	1.1	1108	2.75	1064.47	30.8	28.4			
0.89	1.1	1076	2.80	1035.22	30.9	28.4			
0.43	0.52	2390	1.30	3282.02	26.5	26.5	CG094-14P-63-04E CF094-14P-63-04E	127 125	152
0.52	0.64	1930	1.60	2683.89	28.5	27.1			
0.54	0.66	1864	1.65	2597.68	28.7	27.2			
0.62	0.76	1611	1.90	2268.18	29.6	27.6			
0.66	0.81	1503	2.00	2124.27	29.9	27.8			
0.76	0.93	1293	2.35	1854.82	30.4	28.1			
0.84	1.0	1157	2.60	1677.34	30.7	28.3			
0.86	1.0	1129	2.70	1643.20	30.8	28.3			
2.6	3.2	435	1.90	351.33	13.2	14.2	CG073-14P-63-06F CF073-14P-63-06F	38 42	146
2.9	3.6	396	2.10	319.60	13.3	14.2			
3.3	4.1	345	2.40	278.44	13.5	14.4			
3.7	4.5	314	2.65	253.30	13.6	14.4			
4.0	4.9	287	2.90	351.33	13.7	14.6	CG073-14P-63-04E CF073-14P-63-04E	38 42	146
2.5	3.0	465	1.30	375.71	9.6	6.8	CG063-14P-63-06F CF063-14P-63-06F	22 27	144
2.7	3.3	427	1.45	344.51	9.9	6.8			
3.0	3.7	381	1.60	307.24	10.2	7.0			
3.3	4.0	349	1.75	281.73	10.3	7.1			
3.8	4.7	301	2.00	242.60	10.6	7.2			
4.2	5.1	276	2.20	222.46	10.7	7.3			
4.9	6.1	233	2.60	188.11	10.9	7.4			
5.4	6.6	214	2.85	172.49	10.9	7.5			
3.7	4.6	306	2.00	375.71	10.6	7.2	CG063-14P-63-04E CF063-14P-63-04E	21 26	144
4.1	5.0	281	2.15	344.51	10.7	7.3			
4.6	5.6	251	2.40	307.24	10.8	7.4			
5.0	6.1	230	2.65	281.73	10.9	7.4			

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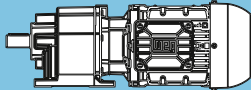
** ... on request

P_N = 0.12 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.12 kW		0.14 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
2.8	3.5	407	1.00	328.43	4.8	6.3	CG053-14P-63-06F CF053-14P-63-06F	17 22	142
3.1	3.8	370	1.10	298.57	5.4	6.4			
3.5	4.3	332	1.25	267.93	6.0	6.6			
3.8	4.7	302	1.35	243.57	6.3	6.7			
4.3	5.3	265	1.55	213.71	6.7	6.9			
4.8	5.9	241	1.70	194.29	6.8	7.0			
5.6	6.9	205	2.00	165.45	7.1	7.2			
6.1	7.6	186	2.15	150.41	7.2	7.2			
7.0	8.6	165	2.45	132.97	7.3	7.4			
7.7	9.4	150	2.70	120.88	7.4	7.4			
4.3	5.2	268	1.50	328.43	6.6	6.9	CG053-14P-63-04E CF053-14P-63-04E	17 22	142
4.7	5.8	244	1.65	298.57	6.8	7.0			
5.2	6.4	219	1.85	267.93	7.0	7.1			
5.8	7.1	199	2.05	243.57	7.1	7.2			
6.6	8.0	174	2.30	213.71	7.3	7.3			
7.2	8.9	158	2.55	194.29	7.4	7.4			
4.6	5.6	251	0.80	202.55	3.9	3.0	CG033-14P-63-06F CF033-14P-63-06F	13 15	140
5.1	6.3	224	0.90	180.83	4.4	3.2			
5.6	6.9	203	1.00	164.23	4.7	3.3			
6.5	8.0	177	1.15	142.47	5.0	3.5			
7.1	8.8	160	1.25	129.39	5.2	3.6			
8.4	10	136	1.50	109.79	5.4	3.8			
9.3	11	124	1.65	99.71	5.5	3.8			
11	13	106	1.90	85.78	5.6	3.9			
12	15	97	2.10	77.90	5.7	4.0			
14	18	79	2.55	64.05	5.8	4.1			
16	20	72	2.80	58.17	5.8	4.1			
4.9	6.0	234	0.90	286.32	4.2	3.1	CG033-14P-63-04E CF033-14P-63-04E	12 14	140
5.4	6.6	212	0.95	260.03	4.6	3.3			
6.3	7.7	182	1.10	223.03	5.0	3.5			
6.9	8.5	165	1.25	202.55	5.2	3.6			
7.8	9.5	147	1.40	180.83	5.3	3.7			
8.6	10	134	1.50	164.23	5.4	3.8			
9.9	12	116	1.75	142.47	5.6	3.9			
11	13	106	1.90	129.39	5.6	3.9			
13	16	90	2.25	109.79	5.7	4.0			
14	17	81	2.50	99.71	5.7	4.1			
16	20	70	2.90	85.78	5.8	4.2			
14	17	82	1.05	66.50	3.1	1.1	CG012-14P-63-06F CF012-14P-63-06F	9.9 11	138
16	19	74	1.20	59.59	3.2	1.1			
18	22	64	1.35	51.80	3.3	1.2			
20	25	58	1.50	46.42	3.4	1.3			
22	27	52	1.65	42.00	3.4	1.3			
25	30	47	1.85	37.64	3.4	1.3			
28	34	41	2.10	33.09	3.5	1.4			
31	38	37	2.35	29.65	3.5	1.4			
36	45	32	2.70	25.50	3.5	1.4			
37	46	31	1.35	25.05	3.5	1.3			
47	58	24	2.75	19.51	3.6	1.4			
21	26	54	1.60	66.50	3.4	1.3	CG012-14P-63-04E CF012-14P-63-04E	9.5 11	138
24	29	49	1.75	59.59	3.4	1.3			
27	33	42	2.05	51.80	3.5	1.4			
30	37	38	2.25	46.42	3.5	1.4			
33	41	34	2.50	42.00	3.5	1.4			
37	46	31	2.80	37.64	3.5	1.4			
56	69	20	2.05	25.05	3.6	1.4			

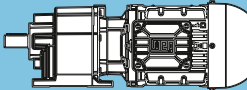


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** ... on request

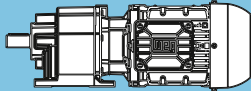
P _N = 0.12 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
0.12 kW	0.14 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
19	24	59	0.90	47.44	3.6	1.1	CG002-14P-63-06F CF002-14P-63-06F	8.8 10	136
22	27	52	1.00	42.34	3.6	1.2			
25	31	46	1.10	36.85	3.7	1.3			
28	35	41	1.25	32.89	3.7	1.3			
32	39	36	1.40	29.33	3.7	1.3			
35	44	32	1.55	26.18	3.7	1.4			
40	50	28	1.80	23.00	3.8	1.4			
45	56	25	2.00	20.53	3.8	1.4			
54	66	21	2.35	17.29	3.7	1.5			
55	68	21	1.50	16.86	3.7	1.4			
60	74	19	2.65	15.43	3.6	1.5			
68	84	17	3.00	13.54	3.5	1.5			
71	87	16	2.70	13.10	3.4	1.4			
30	36	39	1.30	47.44	3.7	1.3	CG002-14P-63-04E CF002-14P-63-04E	8.4 9.7	136
33	41	35	1.45	42.34	3.7	1.3			
38	47	30	1.70	36.85	3.8	1.4			
43	52	27	1.90	32.89	3.8	1.4			
48	59	24	2.10	29.33	3.8	1.4			
54	66	21	2.35	26.18	3.7	1.4			
61	75	19	2.70	23.00	3.6	1.5			
68	84	17	3.00	20.53	3.5	1.5			
81	100	14	3.55	17.29	3.3	1.5			
83	102	14	2.30	16.86	3.2	1.5			
91	111	13	4.00	15.43	3.2	1.5			
104	127	11	4.55	13.54	3.0	1.5			
107	131	11	4.05	13.10	3.0	1.5			
116	142	10	5.10	12.08	2.9	1.5			
135	165	9	5.30	10.42	2.8	1.5			
141	173	8	6.15	9.97	2.8	1.6			
158	193	7	6.90	8.90	2.7	1.6			
172	210	7	6.75	8.17	2.6	1.5			
204	250	6	8.75	6.88	2.5	1.6			
229	280	5	10.00	6.14	2.4	1.6			
292	357	4	9.95	4.81	2.2	1.6			
397	486	3	12.15	3.54	2.0	1.6			

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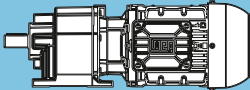
P _N = 0.18 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW		0.22 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.07	0.09	21474	0.85	12662.22	101.9	21.0	CG165-14P-71-06E CF165-14P-71-06E	698 721	170
0.08	0.10	18878	1.00	11217.58	110.7	23.3			
0.09	0.11	16740	1.10	9998.22	116.7	25.3			
0.10	0.12	15293	1.20	9181.16	120.2	26.6			
0.12	0.14	12748	1.45	7752.38	125.4	28.9			
0.13	0.16	11532	1.60	7067.08	127.4	30.0			
0.14	0.17	10247	1.80	6345.03	129.4	31.2			
0.17	0.21	8468	2.15	5339.57	131.7	32.8			
0.18	0.23	7666	2.35	4884.00	132.5	33.5			
0.21	0.25	6735	2.70	4369.98	133.4	34.4			
0.08	0.09	20212	0.90	18322.05	106.4	22.1	CG165-14P-63-04F CF165-14P-63-04F	695 718	170
0.09	0.11	16907	1.10	15484.09	116.3	25.1			
0.10	0.12	15757	1.15	14467.28	119.1	26.2			
0.11	0.13	13650	1.35	12662.22	123.7	28.1			
0.12	0.15	11968	1.55	11217.58	126.7	29.6			
0.14	0.17	10558	1.75	9998.22	128.9	30.9			
0.15	0.19	9620	1.90	9181.16	130.2	31.8			
0.18	0.22	7956	2.30	7752.38	132.2	33.3			
0.20	0.24	7159	2.55	7067.08	133.0	34.0			
0.22	0.27	6328	2.85	6345.03	133.8	34.8			
0.48	0.59	3050	2.65	1891.77	73.7	26.0	CG134-14P-71-06E CF134-14P-71-06E	287 289	160
0.34	0.42	4551	1.00	2636.78	35.3	21.4	CG104-14P-71-06E CF104-14P-71-06E	173 177	156
0.40	0.50	3816	1.20	2229.16	38.6	22.3			
0.42	0.51	3684	1.25	2156.24	39.1	22.5			
0.49	0.61	3082	1.50	1822.91	41.1	23.3			
0.53	0.65	2867	1.60	1702.59	41.8	23.6			
0.63	0.77	2394	1.90	1439.39	42.9	24.2			
0.68	0.84	2178	2.10	1320.15	43.4	24.4			
0.81	0.99	1811	2.50	1116.07	44.1	24.9			
0.83	1.0	1746	2.60	1080.49	44.2	25.0			
0.52	0.64	2896	1.60	2636.78	41.7	23.5	CG104-14P-63-04F CF104-14P-63-04F	170 174	156
0.62	0.76	2418	1.90	2229.16	42.9	24.1			
0.64	0.79	2334	1.95	2156.24	43.1	24.2			
0.76	0.93	1941	2.35	1822.91	43.9	24.7			
0.81	1.0	1801	2.50	1702.59	44.1	24.9			
0.40	0.49	3947	0.80	2268.18	12.8	24.2	CG094-14P-71-06E CF094-14P-71-06E	130 128	152
0.42	0.52	3689	0.85	2124.27	16.5	24.5			
0.49	0.60	3208	0.95	1854.82	21.3	25.3			
0.54	0.66	2889	1.05	1677.34	23.7	25.7			
0.55	0.68	2825	1.10	1643.20	24.1	25.8			
0.61	0.76	2507	1.20	1464.58	25.9	26.3			
0.67	0.83	2288	1.35	1344.90	27.0	26.6			
0.69	0.85	2208	1.40	1300.57	27.4	26.7			
0.79	0.98	1912	1.60	1135.60	28.6	27.2			
0.85	1.0	1785	1.70	1064.47	29.0	27.4			
0.87	1.1	1732	1.75	1035.22	29.2	27.4			
0.97	1.2	1543	1.95	929.45	29.8	27.7			
1.1	1.4	1343	2.25	819.36	30.3	28.0			
1.2	1.4	1277	2.35	782.16	30.4	28.1			
1.3	1.6	1156	2.60	715.43	30.7	28.3			
1.4	1.7	1019	2.95	640.13	31.0	28.5			



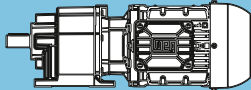
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P _N = 0.18 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW	0.22 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
0.42	0.52	3717	0.85	3282.02	16.1	24.5	CG094-14P-63-04F CF094-14P-63-04F	128 126	152
0.51	0.63	3021	1.00	2683.89	22.7	25.5			
0.53	0.65	2918	1.05	2597.68	23.5	25.7			
0.61	0.75	2532	1.20	2268.18	25.8	26.3			
0.65	0.80	2362	1.30	2124.27	26.7	26.5			
0.74	0.92	2045	1.50	1854.82	28.1	27.0			
0.82	1.0	1838	1.65	1677.34	28.8	27.3			
0.84	1.0	1797	1.70	1643.20	29.0	27.3			
0.94	1.2	1589	1.90	1464.58	29.6	27.7			
1.0	1.3	1447	2.10	1344.90	30.0	27.9			
1.1	1.3	1396	2.15	1300.57	30.1	27.9			
1.2	1.5	1201	2.50	1135.60	30.6	28.2			
1.3	1.6	1117	2.70	1064.47	30.8	28.4			
2.4	3.0	705	2.20	368.94	23.7	21.1	CG083-14P-71-06E CF083-14P-71-06E	65 69	148
3.2	3.9	544	2.85	284.84	24.0	21.4			
2.6	3.2	671	1.25	351.33	11.9	13.5	CG073-14P-71-06E CF073-14P-71-06E	41 45	146
2.8	3.5	610	1.35	319.60	12.3	13.5			
3.2	4.0	532	1.55	278.44	12.7	13.9			
3.6	4.4	484	1.70	253.30	13.0	13.9			
4.2	5.1	413	2.00	216.20	13.3	14.3			
4.6	5.6	376	2.20	196.68	13.4	14.3			
5.1	6.3	339	2.45	177.39	13.5	14.5			
5.6	6.9	308	2.70	161.38	13.6	14.5			
3.9	4.8	438	1.90	351.33	13.2	14.2	CG073-14P-63-04F CF073-14P-63-04F	38 42	146
4.3	5.3	398	2.10	319.60	13.3	14.2			
5.0	6.1	347	2.40	278.44	13.5	14.4			
5.4	6.7	316	2.60	253.30	13.6	14.4			
2.4	3.0	718	0.85	375.71	6.6	6.0	CG063-14P-71-06E CF063-14P-71-06E	24 29	144
2.6	3.2	658	0.95	344.51	7.5	6.2			
2.9	3.6	587	1.05	307.24	8.4	6.4			
3.2	3.9	538	1.15	281.73	8.9	6.5			
3.7	4.6	463	1.30	242.60	9.6	6.8			
4.0	5.0	425	1.45	222.46	9.9	6.9			
4.8	5.9	359	1.70	188.11	10.3	7.1			
5.2	6.4	329	1.85	172.49	10.4	7.1			
5.8	7.2	294	2.05	153.96	10.6	7.2			
6.4	7.9	270	2.25	141.17	10.7	7.3			
7.6	9.4	226	2.70	118.51	10.9	7.4			
8.3	10	208	2.90	108.67	10.9	7.5			
3.7	4.5	468	1.30	375.71	9.6	6.7	CG063-14P-63-04F CF063-14P-63-04F	22 27	144
4.0	4.9	429	1.40	344.51	9.8	6.8			
4.5	5.5	383	1.60	307.24	10.1	7.0			
4.9	6.0	351	1.75	281.73	10.3	7.1			
5.7	7.0	302	2.00	242.60	10.6	7.2			
6.2	7.6	277	2.20	222.46	10.7	7.3			
7.3	9.0	234	2.60	188.11	10.8	7.4			
8.0	9.9	215	2.80	172.49	10.9	7.5			
3.4	4.1	512	0.80	267.93	1.5	5.8	CG053-14P-71-06E CF053-14P-71-06E	19 24	142
3.7	4.6	465	0.90	243.57	3.5	6.0			
4.2	5.2	408	1.00	213.71	4.8	6.2			
4.6	5.7	371	1.10	194.29	5.4	6.4			
5.4	6.7	316	1.30	165.45	6.1	6.7			
6.0	7.4	287	1.40	150.41	6.4	6.8			
6.8	8.3	254	1.60	132.97	6.7	6.9			
7.4	9.2	231	1.75	120.88	6.9	7.0			
8.9	11	194	2.10	101.55	7.2	7.2			
9.7	12	176	2.30	92.32	7.3	7.3			
12	14	149	2.70	77.79	7.4	7.4			
13	16	135	3.00	70.71	7.5	7.5			

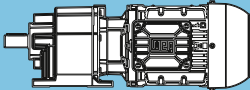
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P_N = 0.18 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
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n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
4.2	5.2	409	1.00	328.43	4.8	6.2	CG053-14P-63-04F CF053-14P-63-04F	17 22	142
4.6	5.7	372	1.10	298.57	5.4	6.4			
5.2	6.3	334	1.20	267.93	5.9	6.6			
5.7	7.0	303	1.35	243.57	6.3	6.7			
6.5	8.0	266	1.55	213.71	6.6	6.9			
7.1	8.8	242	1.70	194.29	6.8	7.0			
8.3	10	206	1.95	165.45	7.1	7.2			
9.2	11	187	2.15	150.41	7.2	7.2			
10	13	166	2.45	132.97	7.3	7.3			
11	14	151	2.70	120.88	7.4	7.4			
15	19	112	2.25	58.85	7.5	7.6	CG052-14P-71-06E CF052-14P-71-06E	19 24	142
17	21	102	2.25	53.50	7.6	7.6			
25	31	68	2.25	35.67	7.7	7.7			
7.0	8.6	247	0.85	129.39	4.0	3.0	CG033-14P-71-06E CF033-14P-71-06E	15 17	140
8.2	10	210	1.00	109.79	4.6	3.3			
9.0	11	190	1.10	99.71	4.9	3.4			
10	13	164	1.25	85.78	5.2	3.6			
12	14	149	1.35	77.90	5.3	3.7			
14	17	122	1.65	64.05	5.5	3.8			
15	19	111	1.85	58.17	5.6	3.9			
19	23	92	2.20	48.22	5.7	4.0			
21	25	84	2.40	43.79	5.7	4.1			
25	31	68	3.00	35.38	5.8	4.2			
6.8	8.4	252	0.80	202.55	3.9	3.0	CG033-14P-63-04F CF033-14P-63-04F	12 14	140
7.6	9.4	225	0.90	180.83	4.4	3.2			
8.4	10	205	1.00	164.23	4.7	3.3			
9.7	12	177	1.15	142.47	5.0	3.5			
11	13	161	1.25	129.39	5.2	3.6			
13	15	137	1.50	109.79	5.4	3.7			
14	17	124	1.65	99.71	5.5	3.8			
16	20	107	1.90	85.78	5.6	3.9			
18	22	97	2.10	77.90	5.7	4.0			
22	27	80	2.55	64.05	5.8	4.1			
24	29	72	2.80	58.17	5.8	4.1			
21	26	82	2.25	42.88	5.7	4.1	CG032-14P-71-06E CF032-14P-71-06E	15 17	140
23	29	74	2.30	38.95	5.8	4.1			
37	46	46	2.25	24.03	5.9	4.3			
17	21	99	0.90	51.80	2.8	1.0	CG012-14P-71-06E CF012-14P-71-06E	12 13	138
19	24	89	1.00	46.42	3.0	1.0			
21	26	80	1.10	42.00	3.1	1.1			
24	29	72	1.20	37.64	3.2	1.2			
27	34	63	1.35	33.09	3.3	1.2			
30	37	57	1.55	29.65	3.4	1.3			
35	44	49	1.75	25.50	3.4	1.3			
36	44	48	0.90	25.05	3.4	1.2			
39	49	44	1.95	22.85	3.5	1.3			
45	56	38	2.25	19.92	3.5	1.4			
46	57	37	1.80	19.51	3.5	1.3			
50	62	34	2.50	17.85	3.5	1.4			
57	70	30	2.20	15.82	3.5	1.4			
61	75	28	3.00	14.88	3.5	1.4			
72	89	24	2.80	12.46	3.5	1.4			
21	26	83	1.05	66.50	3.1	1.1	CG012-14P-63-04F CF012-14P-63-04F	9.7 11	138
23	29	74	1.15	59.59	3.2	1.1			
27	33	65	1.35	51.80	3.3	1.2			
30	37	58	1.50	46.42	3.4	1.2			
33	40	52	1.65	42.00	3.4	1.3			
37	45	47	1.85	37.64	3.4	1.3			
42	51	41	2.10	33.09	3.5	1.4			
47	57	37	2.35	29.65	3.5	1.4			
54	67	32	2.70	25.50	3.5	1.4			
55	68	31	1.35	25.05	3.5	1.3			
60	74	28	3.00	22.85	3.5	1.4			
71	87	24	2.75	19.51	3.6	1.4			

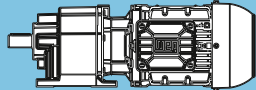


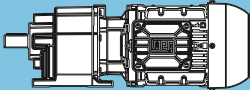
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.18 kW	0.22 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
27	34	63	0.80	32.89	3.6	1.1	CG002-14P-71-06E CF002-14P-71-06E	11 12	136
31	38	56	0.90	29.33	3.6	1.2			
34	42	50	1.00	26.18	3.7	1.2			
39	48	44	1.15	23.00	3.7	1.3			
44	54	39	1.30	20.53	3.7	1.3			
52	64	33	1.55	17.29	3.7	1.4			
53	66	32	1.00	16.86	3.6	1.2			
58	72	29	1.70	15.43	3.6	1.4			
66	82	26	1.95	13.54	3.4	1.4			
69	85	25	1.75	13.10	3.4	1.3			
74	92	23	2.20	12.08	3.3	1.4			
86	106	20	2.30	10.42	3.1	1.4			
90	111	19	2.65	9.97	3.1	1.5			
101	125	17	2.95	8.90	3.0	1.5			
110	136	16	2.90	8.17	2.9	1.4			
29	36	59	0.85	47.44	3.6	1.1	CG002-14P-63-04F CF002-14P-63-04F	8.6 9.9	136
33	40	53	0.95	42.34	3.6	1.2			
37	46	46	1.10	36.85	3.7	1.3			
42	52	41	1.25	32.89	3.7	1.3			
47	58	37	1.40	29.33	3.7	1.3			
53	65	33	1.55	26.18	3.7	1.4			
60	74	29	1.75	23.00	3.5	1.4			
67	83	26	2.00	20.53	3.4	1.4			
80	98	22	2.35	17.29	3.3	1.4			
82	101	21	1.50	16.86	3.2	1.4			
89	110	19	2.65	15.43	3.1	1.5			
102	126	17	3.00	13.54	3.0	1.5			
105	130	16	2.65	13.10	3.0	1.4			
114	141	15	3.35	12.08	2.9	1.5			
132	163	13	3.50	10.42	2.8	1.5			
138	171	12	4.05	9.97	2.8	1.5			
155	191	11	4.55	8.90	2.7	1.5			
169	208	10	4.45	8.17	2.6	1.5			
201	247	9	5.75	6.88	2.4	1.6			
225	277	8	6.55	6.14	2.4	1.6			
225	277	8	5.50	6.14	2.3	1.5			
287	353	6	6.55	4.81	2.2	1.6			
390	480	4	7.95	3.54	2.0	1.6			

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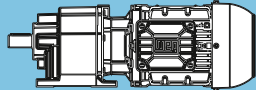
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0.25 kW		0.30 kW			F _m kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.10	0.12	22193	0.85	9998.22	99.1	20.3	CG165-14P-80-06D CF165-14P-80-06D	698 721	170
0.12	0.15	16989	1.10	7752.38	116.0	25.1			
0.14	0.17	15408	1.20	7067.08	119.9	26.5			
0.15	0.19	13727	1.35	6345.03	123.5	28.0			
0.18	0.22	11404	1.60	5339.57	127.6	30.1			
0.20	0.24	10351	1.75	4884.00	129.2	31.1			
0.22	0.27	9142	2.00	4369.98	130.9	32.2			
0.26	0.32	7561	2.40	3690.13	132.6	33.6			
0.27	0.33	7223	2.50	3543.61	133.0	33.9			
0.09	0.11	23846	0.80	15484.09	92.0	18.8	CG165-14P-71-04E CF165-14P-71-04E	696 719	170
0.10	0.12	22224	0.85	14467.28	99.0	20.3			
0.11	0.13	19351	0.95	12662.22	109.3	22.9			
0.12	0.15	17012	1.10	11217.58	116.0	25.0			
0.14	0.17	15085	1.20	9998.22	120.6	26.8			
0.15	0.19	13746	1.35	9181.16	123.5	28.0			
0.18	0.22	11458	1.60	7752.38	127.6	30.1			
0.20	0.24	10365	1.75	7067.08	129.2	31.1			
0.22	0.27	9186	2.00	6345.03	130.8	32.2			
0.26	0.32	7572	2.40	5339.57	132.6	33.6			
0.28	0.35	6836	2.65	4884.00	133.3	34.3			
0.32	0.39	6006	3.00	4369.98	134.1	35.0			
0.44	0.55	4516	2.90	2162.84	109.7	23.0	CG144-14P-80-06D CF144-14P-80-06D	434 452	164
0.50	0.63	4110	1.95	1891.77	72.2	24.8	CG134-14P-80-06D CF134-14P-80-06D	287 289	160
0.58	0.72	3516	2.30	1642.17	73.1	25.5			
0.65	0.81	3088	2.60	1460.54	73.6	26.0			
0.67	0.84	2988	2.70	1418.83	73.7	26.1			
0.73	0.90	2728	2.95	1891.77	74.0	26.4	CG134-14P-71-04E CF134-14P-71-04E	285 287	160
0.43	0.53	5057	0.90	2229.16	32.4	20.8	CG104-14P-80-06D CF104-14P-80-06D	173 177	156
0.44	0.55	4881	0.95	2156.24	33.4	21.0			
0.52	0.65	4101	1.10	1822.91	37.4	22.0			
0.56	0.70	3815	1.20	1702.59	38.6	22.3			
0.66	0.82	3192	1.45	1439.39	40.8	23.1			
0.72	0.90	2916	1.55	1320.15	41.6	23.5			
0.86	1.1	2435	1.85	1116.07	42.9	24.1			
0.88	1.1	2347	1.95	1080.49	43.0	24.2			
1.0	1.3	1952	2.35	913.46	43.8	24.7			
1.1	1.4	1759	2.60	831.69	44.2	25.0			
0.52	0.64	4106	1.10	2636.78	37.4	22.0	CG104-14P-71-04E CF104-14P-71-04E	171 175	156
0.62	0.76	3435	1.35	2229.16	40.0	22.8			
0.64	0.79	3316	1.40	2156.24	40.4	23.0			
0.76	0.93	2775	1.65	1822.91	42.0	23.7			
0.81	1.0	2581	1.75	1702.59	42.5	23.9			
0.96	1.2	2151	2.10	1439.39	43.5	24.5			
1.0	1.3	1952	2.35	1320.15	43.8	24.7			
1.2	1.5	1620	2.80	1116.07	44.4	25.1			
1.3	1.6	1561	2.90	1080.49	44.5	25.2			
0.57	0.71	3821	0.80	1677.34	14.8	24.4			
0.58	0.72	3735	0.85	1643.20	15.9	24.5			
0.65	0.81	3316	0.95	1464.58	20.4	25.1			
0.71	0.88	3038	1.00	1344.90	22.6	25.5			
0.73	0.91	2932	1.05	1300.57	23.4	25.7			
0.84	1.0	2545	1.20	1135.60	25.7	26.2			
0.90	1.1	2375	1.30	1064.47	26.6	26.5			
0.92	1.1	2310	1.30	1035.22	26.9	26.6			
1.0	1.3	2057	1.50	929.45	28.0	27.0			
1.2	1.4	1799	1.70	819.36	29.0	27.3			
1.3	1.7	1554	1.95	715.43	29.7	27.7			
1.5	1.9	1376	2.20	640.13	30.2	28.0			
1.8	2.2	1141	2.65	540.55	30.7	28.3			
1.9	2.3	1060	2.85	506.66	30.9	28.4			

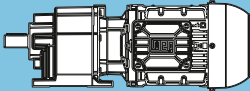
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P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW	0.30 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
0.61	0.75	3568	0.85	2268.18	17.9	24.7	CG094-14P-71-04E CF094-14P-71-04E	128 126	152
0.65	0.8	3335	0.90	2124.27	20.2	25.1			
0.74	0.92	2894	1.05	1854.82	23.6	25.7			
0.82	1.0	2601	1.20	1677.34	25.4	26.2			
0.84	1.0	2548	1.20	1643.20	25.7	26.2			
0.94	1.2	2257	1.35	1464.58	27.2	26.7			
1.0	1.3	2060	1.50	1344.90	28.0	27.0			
1.1	1.3	1988	1.55	1300.57	28.3	27.1			
1.2	1.5	1721	1.75	1135.60	29.2	27.5			
1.3	1.6	1604	1.90	1064.47	29.6	27.6			
1.5	1.8	1383	2.20	929.45	30.2	28.0			
1.7	2.1	1204	2.50	819.36	30.6	28.2			
1.8	2.2	1142	2.65	782.16	30.7	28.3			
1.9	2.4	1032	2.95	715.43	30.9	28.5			
2.6	3.2	922	1.70	368.94	23.1	20.6	CG083-14P-80-06D CF083-14P-80-06D	65 69	148
3.4	4.2	712	2.20	284.84	23.7	21.0			
4.0	5.0	597	2.60	238.89	23.9	21.3			
3.7	4.6	638	2.45	368.94	23.9	21.2	CG083-14P-71-04E CF083-14P-71-04E	63 67	148
2.7	3.4	878	0.95	351.33	10.1	13.0			
3.0	3.7	799	1.05	319.60	10.9	13.0			
3.4	4.3	696	1.20	278.44	11.7	13.5			
3.8	4.7	633	1.30	253.30	12.2	13.5			
4.4	5.5	541	1.55	216.20	12.7	13.9			
4.9	6.0	492	1.70	196.68	12.9	13.9			
5.4	6.7	443	1.85	177.39	13.2	14.2			
5.9	7.3	403	2.05	161.38	13.3	14.2			
7.0	8.6	343	2.40	137.38	13.5	14.5			
7.6	9.5	312	2.65	124.97	13.6	14.4			
3.9	4.8	608	1.35	351.33	12.3	13.7	CG073-14P-80-06D CF073-14P-80-06D	41 45	146
4.3	5.3	553	1.50	319.60	12.6	13.7			
5.0	6.1	482	1.75	278.44	13.0	14.1			
5.4	6.7	438	1.90	253.30	13.2	14.1			
6.4	7.9	374	2.20	216.20	13.4	14.4			
7.0	8.6	340	2.45	196.68	13.5	14.4			
7.8	9.6	307	2.70	177.39	13.6	14.6			
8.6	11	279	2.95	161.38	13.7	14.5			
3.1	3.9	768	0.80	307.24	5.6	5.9	CG063-14P-80-06D CF063-14P-80-06D	25 30	144
3.4	4.2	704	0.90	281.73	6.8	6.0			
3.9	4.9	606	1.00	242.60	8.2	6.3			
4.3	5.3	556	1.10	222.46	8.8	6.5			
5.1	6.3	470	1.30	188.11	9.5	6.7			
5.5	6.9	431	1.40	172.49	9.8	6.8			
6.2	7.7	385	1.60	153.96	10.1	7.0			
6.8	8.4	353	1.75	141.17	10.3	7.1			
8.1	10	296	2.05	118.51	10.6	7.2			
8.8	11	272	2.25	108.67	10.7	7.3			
11	13	224	2.70	89.54	10.9	7.5			
12	14	205	2.95	82.10	10.9	7.5			
3.7	4.5	650	0.95	375.71	7.7	6.2	CG063-14P-71-04E CF063-14P-71-04E	22 27	144
4.0	4.9	596	1.05	344.51	8.3	6.4			
4.5	5.5	532	1.15	307.24	9.0	6.6			
4.9	6.0	487	1.25	281.73	9.4	6.7			
5.7	7.0	420	1.45	242.60	9.9	6.9			
6.2	7.6	385	1.60	222.46	10.1	7.0			
7.3	9.0	325	1.85	188.11	10.5	7.2			
8.0	9.9	298	2.05	172.49	10.6	7.2			
9.0	11	266	2.30	153.96	10.7	7.3			
9.8	12	244	2.50	141.17	10.8	7.4			
12	14	205	2.95	118.51	10.9	7.5			
16	20	150	2.80	60.00	11.1	7.7			
17	22	138	2.80	55.02	11.1	7.7			
29	35	84	2.85	33.43	11.2	7.8			

P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW		0.30 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
4.9	6.1	486	0.85	194.29	2.8	5.9	CG053-14P-80-06D CF053-14P-80-06D	20 25	142
5.8	7.2	414	1.00	165.45	4.7	6.2			
6.3	7.9	376	1.10	150.41	5.4	6.4			
7.2	8.9	332	1.25	132.97	6.0	6.6			
7.9	9.8	302	1.35	120.88	6.3	6.7			
9.4	12	254	1.60	101.55	6.7	6.9			
10	13	231	1.75	92.32	6.9	7.0			
12	15	194	2.10	77.79	7.2	7.2			
14	17	177	2.30	70.71	7.3	7.3			
15	19	154	2.60	61.63	7.4	7.4			
17	21	140	2.90	56.02	7.4	7.5			
4.6	5.7	517	0.80	298.57	1.1	5.7	CG053-14P-71-04E CF053-14P-71-04E	18 23	142
5.2	6.3	464	0.90	267.93	3.6	6.0			
5.7	7.0	421	0.95	243.57	4.6	6.2			
6.5	8.0	370	1.10	213.71	5.4	6.4			
7.1	8.8	336	1.20	194.29	5.9	6.5			
8.3	10	286	1.40	165.45	6.5	6.8			
9.2	11	260	1.55	150.41	6.7	6.9			
10	13	230	1.75	132.97	6.9	7.1			
11	14	209	1.95	120.88	7.1	7.1			
14	17	176	2.30	101.55	7.3	7.3			
15	18	160	2.55	92.32	7.3	7.4			
18	22	135	3.00	77.79	7.5	7.5			
16	20	147	1.70	58.85	7.4	7.4	CG052-14P-80-06D CF052-14P-80-06D	19 24	142
18	22	134	1.70	53.50	7.5	7.5			
20	25	120	2.85	48.13	7.5	7.6			
22	27	109	2.85	43.75	7.5	7.6			
27	33	89	1.70	35.67	7.6	7.6			
33	41	73	2.80	29.17	7.6	7.7			
23	29	102	2.50	58.85	7.6	7.6	CG052-14P-71-04E CF052-14P-71-04E	17 22	142
26	32	93	2.50	53.50	7.6	7.7			
39	48	62	2.45	35.67	7.7	7.7			
9.6	12	249	0.85	99.71	3.9	3.0	CG033-14P-80-06D CF033-14P-80-06D	16 18	140
11	14	214	0.95	85.78	4.5	3.3			
12	15	195	1.05	77.90	4.8	3.4			
15	19	160	1.25	64.05	5.2	3.6			
16	20	145	1.40	58.17	5.3	3.7			
17	21	138	1.45	55.25	5.4	3.7			
19	24	125	1.60	50.18	5.5	3.8			
20	25	121	1.70	48.22	5.5	3.8			
22	27	109	1.85	43.79	5.6	3.9			
27	34	88	2.30	35.38	5.7	4.0			
30	37	80	2.50	32.13	5.8	4.1			
9.7	12	246	0.85	142.47	4.0	3.1	CG033-14P-71-04E CF033-14P-71-04E	13 15	140
11	13	224	0.90	129.39	4.4	3.2			
13	15	190	1.10	109.79	4.9	3.4			
14	17	173	1.20	99.71	5.1	3.5			
16	20	148	1.35	85.78	5.3	3.7			
18	22	135	1.50	77.90	5.4	3.7			
22	27	111	1.85	64.05	5.6	3.9			
24	29	101	2.00	58.17	5.7	4.0			
29	35	83	2.40	48.22	5.7	4.1			
32	39	76	2.65	43.79	5.8	4.1			
22	28	107	1.75	42.88	5.6	3.9	CG032-14P-80-06D CF032-14P-80-06D	15 17	140
25	30	97	1.75	38.95	5.7	4.0			
27	34	87	2.30	34.88	5.7	4.1			
30	37	79	2.55	31.67	5.8	4.1			
34	43	69	2.90	27.71	5.8	4.2			
40	49	60	1.75	24.03	5.8	4.1			
49	61	49	2.65	19.54	5.6	4.2			
32	40	74	2.50	42.88	5.8	4.1	CG032-14P-71-04E CF032-14P-71-04E	13 15	140
35	44	67	2.50	38.95	5.8	4.2			
57	71	42	2.50	24.03	5.3	4.3			

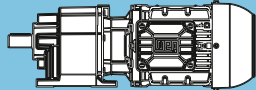


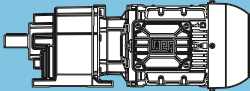
P _N = 0.25 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.25 kW	0.30 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
23	28	105	0.85	42.00	2.7	1.0	CG012-14P-80-06D CF012-14P-80-06D	13 14	138
25	32	94	0.95	37.64	2.9	1.0			
29	36	83	1.05	33.09	3.1	1.1			
32	40	74	1.15	29.65	3.2	1.1			
37	47	64	1.35	25.50	3.3	1.2			
42	52	57	1.50	22.85	3.4	1.3			
48	60	50	1.75	19.92	3.4	1.3			
49	61	49	1.40	19.51	3.4	1.2			
53	66	45	1.95	17.85	3.5	1.3			
60	75	40	1.70	15.82	3.5	1.3			
64	80	37	2.30	14.88	3.5	1.4			
72	89	33	2.60	13.33	3.5	1.4			
74	92	32	2.65	12.83	3.5	1.4			
77	95	31	2.15	12.46	3.4	1.3			
83	103	29	3.00	11.50	3.4	1.4			
85	106	28	3.00	11.20	3.3	1.4			
99	123	24	2.75	9.60	3.2	1.4			
23	29	103	0.85	59.59	2.8	1.0	CG012-14P-71-04E CF012-14P-71-04E	11 12	138
27	33	90	0.95	51.80	3.0	1.0			
30	37	80	1.10	46.42	3.1	1.1			
33	40	73	1.20	42.00	3.2	1.2			
37	45	65	1.35	37.64	3.3	1.2			
42	51	57	1.50	33.09	3.4	1.3			
47	57	51	1.70	29.65	3.4	1.3			
54	67	44	1.95	25.50	3.5	1.3			
55	68	43	0.95	25.05	3.5	1.2			
60	74	40	2.20	22.85	3.5	1.4			
69	85	34	2.50	19.92	3.5	1.4			
71	87	34	2.00	19.51	3.5	1.3			
77	95	31	2.80	17.85	3.4	1.4			
87	107	27	2.45	15.82	3.3	1.4			
36	45	65	0.80	26.18	3.5	1.1	CG002-14P-80-06D CF002-14P-80-06D	12 13	136
42	52	58	0.90	23.00	3.6	1.2			
47	58	51	1.00	20.53	3.6	1.2			
55	69	43	1.20	17.29	3.6	1.3			
62	77	39	1.30	15.43	3.4	1.3			
71	88	34	1.50	13.54	3.3	1.3			
73	91	33	1.35	13.10	3.2	1.2			
79	98	30	1.70	12.08	3.2	1.4			
92	114	26	1.75	10.42	3.0	1.3			
96	119	25	2.05	9.97	3.0	1.4			
107	133	22	2.25	8.90	2.9	1.4			
117	145	20	2.25	8.17	2.8	1.4			
139	173	17	2.90	6.88	2.7	1.5			
155	193	15	2.75	6.14	2.6	1.4			
37	46	64	0.80	36.85	3.5	1.1	CG002-14P-71-04E CF002-14P-71-04E	9.5 11	136
42	52	57	0.90	32.89	3.6	1.2			
47	58	51	1.00	29.33	3.6	1.2			
53	65	45	1.15	26.18	3.6	1.2			
60	74	40	1.30	23.00	3.5	1.3			
67	83	36	1.45	20.53	3.4	1.3			
80	98	30	1.70	17.29	3.2	1.4			
82	101	29	1.10	16.86	3.1	1.3			
89	110	27	1.90	15.43	3.1	1.4			
102	126	23	2.15	13.54	3.0	1.4			
105	130	23	1.90	13.10	2.9	1.4			
114	141	21	2.40	12.08	2.9	1.5			
132	163	18	2.50	10.42	2.7	1.4			
138	171	17	2.90	9.97	2.7	1.5			
155	191	15	3.25	8.90	2.6	1.5			
169	208	14	3.20	8.17	2.5	1.5			
201	247	12	4.15	6.88	2.4	1.5			
225	277	11	4.75	6.14	2.3	1.5			
287	353	8	4.70	4.81	2.1	1.5			
390	480	6	5.75	3.54	2.0	1.6			

P _N = 0.37 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW		0.44 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.15	0.18	21521	0.85	6345.03	101.8	20.9	CG165-14P-80-06E CF165-14P-80-06E	700 723	170
0.17	0.21	17926	1.05	5339.57	113.5	24.2			
0.19	0.23	16312	1.15	4884.00	117.8	25.7			
0.21	0.26	14521	1.25	4369.98	121.9	27.3			
0.25	0.31	12105	1.50	3690.13	126.5	29.5			
0.26	0.32	11565	1.60	3543.61	127.4	30.0			
0.31	0.38	9704	1.90	3020.06	130.1	31.7			
0.38	0.47	7688	2.35	2448.96	132.5	33.5			
0.38	0.47	7527	2.40	2404.16	132.7	33.7			
0.45	0.56	6253	2.90	2050.07	133.9	34.8			
0.14	0.17	22544	0.80	9998.22	97.7	20.0	CG165-14P-71-04F CF165-14P-71-04F	697 720	170
0.15	0.19	20596	0.90	9181.16	105.1	21.8			
0.18	0.22	17257	1.05	7752.38	115.3	24.8			
0.20	0.24	15611	1.20	7067.08	119.4	26.3			
0.22	0.27	13944	1.30	6345.03	123.1	27.8			
0.26	0.32	11555	1.60	5339.57	127.4	30.0			
0.29	0.35	10487	1.75	4884.00	129.0	31.0			
0.32	0.39	9287	1.95	4369.98	130.7	32.1			
0.38	0.46	7681	2.35	3690.13	132.5	33.5			
0.46	0.57	6077	3.00	3020.06	134.0	35.0			
0.44	0.54	6737	2.70	2093.95	133.4	34.4	CG164-14P-80-06E CF164-14P-80-06E	687 710	168
0.43	0.53	7224	1.80	2162.84	107.1	20.3	CG144-14P-80-06E CF144-14P-80-06E	436 454	164
0.49	0.60	6221	2.10	1885.79	108.2	21.3			
0.55	0.68	5440	2.40	1669.82	109.0	22.0			
0.57	0.70	5270	2.50	1624.38	109.1	22.2			
0.64	0.78	4665	2.80	1455.92	109.6	22.8			
0.66	0.81	4459	2.95	1400.42	109.8	23.0			
0.64	0.79	4586	2.85	2162.84	109.7	22.9	CG144-14P-71-04F CF144-14P-71-04F	433 451	164
0.49	0.60	6464	1.25	1891.77	67.4	22.1	CG134-14P-80-06E CF134-14P-80-06E	289 291	160
0.56	0.69	5565	1.45	1642.17	69.5	23.1			
0.63	0.78	4909	1.65	1460.54	70.9	23.9			
0.65	0.80	4759	1.70	1418.83	71.2	24.1			
0.73	0.90	4217	1.90	1267.83	72.1	24.7			
0.76	0.93	4058	2.00	1224.91	72.3	24.9			
0.84	1.0	3591	2.25	1095.41	73.0	25.4			
0.87	1.1	3479	2.30	1063.29	73.1	25.5			
0.96	1.2	3106	2.60	961.31	73.6	26.0			
1.0	1.2	2950	2.75	918.68	73.8	26.1			
0.74	0.9	4164	1.95	1891.77	72.2	24.7	CG134-14P-71-04F CF134-14P-71-04F	286 288	160
0.85	1.0	3570	2.25	1642.17	73.0	25.4			
0.96	1.2	3129	2.60	1460.54	73.6	25.9			
0.98	1.2	3033	2.65	1418.83	73.7	26.0			
1.1	1.3	2671	3.00	1267.83	74.1	26.4			
0.54	0.67	5926	0.80	1702.59	25.8	19.7	CG104-14P-80-06E CF104-14P-80-06E	175 179	156
0.64	0.79	4979	0.95	1439.39	32.9	20.9			
0.70	0.86	4557	1.00	1320.15	35.2	21.4			
0.83	1.0	3821	1.20	1116.07	38.6	22.3			
0.86	1.1	3692	1.25	1080.49	39.1	22.5			
1.0	1.2	3089	1.50	913.46	41.1	23.3			
1.1	1.4	2795	1.65	831.69	42.0	23.6			
1.3	1.6	2334	1.95	703.12	43.1	24.2			
1.5	1.8	2064	2.20	628.39	43.6	24.6			
1.7	2.1	1713	2.65	531.25	44.2	25.0			
1.8	2.2	1651	2.75	514.28	44.3	25.1			



Legend see page 29

P _N = 0.37 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW	0.44 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
0.63	0.77	5124	0.90	2229.16	32.0	20.7	CG104-14P-80-06E CF104-14P-80-06E	172 176	156
0.65	0.79	4946	0.95	2156.24	33.1	20.9			
0.77	0.94	4156	1.10	1822.91	37.2	21.9			
0.82	1.0	3865	1.20	1702.59	38.4	22.3			
0.97	1.2	3241	1.40	1439.39	40.7	23.1			
1.1	1.3	2954	1.55	1320.15	41.5	23.4			
1.2	1.5	2467	1.85	1116.07	42.8	24.1			
1.3	1.6	2383	1.90	1080.49	43.0	24.2			
1.5	1.9	1982	2.30	913.46	43.8	24.7			
1.7	2.1	1786	2.55	831.69	44.1	24.9			
0.81	1.0	3952	0.80	1135.60	12.7	24.2	CG094-14P-80-06E CF094-14P-80-06E	133 131	152
0.87	1.1	3697	0.85	1064.47	16.4	24.5			
0.89	1.1	3596	0.85	1035.22	17.6	24.7			
1.0	1.2	3215	0.95	929.45	21.2	25.3			
1.1	1.4	2817	1.10	819.36	24.1	25.8			
1.2	1.5	2684	1.15	782.16	24.9	26.0			
1.3	1.6	2444	1.25	715.43	26.3	26.4			
1.4	1.8	2174	1.40	640.13	27.5	26.8			
1.5	1.8	2098	1.45	619.07	27.8	26.9			
1.7	2.1	1813	1.70	540.55	28.9	27.3			
1.8	2.2	1737	1.75	519.08	29.2	27.4			
2.1	2.6	1459	2.10	442.39	30.0	27.8			
2.1	2.6	1433	2.10	434.54	30.1	27.9			
2.3	2.8	1347	2.25	410.85	30.3	28.0			
2.6	3.2	1159	2.60	358.73	30.7	28.3			
2.7	3.3	1104	2.75	343.93	30.8	28.4			
0.83	1.0	3871	0.80	1677.34	14.0	24.3	CG094-14P-71-04F CF094-14P-71-04F	129 127	152
0.85	1.0	3792	0.80	1643.20	15.2	24.4			
0.95	1.2	3366	0.90	1464.58	19.9	25.0			
1.0	1.3	3078	1.00	1344.90	22.3	25.5			
1.1	1.3	2971	1.05	1300.57	23.1	25.6			
1.2	1.5	2578	1.20	1135.60	25.5	26.2			
1.3	1.6	2412	1.25	1064.47	26.4	26.4			
1.5	1.8	2089	1.45	929.45	27.9	26.9			
1.7	2.1	1826	1.65	819.36	28.9	27.3			
1.8	2.2	1736	1.75	782.16	29.2	27.4			
1.9	2.4	1575	1.95	715.43	29.7	27.7			
2.2	2.7	1397	2.15	640.13	30.1	27.9			
2.3	2.8	1346	2.25	619.07	30.3	28.0			
2.6	3.2	1158	2.60	540.55	30.7	28.3			
2.8	3.4	1076	2.80	506.66	30.9	28.4			
3.0	3.7	1172	2.60	306.73	30.7	28.3	CG093-14P-80-06E CF093-14P-80-06E	120 118	150
2.5	3.1	1409	1.10	368.94	21.1	19.6	CG083-14P-80-06E CF083-14P-80-06E	67 71	148
3.2	4.0	1088	1.45	284.84	22.5	20.3			
3.9	4.8	913	1.70	238.89	23.2	20.6			
4.9	6.1	716	2.20	187.48	23.7	21.0			
6.4	7.9	553	2.85	144.69	24.0	21.4			
3.8	4.6	935	1.70	368.94	23.1	20.6	CG083-14P-71-04F CF083-14P-71-04F	64 68	148
4.9	6.0	721	2.15	284.84	23.7	21.0			
5.8	7.2	605	2.60	238.89	23.9	21.3			
3.3	4.1	1064	0.80	278.44	7.6	12.5	CG073-14P-80-06E CF073-14P-80-06E	43 47	146
3.7	4.5	968	0.85	253.30	9.1	12.4			
4.3	5.3	826	1.00	216.20	10.6	13.1			
4.7	5.8	751	1.10	196.68	11.3	13.1			
5.2	6.4	678	1.25	177.39	11.9	13.5			
5.7	7.1	616	1.35	161.38	12.3	13.5			
6.7	8.3	525	1.60	137.38	12.8	13.9			
7.4	9.1	477	1.75	124.97	13.0	13.9			
8.9	11	399	2.10	104.50	13.3	14.3			
9.7	12	363	2.30	95.06	13.5	14.3			
11	13	329	2.50	86.17	13.6	14.5			
12	15	299	2.75	78.39	13.6	14.5			

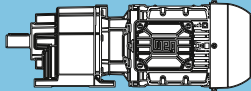
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page			
0.37 kW		0.44 kW			F_{rN} kN	F_{aN} kN						
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B									
4.0	4.9	890	0.95	351.33	10.0	12.9	CG073-14P-71-04F CF073-14P-71-04F	40 44	146			
4.4	5.4	810	1.05	319.60	10.8	12.9						
5.0	6.1	705	1.20	278.44	11.7	13.5						
5.5	6.8	642	1.30	253.30	12.1	13.4						
6.5	7.9	548	1.50	216.20	12.7	13.9						
7.1	8.7	498	1.65	196.68	12.9	13.9						
7.9	9.6	449	1.85	177.39	13.1	14.2						
8.6	11	409	2.05	161.38	13.3	14.2						
10	12	348	2.40	137.38	13.5	14.4						
11	14	317	2.60	124.97	13.6	14.4						
4.9	6.1	719	0.85	188.11	6.6	6.0	CG063-14P-80-06E CF063-14P-80-06E	27 32	144			
5.4	6.6	659	0.95	172.49	7.5	6.2						
6.0	7.4	588	1.05	153.96	8.4	6.4						
6.6	8.1	539	1.15	141.17	8.9	6.5						
7.8	9.6	453	1.35	118.51	9.7	6.8						
8.5	10	415	1.45	108.67	9.9	6.9						
10	13	342	1.80	89.54	10.4	7.1						
11	14	314	1.95	82.10	10.5	7.2						
13	16	280	2.15	73.28	10.7	7.3						
14	17	257	2.35	67.19	10.8	7.3						
16	19	227	2.65	59.42	10.9	7.4	CG063-14P-71-04F CF063-14P-71-04F	23 28	144			
17	21	208	2.90	54.49	10.9	7.5						
4.5	5.6	778	0.80	307.24	5.4	5.8						
5.0	6.1	714	0.85	281.73	6.7	6.0						
5.8	7.0	614	1.00	242.60	8.1	6.3						
6.3	7.7	563	1.10	222.46	8.7	6.4						
7.4	9.1	476	1.30	188.11	9.5	6.7						
8.1	9.9	437	1.40	172.49	9.8	6.8						
9.1	11	390	1.55	153.96	10.1	7.0						
9.9	12	358	1.70	141.17	10.3	7.1						
12	14	300	2.00	118.51	10.6	7.2	CG062-14P-80-06E CF062-14P-80-06E	26 31	144			
13	16	275	2.20	108.67	10.7	7.3						
16	19	227	2.65	89.54	10.9	7.4						
17	21	208	2.90	82.10	10.9	7.5						
15	19	229	1.85	60.00	10.9	7.4						
17	21	210	1.85	55.02	10.9	7.5						
28	34	128	1.85	33.43	11.1	7.6						
23	29	152	2.80	60.00	11.1	7.7				CG062-14P-71-04F CF062-14P-71-04F	23 28	144
25	31	139	2.80	55.02	11.1	7.7						
42	51	85	2.80	33.43	11.2	7.7						
7.0	8.6	508	0.80	132.97	1.8	5.8	CG053-14P-80-06E CF053-14P-80-06E	22 27	142			
7.7	9.4	462	0.90	120.88	3.6	6.0						
9.1	11	388	1.05	101.55	5.2	6.3						
10	12	353	1.15	92.32	5.7	6.5						
12	15	297	1.35	77.79	6.3	6.8						
13	16	270	1.50	70.71	6.6	6.9						
15	18	235	1.70	61.63	6.9	7.0						
17	20	214	1.90	56.02	7.0	7.1						
19	23	188	2.15	49.20	7.2	7.2						
21	25	171	2.35	44.73	7.3	7.3						
7.2	8.8	492	0.85	194.29	2.6	5.8	CG053-14P-71-04F CF053-14P-71-04F	19 24	142			
8.4	10	419	1.00	165.45	4.6	6.2						
9.3	11	381	1.05	150.41	5.3	6.3						
10	13	337	1.20	132.97	5.9	6.6						
12	14	306	1.35	120.88	6.3	6.7						
14	17	257	1.60	101.55	6.7	6.9						
15	19	234	1.75	92.32	6.9	7.0						
18	22	197	2.05	77.79	7.1	7.2						
20	24	179	2.25	70.71	7.2	7.3						
23	28	156	2.60	61.63	7.4	7.4						
25	31	142	2.85	56.02	7.4	7.4						



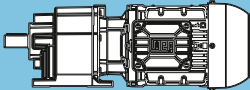
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P_N = 0.37 kW

IE3

50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW	0.44 kW	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
16	19	225	1.15	58.85	7.0	7.1	CG052-14P-80-06E CF052-14P-80-06E	21 26	142
17	21	204	1.15	53.50	7.1	7.2			
19	24	184	1.85	48.13	7.2	7.3			
21	26	167	1.85	43.75	7.3	7.3			
24	30	145	2.80	38.00	7.4	7.4			
26	32	136	1.15	35.67	7.5	7.3			
32	39	111	1.85	29.17	7.5	7.5	CG052-14P-71-04F CF052-14P-71-04F	18 23	142
24	29	149	1.70	58.85	7.4	7.4			
26	32	136	1.70	53.50	7.5	7.5			
29	36	122	2.80	48.13	7.5	7.5			
32	39	111	2.80	43.75	7.5	7.6			
39	48	90	1.70	35.67	7.6	7.6			
48	59	74	2.80	29.17	7.6	7.7	CG033-14P-80-06E CF033-14P-80-06E	17 19	140
14	18	245	0.85	64.05	4.0	3.1			
16	20	222	0.95	58.17	4.4	3.2			
17	21	211	0.95	55.25	4.6	3.3			
18	23	192	1.05	50.18	4.9	3.4			
19	24	184	1.10	48.22	4.9	3.5			
21	26	167	1.20	43.79	5.1	3.5			
26	32	135	1.50	35.38	5.4	3.8			
29	35	123	1.65	32.13	5.5	3.8			
14	17	253	0.80	99.71	3.9	3.0	CG033-14P-71-04F CF033-14P-71-04F	14 16	140
16	20	217	0.95	85.78	4.5	3.2			
18	22	197	1.05	77.90	4.8	3.3			
22	27	162	1.25	64.05	5.2	3.6			
24	29	147	1.40	58.17	5.3	3.7			
29	35	122	1.65	48.22	5.5	3.8			
32	39	111	1.85	43.79	5.6	3.9			
39	48	90	2.25	35.38	5.7	4.0			
43	53	81	2.50	32.13	5.7	4.1			
22	27	164	1.15	42.88	5.2	3.6	CG032-14P-80-06E CF032-14P-80-06E	17 19	140
24	29	149	1.15	38.95	5.3	3.7			
27	33	133	1.55	34.88	5.4	3.8			
29	36	121	1.70	31.67	5.5	3.8			
33	41	106	1.90	27.71	5.6	3.9			
37	45	96	2.10	25.17	5.7	4.0			
38	47	92	1.15	24.03	5.7	3.9			
43	53	82	2.45	21.40	5.7	4.1			
47	58	75	1.75	19.54	5.5	4.0			
48	59	74	2.70	19.44	5.5	4.1			
60	73	59	2.20	15.53	5.1	4.2			
77	95	46	2.85	11.99	4.8	4.3			
33	40	109	1.70	42.88	5.6	3.9	CG032-14P-71-04F CF032-14P-71-04F	14 16	140
36	44	99	1.75	38.95	5.7	4.0			
40	49	88	2.30	34.88	5.7	4.0			
44	54	80	2.50	31.67	5.6	4.1			
50	62	70	2.85	27.71	5.5	4.2			
58	71	61	1.70	24.03	5.2	4.1			
71	88	49	2.60	19.54	4.9	4.2			

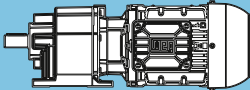
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P _N = 0.37 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.37 kW		0.44 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
31	38	113	0.80	29.65	2.6	0.9	CG012-14P-80-06E CF012-14P-80-06E	15 16	138
36	45	97	0.90	25.50	2.9	1.0			
40	50	87	1.00	22.85	3.0	1.1			
46	57	76	1.15	19.92	3.2	1.1			
47	58	75	0.90	19.51	3.2	1.0			
52	64	68	1.25	17.85	3.3	1.2			
58	72	60	1.10	15.82	3.3	1.1			
62	77	57	1.50	14.88	3.4	1.3			
69	86	51	1.70	13.33	3.4	1.3			
72	89	49	1.75	12.83	3.4	1.3			
74	91	48	1.40	12.46	3.3	1.2			
80	99	44	1.95	11.50	3.3	1.3			
83	102	43	2.00	11.20	3.3	1.4			
92	114	38	2.15	10.04	3.2	1.4			
96	119	37	1.80	9.60	3.1	1.3			
113	139	31	2.45	8.22	3.0	1.4			
123	152	29	2.35	7.50	2.9	1.4			
126	155	28	2.65	7.36	2.9	1.4			
33	41	106	0.80	42.00	2.7	0.9	CG012-14P-71-04F CF012-14P-71-04F	12 13	138
37	45	95	0.90	37.64	2.9	1.0			
42	52	84	1.05	33.09	3.1	1.1			
47	58	75	1.15	29.65	3.2	1.1			
55	67	65	1.35	25.50	3.3	1.2			
61	75	58	1.50	22.85	3.4	1.2			
70	86	50	1.70	19.92	3.4	1.3			
72	88	49	1.35	19.51	3.4	1.2			
78	96	45	1.90	17.85	3.3	1.3			
88	108	40	1.65	15.82	3.2	1.3			
94	115	38	2.30	14.88	3.2	1.4			
105	128	34	2.55	13.33	3.1	1.4			
112	137	32	2.10	12.46	3.0	1.3			
125	153	28	3.00	11.20	2.9	1.4			
145	178	24	2.75	9.60	2.8	1.4			
54	66	66	0.80	17.29	3.4	1.1	CG002-14P-80-06E CF002-14P-80-06E	14 15	136
60	74	59	0.85	15.43	3.3	1.1			
68	84	52	1.00	13.54	3.2	1.2			
71	87	50	0.90	13.10	3.1	1.0			
77	94	46	1.10	12.08	3.1	1.2			
89	109	40	1.15	10.42	2.9	1.1			
93	114	38	1.35	9.97	3.0	1.3			
104	128	34	1.50	8.90	2.9	1.3			
113	139	31	1.45	8.17	2.8	1.2			
135	166	26	1.90	6.88	2.7	1.4			
151	186	23	2.15	6.14	2.6	1.4			
192	237	18	2.15	4.81	2.4	1.4			
261	322	14	2.60	3.54	2.2	1.5			
53	65	66	0.80	26.18	3.4	1.1			
61	74	58	0.90	23.00	3.3	1.1			
68	83	52	1.00	20.53	3.2	1.2			
81	99	44	1.15	17.29	3.1	1.3			
90	111	39	1.30	15.43	3.0	1.3			
103	126	34	1.50	13.54	2.9	1.3			
107	131	33	1.30	13.10	2.8	1.2			
115	142	31	1.65	12.08	2.8	1.4			
134	164	26	1.75	10.42	2.6	1.3			
140	172	25	2.00	9.97	2.6	1.4			
157	192	23	2.25	8.90	2.6	1.4			
171	209	21	2.20	8.17	2.5	1.4			
203	249	17	2.85	6.88	2.4	1.5			
227	279	16	3.25	6.14	2.3	1.5			
290	355	12	3.25	4.81	2.1	1.5			
394	483	9	3.95	3.54	1.9	1.5			

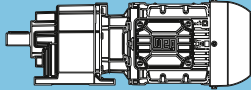
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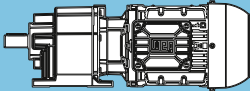
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50 Hz		60 Hz			at 50 Hz			m kg	Dimension sheet see page
0.55 kW	0.66 kW	M ₂ Nm	f _b	i	F _{rN}	F _{aN}			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				kN	kN			
0.22	0.26	21566	0.85	4369.98	101.6	20.9	CG165-14P-L80-06F CF165-14P-L80-06F	701 724	170
0.26	0.31	18072	1.00	3690.13	113.1	24.1			
0.27	0.33	17310	1.05	3543.61	115.2	24.8			
0.31	0.38	14602	1.25	3020.06	121.7	27.2			
0.32	0.39	14305	1.30	2966.43	122.3	27.5			
0.39	0.47	11659	1.55	2448.96	127.2	29.9			
0.39	0.48	11416	1.60	2404.16	127.6	30.1			
0.46	0.56	9585	1.90	2050.07	130.3	31.8			
0.57	0.70	7569	2.40	1661.50	132.6	33.6			
0.20	0.24	23270	0.80	7067.08	94.6	19.4	CG165-14P-80-04E CF165-14P-80-04E	699 722	170
0.22	0.27	20785	0.90	6345.03	104.4	21.6			
0.27	0.32	17358	1.05	5339.57	115.1	24.7			
0.29	0.35	15795	1.15	4884.00	119.0	26.1			
0.32	0.39	14025	1.30	4369.98	122.9	27.8			
0.38	0.47	11691	1.55	3690.13	127.2	29.9			
0.40	0.49	11169	1.65	3543.61	128.0	30.4			
0.47	0.57	9372	1.95	3020.06	130.6	32.0			
0.48	0.58	9182	2.00	2966.43	130.8	32.2			
0.58	0.70	7405	2.45	2448.96	132.8	33.8			
0.59	0.72	7251	2.50	2404.16	133.0	33.9			
0.69	0.84	6024	3.00	2050.07	134.0	35.0			
0.45	0.55	10177	1.80	2093.95	129.5	31.3	CG164-14P-L80-06F CF164-14P-L80-06F	688 711	168
0.52	0.64	8657	2.10	1803.51	131.4	32.6			
0.57	0.70	7889	2.30	1657.33	132.3	33.3			
0.61	0.74	7380	2.45	1559.96	132.8	33.8			
0.65	0.80	6775	2.70	1447.11	133.4	34.3			
0.66	0.81	6683	2.70	1427.45	133.5	34.4			
0.68	0.82	6497	2.80	2093.95	133.6	34.6	CG164-14P-80-04E CF164-14P-80-04E	686 709	168
0.44	0.53	10753	1.25	2162.84	101.7	16.7	CG144-14P-L80-06F CF144-14P-L80-06F	437 455	164
0.50	0.61	9318	1.40	1885.79	104.2	18.2			
0.57	0.69	8183	1.60	1669.82	105.9	19.3			
0.58	0.71	7944	1.65	1624.38	106.2	19.5			
0.65	0.79	7061	1.85	1455.92	107.3	20.4			
0.67	0.82	6764	1.95	1400.42	107.7	20.7			
0.68	0.83	6756	1.95	1398.80	107.7	20.7			
0.75	0.92	5995	2.20	1254.10	108.5	21.5			
0.77	0.95	5825	2.25	1221.03	108.6	21.7			
0.86	1.1	5178	2.55	1099.05	109.2	22.3			
0.88	1.1	5077	2.60	1079.94	109.3	22.4			
0.90	1.1	4934	2.65	1051.77	109.4	22.6			
0.99	1.2	4440	2.95	958.27	109.8	23.1			
0.66	0.80	6966	1.90	2162.84	107.4	20.5	CG144-14P-80-04E CF144-14P-80-04E	435 453	164
0.75	0.91	5999	2.20	1885.79	108.5	21.5			
0.85	1.0	5246	2.50	1669.82	109.2	22.2			
0.87	1.1	5082	2.60	1624.38	109.3	22.4			
0.98	1.2	4498	2.90	1455.92	109.8	23.0			
0.50	0.61	9561	0.85	1891.77	56.5	18.6	CG134-14P-L80-06F CF134-14P-L80-06F	290 292	160
0.58	0.70	8248	1.00	1642.17	61.9	20.1			
0.65	0.79	7306	1.10	1460.54	65.0	21.2			
0.67	0.81	7083	1.15	1418.83	65.7	21.4			
0.75	0.91	6290	1.30	1267.83	67.8	22.3			
0.77	0.94	6065	1.35	1224.91	68.4	22.6			
0.86	1.1	5390	1.50	1095.41	69.9	23.3			
0.89	1.1	5221	1.55	1063.29	70.3	23.5			
0.98	1.2	4682	1.75	961.31	71.3	24.2			
1.0	1.3	4465	1.80	918.68	71.7	24.4			
1.1	1.4	4022	2.00	834.47	72.4	24.9			
1.3	1.6	3532	2.30	741.90	73.1	25.5			
1.3	1.6	3425	2.35	720.98	73.2	25.6			
1.5	1.8	3021	2.65	644.01	73.7	26.0			
1.5	1.9	2861	2.80	613.66	73.9	26.2			

Legend see page 29

P _N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW		0.66 kW			F _m kN	F _{an} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.75	0.91	6246	1.30	1891.77	68.0	22.4	CG134-14P-80-04E CF134-14P-80-04E	288 290	160
0.86	1.0	5378	1.50	1642.17	69.9	23.4			
0.97	1.2	4743	1.70	1460.54	71.2	24.1			
1.0	1.2	4598	1.75	1418.83	71.4	24.2			
1.1	1.4	4067	2.00	1267.83	72.3	24.9			
1.2	1.4	3921	2.05	1224.91	72.5	25.0			
1.3	1.6	3463	2.35	1095.41	73.2	25.5			
1.5	1.8	2995	2.70	961.31	73.7	26.1			
0.85	1.0	5652	0.80	1116.07	28.1	20.0	CG104-14P-L80-06F CF104-14P-L80-06F	176 180	156
0.87	1.1	5461	0.85	1080.49	29.6	20.3			
1.0	1.3	4588	1.00	913.46	35.1	21.4			
1.1	1.4	4160	1.10	831.69	37.1	21.9			
1.3	1.6	3488	1.30	703.12	39.8	22.8			
1.5	1.8	3092	1.50	628.39	41.1	23.3			
1.8	2.2	2587	1.75	531.25	42.5	23.9			
2.2	2.7	2078	2.20	434.78	43.6	24.6			
2.3	2.8	1985	2.30	417.03	43.8	24.7			
2.7	3.3	1647	2.75	352.56	44.3	25.1			
0.83	1.0	5738	0.80	1702.59	27.4	19.9	CG104-14P-80-04E CF104-14P-80-04E	174 178	156
0.99	1.2	4821	0.95	1439.39	33.8	21.1			
1.1	1.3	4404	1.05	1320.15	36.0	21.6			
1.3	1.5	3693	1.25	1116.07	39.1	22.5			
1.6	1.9	2985	1.55	913.46	41.4	23.4			
1.7	2.1	2701	1.70	831.69	42.2	23.8			
2.0	2.4	2255	2.00	703.12	43.2	24.3			
2.3	2.7	1991	2.30	628.39	43.8	24.7			
2.7	3.2	1652	2.75	531.25	44.3	25.1			
2.8	3.3	1592	2.85	514.28	44.4	25.2			
1.2	1.5	3961	0.80	782.16	12.6	24.1	CG094-14P-L80-06F CF094-14P-L80-06F	134 132	152
1.3	1.6	3616	0.85	715.43	17.4	24.7			
1.5	1.8	3222	0.95	640.13	21.2	25.2			
1.7	2.1	2698	1.15	540.55	24.9	26.0			
1.8	2.2	2586	1.20	519.08	25.5	26.2			
1.9	2.3	2524	1.20	506.66	25.8	26.3			
2.1	2.6	2186	1.40	442.39	27.5	26.8			
2.2	2.7	2147	1.40	434.54	27.6	26.8			
2.3	2.8	2022	1.50	410.85	28.1	27.0			
2.6	3.2	1747	1.75	358.73	29.1	27.4			
2.7	3.3	1715	1.75	352.17	29.2	27.5			
3.1	3.8	1441	2.10	300.30	30.0	27.9			
3.4	4.1	1327	2.30	278.74	30.3	28.0			
3.9	4.7	1142	2.65	243.38	30.7	28.3			
1.3	1.5	3827	0.80	1135.60	14.7	24.3	CG094-14P-80-04E CF094-14P-80-04E	132 130	152
1.4	1.7	3475	0.90	1035.22	18.9	24.9			
1.5	1.9	3107	1.00	929.45	22.1	25.4			
1.7	2.1	2728	1.10	819.36	24.7	26.0			
1.8	2.2	2593	1.20	782.16	25.5	26.2			
2.0	2.4	2362	1.30	715.43	26.7	26.5			
2.2	2.7	2101	1.45	640.13	27.8	26.9			
2.3	2.8	2027	1.50	619.07	28.1	27.0			
2.6	3.2	1752	1.75	540.55	29.1	27.4			
2.7	3.3	1679	1.80	519.08	29.4	27.5			
2.8	3.4	1635	1.85	506.66	29.5	27.6			
3.2	3.9	1410	2.15	442.39	30.1	27.9			
3.3	4.0	1382	2.20	434.54	30.2	28.0			
3.5	4.2	1299	2.35	410.85	30.4	28.1			
4.0	4.8	1118	2.70	358.73	30.8	28.3			
4.1	5.0	1065	2.85	343.93	30.9	28.4			
3.1	3.8	1705	1.80	306.73	29.3	27.5	CG093-14P-L80-06F CF093-14P-L80-06F	121 119	150
3.9	4.8	1349	2.25	242.77	30.3	28.0			
4.5	5.4	1178	2.55	211.98	30.7	28.3			
5.0	6.2	1041	2.90	187.34	30.9	28.5			

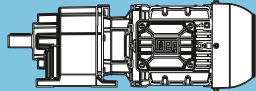
Legend see page 29

P _N = 0.55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW	0.66 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
4.6	5.6	1135	2.65	306.73	30.7	28.3	CG093-14P-80-04E CF093-14P-80-04E	119 117	150
2.6	3.1	2051	0.80	368.94	16.5	18.3	CG083-14P-L80-06F CF083-14P-L80-06F	68 72	148
3.3	4.1	1583	1.00	284.84	20.1	19.3			
4.0	4.8	1328	1.20	238.89	21.5	19.8			
5.0	6.2	1042	1.50	187.48	22.7	20.4			
6.5	8.0	804	1.95	144.69	23.5	20.9			
7.9	9.7	665	2.35	119.68	23.8	21.1			
9.3	11	566	2.75	101.80	24.0	21.3	CG083-14P-80-04E CF083-14P-80-04E	66 70	148
3.8	4.7	1365	1.15	368.94	21.3	19.7			
5.0	6.0	1054	1.50	284.84	22.7	20.3			
5.9	7.2	884	1.80	238.89	23.2	20.7			
7.6	9.2	693	2.25	187.48	23.7	21.1			
9.8	12	535	2.90	144.69	24.1	21.4			
4.8	5.9	1093	0.80	196.68	7.1	12.1	CG073-14P-L80-06F CF073-14P-L80-06F	44 48	146
5.3	6.5	986	0.85	177.39	8.8	12.7			
5.9	7.2	897	0.95	161.38	9.9	12.7			
6.9	8.4	764	1.10	137.38	11.2	13.3			
7.6	9.2	695	1.20	124.97	11.7	13.3			
9.0	11	581	1.45	104.50	12.5	13.8			
9.9	12	528	1.60	95.06	12.8	13.8			
11	13	479	1.75	86.17	13.0	14.1			
12	15	436	1.90	78.39	13.2	14.1			
13	16	393	2.10	70.68	13.4	14.3			
15	18	357	2.30	64.30	13.5	14.3			
16	19	334	2.50	60.06	13.5	14.5			
17	21	304	2.75	54.63	13.6	14.5			
19	23	274	3.00	49.38	13.7	14.6			
5.1	6.2	1030	0.80	278.44	8.2	12.6	CG073-14P-80-04E CF073-14P-80-04E	42 46	146
5.6	6.8	937	0.90	253.30	9.5	12.5			
6.6	8.0	800	1.05	216.20	10.9	13.2			
7.2	8.7	727	1.15	196.68	11.5	13.2			
8.0	9.7	656	1.25	177.39	12.0	13.6			
8.8	11	597	1.40	161.38	12.4	13.6			
10	13	508	1.65	137.38	12.9	14.0			
11	14	462	1.80	124.97	13.1	14.0			
14	16	387	2.15	104.50	13.4	14.3			
15	18	352	2.35	95.06	13.5	14.3			
16	20	319	2.60	86.17	13.6	14.5			
18	22	290	2.85	78.39	13.7	14.5			
6.7	8.2	785	0.80	141.17	5.3	5.8	CG063-14P-L80-06F CF063-14P-L80-06F	28 33	144
8.0	9.7	659	0.95	118.51	7.5	6.2			
8.7	11	604	1.00	108.67	8.2	6.3			
11	13	498	1.25	89.54	9.3	6.7			
12	14	456	1.35	82.10	9.6	6.8			
13	16	407	1.50	73.28	10.0	6.9			
14	17	373	1.65	67.19	10.2	7.0			
16	19	330	1.85	59.42	10.4	7.1			
17	21	303	2.00	54.49	10.6	7.2			
19	23	276	2.20	49.74	10.7	7.3			
21	25	254	2.40	45.61	10.8	7.4			
7.5	9.1	696	0.90	188.11	7.0	6.1	CG063-14P-80-04E CF063-14P-80-04E	26 31	144
8.2	10	638	0.95	172.49	7.8	6.2			
9.2	11	569	1.10	153.96	8.6	6.5			
10	12	522	1.15	141.17	9.1	6.6			
12	15	438	1.40	118.51	9.8	6.8			
13	16	402	1.50	108.67	10.0	6.9			
16	19	331	1.85	89.54	10.4	7.1			
17	21	304	2.00	82.10	10.6	7.2			
19	23	271	2.25	73.28	10.7	7.3			
21	26	249	2.45	67.19	10.8	7.4			
24	29	220	2.75	59.42	10.9	7.5			
26	32	202	3.00	54.49	11.0	7.5			

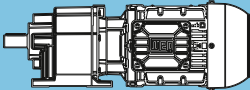
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0.55 kW		0.66 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
16	19	333	1.30	60.00	10.4	7.1	CG062-14P-L80-06F CF062-14P-L80-06F	28 33	144
17	21	306	1.30	55.02	10.6	7.2			
20	24	264	2.30	47.55	10.7	7.3			
22	26	242	2.35	43.60	10.8	7.4			
26	31	205	2.95	36.92	10.9	7.5			
28	35	186	1.30	33.43	11.0	7.3			
36	44	147	2.35	26.49	11.1	7.5			
24	29	222	1.90	60.00	10.9	7.5	CG062-14P-80-04E CF062-14P-80-04E	25 30	144
26	31	204	1.90	55.02	10.9	7.5			
42	51	124	1.90	33.43	11.1	7.6			
10	13	513	0.80	92.32	1.4	5.7	CG053-14P-L80-06F CF053-14P-L80-06F	23 28	142
12	15	432	0.95	77.79	4.3	6.1			
13	16	393	1.05	70.71	5.1	6.3			
15	19	343	1.20	61.63	5.8	6.5			
17	21	311	1.30	56.02	6.2	6.7			
19	23	273	1.50	49.20	6.6	6.9			
21	26	249	1.65	44.73	6.8	7.0			
11	13	492	0.85	132.97	2.6	5.9	CG053-14P-80-04E CF053-14P-80-04E	21 26	142
12	14	447	0.90	120.88	4.0	6.0			
14	17	376	1.10	101.55	5.4	6.4			
15	19	341	1.20	92.32	5.8	6.5			
18	22	288	1.40	77.79	6.4	6.8			
20	24	262	1.55	70.71	6.7	6.9			
23	28	228	1.80	61.63	6.9	7.1			
25	31	207	1.95	56.02	7.1	7.1			
29	35	182	2.20	49.20	7.2	7.3			
32	38	165	2.45	44.73	7.3	7.3			
16	20	327	0.80	58.85	6.0	6.6	CG052-14P-L80-06F CF052-14P-L80-06F	22 27	142
18	22	297	0.80	53.50	6.3	6.7			
20	24	267	1.30	48.13	6.6	6.9			
22	26	243	1.30	43.75	6.8	7.0			
25	30	211	1.90	38.00	7.1	7.1			
26	32	198	0.80	35.67	7.1	7.0			
27	33	192	2.10	34.55	7.2	7.2			
32	39	164	2.45	29.46	7.3	7.4			
35	43	149	2.70	26.79	7.4	7.4			
39	48	134	3.00	24.12	7.5	7.5			
41	50	128	2.10	23.03	7.5	7.4			
53	65	99	2.70	17.86	7.6	7.5			
24	29	218	1.15	58.85	7.0	7.1			
27	32	198	1.15	53.50	7.1	7.2			
30	36	178	1.90	48.13	7.3	7.3			
32	39	162	1.90	43.75	7.3	7.4			
37	45	141	2.85	38.00	7.4	7.5			
40	48	132	1.15	35.67	7.5	7.3			
49	59	108	1.90	29.17	7.6	7.5			
22	26	243	0.85	43.79	4.1	3.1	CG033-14P-L80-06F CF033-14P-L80-06F	19 21	140
27	33	197	1.05	35.38	4.8	3.4			
29	36	179	1.15	32.13	5.0	3.5			
22	27	237	0.85	64.05	4.2	3.1	CG033-14P-80-04E CF033-14P-80-04E	16 18	140
24	30	215	0.95	58.17	4.5	3.2			
26	31	204	1.00	55.25	4.7	3.3			
28	34	186	1.10	50.18	4.9	3.4			
29	36	178	1.15	48.22	5.0	3.5			
32	39	162	1.25	43.79	5.2	3.6			
40	49	131	1.55	35.38	5.5	3.8			
44	54	119	1.70	32.13	5.4	3.8			



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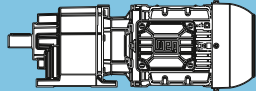
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0.55 kW	0.66 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN						
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹											
22	27	238	0.80	42.88	4.2	3.1	CG032-14P-L80-06F CF032-14P-L80-06F	18 20	140			
24	30	216	0.80	38.95	4.5	3.2						
27	33	194	1.05	34.88	4.8	3.4						
30	36	176	1.15	31.67	5.0	3.5						
34	42	154	1.30	27.71	5.3	3.6						
38	46	140	1.45	25.17	5.4	3.7						
39	48	134	0.80	24.03	5.4	3.6						
44	54	119	1.70	21.40	5.4	3.9						
48	59	109	1.20	19.54	5.2	3.8						
49	59	108	1.90	19.44	5.3	3.9						
55	68	95	2.15	17.09	5.1	4.0						
61	74	86	1.55	15.53	4.9	4.0						
73	89	72	2.75	12.92	4.8	4.2						
79	96	67	2.00	11.99	4.6	4.1						
99	121	53	2.45	9.57	4.3	4.2						
33	40	159	1.20	42.88	5.2	3.6	CG032-14P-80-04E CF032-14P-80-04E	16 18	140			
36	44	144	1.20	38.95	5.3	3.7						
41	49	129	1.60	34.88	5.5	3.8						
45	54	117	1.75	31.67	5.4	3.9						
51	62	103	2.00	27.71	5.2	4.0						
56	68	93	2.15	25.17	5.1	4.0						
59	72	89	1.20	24.03	5.0	3.9						
66	80	79	2.55	21.40	4.9	4.1						
73	88	72	1.80	19.54	4.7	4.1						
91	111	57	2.30	15.53	4.4	4.2						
118	143	44	2.95	11.99	4.1	4.3						
47	58	111	0.80	19.92	2.6	0.9				CG012-14P-L80-06F CF012-14P-L80-06F	16 17	138
53	65	99	0.90	17.85	2.8	1.0						
60	73	88	0.80	15.82	3.0	0.8						
64	78	83	1.05	14.88	3.1	1.1						
71	87	74	1.15	13.33	3.2	1.1						
74	90	71	1.20	12.83	3.2	1.2						
76	93	69	1.00	12.46	3.2	1.0						
82	100	64	1.35	11.50	3.2	1.2						
84	103	62	1.35	11.20	3.2	1.2						
94	115	56	1.50	10.04	3.1	1.3						
98	120	53	1.25	9.60	3.0	1.1						
115	141	46	1.70	8.22	2.9	1.3						
126	154	42	1.60	7.50	2.8	1.3						
128	157	41	1.85	7.36	2.8	1.4						
169	206	31	2.15	5.60	2.6	1.3						
196	239	27	2.50	4.83	2.5	1.4						
224	274	23	2.85	4.22	2.4	1.4						
48	58	110	0.80	29.65	2.6	0.9	CG012-14P-80-04E CF012-14P-80-04E	14 15	138			
56	67	94	0.95	25.50	2.9	1.0						
62	75	85	1.05	22.85	3.1	1.1						
71	86	74	1.20	19.92	3.2	1.2						
73	88	72	0.95	19.51	3.2	1.0						
80	96	66	1.30	17.85	3.2	1.2						
90	109	59	1.15	15.82	3.0	1.1						
95	116	55	1.55	14.88	3.1	1.3						
107	129	49	1.75	13.33	3.0	1.3						
111	134	47	1.80	12.83	2.9	1.3						
114	138	46	1.45	12.46	2.9	1.2						
123	150	43	2.00	11.50	2.8	1.3						
127	154	41	2.05	11.20	2.8	1.4						
141	171	37	2.20	10.04	2.7	1.4						
148	179	36	1.90	9.60	2.7	1.3						
173	209	30	2.55	8.22	2.6	1.4						
189	229	28	2.40	7.50	2.5	1.4						
193	234	27	2.75	7.36	2.5	1.4						

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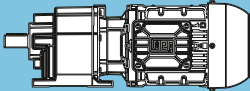
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.55 kW		0.66 kW			F _{rn} kN	F _{aW} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
91	111	58	0.80	10.42	2.7	0.9	CG002-14P-L80-06F CF002-14P-L80-06F	15 16	136
95	116	55	0.95	9.97	2.8	1.2			
106	130	49	1.05	8.90	2.7	1.2			
116	141	45	1.00	8.17	2.6	1.1			
137	168	38	1.30	6.88	2.6	1.3			
154	188	34	1.25	6.14	2.4	1.2			
196	240	27	1.50	4.81	2.3	1.3			
267	326	20	1.80	3.54	2.1	1.4			
387	473	14	2.30	2.44	1.9	1.5			
82	100	64	0.80	17.29	2.9	1.1			
92	111	57	0.90	15.43	2.8	1.1			
105	127	50	1.00	13.54	2.8	1.2			
108	131	48	0.90	13.10	2.6	1.0			
118	142	45	1.15	12.08	2.7	1.3			
136	165	39	1.20	10.42	2.5	1.2			
142	173	37	1.40	9.97	2.6	1.3			
160	193	33	1.55	8.90	2.5	1.4			
174	210	30	1.50	8.17	2.4	1.3			
207	250	25	1.95	6.88	2.3	1.4			
231	280	23	1.85	6.14	2.2	1.4			
295	357	18	2.20	4.81	2.0	1.4			
401	486	13	2.70	3.54	1.9	1.5			



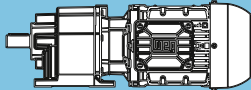
Legend see page 29

P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW	0.90 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
0.31	0.38	20380	0.90	3020.06	105.9	22.0	CG165-11P-90S/L-06E CF165-11P-90S/L-06E	707 730	170
0.32	0.39	20018	0.90	2966.43	107.1	22.3			
0.38	0.47	16315	1.15	2448.96	117.8	25.7			
0.39	0.48	16017	1.15	2404.16	118.5	25.9			
0.46	0.56	13518	1.35	2050.07	123.9	28.2			
0.57	0.69	10760	1.70	1661.50	128.6	30.7			
0.27	0.33	23807	0.80	5339.57	92.2	18.9	CG165-11P-80-04F CF165-11P-80-04F	701 724	170
0.29	0.36	21720	0.85	4884.00	101.0	20.8			
0.33	0.4	19335	0.95	4369.98	109.3	22.9			
0.39	0.47	16160	1.15	3690.13	118.1	25.8			
0.40	0.49	15479	1.20	3543.61	119.8	26.4			
0.47	0.58	13057	1.40	3020.06	124.8	28.6			
0.48	0.59	12792	1.45	2966.43	125.3	28.9			
0.58	0.71	10398	1.75	2448.96	129.2	31.1			
0.59	0.72	10182	1.80	2404.16	129.5	31.2			
0.70	0.85	8526	2.15	2050.07	131.6	32.8			
0.86	1.0	6715	2.70	1661.50	133.5	34.4			
0.45	0.55	14242	1.30	2093.95	122.5	27.6	CG164-11P-90S/L-06E CF164-11P-90S/L-06E	694 717	168
0.52	0.63	12166	1.50	1803.51	126.4	29.4			
0.57	0.69	11111	1.65	1657.33	128.1	30.4			
0.60	0.73	10415	1.75	1559.96	129.1	31.0			
0.65	0.79	9602	1.90	1447.11	130.3	31.8			
0.66	0.80	9452	1.95	1427.45	130.5	31.9			
0.73	0.90	8398	2.15	1278.93	131.7	32.9			
0.75	0.92	8151	2.25	1246.39	132.0	33.1			
0.76	0.93	8074	2.25	1234.69	132.1	33.2			
0.85	1.0	7114	2.55	1101.54	133.1	34.0			
0.87	1.1	6970	2.60	1081.51	133.2	34.2			
0.99	1.2	6039	3.00	952.78	134.0	35.0			
0.68	0.83	9095	2.00	2093.95	130.9	32.2			
0.79	0.96	7720	2.35	1803.51	132.5	33.5			
0.86	1.0	7021	2.60	1657.33	133.2	34.1			
0.92	1.1	6567	2.75	1559.96	133.6	34.5			
0.99	1.2	6029	3.00	1447.11	134.0	35.0			
0.43	0.53	14954	0.90	2162.84	91.8	12.5	CG144-11P-90S/L-06E CF144-11P-90S/L-06E	443 461	164
0.50	0.61	12959	1.05	1885.79	97.0	14.5			
0.56	0.69	11427	1.15	1669.82	100.4	16.0			
0.58	0.70	11094	1.20	1624.38	101.1	16.4			
0.65	0.79	9882	1.35	1455.92	103.3	17.6			
0.67	0.82	9486	1.40	1400.42	103.9	18.0			
0.75	0.91	8442	1.55	1254.10	105.5	19.0			
0.77	0.94	8203	1.60	1221.03	105.9	19.3			
0.86	1.0	7323	1.80	1099.05	107.0	20.2			
0.87	1.1	7180	1.85	1079.94	107.2	20.3			
0.89	1.1	6979	1.90	1051.77	107.4	20.5			
0.98	1.2	6306	2.10	958.27	108.2	21.2			
1.0	1.3	5935	2.20	905.71	108.5	21.6			
1.1	1.3	5512	2.40	848.21	108.9	22.0			
1.3	1.5	4737	2.75	739.56	109.6	22.8			
0.66	0.80	9650	1.35	2162.84	103.7	17.8	CG144-11P-80-04F CF144-11P-80-04F	437 455	164
0.76	0.92	8328	1.60	1885.79	105.7	19.2			
0.86	1.0	7313	1.80	1669.82	107.0	20.2			
0.88	1.1	7099	1.85	1624.38	107.3	20.4			
0.98	1.2	6298	2.10	1455.92	108.2	21.2			
1.0	1.2	6032	2.20	1400.42	108.4	21.5			
1.1	1.4	5346	2.45	1254.10	109.1	22.1			
1.2	1.4	5184	2.55	1221.03	109.2	22.3			
1.3	1.6	4608	2.85	1099.05	109.7	22.9			
1.4	1.7	4382	3.00	1051.77	109.8	23.1			

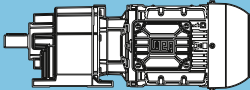
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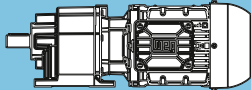
P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW		0.90 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.64	0.78	10140	0.80	1460.54	53.7	17.9	CG134-11P-90S/L-06E CF134-11P-90S/L-06E	296 298	160
0.66	0.81	9830	0.85	1418.83	55.2	18.3			
0.74	0.9	8748	0.95	1267.83	60.0	19.5			
0.77	0.93	8452	0.95	1224.91	61.1	19.8			
0.86	1.0	7512	1.10	1095.41	64.4	20.9			
0.88	1.1	7292	1.10	1063.29	65.1	21.2			
0.98	1.2	6552	1.25	961.31	67.2	22.0			
1.0	1.2	6248	1.30	918.68	67.9	22.4			
1.1	1.4	5641	1.45	834.47	69.4	23.1			
1.3	1.5	4974	1.65	741.90	70.8	23.8			
1.5	1.8	4273	1.90	644.01	72.0	24.6			
1.7	2.1	3646	2.20	556.43	72.9	25.3			
1.8	2.1	3469	2.35	532.69	73.2	25.5			
2.0	2.5	2948	2.75	460.25	73.8	26.1			
2.1	2.5	2896	2.80	453.11	73.8	26.2			
0.76	0.92	8580	0.95	1891.77	60.6	19.7	CG134-11P-80-04F CF134-11P-80-04F	290 292	160
0.87	1.1	7403	1.10	1642.17	64.7	21.0			
0.98	1.2	6543	1.25	1460.54	67.2	22.0			
1.0	1.2	6343	1.30	1418.83	67.7	22.3			
1.1	1.4	5633	1.45	1267.83	69.4	23.1			
1.2	1.4	5431	1.50	1224.91	69.8	23.3			
1.3	1.6	4817	1.70	1095.41	71.0	24.0			
1.5	1.8	4184	1.95	961.31	72.1	24.7			
1.6	1.9	3982	2.05	918.68	72.4	25.0			
1.7	2.1	3587	2.25	834.47	73.0	25.4			
1.9	2.3	3150	2.55	741.90	73.6	25.9			
2.0	2.4	3048	2.65	720.98	73.7	26.0			
2.2	2.7	2683	3.00	644.01	74.1	26.4			
1.1	1.4	5774	0.80	831.69	27.1	19.9	CG104-11P-90S/L-06E CF104-11P-90S/L-06E	182 186	156
1.3	1.6	4852	0.95	703.12	33.6	21.0			
1.5	1.8	4318	1.05	628.39	36.4	21.7			
1.8	2.2	3621	1.25	531.25	39.3	22.6			
2.2	2.6	2927	1.55	434.78	41.6	23.5			
2.3	2.7	2796	1.65	417.03	42.0	23.6			
2.7	3.2	2334	1.95	352.56	43.1	24.2			
3.2	3.9	1922	2.35	295.14	43.9	24.8			
3.3	4.0	1831	2.50	282.94	44.0	24.9			
3.9	4.8	1516	3.00	239.20	44.5	25.3			
1.3	1.6	5072	0.90	1116.07	32.3	20.7	CG104-11P-80-04F CF104-11P-80-04F	176 180	156
1.6	1.9	4118	1.10	913.46	37.3	22.0			
1.7	2.1	3726	1.25	831.69	38.9	22.5			
2.0	2.5	3124	1.45	703.12	41.0	23.2			
2.3	2.8	2769	1.65	628.39	42.0	23.7			
2.7	3.3	2312	1.95	531.25	43.1	24.3			
2.8	3.4	2229	2.05	514.28	43.3	24.4			
3.3	4.0	1853	2.45	434.78	44.0	24.8			
3.4	4.2	1770	2.55	417.03	44.1	24.9			
3.8	4.6	1878	2.40	246.43	44.0	24.8	CG104-11P-90S/L-06E CF104-11P-90S/L-06E	169 173	156
4.5	5.5	1587	2.85	208.33	44.4	25.2			
1.7	2.1	3753	0.80	540.55	15.7	24.5	CG094-11P-90S/L-06E CF094-11P-90S/L-06E	139 137	152
1.8	2.2	3596	0.85	519.08	17.6	24.7			
1.9	2.3	3503	0.90	506.66	18.6	24.8			
2.1	2.6	3046	1.00	442.39	22.6	25.5			
2.2	2.6	2986	1.05	434.54	23.0	25.6			
2.3	2.8	2817	1.10	410.85	24.1	25.8			
2.6	3.2	2445	1.25	358.73	26.2	26.4			
2.7	3.3	2400	1.25	352.17	26.5	26.5			
3.1	3.8	2026	1.50	300.30	28.1	27.0			
3.4	4.1	1869	1.65	278.74	28.7	27.2			
3.9	4.7	1615	1.90	243.38	29.5	27.6			

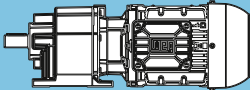
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P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW	0.90 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
1.7	2.1	3732	0.85	819.36	16.0	24.5	CG094-11P-80-04F CF094-11P-80-04F	133 131	152
1.8	2.2	3562	0.85	782.16	18.0	24.7			
2.0	2.4	3245	0.95	715.43	21.0	25.2			
2.2	2.7	2892	1.05	640.13	23.6	25.7			
2.3	2.8	2791	1.10	619.07	24.3	25.9			
2.6	3.2	2422	1.25	540.55	26.4	26.4			
2.8	3.4	2321	1.30	519.08	26.9	26.6			
3.2	3.9	1958	1.55	442.39	28.4	27.1			
3.3	4.0	1919	1.60	434.54	28.5	27.2			
3.5	4.2	1807	1.70	410.85	28.9	27.3			
4.0	4.9	1561	1.95	358.73	29.7	27.7			
4.1	4.9	1530	2.00	352.17	29.8	27.7			
4.2	5.1	1491	2.05	343.93	29.9	27.8			
4.8	5.8	1286	2.35	300.30	30.4	28.1			
5.1	6.2	1183	2.55	278.74	30.6	28.3			
5.9	7.1	1014	3.00	243.38	31.0	28.5			
3.1	3.7	2337	1.30	306.73	26.8	26.5	CG093-11P-90S/L-06E CF093-11P-90S/L-06E	126 124	150
3.9	4.7	1850	1.65	242.77	28.8	27.3			
4.4	5.4	1615	1.90	211.98	29.5	27.6			
5.0	6.1	1427	2.15	187.34	30.1	27.9			
5.9	7.2	1207	2.50	158.42	30.6	28.2			
6.1	7.4	1175	2.60	154.24	30.7	28.3			
6.9	8.4	1038	2.90	136.18	30.9	28.5			
4.7	5.7	1536	2.00	306.73	29.8	27.7	CG093-11P-80-04F CF093-11P-80-04F	120 118	150
5.9	7.2	1216	2.50	242.77	30.6	28.2			
6.7	8.2	1062	2.85	211.98	30.9	28.4			
3.9	4.8	1820	0.90	238.89	18.5	18.8	CG083-11P-90S/L-06E CF083-11P-90S/L-06E	74 78	148
5.0	6.1	1429	1.10	187.48	21.0	19.6			
6.5	7.9	1102	1.45	144.69	22.5	20.2			
7.9	9.6	912	1.70	119.68	23.2	20.6			
9.2	11	776	2.00	101.80	23.5	20.9			
11	13	672	2.35	88.23	23.8	21.1			
13	15	568	2.75	74.50	24.0	21.3			
3.9	4.7	1848	0.85	368.94	18.2	18.7	CG083-11P-80-04F CF083-11P-80-04F	68 72	148
5.0	6.1	1427	1.10	284.84	21.0	19.6			
6.0	7.3	1197	1.30	238.89	22.1	20.1			
7.6	9.3	939	1.70	187.48	23.1	20.6			
9.9	12	725	2.15	144.69	23.7	21.0			
12	15	599	2.60	119.68	23.9	21.3			
6.8	8.3	1047	0.80	137.38	7.9	12.5	CG073-11P-90S/L-06E CF073-11P-90S/L-06E	50 54	146
7.5	9.2	952	0.90	124.97	9.3	12.5			
9.0	11	796	1.05	104.50	10.9	13.2			
9.9	12	724	1.15	95.06	11.5	13.2			
11	13	657	1.25	86.17	12.0	13.6			
12	15	597	1.40	78.39	12.4	13.6			
13	16	539	1.55	70.68	12.7	13.9			
15	18	490	1.70	64.30	12.9	13.9			
16	19	458	1.80	60.06	13.1	14.1			
17	21	416	2.00	54.63	13.3	14.1			
19	23	376	2.20	49.38	13.4	14.4			
21	25	342	2.35	44.92	13.5	14.4			
24	29	298	2.60	39.17	13.6	14.6			
26	32	271	2.70	35.63	13.7	14.6			

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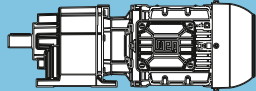
P _N = 0.75 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW		0.90 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
6.6	8.0	1083	0.80	216.20	7.3	12.4	CG073-11P-80-04F CF073-11P-80-04F	44 48	146
7.3	8.8	985	0.85	196.68	8.8	12.4			
8.1	9.8	889	0.95	177.39	10.0	12.9			
8.9	11	808	1.05	161.38	10.8	12.9			
10	13	688	1.20	137.38	11.8	13.5			
11	14	626	1.35	124.97	12.2	13.5			
14	17	523	1.60	104.50	12.8	14.0			
15	18	476	1.75	95.06	13.0	13.9			
17	20	432	1.90	86.17	13.2	14.2			
18	22	393	2.10	78.39	13.4	14.2			
20	25	354	2.35	70.68	13.5	14.4			
22	27	322	2.55	64.30	13.6	14.4			
24	29	301	2.75	60.06	13.6	14.6			
26	32	274	3.00	54.63	13.7	14.6			
24	29	297	2.80	38.92	13.7	14.6	CG072-11P-90S/L-06E CF072-11P-90S/L-06E	49 53	146
10	13	682	0.90	89.54	7.2	6.1	CG063-11P-90S/L-06E CF063-11P-90S/L-06E	33 38	144
11	14	626	1.00	82.10	8.0	6.3			
13	16	558	1.10	73.28	8.7	6.5			
14	17	512	1.20	67.19	9.2	6.6			
16	19	453	1.35	59.42	9.7	6.8			
17	21	415	1.45	54.49	9.9	6.9			
19	23	379	1.60	49.74	10.2	7.0			
21	25	348	1.75	45.61	10.3	7.1			
9.3	11	771	0.80	153.96	5.6	5.9	CG063-11P-80-04F CF063-11P-80-04F	27 32	144
10	12	707	0.85	141.17	6.8	6.0			
12	15	594	1.05	118.51	8.4	6.4			
13	16	544	1.15	108.67	8.9	6.5			
16	19	448	1.35	89.54	9.7	6.8			
17	21	411	1.50	82.10	10.0	6.9			
20	24	367	1.65	73.28	10.2	7.0			
21	26	337	1.80	67.19	10.4	7.1			
24	29	298	2.05	59.42	10.6	7.2			
26	32	273	2.20	54.49	10.7	7.3			
29	35	249	2.45	49.74	10.8	7.4			
31	38	228	2.65	45.61	10.9	7.4			
16	19	457	0.95	60.00	9.6	6.8	CG062-11P-90S/L-06E CF062-11P-90S/L-06E	33 38	144
17	21	419	0.95	55.02	9.9	6.9			
20	24	362	1.70	47.55	10.3	7.1			
22	26	332	1.70	43.60	10.4	7.1			
25	31	281	2.15	36.92	10.7	7.3			
28	34	258	2.35	33.86	10.8	7.3			
31	38	231	2.60	30.30	10.9	7.4			
34	41	212	2.85	27.78	10.9	7.5			
35	43	202	1.70	26.49	11.0	7.3			
46	56	157	2.45	20.57	11.1	7.4			
56	68	129	2.95	16.88	10.7	7.6			
24	29	301	1.40	60.00	10.6	7.2	CG063-11P-80-04F CF063-11P-80-04F	27 32	144
26	32	276	1.40	55.02	10.7	7.3			
30	37	238	2.55	47.55	10.8	7.4			
33	40	218	2.60	43.60	10.9	7.5			
43	52	167	1.40	33.43	11.0	7.4			
54	66	133	2.60	26.49	10.8	7.5			
15	19	470	0.90	61.63	3.4	6.0	CG053-11P-90S/L-06E CF053-11P-90S/L-06E	29 34	142
17	20	427	0.95	56.02	4.4	6.1			
19	23	375	1.10	49.20	5.4	6.4			
21	26	341	1.20	44.73	5.8	6.5			
14	17	509	0.80	101.55	1.7	5.8	CG053-11P-80-04F CF053-11P-80-04F	23 28	142
15	19	462	0.90	92.32	3.6	6.0			
18	22	390	1.05	77.79	5.1	6.3			
20	25	354	1.15	70.71	5.7	6.5			
23	28	309	1.30	61.63	6.2	6.7			
26	31	281	1.45	56.02	6.5	6.8			
29	35	246	1.65	49.20	6.8	7.0			
32	39	224	1.80	44.73	7.0	7.1			

P _N = 0.75 kW								IE3	
50 Hz		60 Hz		at 50 Hz				m kg	Dimension sheet see page
0.75 kW	0.90 kW	M ₂ Nm	f _B	i	F _{rN}	F _{aN}			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				kN	kN			
20	24	367	0.95	48.13	5.5	6.4	CG052-11P-90S/L-06E CF052-11P-90S/L-06E	28 33	142
21	26	333	0.95	43.75	5.9	6.6			
25	30	290	1.40	38.00	6.4	6.8			
27	33	263	1.55	34.55	6.7	6.9			
32	39	225	1.80	29.46	7.0	7.1			
35	43	204	2.00	26.79	7.1	7.2			
39	47	184	2.20	24.12	7.2	7.3			
41	50	175	1.55	23.03	7.3	7.1			
43	52	167	2.40	21.92	7.3	7.3			
51	62	141	2.85	18.56	7.4	7.5			
53	64	136	2.00	17.86	7.5	7.3	CG052-11P-80-04F CF052-11P-80-04F	22 27	142
64	78	111	2.40	14.62	7.5	7.5			
24	30	295	0.85	58.85	6.4	6.8			
27	33	268	0.85	53.50	6.6	6.9			
30	36	241	1.40	48.13	6.8	7.0			
33	40	219	1.45	43.75	7.0	7.1			
38	46	190	2.15	38.00	7.2	7.2			
40	49	179	0.85	35.67	7.3	7.1			
41	50	173	2.35	34.55	7.3	7.3			
49	59	148	2.75	29.46	7.4	7.4			
49	60	146	1.40	29.17	7.4	7.3	CG033-11P-80-04F CF033-11P-80-04F	18 20	140
53	65	134	3.00	26.79	7.5	7.5			
62	76	115	2.35	23.03	7.5	7.4			
80	97	89	3.00	17.86	7.5	7.6			
28	35	251	0.80	50.18	3.9	3			
30	36	242	0.85	48.22	4.1	3.1			
33	40	219	0.95	43.79	4.5	3.2			
40	49	177	1.15	35.38	5.0	3.5			
45	54	161	1.25	32.13	5.1	3.6			
27	33	266	0.80	34.88	3.6	2.9			
30	36	241	0.85	31.67	4.1	3.1			
34	41	211	0.95	27.71	4.6	3.3			
37	45	192	1.05	25.17	4.9	3.4			
44	53	163	1.25	21.40	5.2	3.6			
48	59	148	1.40	19.44	5.1	3.7			
48	59	149	0.90	19.54	5.0	3.5			
55	67	130	1.55	17.09	4.9	3.8			
61	74	118	1.70	15.52	4.8	3.8			
61	74	118	1.10	15.53	4.7	3.7			
73	89	98	2.00	12.92	4.6	4.0			
78	95	91	1.45	11.99	4.5	3.9			
80	98	89	2.25	11.73	4.5	4.0			
96	117	75	2.45	9.82	4.3	4.1			
98	120	73	1.80	9.57	4.2	4.1			
105	128	68	2.70	8.92	4.2	4.2			
123	150	58	2.95	7.64	4.0	4.2	CG032-11P-80-04F CF032-11P-80-04F	18 20	140
130	158	55	2.40	7.24	3.9	4.2			
33	41	215	0.90	42.88	4.5	3.3			
37	45	195	0.90	38.95	4.8	3.4			
41	50	175	1.15	34.88	5.1	3.5			
45	55	159	1.30	31.67	5.1	3.6			
52	63	139	1.45	27.71	5.0	3.7			
57	69	126	1.60	25.17	4.9	3.8			
60	72	120	0.90	24.03	4.7	3.7			
67	81	107	1.90	21.40	4.7	3.9			
73	89	98	1.35	19.54	4.5	3.9			
74	90	97	2.10	19.44	4.6	4.0			
84	102	86	2.35	17.09	4.4	4.1			
92	112	78	2.60	15.52	4.3	4.1			
92	112	78	1.70	15.53	4.3	4.0			
111	135	65	3.00	12.92	4.1	4.2			
119	145	60	2.20	11.99	4.0	4.1			
149	182	48	2.75	9.57	3.8	4.2			

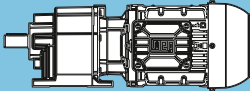
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
0.75 kW		0.90 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
71	86	102	0.85	13.33	2.8	1.0	CG012-11P-90S/L-06E CF012-11P-90S/L-06E	22 23	138
73	89	98	0.90	12.83	2.9	1.0			
82	100	88	1.00	11.50	3.0	1.1			
84	102	85	1.00	11.20	3.0	1.1			
94	114	76	1.10	10.04	2.9	1.1			
98	119	73	0.95	9.60	2.8	1.0			
114	139	63	1.25	8.22	2.8	1.2			
125	153	57	1.20	7.50	2.7	1.1			
128	155	56	1.35	7.36	2.7	1.3			
168	204	43	1.55	5.60	2.5	1.2			
194	237	37	1.80	4.83	2.4	1.3			
223	271	32	2.10	4.22	2.3	1.3			
304	370	24	2.70	3.09	2.1	1.4			
72	87	100	0.90	19.92	2.8	1.0	CG012-11P-80-04F CF012-11P-80-04F	15 16	138
80	97	89	1.00	17.85	3.0	1.0			
90	110	79	0.85	15.82	2.9	0.9			
96	117	75	1.15	14.88	2.9	1.1			
107	131	67	1.30	13.33	2.9	1.2			
111	136	64	1.35	12.83	2.8	1.2			
115	140	62	1.10	12.46	2.7	1.1			
124	151	58	1.50	11.50	2.8	1.2			
128	155	56	1.50	11.20	2.7	1.3			
142	173	50	1.65	10.04	2.7	1.3			
149	181	48	1.40	9.60	2.6	1.2			
174	212	41	1.85	8.22	2.5	1.4			
191	232	38	1.80	7.50	2.4	1.3			
194	236	37	2.05	7.36	2.4	1.4			
255	311	28	2.40	5.60	2.2	1.4			
296	360	24	2.75	4.83	2.1	1.4			
118	144	61	0.85	12.08	2.6	1.1	CG002-11P-80-04F CF002-11P-80-04F	14 15	136
137	167	52	0.90	10.42	2.4	1.0			
143	175	50	1.05	9.97	2.5	1.2			
161	196	45	1.15	8.90	2.4	1.3			
175	213	41	1.10	8.17	2.3	1.1			
208	253	34	1.45	6.88	2.2	1.3			
233	283	31	1.40	6.14	2.1	1.3			
297	362	24	1.65	4.81	2.0	1.3			
404	491	18	2.00	3.54	1.8	1.4			



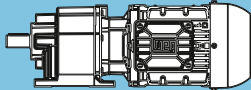
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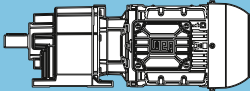
P _N = 1.1 kW								IE3	
50 Hz 1.1 kW n ₅₀ min ⁻¹	60 Hz 1.3 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
0.39	0.48	23716	0.80	3690.13	92.6	19.0	CG165-11P-90S/L-04E CF165-11P-90S/L-04E	705 728	170
0.41	0.50	22775	0.80	3543.61	96.8	19.8			
0.48	0.58	19261	0.95	3020.06	109.5	23.0			
0.49	0.59	18871	1.00	2966.43	110.7	23.4			
0.59	0.72	15420	1.20	2448.96	119.9	26.5			
0.61	0.73	15138	1.20	2404.16	120.5	26.7			
0.71	0.86	12743	1.45	2050.07	125.4	28.9			
0.88	1.1	10143	1.80	1661.50	129.5	31.3			
0.39	0.48	23855	0.80	2448.96	92.0	18.8	CG165-11P-100L-06D CF165-11P-100L-06D	711 734	170
0.40	0.48	23419	0.80	2404.16	94.0	19.2			
0.47	0.57	19817	0.95	2050.07	107.8	22.5			
0.58	0.70	15897	1.15	1661.50	118.8	26.1			
0.69	0.84	13467	1.35	2093.95	124.0	28.3	CG164-11P-90S/L-04E CF164-11P-90S/L-04E	692 715	168
0.81	0.98	11480	1.60	1803.51	127.5	30.1			
0.88	1.1	10484	1.75	1657.33	129.0	31.0			
0.93	1.1	9828	1.85	1559.96	130.0	31.6			
1.0	1.2	9060	2.00	1447.11	131.0	32.3			
1.1	1.4	7908	2.30	1278.93	132.3	33.3			
1.2	1.4	7691	2.35	1246.39	132.5	33.5			
1.3	1.6	6699	2.70	1101.54	133.5	34.4			
0.46	0.56	20792	0.90	2093.95	104.4	21.6	CG164-11P-100L-06D CF164-11P-100L-06D	698 721	168
0.53	0.65	17798	1.05	1803.51	113.9	24.3			
0.58	0.70	16288	1.15	1657.33	117.8	25.7			
0.62	0.75	15300	1.20	1559.96	120.2	26.6			
0.66	0.81	14135	1.30	1447.11	122.7	27.7			
0.67	0.82	13943	1.30	1427.45	123.1	27.8			
0.75	0.91	12415	1.45	1278.93	126.0	29.2			
0.77	0.93	12074	1.50	1246.39	126.5	29.5			
0.78	0.94	11936	1.55	1234.69	126.8	29.7			
0.87	1.1	10562	1.75	1101.54	128.9	30.9			
0.89	1.1	10370	1.75	1081.51	129.2	31.1			
1.0	1.2	9041	2.00	952.78	131.0	32.3			
1.2	1.4	7574	2.40	811.56	132.6	33.6			
1.4	1.7	6402	2.85	698.99	133.7	34.7			
0.67	0.81	14141	0.95	2162.84	94.0	13.3	CG144-11P-90S/L-04E CF144-11P-90S/L-04E	441 459	164
0.77	0.93	12254	1.10	1885.79	98.6	15.2			
0.87	1.1	10784	1.25	1669.82	101.6	16.7			
0.90	1.1	10490	1.25	1624.38	102.2	17.0			
1.0	1.2	9344	1.40	1455.92	104.2	18.1			
1.2	1.4	7966	1.65	1254.10	106.2	19.5			
1.3	1.6	6910	1.90	1099.05	107.5	20.6			
1.4	1.7	6585	2.00	1051.77	107.9	20.9			
1.5	1.8	5950	2.20	958.27	108.5	21.5			
1.6	1.9	5589	2.35	905.71	108.9	21.9			
1.7	2.1	5201	2.50	848.21	109.2	22.3			
1.8	2.1	5041	2.60	825.43	109.3	22.4			
2.0	2.4	4451	2.95	739.56	109.8	23.0			

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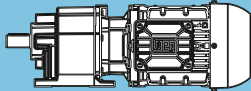
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.1 kW		1.3 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
0.57	0.70	16648	0.80	1669.82	86.4	10.8	CG144-11P-100L-06D CF144-11P-100L-06D	447 465	164
0.59	0.72	16162	0.85	1624.38	88.0	11.3			
0.66	0.80	14456	0.90	1455.92	93.2	13.0			
0.69	0.83	13877	0.95	1400.42	94.7	13.6			
0.77	0.93	12351	1.10	1254.10	98.4	15.1			
0.79	0.95	12025	1.10	1221.03	99.1	15.4			
0.87	1.1	10757	1.25	1099.05	101.7	16.7			
0.89	1.1	10570	1.25	1079.94	102.0	16.9			
0.91	1.1	10273	1.30	1051.77	102.6	17.2			
1.0	1.2	9322	1.40	958.27	104.2	18.2			
1.1	1.3	8774	1.50	905.71	105.0	18.7			
1.2	1.4	7947	1.65	825.43	106.2	19.5			
1.3	1.6	7062	1.85	739.56	107.3	20.4			
1.4	1.6	6759	1.95	710.80	107.7	20.7			
1.5	1.8	5995	2.20	637.04	108.5	21.5			
1.6	1.9	5733	2.30	611.72	108.7	21.8			
1.7	2.1	5077	2.60	548.57	109.3	22.4			
1.8	2.2	4857	2.70	526.92	109.5	22.6			
1.9	2.3	4757	2.75	517.20	109.6	22.7			
1.0	1.2	9588	0.85	1460.54	56.4	18.5	CG134-11P-90S/L-04E CF134-11P-90S/L-04E	294 296	160
1.1	1.4	8272	1.00	1267.83	61.8	20.1			
1.2	1.4	7976	1.05	1224.91	62.8	20.4			
1.3	1.6	7103	1.15	1095.41	65.6	21.4			
1.4	1.7	6881	1.20	1063.29	66.3	21.6			
1.5	1.8	6195	1.30	961.31	68.1	22.4			
1.6	1.9	5896	1.40	918.68	68.8	22.8			
1.7	2.1	5334	1.50	834.47	70.0	23.4			
2.0	2.4	4693	1.75	741.90	71.3	24.1			
2.3	2.7	4032	2.00	644.01	72.4	24.9			
2.4	2.9	3826	2.10	613.66	72.7	25.1			
2.6	3.2	3434	2.35	556.43	73.2	25.6			
2.7	3.3	3273	2.45	532.69	73.4	25.8			
2.8	3.4	3201	2.50	521.98	73.5	25.8			
3.2	3.8	2776	2.90	460.25	74.0	26.3			
0.90	1.1	10601	0.80	1063.29	51.2	17.4	CG134-11P-100L-06D CF134-11P-100L-06D	300 302	160
1.0	1.2	9565	0.85	961.31	56.5	18.6			
1.2	1.4	8252	1.00	834.47	61.9	20.1			
1.3	1.6	7306	1.10	741.90	65.0	21.2			
1.5	1.8	6291	1.30	644.01	67.8	22.3			
1.6	1.9	5982	1.35	613.66	68.6	22.7			
1.7	2.1	5390	1.50	556.43	69.9	23.3			
1.8	2.2	5139	1.60	532.69	70.4	23.6			
2.1	2.5	4395	1.85	460.25	71.8	24.5			
2.4	3.0	3696	2.20	392.69	72.9	25.3			
2.5	3.0	3684	2.20	391.48	72.9	25.3			
2.8	3.4	3147	2.55	339.29	73.6	25.9			
2.9	3.5	3063	2.65	331.61	73.7	26.0			
3.1	3.7	2888	2.80	314.70	73.8	26.2			
1.7	2.1	5460	0.85	831.69	29.6	20.3	CG104-11P-90S/L-04E CF104-11P-90S/L-04E	180 184	156
2.1	2.5	4588	1.00	703.12	35.1	21.4			
2.3	2.8	4075	1.15	628.39	37.5	22.0			
2.7	3.3	3417	1.35	531.25	40.1	22.9			
2.8	3.4	3301	1.40	514.28	40.5	23.0			
3.3	4.0	2762	1.65	434.78	42.0	23.7			
3.5	4.2	2638	1.75	417.03	42.4	23.8			
4.1	5.0	2203	2.05	352.56	43.4	24.4			
4.2	5.0	2177	2.10	349.11	43.4	24.4			
4.9	6.0	1810	2.50	295.14	44.1	24.9			
5.1	6.2	1724	2.65	282.94	44.2	25.0			

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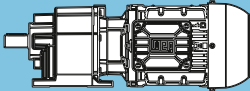
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50 Hz 1.1 kW	60 Hz 1.3 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
1.8	2.2	5275	0.90	531.25	30.9	20.5	CG104-11P-100L-06D CF104-11P-100L-06D	186 190	156
1.9	2.3	5107	0.90	514.28	32.1	20.7			
2.2	2.7	4291	1.05	434.78	36.5	21.7			
2.3	2.8	4107	1.10	417.03	37.4	22.0			
2.7	3.3	3437	1.35	352.56	40.0	22.8			
3.3	3.9	2847	1.60	295.14	41.8	23.6			
3.4	4.1	2718	1.70	282.94	42.2	23.7			
4.0	4.9	2270	2.00	239.20	43.2	24.3			
5.9	7.1	1779	2.55	246.43	44.1	24.9	CG103-11P-90S/L-04E CF103-11P-90S/L-04E	167 171	154
7.0	8.4	1504	3.00	208.33	44.5	25.3			
3.9	4.7	2697	1.70	246.43	42.2	23.8	CG103-11P-100L-06D CF103-11P-100L-06D	173 177	154
4.6	5.6	2280	2.00	208.33	43.2	24.3			
5.3	6.5	1973	2.30	180.35	43.8	24.7			
6.0	7.3	1748	2.60	159.72	44.2	25.0			
6.9	8.4	1512	3.00	138.17	44.5	25.3			
2.7	3.3	3549	0.85	540.55	18.1	24.8	CG094-11P-90S/L-04E CF094-11P-90S/L-04E	137 135	152
2.8	3.4	3401	0.90	519.08	19.6	25.0			
2.9	3.5	3313	0.95	506.66	20.4	25.1			
3.3	4.0	2880	1.05	442.39	23.7	25.7			
3.5	4.3	2664	1.15	410.85	25.1	26.1			
4.1	4.9	2312	1.30	358.73	26.9	26.6			
4.2	5.1	2207	1.40	343.93	27.4	26.7			
4.8	5.9	1912	1.60	300.30	28.6	27.2			
5.2	6.3	1767	1.70	278.74	29.1	27.4			
6.0	7.2	1524	2.00	243.38	29.8	27.7			
2.7	3.2	3569	0.85	358.73	17.9	24.7	CG094-11P-100L-06D CF094-11P-100L-06D	143 141	150
2.8	3.4	3415	0.90	343.93	19.5	25.0			
3.2	3.9	2964	1.05	300.30	23.1	25.6			
3.4	4.2	2745	1.10	278.74	24.6	25.9			
3.9	4.8	2377	1.30	243.38	26.6	26.5			
4.7	5.7	2215	1.40	306.73	27.3	26.7	CG093-11P-90S/L-04E CF093-11P-90S/L-04E	124 122	150
6.0	7.2	1753	1.75	242.77	29.1	27.4			
6.9	8.3	1530	2.00	211.98	29.8	27.7			
7.8	9.4	1353	2.25	187.34	30.3	28.0			
9.2	11	1144	2.65	158.42	30.7	28.3			
9.4	11	1114	2.70	154.24	30.8	28.4			
3.1	3.8	3356	0.90	306.73	20.0	25.0	CG093-11P-100L-06D CF093-11P-100L-06D	130 128	150
4.0	4.8	2657	1.15	242.77	25.1	26.1			
4.5	5.5	2320	1.30	211.98	26.9	26.6			
5.1	6.2	2050	1.50	187.34	28.0	27.0			
6.1	7.4	1734	1.75	158.42	29.2	27.4			
6.2	7.6	1688	1.80	154.24	29.3	27.5			
7.0	8.6	1490	2.05	136.18	29.9	27.8			
7.9	9.5	1336	2.25	122.08	30.3	28.0			
8.1	9.8	1301	2.35	118.88	30.4	28.1			
9.0	11	1166	2.60	106.60	30.7	28.3			
9.4	11	1115	2.70	101.85	30.8	28.4			
10	12	1031	2.95	94.21	30.9	28.5			
5.1	6.2	2057	0.80	284.84	16.4	18.3	CG083-11P-90S/L-04E CF083-11P-90S/L-04E	72 76	148
6.1	7.4	1725	0.90	238.89	19.2	19.0			
7.8	9.4	1354	1.15	187.48	21.4	19.7			
10	12	1045	1.50	144.69	22.7	20.4			
12	15	864	1.80	119.68	23.3	20.7			
14	17	735	2.15	101.80	23.6	21.0			
16	20	637	2.45	88.23	23.9	21.2			
20	24	538	2.90	74.50	24.1	21.4			
5.1	6.2	2052	0.80	187.48	16.4	18.3	CG083-11P-100L-06D CF083-11P-100L-06D	78 82	148
6.6	8.1	1583	1.00	144.69	20.1	19.3			
8.0	9.7	1310	1.20	119.68	21.6	19.8			
9.4	11	1114	1.40	101.80	22.4	20.2			
11	13	965	1.65	88.23	23.0	20.5			
13	16	815	1.95	74.50	23.4	20.8			
16	19	672	2.35	61.37	23.8	21.1			

P_N = 1.1 kW								IE3	
50 Hz 1.1 kW n ₅₀ min ⁻¹	60 Hz 1.3 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
18	22	593	2.65	54.18	24.0	21.3	CG082-11P-100L-06D CF082-11P-100L-06D	77 81	148
11	13	992	0.85	137.38	8.7	12.7	CG073-11P-90S/L-04E CF073-11P-90S/L-04E	48 52	146
12	14	902	0.95	124.97	9.9	12.6			
14	17	754	1.10	104.50	11.3	13.3			
15	19	686	1.20	95.06	11.8	13.3			
17	20	622	1.35	86.17	12.2	13.7			
19	22	566	1.45	78.39	12.6	13.7			
21	25	510	1.65	70.68	12.9	14.0			
23	27	464	1.80	64.30	13.1	14.0			
24	29	434	1.90	60.06	13.2	14.2			
27	32	394	2.10	54.63	13.3	14.2			
29	36	357	2.35	49.38	13.5	14.4			
32	39	324	2.45	44.92	13.6	14.4			
37	45	283	2.75	39.17	13.7	14.6			
41	49	257	2.85	35.63	13.7	14.6			
10	12	1040	0.80	95.06	8.0	12.2	CG073-11P-100L-06D CF073-11P-100L-06D	54 58	146
11	14	943	0.90	86.17	9.4	12.8			
12	15	858	1.00	78.39	10.3	12.8			
14	16	773	1.10	70.68	11.1	13.3			
15	18	704	1.20	64.30	11.7	13.2			
16	19	657	1.25	60.06	12.0	13.6			
18	21	598	1.40	54.63	12.4	13.6			
19	24	540	1.55	49.38	12.7	13.9			
21	26	492	1.65	44.92	12.9	13.9			
25	30	429	1.80	39.17	13.2	14.2			
27	33	390	1.90	35.63	13.4	14.2			
37	45	281	2.95	38.92	13.7	14.6	CG072-11P-90S/L-04E CF072-11P-90S/L-04E	47 51	146
25	30	426	1.95	38.92	13.2	14.2	CG072-11P-100L-06D CF072-11P-100L-06D	53 57	146
27	33	387	2.15	35.41	13.4	14.2			
31	38	334	2.50	30.55	13.5	14.5			
35	42	304	2.70	27.79	13.6	14.5			
13	16	785	0.80	108.67	5.3	5.8	CG063-11P-90S/L-04E CF063-11P-90S/L-04E	31 36	144
16	20	646	0.95	89.54	7.7	6.2			
18	21	593	1.05	82.10	8.4	6.4			
20	24	529	1.15	73.28	9.0	6.6			
22	26	485	1.25	67.19	9.4	6.7			
24	30	429	1.40	59.42	9.8	6.9			
27	32	393	1.55	54.49	10.1	6.9			
29	35	359	1.70	49.74	10.3	7.1			
32	39	329	1.85	45.61	10.4	7.1			
14	17	735	0.85	67.19	6.3	5.9	CG063-11P-100L-06D CF063-11P-100L-06D	37 42	144
16	20	650	0.95	59.42	7.7	6.2			
18	21	596	1.05	54.49	8.3	6.4			
19	23	544	1.15	49.74	8.9	6.5			
21	26	499	1.25	45.61	9.3	6.6			
24	29	433	1.00	60.00	9.8	6.8	CG062-11P-90S/L-04E CF062-11P-90S/L-04E	31 36	144
26	32	397	1.00	55.02	10.1	6.9			
31	37	343	1.75	47.55	10.4	7.1			
33	40	315	1.80	43.60	10.5	7.2			
39	48	267	2.30	36.92	10.7	7.3			
43	52	244	2.50	33.86	10.8	7.4			
44	53	241	1.00	33.43	10.8	7.1			
48	58	219	2.75	30.30	10.9	7.5			
52	63	201	3.00	27.78	10.8	7.5			
55	66	191	1.80	26.49	10.6	7.3			
71	86	149	2.55	20.57	9.8	7.5			

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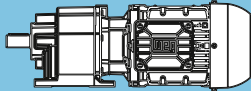
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50 Hz 1.1 kW	60 Hz 1.3 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
20	24	520	1.20	47.55	9.1	6.6	CG062-11P-100L-06D CF062-11P-100L-06D	37 42	144
22	27	477	1.20	43.60	9.5	6.7			
26	32	404	1.50	36.92	10.0	6.9			
28	34	370	1.65	33.86	10.2	7.0			
32	38	332	1.85	30.30	10.4	7.1			
35	42	304	2.00	27.78	10.6	7.2			
36	44	290	1.20	26.49	10.6	6.9			
41	50	257	2.35	23.46	10.8	7.4			
45	54	235	2.55	21.51	10.8	7.4			
47	57	225	1.70	20.57	10.9	7.2			
57	69	185	2.05	16.88	10.4	7.3			
73	89	143	2.65	13.07	9.7	7.5			
21	25	511	0.80	70.71	1.6	5.7			
24	29	445	0.90	61.63	4.0	6.1			
26	31	404	1.00	56.02	4.9	6.2			
30	36	355	1.15	49.20	5.7	6.5			
33	39	323	1.25	44.73	6.1	6.6			
30	37	347	1.00	48.13	5.8	6.5	CG052-11P-90S/L-04E CF052-11P-90S/L-04E	26 31	142
33	40	316	1.00	43.75	6.1	6.6			
38	46	274	1.50	38.00	6.6	6.9			
42	51	249	1.65	34.55	6.8	6.9			
49	60	213	1.90	29.46	7.0	7.1			
50	60	211	1.00	29.17	7.1	6.9			
54	66	193	2.10	26.79	7.2	7.2			
60	73	174	2.30	24.12	7.3	7.3			
63	76	166	1.65	23.03	7.3	7.1			
66	80	158	2.55	21.92	7.4	7.4			
78	95	134	3.00	18.56	7.5	7.5			
81	99	129	2.10	17.86	7.3	7.4			
100	120	106	2.55	14.62	6.9	7.5			
25	31	416	1.00	38.00	4.7	6.2	CG052-11P-100L-06D CF052-11P-100L-06D	32 37	142
28	34	378	1.10	34.55	5.3	6.4			
33	40	322	1.25	29.46	6.1	6.6			
36	43	293	1.40	26.79	6.4	6.7			
40	48	264	1.55	24.12	6.7	6.9			
42	51	252	1.10	23.03	6.8	6.7			
44	53	240	1.70	21.92	6.9	7.0			
52	63	203	2.00	18.56	7.1	7.2			
54	65	195	1.40	17.86	7.2	7.0			
57	69	185	2.20	16.88	7.2	7.2			
66	80	160	1.70	14.62	7.3	7.2			
68	83	153	2.65	14.03	7.4	7.4			
75	91	140	2.90	12.75	7.4	7.5			
85	104	123	2.20	11.25	7.2	7.4			
113	137	93	2.90	8.50	6.7	7.6			
42	50	252	0.80	34.88	3.9	3.0	CG032-11P-90S/L-04E CF032-11P-90S/L-04E	22 24	140
46	56	229	0.90	31.67	4.3	3.1			
53	64	200	1.00	27.71	4.6	3.4			
58	70	182	1.15	25.17	4.5	3.4			
68	82	155	1.30	21.40	4.4	3.6			
74	90	141	0.95	19.54	4.2	3.5			
75	91	140	1.45	19.44	4.3	3.7			
85	103	123	1.65	17.09	4.2	3.8			
94	113	112	1.20	15.53	4.0	3.8			
113	136	93	2.10	12.92	3.9	4.0			
121	147	87	1.55	11.99	3.8	3.9			
124	150	85	2.35	11.73	3.8	4.1			
148	179	71	2.55	9.82	3.7	4.2			
152	184	69	1.90	9.57	3.6	4.1			
163	197	64	2.85	8.92	3.6	4.2			
201	243	52	2.50	7.24	3.3	4.2			

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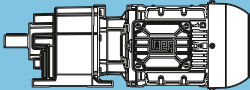
P_N = 1.1 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.1 kW		1.3 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
45	54	234	0.90	21.40	4.2	3.1	CG032-11P-100L-06D CF032-11P-100L-06D	28 30	140
49	60	213	0.95	19.44	4.6	3.3			
56	68	187	1.10	17.09	4.6	3.4			
62	75	170	0.80	15.53	4.3	3.3			
74	90	141	1.40	12.92	4.3	3.7			
80	97	131	1.00	11.99	4.2	3.6			
82	99	128	1.55	11.73	4.2	3.8			
98	119	107	1.70	9.82	4.1	3.9			
100	122	105	1.25	9.57	4.0	3.8			
108	131	98	1.90	8.92	4.0	4.0			
126	153	84	2.05	7.64	3.8	4.1			
133	161	79	1.65	7.24	3.7	4.0			
138	168	76	2.30	6.94	3.7	4.1			
161	195	65	2.45	5.96	3.6	4.2			
175	212	60	2.20	5.50	3.5	4.1			
177	215	59	2.70	5.41	3.5	4.2			
224	272	47	2.80	4.28	3.3	4.2			
98	118	107	0.80	14.88	2.7	0.9	CG012-11P-90S/L-04E CF012-11P-90S/L-04E	20 21	138
109	132	96	0.90	13.33	2.7	1.0			
113	137	93	0.95	12.83	2.6	1.0			
127	153	83	1.05	11.50	2.6	1.1			
130	157	81	1.05	11.20	2.6	1.1			
145	175	72	1.15	10.04	2.5	1.2			
152	183	69	1.00	9.60	2.4	1.0			
177	214	59	1.30	8.22	2.4	1.2			
194	235	54	1.25	7.50	2.3	1.1			
198	239	53	1.40	7.36	2.3	1.3			
260	314	40	1.65	5.60	2.1	1.3			
301	364	35	1.90	4.83	2.1	1.3			
345	417	30	2.20	4.22	2.0	1.4			
470	569	22	2.85	3.09	1.8	1.4			



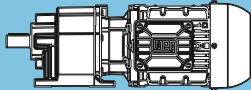
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P _N = 1.5 kW								IE3	
50 Hz 1.5 kW n ₅₀ min ⁻¹	60 Hz 1.8 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
0.59	0.72	21482	0.85	2448.96	101.9	21.0	CG165-11P-90S/L-04F CF165-11P-90S/L-04F	706 729	170
0.60	0.73	21035	0.90	2404.16	103.6	21.4			
0.71	0.86	17799	1.05	2050.07	113.9	24.3			
0.87	1.1	14242	1.30	1661.50	122.5	27.6			
0.69	0.84	18694	1.00	2093.95	111.3	23.5	CG164-11P-90S/L-04F CF164-11P-90S/L-04F	693 716	168
0.80	0.97	16003	1.15	1803.51	118.5	26.0			
0.87	1.1	14645	1.25	1657.33	121.6	27.2			
0.93	1.1	13728	1.35	1559.96	123.5	28.0			
1.0	1.2	12683	1.45	1447.11	125.5	29.0			
1.1	1.4	11117	1.65	1278.93	128.1	30.4			
1.2	1.4	10811	1.70	1246.39	128.6	30.7			
1.3	1.6	9476	1.90	1101.54	130.4	31.9			
1.5	1.8	8078	2.25	952.78	132.1	33.2			
1.6	1.9	7881	2.30	931.50	132.3	33.3			
1.8	2.2	6753	2.70	811.56	133.4	34.4			
0.77	0.93	16975	0.80	1885.79	85.3	10.5	CG144-11P-90S/L-04F CF144-11P-90S/L-04F	442 460	164
0.87	1.1	14969	0.90	1669.82	91.7	12.5			
0.89	1.1	14562	0.90	1624.38	92.9	12.9			
1.0	1.2	12972	1.05	1455.92	97.0	14.5			
1.2	1.4	11105	1.20	1254.10	101.0	16.4			
1.3	1.6	9672	1.35	1099.05	103.6	17.8			
1.4	1.7	9218	1.45	1051.77	104.4	18.3			
1.5	1.8	8347	1.60	958.27	105.7	19.1			
1.6	1.9	7856	1.70	905.71	106.3	19.6			
1.7	2.1	7327	1.80	848.21	107.0	20.2			
1.8	2.1	7116	1.85	825.43	107.3	20.4			
2.0	2.4	6310	2.10	739.56	108.1	21.2			
2.1	2.5	5961	2.20	701.59	108.5	21.5			
2.3	2.8	5356	2.45	637.04	109.1	22.1			
2.4	2.9	5122	2.55	611.72	109.3	22.4			
2.6	3.2	4527	2.90	548.57	109.7	23.0			
1.3	1.6	9840	0.85	1095.41	55.2	18.3	CG134-11P-90S/L-04F CF134-11P-90S/L-04F	295 297	160
1.4	1.7	9551	0.85	1063.29	56.5	18.6			
1.5	1.8	8600	0.95	961.31	60.6	19.7			
1.6	1.9	8202	1.00	918.68	62.0	20.1			
1.7	2.1	7419	1.10	834.47	64.7	21.0			
2.0	2.4	6556	1.25	741.90	67.2	22.0			
2.3	2.7	5644	1.45	644.01	69.4	23.1			
2.4	2.9	5367	1.50	613.66	70.0	23.4			
2.6	3.2	4827	1.70	556.43	71.0	24.0			
2.7	3.3	4611	1.75	532.69	71.4	24.2			
2.8	3.4	4509	1.80	521.98	71.6	24.3			
3.2	3.8	3935	2.05	460.25	72.5	25.0			
3.7	4.5	3302	2.45	392.69	73.4	25.7			
3.8	4.6	3205	2.50	382.01	73.5	25.8			
4.3	5.2	2800	2.90	339.29	73.9	26.3			
4.4	5.3	2731	2.95	331.61	74.0	26.4			
2.3	2.8	5656	0.80	628.39	28.1	20.0	CG134-11P-90S/L-04F CF134-11P-90S/L-04F	181 185	160
2.7	3.3	4753	0.95	531.25	34.2	21.2			
2.8	3.4	4591	1.00	514.28	35.0	21.4			
3.3	4.0	3850	1.20	434.78	38.5	22.3			
3.5	4.2	3685	1.25	417.03	39.1	22.5			
4.1	5.0	3084	1.50	352.56	41.1	23.3			
4.2	5.0	3053	1.50	349.11	41.2	23.3			
4.9	5.9	2550	1.80	295.14	42.6	24.0			
5.1	6.2	2439	1.85	282.94	42.8	24.1			
6.1	7.3	2028	2.25	239.20	43.7	24.6			
5.9	7.1	2435	1.85	246.43	42.9	24.1	CG103-11P-90S/L-04F CF103-11P-90S/L-04F	168 172	154
7.0	8.4	2058	2.20	208.33	43.6	24.6			
8.0	9.7	1782	2.55	180.35	44.1	24.9			
9.1	11	1578	2.90	159.72	44.4	25.2			

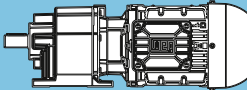
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P _N = 1.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
1.5 kW		1.8 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
3.3	4.0	3982	0.80	442.39	12.2	24.1	CG094-11P-90S/L-04F CF094-11P-90S/L-04F	139 137	152
3.5	4.3	3691	0.85	410.85	16.5	24.5			
4.0	4.9	3209	0.95	358.73	21.3	25.3			
4.1	5.0	3144	1.00	352.17	21.8	25.4			
4.2	5.1	3071	1.00	343.93	22.4	25.5			
4.8	5.8	2665	1.15	300.30	25.1	26.1			
5.2	6.3	2463	1.25	278.74	26.2	26.4			
6.0	7.2	2133	1.45	243.38	27.7	26.8			
4.7	5.7	3030	1.00	306.73	22.7	25.5	CG093-11P-90S/L-04F CF093-11P-90S/L-04F	126 124	150
6.0	7.2	2398	1.30	242.77	26.5	26.5			
6.8	8.3	2094	1.45	211.98	27.9	26.9			
7.7	9.4	1851	1.65	187.34	28.8	27.3			
9.2	11	1565	1.95	158.42	29.7	27.7			
9.4	11	1524	2.00	154.24	29.8	27.7			
11	13	1345	2.25	136.18	30.3	28.0			
12	14	1206	2.50	122.08	30.6	28.2			
14	16	1053	2.85	106.60	30.9	28.4			
7.7	9.4	1852	0.85	187.48	18.2	18.7	CG083-11P-90S/L-04F CF083-11P-90S/L-04F	73 77	148
10	12	1429	1.10	144.69	21.0	19.6			
12	15	1182	1.35	119.68	22.2	20.1			
14	17	1006	1.55	101.80	22.8	20.4			
16	20	872	1.80	88.23	23.3	20.7			
19	24	736	2.15	74.50	23.6	21.0			
24	29	606	2.60	61.37	23.9	21.3			
27	32	535	2.90	54.18	24.1	21.4			
14	17	1032	0.80	104.50	8.1	12.5	CG073-11P-90S/L-04F CF073-11P-90S/L-04F	49 53	146
15	18	939	0.90	95.06	9.4	12.5			
17	20	851	1.00	86.17	10.4	13.0			
18	22	774	1.10	78.39	11.1	13.0			
21	25	698	1.20	70.68	11.7	13.5			
23	27	635	1.30	64.30	12.1	13.5			
24	29	593	1.40	60.06	12.4	13.8			
27	32	540	1.55	54.63	12.7	13.8			
29	36	488	1.70	49.38	13.0	14.1			
32	39	444	1.80	44.92	13.2	14.0			
37	45	387	2.00	39.17	13.4	14.3			
41	49	352	2.10	35.63	13.5	14.3			
37	45	385	2.15	38.92	13.4	14.3	CG072-11P-90S/L-04F CF072-11P-90S/L-04F	48 52	146
41	50	350	2.35	35.41	13.5	14.3			
47	57	302	2.75	30.55	13.6	14.6			
52	63	275	3.00	27.79	13.7	14.6			
20	24	724	0.85	73.28	6.5	6.0	CG063-11P-90S/L-04F CF063-11P-90S/L-04F	33 38	144
22	26	664	0.95	67.19	7.5	6.2			
24	30	587	1.05	59.42	8.4	6.4			
27	32	538	1.15	54.49	8.9	6.5			
29	35	491	1.25	49.74	9.4	6.7			
32	38	451	1.35	45.61	9.7	6.8			
30	37	470	1.30	47.55	9.5	6.7	CG062-11P-90S/L-04F CF062-11P-90S/L-04F	33 38	144
33	40	431	1.35	43.60	9.8	6.8			
39	48	365	1.65	36.92	10.3	7.0			
43	52	334	1.80	33.86	10.4	7.1			
48	58	299	2.05	30.30	10.6	7.2			
52	63	274	2.20	27.78	10.5	7.3			
55	66	262	1.35	26.49	10.3	7.0			
62	75	232	2.60	23.46	10.0	7.4			
67	82	213	2.85	21.51	9.8	7.5			
70	85	203	1.90	20.57	9.6	7.3			
86	104	167	2.30	16.88	9.1	7.4			
111	134	129	2.95	13.07	8.4	7.6			
29	36	486	0.85	49.20	2.8	5.9	CG053-11P-90S/L-04F CF053-11P-90S/L-04F	28 33	142
32	39	442	0.95	44.73	4.1	6.1			

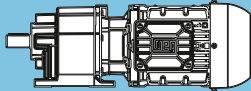
Legend see page 29

P _N = 1.5 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
1.5 kW	1.8 kW	M ₂ Nm	f _b	i	F _{rN}	F _{aN}			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				kN	kN			
38	46	375	1.10	38.00	5.4	6.4	CG052-11P-90S/L-04F CF052-11P-90S/L-04F	27 32	142
42	51	341	1.20	34.55	5.8	6.5			
49	60	291	1.40	29.46	6.4	6.8			
54	66	265	1.55	26.79	6.7	6.9			
60	73	238	1.70	24.12	6.9	7.0			
63	76	228	1.20	23.03	6.9	6.8			
66	80	217	1.85	21.92	7.0	7.1			
78	95	183	2.20	18.56	7.2	7.3			
81	98	176	1.55	17.86	7.1	7.1			
86	104	167	2.40	16.88	7.0	7.3			
99	120	144	1.85	14.62	6.7	7.3			
103	125	139	2.90	14.03	6.7	7.5			
129	156	111	2.45	11.25	6.3	7.5			
58	70	249	0.85	25.17	4.0	3.0	CG032-11P-90S/L-04F CF032-11P-90S/L-04F	23 25	140
68	82	211	0.95	21.40	4.1	3.3			
75	90	192	1.05	19.44	4.0	3.4			
85	103	169	1.20	17.09	3.9	3.5			
93	113	153	1.35	15.52	3.9	3.6			
93	113	153	0.85	15.53	3.8	3.4			
112	136	128	1.55	12.92	3.7	3.8			
121	146	118	1.10	11.99	3.6	3.7			
124	150	116	1.75	11.73	3.6	3.9			
148	179	97	1.90	9.82	3.5	4.0			
151	183	95	1.40	9.57	3.4	3.9			
163	197	88	2.10	8.92	3.4	4.0			
190	230	75	2.25	7.64	3.3	4.1			
200	243	71	1.85	7.24	3.2	4.1			
209	253	69	2.50	6.94	3.2	4.2			
243	294	59	2.70	5.96	3.1	4.2			
264	319	54	2.40	5.50	3.0	4.2			
268	324	53	3.00	5.41	3.0	4.3			
129	157	111	0.80	11.20	2.4	0.9	CG012-11P-90S/L-04F CF012-11P-90S/L-04F	21 22	138
144	175	99	0.85	10.04	2.3	1.0			
176	214	81	0.95	8.22	2.3	1.1			
193	234	74	0.90	7.50	2.1	1.0			
197	238	73	1.05	7.36	2.2	1.2			
259	313	55	1.20	5.60	2.0	1.1			
300	363	48	1.40	4.83	2.0	1.2			
344	416	42	1.60	4.22	1.9	1.3			
469	567	31	2.10	3.09	1.8	1.4			

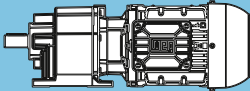
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P _N = 2.2 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
2.2 kW		2.6 kW			F _m kN	F _{an} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
0.86	1.1	21599	0.85	1661.50	101.5	20.9	CG165-11P-100L-04E CF165-11P-100L-04E	716	170
0.90	1.1	20774	0.90	1602.16	104.5	21.6		739	
0.87	1.1	22063	0.85	1657.33	99.7	20.5	CG164-11P-100L-04E CF164-11P-100L-04E	703 726	168
0.92	1.1	20725	0.90	1559.96	104.7	21.7			
0.99	1.2	19186	0.95	1447.11	109.8	23.1			
1.0	1.2	18887	1.00	1427.45	110.7	23.3			
1.1	1.4	16852	1.10	1278.93	116.4	25.2			
1.2	1.4	16423	1.10	1246.39	117.5	25.6			
1.3	1.6	14426	1.25	1101.54	122.1	27.4			
1.5	1.8	12350	1.50	952.78	126.1	29.3			
1.8	2.2	10411	1.75	811.56	129.2	31.0			
2.1	2.5	8856	2.05	698.99	131.2	32.5			
2.4	2.9	7550	2.40	604.60	132.7	33.6			
2.5	3.0	7166	2.55	577.48	133.0	34.0			
2.8	3.4	6348	2.85	517.99	133.8	34.7			
2.9	3.5	6083	3.00	499.49	134.0	35.0			
1.1	1.4	16730	0.80	1254.10	86.1	10.7	CG144-11P-100L-04E CF144-11P-100L-04E	452 470	164
1.2	1.4	16288	0.80	1221.03	87.6	11.2			
1.3	1.6	14601	0.90	1099.05	92.8	12.9			
1.4	1.7	13945	0.95	1051.77	94.5	13.5			
1.5	1.8	12653	1.05	958.27	97.7	14.8			
1.6	1.9	11934	1.10	905.71	99.3	15.5			
1.7	2.1	11131	1.20	848.21	101.0	16.3			
1.9	2.4	9645	1.35	739.56	103.7	17.8			
2.0	2.5	9232	1.45	710.80	104.3	18.2			
2.3	2.7	8223	1.60	637.04	105.8	19.3			
2.4	2.9	7672	1.70	596.77	106.6	19.8			
2.6	3.2	6994	1.90	548.57	107.4	20.5			
2.7	3.3	6704	1.95	526.92	107.7	20.8			
2.8	3.4	6606	2.00	520.33	107.8	20.9			
3.2	3.8	5690	2.30	453.75	108.8	21.8			
3.3	4.0	5454	2.40	436.75	109.0	22.0			
3.4	4.1	5237	2.50	421.15	109.2	22.3			
3.7	4.5	4780	2.75	388.44	109.5	22.7			
3.8	4.6	4676	2.80	380.80	109.6	22.8			
3.9	4.8	4491	2.90	367.20	109.8	23.0			
4.0	4.9	4382	3.00	359.79	109.8	23.1			
1.9	2.4	9877	0.85	741.90	55.0	18.2	CG134-11P-100L-04E CF134-11P-100L-04E	305 307	160
2.0	2.4	9598	0.85	720.98	56.3	18.5			
2.2	2.7	8538	0.95	644.01	60.8	19.7			
2.3	2.8	8119	1.00	613.66	62.3	20.2			
2.6	3.1	7332	1.10	556.43	64.9	21.1			
2.7	3.3	7005	1.15	532.69	65.9	21.5			
3.1	3.8	6003	1.35	460.25	68.6	22.6			
3.2	3.9	5897	1.40	453.11	68.8	22.8			
3.7	4.4	5069	1.60	392.69	70.6	23.7			
3.8	4.6	4921	1.65	382.01	70.9	23.9			
3.9	4.7	4735	1.70	368.37	71.2	24.1			
4.2	5.1	4335	1.85	339.29	71.9	24.5			
4.3	5.3	4228	1.90	331.61	72.1	24.7			
4.5	5.5	4060	2.00	319.76	72.3	24.9			
4.6	5.5	3987	2.05	314.70	72.4	24.9			
5.0	6.1	3600	2.25	286.51	73.0	25.4			
5.2	6.3	3457	2.35	276.28	73.2	25.6			
5.3	6.4	3418	2.35	273.18	73.2	25.6			
6.1	7.4	2899	2.80	236.02	73.8	26.2			
3.3	4.0	5800	0.80	434.78	26.9	19.8	CG104-11P-100L-04E CF104-11P-100L-04E	305 307	156
3.4	4.2	5552	0.85	417.03	28.9	20.1			
4.1	4.9	4665	1.00	352.56	34.7	21.3			
4.9	5.9	3873	1.20	295.14	38.4	22.3			
5.1	6.2	3705	1.25	282.94	39.0	22.5			
5.3	6.4	3566	1.30	272.83	39.5	22.7			
6.0	7.3	3107	1.45	239.20	41.1	23.2			
6.2	7.6	2984	1.55	230.65	41.4	23.4			



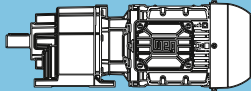
P _N = 2.2 kW								IE3	
50 Hz 2.2 kW	60 Hz 2.6 kW	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
5.8	7.1	3608	1.25	246.43	39.4	22.6	CG103-11P-100L-04E CF103-11P-100L-04E	178 182	154
6.9	8.4	3050	1.50	208.33	41.2	23.3			
8.0	9.7	2640	1.75	180.35	42.4	23.8			
9.0	11	2339	1.95	159.72	43.1	24.2			
10	13	2023	2.25	138.17	43.7	24.6			
11	13	1951	2.35	133.24	43.8	24.7			
12	14	1786	2.55	122.02	44.1	24.9			
14	17	1510	3.00	103.15	44.5	25.3			
5.1	6.3	3711	0.85	278.74	16.2	24.5	CG094-11P-100L-04E CF094-11P-100L-04E	149 147	152
5.3	6.5	3578	0.85	268.78	17.8	24.7			
5.9	7.2	3227	0.95	243.38	21.1	25.2			
6.1	7.4	3105	1.00	234.69	22.1	25.4			
5.9	7.2	3554	0.85	242.77	18.0	24.7	CG093-11P-100L-04E CF093-11P-100L-04E	136 134	150
6.8	8.2	3104	1.00	211.98	22.1	25.4			
7.7	9.3	2743	1.10	187.34	24.6	25.9			
9.1	11	2320	1.30	158.42	26.9	26.6			
9.3	11	2258	1.35	154.24	27.1	26.7			
11	13	1994	1.55	136.18	28.3	27.1			
12	14	1787	1.70	122.08	29.0	27.4			
13	16	1561	1.95	106.60	29.7	27.7			
14	17	1491	2.05	101.85	29.9	27.8			
15	18	1438	2.10	98.21	30.0	27.9			
17	20	1269	2.40	86.68	30.5	28.1			
18	22	1166	2.60	79.66	30.7	28.3			
20	24	1065	2.85	72.72	30.9	28.4			
21	25	1003	3.00	68.48	31.0	28.5			
12	15	1752	0.90	119.68	19.0	18.9	CG083-11P-100L-04E CF083-11P-100L-04E	83 87	148
14	17	1490	1.05	101.80	20.7	19.5			
16	20	1292	1.20	88.23	21.7	19.9			
19	23	1091	1.45	74.50	22.5	20.3			
20	24	1052	1.50	71.84	22.7	20.4			
23	28	899	1.75	61.37	23.2	20.7			
26	32	793	2.00	54.18	23.5	20.9	CG082-11P-100L-04E CF082-11P-100L-04E	82 86	148
33	41	628	2.50	42.88	23.9	21.2			
38	47	548	2.85	37.44	23.4	21.4			
46	56	457	2.45	31.23	22.0	21.4			
20	25	1035	0.80	70.68	8.1	12.5	CG073-11P-100L-04E CF073-11P-100L-04E	59 63	146
22	27	941	0.90	64.30	9.4	12.5			
24	29	879	0.95	60.06	10.1	13.0			
26	32	800	1.05	54.63	10.9	13.0			
29	35	723	1.15	49.38	11.5	13.4			
30	37	697	1.20	47.62	11.7	13.5			
32	39	658	1.25	44.92	12.0	13.4			
33	40	634	1.25	43.32	12.2	13.5			
37	45	573	1.35	39.17	12.5	13.8			
40	49	522	1.40	35.63	12.8	13.8			
37	45	570	1.45	38.92	12.5	13.8	CG072-11P-100L-04E CF072-11P-100L-04E	58 62	146
41	49	518	1.60	35.41	12.8	13.8			
47	57	447	1.85	30.55	13.1	14.2			
52	63	407	2.05	27.79	13.3	14.2			
61	74	345	2.35	23.58	13.5	14.4			
67	81	314	2.50	21.45	13.6	14.4			
70	85	302	2.30	20.65	13.6	14.1			
74	89	286	2.70	19.50	13.7	14.6			
81	98	260	2.85	17.74	13.7	14.6			
87	105	243	3.00	16.59	13.8	14.7			
89	108	237	2.85	16.20	13.8	14.4			
26	32	798	0.80	54.49	4.9	5.8	CG063-11P-100L-04E CF063-11P-100L-04E	43 48	144
29	35	728	0.85	49.74	6.4	6.0			
31	38	668	0.90	45.61	7.4	6.1			

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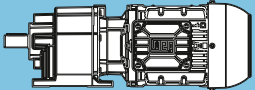
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
2.2 kW		2.6 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
39	47	541	1.15	36.92	8.9	6.5	CG062-11P-100L-04E CF062-11P-100L-04E	42 47	144
42	52	496	1.25	33.86	9.3	6.6			
47	58	444	1.40	30.30	9.7	6.8			
52	63	407	1.50	27.78	10.0	6.9			
61	74	344	1.75	23.46	9.7	7.1			
67	81	315	1.95	21.51	9.5	7.2			
70	85	301	1.30	20.57	9.3	6.8			
80	98	261	2.30	17.85	9.1	7.3			
85	103	247	1.55	16.88	8.8	7.1			
88	107	240	2.55	16.36	8.8	7.4			
98	119	215	2.80	14.72	8.6	7.5			
110	133	191	2.00	13.07	8.2	7.3			
144	176	146	2.60	9.94	7.6	7.5			
49	59	431	0.95	29.46	4.3	6.1	CG052-11P-100L-04E CF052-11P-100L-04E	37 42	142
54	65	392	1.05	26.79	5.1	6.3			
60	72	353	1.15	24.12	5.7	6.5			
65	80	321	1.25	21.92	6.1	6.6			
77	94	272	1.50	18.56	6.6	6.9			
80	98	261	1.05	17.86	6.7	6.6			
85	103	247	1.65	16.88	6.7	7.0			
98	119	214	1.25	14.62	6.4	6.9			
102	124	205	1.95	14.03	6.5	7.2			
113	137	187	2.15	12.75	6.3	7.2			
125	152	168	2.40	11.48	6.1	7.3			
128	155	165	1.65	11.25	6.0	7.2			
138	167	153	2.65	10.43	6.0	7.4			
154	187	136	2.85	9.31	5.8	7.5			
169	205	124	2.15	8.50	5.6	7.4			
170	206	124	2.95	8.46	5.6	7.5			
206	251	102	2.65	6.96	5.3	7.5			
84	102	250	0.80	17.09	3.5	3.0	CG032-11P-100L-04E CF032-11P-100L-04E	33 35	140
92	112	227	0.90	15.52	3.4	3.2			
111	135	189	1.05	12.92	3.4	3.4			
122	149	172	1.20	11.73	3.3	3.5			
146	178	144	1.30	9.82	3.3	3.7			
150	182	140	0.95	9.57	3.1	3.5			
161	196	131	1.45	8.92	3.2	3.8			
188	228	112	1.55	7.64	3.1	3.9			
198	241	106	1.25	7.24	3.0	3.8			
207	252	102	1.70	6.94	3.0	4.0			
241	293	87	1.85	5.96	3.0	4.1			
261	317	81	1.65	5.50	2.9	4.0			
265	322	79	2.05	5.41	2.9	4.1			
335	408	63	2.10	4.28	2.7	4.1			
430	522	49	2.70	3.34	2.5	4.2			



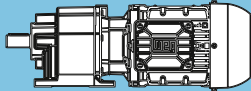
Legend see page 29

P _N = 3.0 kW								IE3	
50 Hz 3.0 kW	60 Hz 3.6 kW	M ₂ Nm	f _b	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
1.1	1.4	23184	0.80	1278.93	95.0	19.4	CG164-11P-L100L-04F CF164-11P-L100L-04F	710 733	168
1.2	1.4	22594	0.80	1246.39	97.5	20.0			
1.3	1.6	19846	0.95	1101.54	107.7	22.5			
1.5	1.8	17061	1.10	952.78	115.9	25.0			
1.8	2.1	14442	1.25	811.56	122.0	27.4			
2.1	2.5	12312	1.50	698.99	126.1	29.3			
2.4	2.9	10540	1.75	604.60	129.0	30.9			
2.5	3.0	10046	1.80	577.48	129.7	31.4			
2.8	3.4	8919	2.05	517.99	131.1	32.4			
2.9	3.5	8582	2.10	499.49	131.5	32.7			
3.3	3.9	7465	2.45	440.86	132.7	33.7			
3.4	4.1	7225	2.50	427.56	133.0	33.9			
3.9	4.7	6133	2.95	369.82	134.0	34.9			
1.6	1.9	16418	0.80	905.71	87.2	11.0	CG144-11P-L100L-04F CF144-11P-L100L-04F	459 477	164
1.7	2.1	15345	0.85	848.21	90.6	12.1			
1.9	2.4	13297	1.00	739.56	96.2	14.2			
2.0	2.4	12754	1.05	710.80	97.5	14.7			
2.1	2.5	12589	1.05	701.59	97.9	14.9			
2.3	2.7	11383	1.15	637.04	100.5	16.1			
2.4	2.8	10909	1.20	611.72	101.4	16.6			
2.6	3.2	9722	1.35	548.57	103.5	17.8			
2.7	3.3	9319	1.40	526.92	104.2	18.2			
2.8	3.3	9184	1.45	520.33	104.4	18.3			
3.2	3.8	7943	1.65	453.75	106.2	19.5			
3.3	4.0	7614	1.75	436.75	106.6	19.9			
3.4	4.1	7327	1.80	421.15	107.0	20.2			
3.7	4.5	6716	1.95	388.44	107.7	20.8			
3.8	4.6	6570	2.00	380.80	107.9	20.9			
3.9	4.7	6309	2.10	367.20	108.2	21.2			
4.0	4.8	6169	2.15	359.79	108.3	21.3			
4.3	5.2	5700	2.30	334.50	108.8	21.8			
4.4	5.3	5578	2.35	328.01	108.9	21.9			
4.6	5.5	5356	2.45	316.30	109.1	22.1			
5.1	6.2	4714	2.80	282.46	109.6	22.8			
5.3	6.4	4526	2.90	272.37	109.7	23.0			
2.6	3.1	10087	0.80	556.43	54.0	18.0	CG134-11P-L100L-04F CF134-11P-L100L-04F	312 314	160
2.7	3.3	9637	0.85	532.69	56.1	18.5			
2.8	3.3	9443	0.85	521.98	57.0	18.7			
3.1	3.8	8275	1.00	460.25	61.8	20.0			
3.2	3.8	8147	1.00	453.11	62.2	20.2			
3.7	4.4	7017	1.15	392.69	65.9	21.5			
3.8	4.6	6812	1.20	382.01	66.5	21.7			
3.9	4.7	6555	1.25	368.37	67.2	22.0			
4.2	5.1	6013	1.35	339.29	68.5	22.6			
4.3	5.2	5865	1.40	331.61	68.9	22.8			
4.5	5.4	5644	1.45	319.76	69.4	23.1			
4.6	5.5	5554	1.45	314.70	69.6	23.2			
5.0	6.1	5026	1.60	286.51	70.7	23.8			
5.2	6.3	4826	1.70	276.28	71.0	24.0			
5.3	6.4	4772	1.70	273.18	71.1	24.0			
6.1	7.4	4072	2.00	236.02	72.3	24.8			
4.9	5.9	5339	0.85	295.14	30.5	20.4	CG104-11P-L100L-04F CF104-11P-L100L-04F	198 202	156
5.1	6.1	5108	0.90	282.94	32.1	20.7			
5.3	6.4	4915	0.95	272.83	33.2	20.9			
6.0	7.3	4292	1.05	239.20	36.5	21.7			
6.2	7.5	4130	1.10	230.65	37.3	21.9			

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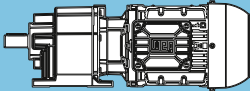
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n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
5.8	7.1	4903	0.95	246.43	33.3	21.0	CG103-11P-L100L-04F CF103-11P-L100L-04F	185 189	154
6.9	8.4	4145	1.10	208.33	37.2	21.9			
8.0	9.6	3588	1.30	180.35	39.5	22.6			
9.0	11	3178	1.45	159.72	40.9	23.2			
10	13	2749	1.65	138.17	42.1	23.7			
11	13	2651	1.70	133.24	42.3	23.8			
12	14	2428	1.90	122.02	42.9	24.1			
14	17	2052	2.20	103.15	43.6	24.6			
16	19	1777	2.55	89.30	44.1	24.9			
17	20	1717	2.65	86.31	43.6	25.0			
18	22	1573	2.90	79.08	42.6	25.2			
7.7	9.3	3727	0.85	187.34	16.0	24.5	CG093-11P-L100L-04F CF093-11P-L100L-04F	142 140	150
9.1	11	3152	1.00	158.42	21.7	25.3			
9.3	11	3069	1.00	154.24	22.4	25.5			
11	13	2709	1.15	136.18	24.8	26.0			
12	14	2429	1.25	122.08	26.3	26.4			
14	16	2121	1.45	106.60	27.7	26.9			
15	18	1954	1.55	98.21	28.4	27.1			
17	20	1725	1.75	86.68	29.2	27.5			
18	22	1585	1.90	79.66	29.6	27.7			
20	24	1447	2.10	72.72	30.0	27.9			
21	25	1362	2.25	68.48	30.2	28.0			
23	28	1219	2.50	61.28	30.6	28.2			
24	29	1189	2.55	59.78	30.6	28.2			
28	34	1019	2.95	51.22	31.0	28.5			
14	17	2025	0.80	101.80	16.7	18.4	CG083-11P-L100L-04F CF083-11P-L100L-04F	90 94	148
16	20	1755	0.90	88.23	19.0	18.9			
19	23	1482	1.05	74.50	20.7	19.5			
20	24	1429	1.10	71.84	21.0	19.6			
23	28	1221	1.30	61.37	22.0	20.0			
27	32	1078	1.45	54.18	22.6	20.3	CG082-11P-L100L-04F CF082-11P-L100L-04F	89 93	148
34	41	853	1.85	42.88	23.3	20.8			
38	46	745	2.10	37.44	23.6	21.0			
44	53	658	2.40	33.09	22.6	21.2			
46	56	621	1.80	31.23	22.3	21.0			
51	62	557	2.80	27.98	21.4	21.4			
58	70	492	2.30	24.72	20.5	21.3			
26	32	1087	0.80	54.63	7.2	12.1	CG073-11P-L100L-04F CF073-11P-L100L-04F	66 70	146
29	35	982	0.85	49.38	8.9	12.7			
30	37	947	0.90	47.62	9.3	12.8			
32	39	894	0.90	44.92	10.0	12.7			
33	40	862	0.95	43.32	10.3	12.8			
37	44	779	1.00	39.17	11.1	13.2			
40	49	709	1.05	35.63	11.6	13.2			
37	45	774	1.10	38.92	11.1	13.3	CG072-11P-L100L-04F CF072-11P-L100L-04F	65 69	146
41	49	704	1.20	35.41	11.7	13.2			
47	57	608	1.35	30.55	12.3	13.7			
52	63	553	1.50	27.79	12.6	13.7			
61	74	469	1.75	23.58	13.0	14.1			
67	81	427	1.85	21.45	13.2	14.1			
70	84	411	1.70	20.65	13.3	13.7			
74	89	388	2.00	19.50	13.4	14.3			
81	98	353	2.10	17.74	13.5	14.3			
87	105	330	2.20	16.59	13.6	14.5			
89	107	322	2.10	16.20	13.4	14.0			
95	115	300	2.35	15.09	13.6	14.5			
100	121	286	2.45	14.38	13.7	14.6			
110	133	260	2.60	13.08	13.3	14.6			
115	139	249	2.50	12.51	13.1	14.3			
119	143	242	2.75	12.14	12.9	14.7			
123	149	233	2.80	11.71	12.8	14.8			
130	158	220	2.90	11.04	12.5	14.7			
135	163	212	3.00	10.65	12.3	14.8			
139	168	206	2.85	10.34	12.3	14.5			



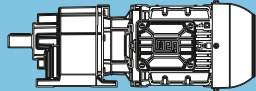
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
3.0 kW		3.6 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b						
39	47	735	0.85	36.92	6.3	6.0	CG062-11P-L100L-04F CF062-11P-L100L-04F	49 54	144
43	51	674	0.90	33.86	7.3	6.1			
48	57	603	1.00	30.30	8.3	6.4			
52	63	553	1.10	27.78	8.8	6.5			
61	74	467	1.30	23.46	9.3	6.7			
67	81	428	1.45	21.51	9.1	6.8			
70	85	409	0.95	20.57	8.9	6.4			
81	98	355	1.70	17.85	8.7	7.1			
85	103	336	1.15	16.88	8.5	6.7			
88	106	326	1.85	16.36	8.5	7.1			
98	118	293	2.05	14.72	8.3	7.3			
107	129	268	2.25	13.49	8.1	7.3			
110	133	260	1.45	13.07	8.0	7.0			
119	144	240	2.50	12.07	7.9	7.4			
130	157	220	2.75	11.07	7.7	7.5			
140	170	204	2.95	10.26	7.6	7.5			
145	175	198	1.95	9.94	7.4	7.3			
176	212	163	2.35	8.20	7.0	7.4			
214	259	134	2.85	6.73	6.7	7.5			
54	65	533	0.80	26.79	**	5.6	CG052-11P-L100L-04F CF052-11P-L100L-04F	44 49	142
60	72	480	0.85	24.12	3.0	5.9			
66	79	436	0.95	21.92	4.2	6.1			
78	94	369	1.10	18.56	5.5	6.4			
81	97	355	0.80	17.86	5.7	6.1			
85	103	336	1.20	16.88	5.9	6.6			
99	119	291	0.95	14.62	6.0	6.4			
103	124	279	1.45	14.03	6.1	6.8			
113	136	254	1.60	12.75	6.0	6.9			
125	152	228	1.80	11.48	5.9	7.1			
128	155	224	1.20	11.25	5.8	6.8			
138	167	208	1.95	10.43	5.7	7.1			
155	187	185	2.10	9.31	5.6	7.3			
169	205	169	1.60	8.50	5.4	7.1			
170	206	168	2.20	8.46	5.5	7.3			
185	223	155	2.25	7.79	5.4	7.4			
203	246	141	2.35	7.08	5.2	7.5			
207	250	138	1.95	6.96	5.1	7.3			
228	276	126	2.45	6.31	5.1	7.5			
236	286	121	2.50	6.09	5.0	7.5			
251	303	114	2.55	5.74	4.9	7.6			
255	308	112	2.35	5.64	4.9	7.5			
260	314	110	2.60	5.54	4.9	7.6			
305	368	94	2.45	4.72	4.7	7.6			
376	455	76	2.65	3.83	4.4	7.7			
390	471	73	2.70	3.69	4.3	7.7			
111	135	257	0.80	12.92	3.0	3.0	CG032-11P-L100L-04F CF032-11P-L100L-04F	40 42	140
123	148	233	0.85	11.73	3.0	3.1			
147	177	195	0.95	9.82	2.9	3.4			
162	195	177	1.05	8.92	2.9	3.5			
189	228	152	1.15	7.64	2.9	3.7			
199	240	144	0.95	7.24	2.8	3.5			
208	251	138	1.25	6.94	2.8	3.7			
242	292	119	1.35	5.96	2.8	3.9			
262	316	109	1.20	5.50	2.7	3.8			
266	321	108	1.50	5.41	2.7	3.9			
337	407	85	1.55	4.28	2.5	4.0			
431	521	66	2.00	3.34	2.4	4.1			

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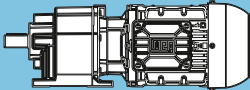
** ... on request

P_N = 4.0 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
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n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
1.5	1.8	22870	0.80	952.78	96.4	19.7	CG164-11P-112M-04E CF164-11P-112M-04E	711 734	168
1.6	1.9	22313	0.85	931.50	98.7	20.2			
1.8	2.2	19361	0.95	811.56	109.2	22.9			
2.1	2.5	16573	1.10	698.99	117.1	25.4			
2.2	2.6	15864	1.15	670.48	118.9	26.1			
2.4	2.9	14218	1.30	604.60	122.5	27.6			
2.5	3.0	13916	1.30	591.77	123.1	27.9			
2.8	3.4	12081	1.50	517.99	126.5	29.5			
2.9	3.5	11626	1.55	499.49	127.3	29.9			
3.3	4.0	10155	1.80	440.86	129.5	31.3			
3.4	4.1	9829	1.85	427.56	130.0	31.6			
3.5	4.2	9596	1.90	418.32	130.3	31.8			
3.9	4.7	8396	2.15	369.82	131.7	32.9			
4.0	4.9	8146	2.25	360.30	132.0	33.1			
4.7	5.6	6944	2.60	311.64	133.2	34.2			
2.0	2.5	17062	0.80	710.80	84.9	10.4	CG144-11P-112M-04E CF144-11P-112M-04E	460 478	164
2.1	2.5	16841	0.80	701.59	85.7	10.6			
2.3	2.8	15229	0.90	637.04	90.9	12.2			
2.4	2.9	14623	0.90	611.72	92.7	12.8			
2.6	3.2	13060	1.00	548.57	96.8	14.4			
2.8	3.3	12519	1.05	526.92	98.0	15.0			
3.2	3.9	10692	1.25	453.75	101.8	16.8			
3.3	4.0	10270	1.30	436.75	102.6	17.2			
3.4	4.2	9883	1.35	421.15	103.3	17.6			
3.7	4.5	9078	1.45	388.44	104.6	18.4			
3.8	4.5	9020	1.45	385.96	104.7	18.5			
3.9	4.8	8547	1.55	367.20	105.4	18.9			
4.0	4.9	8357	1.60	359.79	105.6	19.1			
4.3	5.2	7737	1.70	334.50	106.5	19.7			
4.4	5.4	7572	1.75	328.01	106.7	19.9			
4.6	5.5	7286	1.80	316.30	107.0	20.2			
5.1	6.2	6440	2.05	282.46	108.0	21.0			
5.3	6.4	6197	2.10	272.37	108.3	21.3			
5.4	6.5	6135	2.15	270.22	108.3	21.4			
6.2	7.5	5207	2.50	232.69	109.2	22.3			
7.0	8.5	5450	2.40	206.88	109.0	22.0	CG143-11P-112M-04E CF143-11P-112M-04E	436 454	162
8.0	9.7	4752	2.75	180.38	109.6	22.7			
8.3	10	4582	2.85	173.94	109.7	22.9			
3.7	4.5	9387	0.90	392.69	57.3	18.8	CG134-11P-112M-04E CF134-11P-112M-04E	313 315	160
3.8	4.6	9132	0.90	382.01	58.4	19.1			
3.9	4.8	8788	0.95	368.37	59.8	19.5			
4.3	5.2	8078	1.00	339.29	62.5	20.3			
4.4	5.3	7879	1.05	331.61	63.2	20.5			
4.5	5.5	7582	1.10	319.76	64.2	20.8			
4.6	5.6	7462	1.10	314.70	64.5	21.0			
5.1	6.1	6765	1.20	286.51	66.6	21.8			
5.2	6.4	6510	1.25	276.28	67.3	22.1			
5.3	6.4	6437	1.25	273.18	67.5	22.1			
6.1	7.4	5505	1.50	236.02	69.7	23.2	CG133-11P-112M-04E CF133-11P-112M-04E	289 291	158
7.1	8.6	5397	1.50	204.88	69.9	23.3			
8.0	9.7	4767	1.70	180.95	71.1	24.1			
9.2	11	4138	1.95	157.08	72.2	24.8			
9.6	12	3990	2.05	151.47	72.4	24.9			
11	13	3575	2.25	135.71	73.0	25.4			
12	15	3060	2.65	116.14	73.7	26.0			
14	17	2683	3.00	101.85	74.1	26.4	CG104-11P-112M-04E CF104-11P-112M-04E	199 203	156
6.1	7.3	5742	0.80	239.20	27.4	19.9			
6.3	7.6	5525	0.85	230.65	29.1	20.2			

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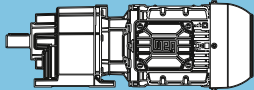
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50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
4.0 kW		4.8 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b						
7.0	8.4	5488	0.85	208.33	29.4	20.2	CG103-11P-112M-04E CF103-11P-112M-04E	186 190	154
8.0	9.7	4751	0.95	180.35	34.2	21.2			
9.1	11	4208	1.10	159.72	36.9	21.8			
10	13	3640	1.25	138.17	39.3	22.6			
11	13	3510	1.30	133.24	39.7	22.7			
12	14	3214	1.40	122.02	40.7	23.1			
14	17	2718	1.70	103.15	42.2	23.7			
16	20	2352	1.95	89.30	43.0	24.2			
17	20	2274	2.00	86.31	43.2	24.3			
18	22	2083	2.20	79.08	43.4	24.6			
21	26	1802	2.50	68.41	40.9	24.9			
22	27	1738	2.60	65.97	40.3	25.0			
25	30	1533	2.95	58.21	38.4	25.3			
11	13	3588	0.85	136.18	17.7	24.7	CG093-11P-112M-04E CF093-11P-112M-04E	143 141	150
12	14	3216	0.95	122.08	21.2	25.2			
14	16	2808	1.10	106.60	24.2	25.9			
15	18	2587	1.20	98.21	25.5	26.2			
17	20	2284	1.35	86.68	27.0	26.6			
18	22	2099	1.45	79.66	27.8	26.9			
20	24	1916	1.60	72.72	28.5	27.2			
21	26	1804	1.70	68.48	28.9	27.3			
24	29	1614	1.90	61.28	29.5	27.6			
28	34	1349	2.25	51.22	30.3	28.0			
29	36	1301	2.35	49.39	30.4	28.1			
33	40	1148	2.50	43.59	30.7	28.3			
40	48	963	2.80	36.57	28.9	28.6			
37	44	1043	2.85	39.60	29.7	28.5	CG092-11P-112M-04E CF092-11P-112M-04E	141 139	150
64	78	595	2.85	22.58	24.4	28.8			
19	24	1963	0.80	74.50	17.3	18.5	CG083-11P-112M-04E CF083-11P-112M-04E	91 95	148
20	24	1893	0.85	71.84	17.9	18.6			
24	29	1617	1.00	61.37	19.9	19.2			
27	32	1427	1.10	54.18	21.0	19.6	CG082-11P-112M-04E CF082-11P-112M-04E	90 94	148
34	41	1130	1.40	42.88	22.4	20.2			
39	47	986	1.60	37.44	22.9	20.5			
44	53	872	1.80	33.09	23.0	20.7			
46	56	823	1.40	31.23	22.7	20.5			
52	63	737	2.15	27.98	21.6	21.0			
59	71	651	1.75	24.72	20.7	20.9			
60	73	634	2.35	24.05	20.4	21.2			
67	81	569	2.35	21.58	19.7	21.1			
69	84	553	2.60	21.00	19.4	21.4			
76	92	503	2.60	19.08	18.8	21.3			
81	98	474	2.90	17.99	18.3	21.5			
84	101	457	2.95	17.35	18.1	21.6			
41	49	939	0.80	35.63	9.4	12.5	CG073-11P-112M-04E CF073-11P-112M-04E	67 71	146

Legend see page 29

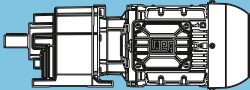
P_N = 4.0 kW							IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
4.0 kW		4.8 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
37	45	1025	0.80	38.92	8.2	12.6	CG072-11P-112M-04E CF072-11P-112M-04E	66 70	146
41	50	933	0.90	35.41	9.5	12.5			
47	57	805	1.05	30.55	10.8	13.2			
52	63	732	1.15	27.79	11.3	13.2			
62	74	621	1.30	23.58	11.9	13.7			
68	82	565	1.40	21.45	12.0	13.7			
70	85	544	1.30	20.65	11.2	13.1			
74	90	514	1.50	19.50	12.3	14.0			
82	99	467	1.60	17.74	12.2	14.0			
87	106	437	1.65	16.59	12.4	14.2			
89	108	427	1.60	16.20	11.6	13.6			
96	116	398	1.80	15.09	12.3	14.2			
101	122	379	1.85	14.38	12.3	14.4			
111	134	345	1.95	13.08	12.2	14.3			
116	140	329	1.90	12.51	11.7	14.0			
119	145	320	2.05	12.14	12.3	14.5			
124	150	308	2.10	11.71	12.2	14.5			
131	159	291	2.20	11.04	12.1	14.5			
136	165	281	2.25	10.65	12.1	14.5			
140	170	272	2.15	10.34	11.6	14.2			
145	176	263	2.35	10.00	12.0	14.7			
159	193	240	2.55	9.10	11.8	14.7			
165	199	232	2.40	8.80	11.4	14.4			
190	230	201	2.65	7.63	11.1	14.5			
225	273	170	2.95	6.44	10.4	14.7			
48	58	798	0.80	30.30	4.9	5.8	CG062-11P-112M-04E CF062-11P-112M-04E	50 55	144
52	63	732	0.85	27.78	6.4	6.0			
62	75	618	1.00	23.46	8.1	6.3			
67	82	567	1.10	21.51	8.6	6.4			
81	98	470	1.30	17.85	8.3	6.7			
86	104	445	0.85	16.88	8.0	6.2			
89	107	431	1.40	16.36	8.1	6.8			
99	119	388	1.55	14.72	7.9	7.0			
107	130	355	1.70	13.49	7.8	7.1			
111	134	344	1.10	13.07	7.6	6.7			
120	145	318	1.90	12.07	7.6	7.2			
131	159	292	2.10	11.07	7.4	7.2			
141	171	270	2.25	10.26	7.3	7.3			
146	177	262	1.45	9.94	7.2	7.0			
154	187	248	2.40	9.40	7.1	7.4			
172	208	222	2.50	8.43	7.0	7.5			
177	214	216	1.75	8.20	6.8	7.2			
178	216	214	2.50	8.13	6.9	7.5			
188	227	204	2.55	7.73	6.8	7.5			
194	235	196	2.60	7.46	6.7	7.5			
216	261	177	2.15	6.73	6.5	7.4			
217	262	176	2.70	6.69	6.5	7.6			
236	286	162	2.75	6.13	6.4	7.6			
254	307	151	2.50	5.71	6.2	7.5			
309	374	124	2.65	4.70	5.9	7.6			
320	387	119	2.70	4.53	5.8	7.6			
389	471	98	2.85	3.73	5.5	7.7			

C

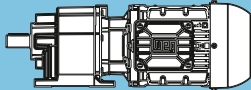
Legend see page 29

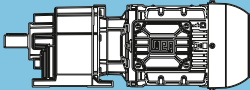
P _N = 4.0 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
4.0 kW	4.8 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
78	95	489	0.85	18.56	2.7	5.9	CG052-11P-112M-04E CF052-11P-112M-04E	45 50	142
86	104	445	0.90	16.88	4.0	6.0			
103	125	369	1.10	14.03	5.5	6.4			
114	138	336	1.20	12.75	5.6	6.6			
126	153	302	1.35	11.48	5.5	6.7			
129	156	296	0.95	11.25	5.4	6.4			
139	168	275	1.50	10.43	5.4	6.8			
156	189	245	1.60	9.31	5.3	7.0			
171	206	224	1.20	8.50	5.1	6.8			
171	207	223	1.65	8.46	5.2	7.1			
186	225	205	1.70	7.79	5.1	7.2			
205	248	187	1.80	7.08	5.0	7.2			
208	252	183	1.50	6.96	4.9	7.0			
230	278	166	1.85	6.31	4.9	7.3			
238	288	160	1.90	6.09	4.8	7.4			
253	306	151	1.95	5.74	4.8	7.4			
257	311	149	1.75	5.64	4.7	7.2			
262	317	146	1.95	5.54	4.7	7.4			
307	372	124	1.85	4.72	4.5	7.4			
379	459	101	2.00	3.83	4.3	7.5			
393	476	97	2.05	3.69	4.2	7.5			

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P _N = 5.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
5.5 kW		6.6 kW			F _m kN	F _{an} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
2.1	2.5	22834	0.80	698.99	96.5	19.8	CG164-11P-132S-04E CF164-11P-132S-04E	729 752	168
2.2	2.6	21858	0.85	670.48	100.5	20.6			
2.4	2.9	19629	0.95	604.60	108.4	22.7			
2.5	3.0	19213	0.95	591.77	109.7	23.0			
2.8	3.4	16714	1.10	517.99	116.8	25.3			
2.9	3.5	16446	1.10	509.69	117.4	25.6			
3.0	3.6	15985	1.15	496.41	118.6	26.0			
3.3	4.0	14109	1.30	440.86	122.7	27.7			
3.4	4.1	13655	1.35	427.56	123.6	28.1			
3.5	4.2	13360	1.35	418.32	124.2	28.4			
4.0	4.8	11714	1.55	369.82	127.1	29.9			
4.1	4.9	11389	1.60	360.30	127.7	30.2			
4.7	5.7	9750	1.85	311.64	130.1	31.6			
2.8	3.3	17213	0.80	526.92	84.4	10.2	CG144-11P-132S-04E CF144-11P-132S-04E	478 496	164
3.2	3.9	14762	0.90	453.75	92.3	12.7			
3.3	3.9	14581	0.90	448.20	92.8	12.9			
3.4	4.0	14180	0.95	436.75	93.9	13.3			
3.5	4.2	13645	1.00	421.15	95.3	13.8			
3.8	4.5	12560	1.05	388.44	97.9	14.9			
4.0	4.8	11849	1.10	367.20	99.5	15.6			
4.1	4.9	11586	1.15	359.79	100.1	15.9			
4.4	5.3	10727	1.25	334.50	101.8	16.7			
4.5	5.4	10519	1.25	328.01	102.1	17.0			
4.6	5.6	10123	1.30	316.30	102.9	17.4			
4.7	5.6	10040	1.30	313.70	103.0	17.4			
5.2	6.2	8984	1.45	282.46	104.7	18.5			
5.4	6.5	8628	1.55	272.37	105.3	18.9			
6.3	7.6	7295	1.80	232.69	107.0	20.2			
7.1	8.5	7417	1.80	206.88	106.9	20.1	CG143-11P-132S-04E CF143-11P-132S-04E	454 472	162
8.1	9.8	6467	2.05	180.38	108.0	21.0			
8.4	10	6236	2.10	173.94	108.2	21.2			
9.4	11	5571	2.35	155.38	108.9	21.9			
11	13	4797	2.75	133.80	109.5	22.7			
4.6	5.5	10446	0.80	319.76	52.1	17.6	CG134-11P-132S-04E CF134-11P-132S-04E	331 333	160
4.7	5.6	10280	0.80	314.70	53.0	17.8			
5.1	6.2	9321	0.90	286.51	57.6	18.9			
5.3	6.4	8988	0.90	276.28	59.0	19.2			
5.4	6.5	8869	0.95	273.18	59.5	19.4			
6.2	7.5	7632	1.05	236.02	64.0	20.8			
7.2	8.6	7345	1.10	204.88	64.9	21.1	CG133-11P-132S-04E CF133-11P-132S-04E	307 309	158
8.1	9.8	6488	1.25	180.95	67.3	22.1			
9.3	11	5632	1.45	157.08	69.4	23.1			
9.7	12	5431	1.50	151.47	69.8	23.3			
11	13	4866	1.65	135.71	71.0	23.9			
13	15	4164	1.95	116.14	72.2	24.7			
14	17	3652	2.20	101.85	72.9	25.3			
15	18	3596	2.25	100.31	73.0	25.4			
16	20	3225	2.50	89.96	73.5	25.8			
19	23	2800	2.90	78.09	73.9	26.3			
9.2	11	5727	0.80	159.72	27.5	19.9	CG103-11P-132S-04E CF103-11P-132S-04E	204 208	154
11	13	4777	0.95	133.24	34.0	21.1			
11	13	4954	0.95	138.17	33.0	20.9			
12	14	4375	1.05	122.02	36.1	21.6			
12	15	4215	1.10	117.56	36.9	21.8			
14	17	3698	1.25	103.15	39.1	22.5			
15	18	3587	1.30	100.05	39.5	22.6			
16	20	3202	1.45	89.30	40.8	23.1			
17	20	3094	1.50	86.31	41.1	23.3			
19	22	2835	1.60	79.08	41.9	23.6			
21	26	2453	1.85	68.41	41.9	24.1			
22	27	2365	1.95	65.97	41.2	24.2			
25	30	2087	2.20	58.21	39.2	24.5			
30	36	1776	2.55	49.54	36.6	24.9			
34	41	1532	2.95	42.74	34.9	25.3			

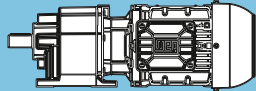


P _N = 5.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
5.5 kW		6.6 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b						
14	17	3822	0.80	106.60	14.8	24.4	CG093-11P-132S-04E CF093-11P-132S-04E	162 160	150
15	18	3521	0.90	98.21	18.4	24.8			
16	19	3378	0.90	94.21	19.8	25.0			
17	20	3108	1.00	86.68	22.1	25.4			
18	22	2856	1.10	79.66	23.9	25.8			
20	24	2607	1.20	72.72	25.4	26.1			
21	26	2455	1.25	68.48	26.2	26.4			
24	29	2197	1.40	61.28	27.4	26.8			
25	30	2143	1.40	59.78	27.7	26.8			
29	34	1836	1.65	51.22	28.8	27.3			
30	36	1771	1.70	49.39	29.1	27.4			
34	40	1563	1.85	43.59	29.7	27.7			
40	48	1311	2.05	36.57	29.5	28.1			
48	57	1105	2.30	30.81	27.5	28.4			
37	45	1420	2.10	39.60	30.1	27.9	CG092-11P-132S-04E CF092-11P-132S-04E	160 158	150
44	53	1200	2.50	33.48	28.4	28.2			
51	61	1039	2.90	28.98	26.9	28.5			
65	78	810	2.10	22.58	24.7	28.4			
77	92	684	2.50	19.09	23.2	28.6			
89	107	593	2.90	16.53	22.0	28.8			
27	33	1942	0.80	54.18	17.5	18.5	CG082-11P-132S-04E CF082-11P-132S-04E	108 112	148
34	41	1537	1.05	42.88	20.4	19.4			
39	47	1342	1.20	37.44	21.4	19.8			
44	53	1186	1.35	33.09	22.2	20.1			
47	57	1120	1.00	31.23	22.4	19.7			
52	63	1003	1.55	27.98	22.1	20.5			
59	71	886	1.30	24.72	21.2	20.3			
61	73	862	1.75	24.05	20.8	20.7			
68	82	774	1.75	21.58	20.1	20.6			
70	84	753	1.90	21.00	19.7	21.0			
77	93	684	1.95	19.08	19.1	20.8			
81	98	645	2.10	17.99	18.6	21.2			
84	102	622	2.20	17.35	18.4	21.2			
91	109	578	2.25	16.13	18.0	21.1			
96	115	549	2.35	15.31	17.5	21.4			
106	127	497	2.50	13.87	17.0	21.3			
114	137	460	2.65	12.84	16.4	21.6			
121	146	434	2.75	12.10	16.1	21.4			
135	163	388	3.00	10.82	15.4	21.7			
53	64	996	0.85	27.79	7.1	12.4	CG072-11P-132S-04E CF072-11P-132S-04E	84 88	146
62	75	845	0.95	23.58	8.5	13.1			
68	82	769	1.05	21.45	8.8	13.0			
71	85	740	0.95	20.65	7.8	12.3			
75	91	699	1.10	19.50	9.4	13.5			
83	99	636	1.20	17.74	9.5	13.5			
88	106	595	1.25	16.59	9.9	13.8			
90	109	581	1.20	16.20	9.0	12.9			
97	117	541	1.30	15.09	10.0	13.7			
102	123	515	1.35	14.38	10.2	14.0			
112	135	469	1.45	13.08	10.3	14.0			
117	141	448	1.40	12.51	9.6	13.5			
121	145	435	1.55	12.14	10.4	14.2			
125	151	420	1.55	11.71	10.5	14.2			
133	160	396	1.65	11.04	10.4	14.2			
138	166	382	1.70	10.65	10.4	14.2			
142	171	371	1.60	10.34	9.9	13.8			
147	177	359	1.75	10.00	10.5	14.4			
161	194	326	1.85	9.10	10.5	14.4			
167	201	315	1.75	8.80	10.0	14.1			
192	231	273	1.95	7.63	10.0	14.2			
228	274	231	2.20	6.44	9.9	14.4			
236	284	223	2.25	6.21	9.9	14.5			
276	333	190	2.50	5.30	9.7	14.6			

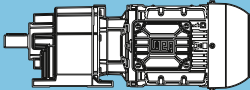
P _N = 5.5 kW								IE3	
50 Hz	60 Hz	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
5.5 kW	6.6 kW				F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
68	82	771	0.80	21.51	5.6	5.8	CG062-11P-132S-04E CF062-11P-132S-04E	69 74	144
82	99	640	0.95	17.85	7.7	6.2			
90	108	587	1.05	16.36	7.5	6.4			
100	120	528	1.15	14.72	7.4	6.6			
109	131	484	1.25	13.49	7.3	6.7			
112	135	469	0.85	13.07	7.1	6.1			
121	146	433	1.40	12.07	7.2	6.8			
132	159	397	1.55	11.07	7.1	6.9			
143	172	368	1.65	10.26	6.9	7.0			
147	178	356	1.10	9.94	6.8	6.6			
156	188	337	1.75	9.40	6.8	7.1			
174	209	302	1.85	8.43	6.7	7.2			
179	215	294	1.30	8.20	6.5	6.9			
180	217	292	1.85	8.13	6.6	7.3			
189	228	277	1.90	7.73	6.5	7.3			
196	237	267	1.90	7.46	6.5	7.3			
218	262	241	1.60	6.73	6.2	7.1			
219	264	240	2.00	6.69	6.3	7.4			
239	288	220	2.05	6.13	6.2	7.5			
256	309	205	1.85	5.71	6.0	7.2			
312	376	168	1.95	4.70	5.7	7.4			
323	390	162	2.00	4.53	5.6	7.4			
393	474	134	2.10	3.73	5.4	7.5			
104	126	503	0.80	14.03	2.1	5.8	CG052-11P-132S-04E CF052-11P-132S-04E	63 68	142
115	138	457	0.90	12.75	3.7	6.0			
128	154	412	1.00	11.48	4.8	6.2			
140	169	374	1.10	10.43	5.0	6.4			
157	190	334	1.20	9.31	4.9	6.6			
172	208	305	0.90	8.50	4.7	6.3			
173	209	303	1.25	8.46	4.8	6.7			
188	227	279	1.25	7.79	4.8	6.8			
207	249	254	1.30	7.08	4.7	6.9			
211	254	249	1.10	6.96	4.6	6.7			
232	280	226	1.40	6.31	4.6	7.1			
241	290	218	1.40	6.09	4.6	7.1			
255	307	206	1.45	5.74	4.5	7.2			
260	313	202	1.30	5.64	4.4	6.9			
265	319	198	1.45	5.54	4.5	7.2			
310	374	169	1.40	4.72	4.3	7.1			
383	461	137	1.50	3.83	4.1	7.3			
397	478	132	1.50	3.69	4.0	7.3			

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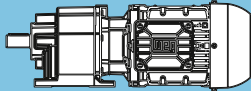
Legend see page 29

P _N = 7.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
7.5 kW		9.0 kW			F _{rN} kN	F _{r2N} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b						
2.8	3.4	23074	0.80	517.99	95.5	19.5	CG164-11P-L132M-04F CF164-11P-L132M-04F	743 766	168
2.9	3.5	22704	0.80	509.69	97.1	19.9			
3.0	3.6	22068	0.85	496.41	99.6	20.4			
3.3	4.0	19518	0.95	440.86	108.7	22.8			
3.4	4.1	18890	1.00	427.56	110.7	23.3			
3.5	4.2	18482	1.00	418.32	111.9	23.7			
4.0	4.8	16239	1.15	369.82	117.9	25.7			
4.1	4.9	15821	1.15	360.30	119.0	26.1			
4.7	5.7	13572	1.35	311.64	123.8	28.2			
3.8	4.6	17193	0.80	385.96	84.5	10.3	CG144-11P-L132M-04F CF144-11P-L132M-04F	492 510	164
4.0	4.8	16357	0.80	367.20	87.4	11.1			
4.1	4.9	15994	0.85	359.79	88.6	11.5			
4.4	5.3	14839	0.90	334.50	92.1	12.6			
4.5	5.4	14552	0.90	328.01	92.9	12.9			
4.6	5.6	14003	0.95	316.30	94.4	13.5			
4.7	5.6	13889	0.95	313.70	94.7	13.6			
5.2	6.3	12454	1.05	282.46	98.2	15.0			
5.4	6.5	11985	1.10	272.37	99.2	15.5			
6.3	7.6	10155	1.30	232.69	102.8	17.3			
7.1	8.6	10115	1.30	206.88	102.9	17.4	CG143-11P-L132M-04F CF143-11P-L132M-04F	468 486	162
8.1	9.8	8819	1.50	180.38	105.0	18.7			
8.4	10	8504	1.55	173.94	105.4	19.0			
9.4	11	7596	1.75	155.38	106.7	19.9			
11	13	6541	2.00	133.80	107.9	20.9			
13	15	5714	2.30	116.88	108.7	21.8			
15	18	4828	2.70	98.76	109.5	22.7			
6.2	7.5	10514	0.80	236.02	51.7	17.5	CG134-11P-L132M-04F CF134-11P-L132M-04F	345 347	160
7.2	8.6	10017	0.80	204.88	54.3	18.1	CG133-11P-L132M-04F CF133-11P-L132M-04F	321 323	158
8.1	9.8	8847	0.95	180.95	59.6	19.4			
9.3	11	7680	1.05	157.08	63.8	20.7			
9.7	12	7405	1.10	151.47	64.7	21.0			
11	13	6635	1.25	135.71	66.9	21.9			
13	15	5678	1.45	116.14	69.3	23.0			
14	17	4980	1.65	101.85	70.7	23.8			
15	18	4904	1.65	100.31	70.9	23.9			
16	20	4398	1.85	89.96	71.8	24.5			
19	23	3818	2.10	78.09	72.7	25.1			
19	24	3682	2.20	75.30	72.9	25.3			
22	26	3299	2.45	67.47	73.4	25.7			
25	31	2823	2.85	57.74	73.9	26.3			
49	59	1460	2.50	29.86	75.0	27.8	CG132-11P-L132M-04F CF132-11P-L132M-04F	312 314	158
86	104	831	2.50	17.00	75.2	28.3			
12	15	5965	0.80	122.02	25.4	19.6	CG103-11P-L132M-04F CF103-11P-L132M-04F	218 222	154
14	17	5043	0.90	103.15	32.5	20.8			
15	18	4891	0.95	100.05	33.4	21.0			
16	20	4366	1.05	89.30	36.2	21.6			
17	21	4220	1.10	86.31	36.9	21.8			
19	22	3867	1.20	79.08	38.4	22.3			
21	26	3345	1.35	68.41	40.3	22.9			
22	27	3225	1.40	65.97	40.7	23.1			
25	30	2846	1.60	58.21	40.3	23.6			
30	36	2422	1.90	49.54	37.6	24.1			
34	41	2089	2.20	42.74	35.7	24.5			
44	54	1614	2.30	33.01	32.3	25.1			
60	73	1193	2.50	24.40	28.7	25.7			
76	92	937	2.30	19.17	26.5	25.6			
103	125	693	2.50	14.17	23.7	26.0			

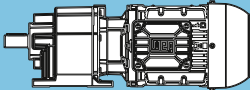
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P _N = 7.5 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
7.5 kW		9.0 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
18	22	3895	0.80	79.66	13.7	24.2	CG093-11P-L132M-04F CF093-11P-L132M-04F	176 174	150
20	24	3555	0.85	72.72	18.0	24.7			
21	26	3348	0.90	68.48	20.1	25.1			
24	29	2996	1.05	61.28	22.9	25.6			
25	30	2923	1.05	59.78	23.4	25.7			
29	35	2504	1.20	51.22	25.9	26.3			
30	36	2415	1.25	49.39	26.4	26.4			
34	41	2131	1.35	43.59	27.7	26.9			
40	48	1788	1.50	36.57	29.0	27.4			
48	57	1507	1.70	30.81	28.2	27.8			
37	45	1936	1.55	39.60	28.5	27.1	CG092-11P-L132M-04F CF092-11P-L132M-04F	174 172	150
44	53	1637	1.85	33.48	29.2	27.6			
51	61	1417	2.15	28.98	27.6	27.9			
57	69	1255	2.40	25.67	26.4	28.1			
65	78	1104	1.55	22.58	25.3	27.8			
66	80	1086	2.80	22.20	24.9	28.4			
68	83	1047	2.50	21.41	24.6	28.5			
77	93	933	1.85	19.09	23.7	28.1			
89	107	808	2.15	16.53	22.4	28.4			
100	121	716	2.55	14.64	21.4	28.6			
116	140	619	2.95	12.66	20.3	28.8			
120	145	597	2.50	12.21	20.0	28.8			
39	47	1830	0.85	37.44	18.4	18.8	CG082-11P-L132M-04F CF082-11P-L132M-04F	122 126	148
44	53	1618	1.00	33.09	19.9	19.2			
52	63	1368	1.15	27.98	21.3	19.7			
59	72	1209	0.95	24.72	21.9	19.5			
61	74	1176	1.30	24.05	21.4	20.1			
68	82	1055	1.25	21.58	20.7	19.9			
70	84	1027	1.40	21.00	20.2	20.4			
77	93	933	1.45	19.08	19.7	20.2			
81	98	880	1.55	17.99	19.1	20.7			
84	102	848	1.60	17.35	18.8	20.8			
91	110	789	1.65	16.13	18.4	20.5			
96	116	749	1.75	15.31	17.9	21.0			
106	128	678	1.85	13.87	17.3	20.8			
114	138	628	1.95	12.84	16.7	21.2			
121	146	592	2.00	12.10	16.5	21.0			
135	164	529	2.20	10.82	15.7	21.4			
141	171	507	2.25	10.37	15.5	21.2			
147	177	489	2.30	10.00	15.3	21.3			
166	201	432	2.45	8.83	14.6	21.4			
198	239	362	2.80	7.40	13.7	21.6			
75	91	953	0.80	19.50	5.5	12.8	CG072-11P-L132M-04F CF072-11P-L132M-04F	98 102	146
83	100	867	0.85	17.74	6.0	12.7			
88	107	811	0.90	16.59	6.6	13.2			
90	109	792	0.85	16.20	5.4	12.0			
97	117	738	0.95	15.09	7.0	13.1			
102	123	703	1.00	14.38	7.4	13.5			
112	135	639	1.05	13.08	7.7	13.4			
117	142	611	1.05	12.51	6.9	12.8			
121	146	593	1.15	12.14	8.0	13.8			
125	151	572	1.15	11.71	8.2	13.8			
133	160	540	1.20	11.04	8.2	13.7			
138	166	521	1.25	10.65	8.3	13.8			
142	171	506	1.20	10.34	7.6	13.3			
147	177	489	1.30	10.00	8.5	14.0			
161	195	445	1.35	9.10	8.7	14.0			
167	201	430	1.30	8.80	8.0	13.6			
192	232	373	1.45	7.63	8.3	13.8			
228	275	315	1.60	6.44	8.5	14.1			
236	285	304	1.65	6.21	8.5	14.1			
276	334	259	1.85	5.30	8.5	14.3			

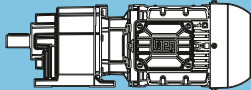
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P _N = 7.5 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
7.5 kW	9.0 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
100	120	719	0.85	14.72	6.6	6.0	CG062-11P-L132M-04F CF062-11P-L132M-04F	82 87	144
109	131	660	0.95	13.49	6.7	6.2			
121	147	590	1.05	12.07	6.7	6.4			
132	160	541	1.15	11.07	6.6	6.5			
143	173	501	1.20	10.26	6.5	6.6			
147	178	486	0.80	9.94	6.3	6.1			
156	188	460	1.30	9.40	6.4	6.8			
174	210	412	1.35	8.43	6.3	6.9			
179	216	401	0.95	8.20	6.1	6.4			
180	218	398	1.35	8.13	6.2	6.9			
189	229	378	1.40	7.73	6.2	7.0			
196	237	365	1.40	7.46	6.1	7.0			
218	263	329	1.15	6.73	5.9	6.7			
219	265	327	1.45	6.69	6.0	7.2			
239	289	300	1.50	6.13	5.9	7.2			
256	310	279	1.35	5.71	5.7	6.9			
312	377	230	1.45	4.70	5.5	7.1			
323	391	222	1.45	4.53	5.4	7.2			
393	475	182	1.55	3.73	5.2	7.3			
140	170	510	0.80	10.43	1.6	5.7	CG052-11P-L132M-04F CF052-11P-L132M-04F	77 82	142
157	190	455	0.85	9.31	3.8	6.0			
173	209	414	0.90	8.46	4.3	6.2			
188	227	381	0.95	7.79	4.3	6.4			
207	250	346	0.95	7.08	4.3	6.5			
211	254	340	0.80	6.96	4.2	6.1			
232	280	309	1.00	6.31	4.3	6.7			
241	291	298	1.05	6.09	4.2	6.7			
255	308	281	1.05	5.74	4.2	6.8			
260	314	276	0.95	5.64	4.1	6.5			
265	320	271	1.05	5.54	4.2	6.9			
310	375	231	1.00	4.72	4.0	6.8			
383	462	187	1.10	3.83	3.8	7.0			
397	480	180	1.10	3.69	3.8	7.1			

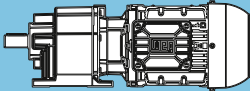
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P_N = 9.2 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
9.2 kW		11 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
3.4	4.1	23443	0.80	427.56	93.9	19.2	CG164-11P-L132M-04G CF164-11P-L132M-04G	748 771	168
3.5	4.2	22936	0.80	418.32	96.1	19.7			
3.9	4.8	20194	0.90	369.82	106.5	22.2			
4.1	4.9	19634	0.95	360.30	108.3	22.7			
4.7	5.7	16878	1.10	311.64	116.3	25.2			
4.7	5.6	17200	0.80	313.70	84.4	10.3	CG144-11P-L132M-04G CF144-11P-L132M-04G	497 515	164
5.2	6.2	15456	0.85	282.46	90.3	12.0			
5.4	6.5	14873	0.90	272.37	92.0	12.6			
6.3	7.6	12628	1.05	232.69	97.8	14.8			
7.1	8.5	12450	1.05	206.88	98.2	15.0			
8.1	9.8	10855	1.20	180.38	101.5	16.6	CG143-11P-L132M-04G CF143-11P-L132M-04G	473 491	162
8.4	10	10467	1.25	173.94	102.2	17.0			
9.4	11	9350	1.40	155.38	104.2	18.1			
11	13	8052	1.65	133.80	106.1	19.4			
12	15	7033	1.85	116.88	107.4	20.5			
13	16	6816	1.95	113.27	107.6	20.7			
15	18	5943	2.20	98.76	108.5	21.5			
17	21	5119	2.55	85.07	109.3	22.4			
20	24	4408	2.95	73.25	109.8	23.1			
9.3	11	9453	0.85	157.08	57.0	18.7			
9.6	12	9115	0.90	151.47	58.5	19.1			
11	13	8167	1.00	135.71	62.2	20.2			
13	15	6989	1.15	116.14	66.0	21.5			
14	17	6129	1.35	101.85	68.2	22.5			
15	18	6036	1.35	100.31	68.5	22.6			
16	20	5414	1.50	89.96	69.9	23.3			
19	23	4699	1.75	78.09	71.3	24.1			
22	26	4060	2.00	67.47	72.3	24.9			
25	31	3475	2.35	57.74	73.2	25.5			
29	35	3001	2.70	49.87	73.7	26.1			
41	50	2137	2.50	35.51	74.5	27.1	CG132-11P-L132M-04G CF132-11P-L132M-04G	317 319	154
49	59	1797	2.00	29.86	74.8	27.4			
72	87	1217	2.50	20.22	75.1	27.8			
86	104	1023	2.00	17.00	75.2	28.1			
16	20	5374	0.85	89.30	30.3	20.4	CG103-11P-L132M-04G CF103-11P-L132M-04G	223 227	154
17	20	5194	0.90	86.31	31.5	20.6			
18	22	4759	0.95	79.08	34.1	21.1			
21	26	4117	1.10	68.41	37.3	22.0			
22	27	3970	1.15	65.97	38.0	22.2			
25	30	3503	1.30	58.21	39.8	22.7			
29	36	2981	1.55	49.54	38.8	23.4			
34	41	2572	1.75	42.74	36.4	23.9			
44	53	1986	1.90	33.01	32.8	24.7	CG102-11P-L132M-04G CF102-11P-L132M-04G	218 222	154
50	61	1755	2.60	29.16	31.3	25.0			
58	70	1523	3.00	25.31	29.5	25.3			
60	72	1469	2.00	24.40	29.1	25.3			
76	92	1153	1.90	19.17	26.8	25.2			
86	104	1019	2.65	16.93	25.6	25.4			
103	125	853	2.00	14.17	23.9	25.7			
24	29	3688	0.85	61.28	16.5	24.6	CG093-11P-L132M-04G CF093-11P-L132M-04G	181 179	150
29	34	3082	1.00	51.22	22.3	25.4			
30	36	2972	1.05	49.39	23.1	25.6			
33	40	2623	1.10	43.59	25.3	26.1			
40	48	2200	1.25	36.57	27.4	26.7			
47	57	1854	1.40	30.81	28.8	27.3			

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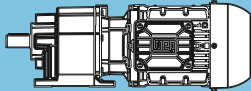
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50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
9.2 kW	11 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
37	45	2383	1.25	39.60	26.6	26.5	CG092-11P-L132M-04G CF092-11P-L132M-04G	179 177	150
44	53	2015	1.50	33.48	28.2	27.0			
50	61	1744	1.75	28.98	28.3	27.4			
57	69	1545	1.95	25.67	26.9	27.7			
65	78	1359	1.25	22.58	25.8	27.3			
66	79	1336	2.25	22.20	25.3	28.0			
68	82	1288	2.00	21.41	25.0	28.1			
76	92	1149	1.50	19.09	24.2	27.7			
77	93	1137	2.65	18.89	23.8	28.3			
88	107	995	1.75	16.53	22.8	28.0			
100	121	881	2.10	14.64	21.7	28.2			
115	139	762	2.40	12.66	20.6	28.5			
120	145	735	2.00	12.21	20.3	28.5			
136	164	648	2.85	10.77	19.3	28.7			
44	53	1991	0.80	33.09	17.0	18.4	CG082-11P-L132M-04G CF082-11P-L132M-04G	127 131	148
52	63	1684	0.95	27.98	19.5	19.1			
59	71	1488	0.80	24.72	20.7	18.8			
61	73	1447	1.05	24.05	20.9	19.5			
68	82	1299	1.05	21.58	21.2	19.3			
70	84	1264	1.15	21.00	20.7	19.9			
77	93	1148	1.15	19.08	20.1	19.7			
81	98	1083	1.25	17.99	19.5	20.3			
84	102	1044	1.30	17.35	19.2	20.4			
91	109	971	1.35	16.13	18.8	20.1			
95	115	921	1.40	15.31	18.3	20.6			
105	127	834	1.50	13.87	17.7	20.4			
114	137	773	1.60	12.84	17.0	20.9			
121	146	728	1.65	12.10	16.8	20.7			
135	163	651	1.80	10.82	15.9	21.2			
141	170	624	1.80	10.37	15.8	21.0			
146	177	602	1.85	10.00	15.6	21.0			
165	200	531	2.00	8.83	14.8	21.2			
197	238	446	2.25	7.40	13.9	21.4			
234	283	375	2.55	6.24	13.0	21.6			
97	117	908	0.80	15.09	4.4	12.6	CG072-11P-L132M-04G CF072-11P-L132M-04G	103 107	146
102	123	865	0.80	14.38	4.9	13.0			
112	135	787	0.90	13.08	5.4	13.0			
117	141	753	0.85	12.51	4.5	12.2			
120	145	730	0.90	12.14	6.0	13.4			
125	151	704	0.95	11.71	6.2	13.5			
132	160	665	1.00	11.04	6.3	13.4			
137	166	641	1.00	10.65	6.5	13.4			
141	171	622	0.95	10.34	5.7	12.8			
146	177	602	1.05	10.00	6.9	13.7			
160	194	547	1.10	9.10	7.1	13.7			
166	201	529	1.05	8.80	6.4	13.2			
191	231	459	1.20	7.63	6.9	13.5			
227	274	387	1.30	6.44	7.2	13.8			
235	284	374	1.35	6.21	7.3	13.8			
275	333	319	1.50	5.30	7.5	14.0			

Legend see page 29

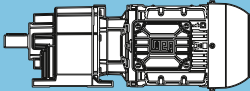
P_N = 9.2 kW							IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
9.2 kW		11 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
121	146	726	0.85	12.07	6.2	6.0	CG062-11P-L132M-04G CF062-11P-L132M-04G	87 92	144
132	159	666	0.95	11.07	6.1	6.1			
142	172	617	1.00	10.26	6.1	6.3			
155	188	566	1.05	9.40	6.0	6.4			
173	209	507	1.10	8.43	6.0	6.6			
178	215	493	0.80	8.20	5.8	6.0			
180	217	489	1.10	8.13	5.9	6.7			
189	228	465	1.15	7.73	5.9	6.7			
196	237	449	1.15	7.46	5.8	6.8			
217	262	405	0.95	6.73	5.6	6.4			
218	264	403	1.20	6.69	5.8	6.9			
238	288	369	1.25	6.13	5.6	7.0			
255	309	344	1.10	5.71	5.5	6.7			
311	376	283	1.15	4.70	5.3	6.9			
322	390	273	1.20	4.53	5.2	7.0			
392	474	224	1.25	3.73	5.0	7.2			



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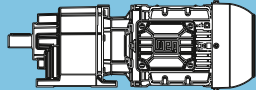
P _N = 11 kW								IE3				
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page			
11 kW		13 kW			F _{rN} kN	F _{r2N} kN						
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B									
4.1	4.9	23459	0.80	360.30	93.8	19.2	CG164-22P-160M-04E CF164-22P-160M-04E	810 833	168			
4.3	5.2	22286	0.85	342.97	98.8	20.3						
4.7	5.7	20208	0.90	311.64	106.4	22.1						
5.0	6.0	19116	0.95	295.40	110.0	23.1						
5.8	6.9	16433	1.10	255.51	117.5	25.6						
6.3	7.6	16770	1.10	234.67	116.6	25.3	CG163-22P-160M-04E CF163-22P-160M-04E	764 787	166			
7.3	8.8	14444	1.25	202.12	122.0	27.4						
8.4	10	12493	1.45	174.82	125.8	29.1						
9.5	12	11020	1.65	154.21	128.2	30.5						
11	13	9465	1.95	132.44	130.4	31.9						
13	16	8034	2.25	112.42	132.1	33.2						
15	18	6949	2.60	97.24	133.2	34.2						
16	19	6534	2.80	91.43	133.6	34.6						
17	21	6130	2.95	85.78	134.0	34.9						
6.3	7.6	15089	0.90	232.69	91.4	12.4	CG144-22P-160M-04E CF144-22P-160M-04E	559 577	164			
7.1	8.6	14784	0.90	206.88	92.2	12.7	CG143-22P-160M-04E CF143-22P-160M-04E	535 553	162			
8.1	9.8	12890	1.05	180.38	97.2	14.6						
9.5	11	11103	1.20	155.38	101.0	16.4						
11	13	9562	1.40	133.80	103.8	17.9						
13	15	8352	1.60	116.88	105.7	19.1						
15	18	7215	1.85	100.96	107.1	20.3						
17	21	6079	2.15	85.07	108.4	21.4						
18	21	5966	2.20	83.49	108.5	21.5						
20	24	5235	2.50	73.25	109.2	22.3						
21	26	4910	2.65	68.70	109.4	22.6						
23	28	4573	2.85	63.99	109.7	22.9						
39	47	2679	2.70	37.48	110.8	24.8	CG142-22P-160M-04E CF142-22P-160M-04E	521 539	162			
69	83	1527	2.70	21.37	111.2	25.6						
11	13	9698	0.85	135.71	55.9	18.4	CG133-22P-160M-04E CF133-22P-160M-04E	388 390	158			
13	15	8300	1.00	116.14	61.7	20.0						
15	18	7168	1.15	100.31	65.4	21.3						
16	20	6429	1.25	89.96	67.5	22.2						
17	21	6062	1.35	84.82	68.4	22.6						
19	23	5580	1.45	78.09	69.5	23.1						
21	26	4946	1.65	69.21	70.8	23.8						
22	26	4822	1.70	67.47	71.0	24.0						
25	31	4126	1.95	57.74	72.2	24.8						
26	32	4013	2.00	56.16	72.4	24.9						
29	36	3564	2.25	49.87	73.0	25.4						
35	42	3013	2.70	42.17	73.7	26.1						
41	50	2538	2.10	35.51	74.2	26.6				CG132-22P-160M-04E CF132-22P-160M-04E	379 381	158
47	57	2213	2.70	30.96	74.5	27.0						
73	88	1445	2.10	20.22	75.0	27.5						
83	101	1260	2.70	17.63	75.1	27.7						
19	22	5652	0.80	79.08	28.2	20.0	CG103-22P-160M-04E CF103-22P-160M-04E	285 289	154			
20	25	5174	0.90	72.40	31.6	20.6						
21	26	4889	0.95	68.41	33.4	21.0						
25	30	4207	1.10	58.87	36.9	21.9						
30	36	3540	1.30	49.54	39.2	22.7						
32	39	3289	1.40	46.03	38.1	23.0						
34	42	3054	1.50	42.74	37.1	23.3						
41	50	2562	1.80	35.85	34.4	23.9						
50	61	2083	2.20	29.15	31.7	24.6						
65	78	1629	2.80	22.79	28.7	25.1						
50	61	2084	2.20	29.16	31.7	24.6	CG102-22P-160M-04E CF102-22P-160M-04E	280 284	154			
58	70	1809	2.50	25.31	29.9	24.9						
67	81	1563	2.90	21.87	28.3	25.2						
87	105	1210	2.25	16.93	25.8	25.1						
100	121	1050	2.60	14.69	24.5	25.4						
116	140	907	3.00	12.70	23.2	25.6						

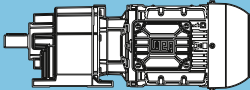
Legend see page 29

P _N = 11 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
11 kW		13 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
29	35	3660	0.85	51.22	16.8	24.6	CG093-22P-160M-04E CF093-22P-160M-04E	243 241	150
34	41	3115	0.95	43.59	22.0	25.4			
40	49	2613	1.05	36.57	25.3	26.1			
48	58	2202	1.15	30.81	27.4	26.7			
58	70	1805	1.30	25.26	27.2	27.3			
57	69	1834	1.65	25.67	27.4	27.3	CG092-22P-160M-04E CF092-22P-160M-04E	241 239	150
66	80	1587	1.90	22.20	25.8	27.7			
78	94	1350	2.25	18.89	24.1	28.0			
91	110	1149	2.65	16.08	22.7	28.3			
100	121	1046	1.75	14.64	22.1	27.9			
116	140	905	2.05	12.66	20.8	28.2			
136	165	770	2.40	10.77	19.6	28.5			
160	194	655	2.80	9.17	18.4	28.7			
70	85	1501	0.95	21.00	20.6	19.4	CG082-22P-160M-04E CF082-22P-160M-04E	189 193	148
82	99	1286	1.10	17.99	19.8	19.9			
96	116	1094	1.20	15.31	18.5	20.3			
114	138	918	1.35	12.84	17.3	20.6			
121	147	865	1.40	12.10	17.0	20.4			
136	164	773	1.50	10.82	16.1	20.9			
142	171	741	1.55	10.37	16.0	20.7			
166	200	634	1.75	8.87	14.9	21.2			
167	201	631	1.70	8.83	15.0	20.9			
199	240	529	1.90	7.40	14.0	21.2			
236	284	446	2.15	6.24	13.1	21.4			
287	347	366	2.45	5.12	12.2	21.6			
121	146	867	0.80	12.14	3.9	13.0	CG072-22P-160M-04E CF072-22P-160M-04E	165 169	146
133	161	789	0.85	11.04	4.4	13.0			
147	178	715	0.90	10.00	5.1	13.4			
162	195	650	0.95	9.10	5.5	13.4			
193	233	545	1.00	7.63	5.4	13.1			
228	276	460	1.10	6.44	6.0	13.4			
277	335	379	1.25	5.30	6.5	13.8			



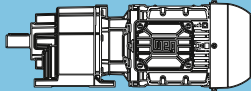
Legend see page 29

P _N = 15 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
15 kW	18 kW	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹								
5.7	6.9	22764	0.80	255.51	96.8	19.8	CG164-22P-160L-04F CF164-22P-160L-04F	833 856	168
6.2	7.6	22946	0.80	234.67	96.0	19.7	CG163-22P-160L-04F CF163-22P-160L-04F	787 810	166
7.2	8.8	19763	0.95	202.12	107.9	22.5			
8.4	10	17094	1.10	174.82	115.8	25.0			
9.5	12	15079	1.20	154.21	120.7	26.8			
11	13	12950	1.40	132.44	125.0	28.7			
13	16	10775	1.70	110.19	128.6	30.7			
13	16	10993	1.65	112.42	128.3	30.5			
15	18	9509	1.90	97.24	130.4	31.9			
16	19	8940	2.05	91.43	131.1	32.4			
17	21	8387	2.15	85.78	131.8	32.9			
20	24	7203	2.50	73.67	133.0	34.0			
9.4	11	15193	0.90	155.38	91.0	12.3	CG143-22P-160L-04F CF143-22P-160L-04F	558 576	162
11	13	13083	1.00	133.80	96.7	14.4			
13	15	11428	1.15	116.88	100.4	16.0			
15	18	9872	1.35	100.96	103.3	17.6			
17	21	8318	1.60	85.07	105.7	19.2			
18	21	8164	1.60	83.49	105.9	19.3			
20	24	7163	1.85	73.25	107.2	20.3			
21	26	6718	1.95	68.70	107.7	20.8			
23	28	6257	2.10	63.99	108.2	21.2			
27	32	5405	2.45	55.27	109.0	22.1			
32	39	4470	2.95	45.71	109.8	23.0			
39	47	3665	1.95	37.48	110.3	23.8	CG142-22P-160L-04F CF142-22P-160L-04F	544 562	162
45	55	3157	3.00	32.28	110.6	24.3			
69	83	2090	1.95	21.37	111.0	24.9			
80	96	1800	3.00	18.41	111.1	25.3			
15	18	9809	0.85	100.31	55.3	18.3	CG133-22P-160L-04F CF133-22P-160L-04F	411 413	158
16	20	8796	0.95	89.96	59.8	19.5			
17	21	8294	1.00	84.82	61.7	20.0			
19	23	7636	1.05	78.09	64.0	20.8			
21	26	6768	1.20	69.21	66.6	21.8			
22	26	6597	1.25	67.47	67.0	22.0			
25	31	5646	1.45	57.74	69.4	23.1			
26	32	5491	1.50	56.16	69.7	23.2			
29	36	4876	1.65	49.87	70.9	23.9			
35	42	4123	1.95	42.17	72.2	24.8			
43	52	3365	2.40	34.41	73.3	25.7			
52	64	2730	2.95	27.92	74.0	26.4			
41	50	3472	1.55	35.51	73.2	25.5	CG132-22P-160L-04F CF132-22P-160L-04F	402 404	158
47	57	3028	1.95	30.96	73.7	26.0			
55	67	2608	3.00	26.67	74.1	26.5			
72	88	1977	1.55	20.22	74.7	26.7			
83	101	1724	1.95	17.63	74.8	27.1			
96	117	1485	3.00	15.19	75.0	27.4			
25	30	5756	0.80	58.87	27.3	19.9	CG103-22P-160L-04F CF103-22P-160L-04F	308 312	154
30	36	4844	0.95	49.54	33.7	21.0			
32	39	4501	1.00	46.03	35.5	21.5			
34	42	4179	1.10	42.74	37.1	21.9			
41	50	3505	1.30	35.85	35.8	22.7			
50	61	2850	1.60	29.15	32.9	23.6			
64	78	2228	2.05	22.79	29.7	24.4			
50	61	2851	1.60	29.16	32.9	23.6	CG102-22P-160L-04F CF102-22P-160L-04F	303 307	154
58	70	2475	1.85	25.31	30.9	24.1			
67	81	2138	2.15	21.87	29.1	24.5			
78	95	1830	2.50	18.71	27.4	24.9			
87	105	1655	1.65	16.93	26.6	24.3			
91	110	1580	2.85	16.16	25.8	25.2			
100	121	1437	1.90	14.69	25.1	24.7			
115	140	1241	2.20	12.70	23.8	25.0			
135	163	1062	2.55	10.86	22.3	25.3			
156	189	918	2.95	9.38	21.1	25.6			

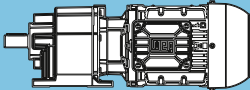
P _N = 15 kW								IE3	
50 Hz 15 kW n ₅₀ min ⁻¹	60 Hz 18 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz			m kg	Dimension sheet see page
					F _{rN} kN	F _{aN} kN			
48	58	3013	0.85	30.81	22.8	25.5	CG093-22P-160L-04F CF093-22P-160L-04F	266	150
58	70	2470	0.95	25.26	26.1	26.4		264	
57	69	2510	1.20	25.67	25.9	26.3	CG092-22P-160L-04F CF092-22P-160L-04F	264 262	150
66	80	2171	1.40	22.20	26.8	26.8			
78	94	1847	1.65	18.89	25.0	27.3			
91	110	1572	1.95	16.08	23.4	27.7			
100	121	1431	1.30	14.64	22.8	27.1			
106	128	1356	2.25	13.87	22.0	28.0			
116	140	1238	1.50	12.66	21.5	27.5			
126	153	1138	2.65	11.63	20.5	28.3			
136	165	1053	1.75	10.77	20.1	27.9			
160	194	896	2.05	9.17	18.9	28.2			
185	224	773	2.40	7.91	17.8	28.4			
221	268	649	2.85	6.63	16.6	28.7			
81	99	1759	0.80	17.99	18.9	18.9	CG082-22P-160L-04F CF082-22P-160L-04F	212 216	148
96	116	1497	0.90	15.31	19.3	19.4			
114	138	1256	1.00	12.84	17.9	19.9			
121	147	1184	1.00	12.10	17.7	19.6			
135	164	1058	1.10	10.82	16.7	20.3			
141	171	1014	1.15	10.37	16.6	20.0			
165	200	868	1.30	8.87	15.4	20.7			
166	201	863	1.25	8.83	15.5	20.4			
198	240	724	1.40	7.40	14.4	20.7			
235	284	610	1.55	6.24	13.5	21.0			
286	347	500	1.80	5.12	12.5	21.3			
228	276	630	0.80	6.44	3.1	12.7	CG072-22P-160L-04F CF072-22P-160L-04F	188	146
276	335	519	0.95	5.30	4.2	13.2		192	



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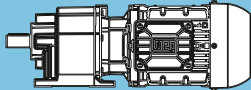
P _N = 18.5 kW								IE3				
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page			
18.5 kW		22 kW			F _{rN} kN	F _{aN} kN						
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B									
8.4	10	21011	0.90	174.82	103.6	21.4	CG163-22P-180M-04E CF163-22P-180M-04E	801 824	166			
9.5	12	18534	1.00	154.21	111.7	23.7						
11	13	15918	1.15	132.44	118.7	26.0						
13	16	13244	1.40	110.19	124.4	28.5						
15	18	11687	1.55	97.24	127.2	29.9						
16	19	10989	1.65	91.43	128.3	30.5						
17	21	10309	1.75	85.78	129.3	31.1						
19	23	9164	2.00	76.25	130.8	32.2						
20	24	8854	2.05	73.67	131.2	32.5						
22	27	7877	2.30	65.54	132.3	33.3						
24	29	7367	2.45	61.29	132.8	33.8	CG143-22P-180M-04E CF143-22P-180M-04E	572 590	162			
29	35	6112	2.95	50.86	134.0	34.9						
11	13	16081	0.85	133.80	88.3	11.4						
13	15	14047	0.95	116.88	94.3	13.4						
15	18	12134	1.10	100.96	98.9	15.3						
17	21	10224	1.30	85.07	102.7	17.3						
18	21	10034	1.30	83.49	103.0	17.4						
20	24	8804	1.50	73.25	105.0	18.7						
21	26	8257	1.60	68.70	105.8	19.2						
23	28	7691	1.70	63.99	106.5	19.8						
26	31	6787	1.95	56.47	107.6	20.7	CG142-22P-180M-04E CF142-22P-180M-04E	558 576	162			
27	32	6643	2.00	55.27	107.8	20.8						
31	37	5763	2.30	47.95	108.7	21.7						
32	39	5494	2.40	45.71	108.9	22.0						
39	47	4521	2.90	37.61	109.7	23.0						
39	47	4505	1.60	37.48	109.7	23.0						
46	55	3880	2.45	32.28	110.2	23.6						
69	83	2569	1.60	21.37	110.9	24.3						
80	96	2213	2.45	18.41	111.0	24.8						
17	21	10194	0.80	84.82	53.4	17.9				CG133-22P-180M-04E CF133-22P-180M-04E	425 427	158
19	23	9385	0.90	78.09	57.3	18.8						
21	26	8319	1.00	69.21	61.6	20.0						
22	26	8109	1.00	67.47	62.4	20.2						
25	31	6939	1.20	57.74	66.1	21.6						
26	32	6749	1.20	56.16	66.6	21.8						
29	36	5994	1.35	49.87	68.6	22.7						
33	40	5388	1.50	44.83	69.9	23.3						
35	42	5068	1.60	42.17	70.6	23.7						
43	52	4136	1.95	34.41	72.2	24.8						
53	64	3355	2.40	27.92	73.3	25.7	CG132-22P-180M-04E CF132-22P-180M-04E	416 418	158			
66	80	2679	3.00	22.29	74.1	26.4						
47	57	3721	1.60	30.96	72.8	25.2						
55	67	3205	2.45	26.67	73.5	25.8						
64	77	2760	2.90	22.97	74.0	26.3						
83	101	2119	1.60	17.63	74.5	26.5						
97	117	1825	2.45	15.19	74.8	26.9						
58	70	3042	1.50	25.31	31.8	23.3				CG102-22P-180M-04E CF102-22P-180M-04E	317 321	154
67	81	2628	1.75	21.87	29.9	23.9						
79	95	2249	2.05	18.71	27.9	24.3						
91	110	1943	2.35	16.16	26.3	24.7						
100	121	1766	1.55	14.69	25.7	24.1						
108	130	1643	2.75	13.67	24.6	25.1						
116	140	1526	1.80	12.70	24.2	24.5						
135	163	1306	2.10	10.86	22.7	24.9						
157	189	1128	2.40	9.38	21.4	25.2						
185	224	954	2.85	7.93	20.1	25.5						

Legend see page 29

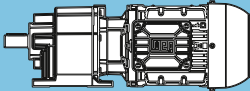
P_N = 18.5 kW							IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
18.5 kW		22 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
66	80	2669	1.15	22.20	25.0	26.1	CG092-22P-180M-04E CF092-22P-180M-04E	278 276	150
78	94	2270	1.35	18.89	25.7	26.6			
91	110	1932	1.60	16.08	24.0	27.1			
106	128	1667	1.80	13.87	22.6	27.5			
116	140	1522	1.20	12.66	22.0	26.9			
126	153	1398	2.15	11.63	21.0	27.9			
136	165	1295	1.45	10.77	20.6	27.4			
155	188	1137	2.50	9.46	19.3	28.3			
160	194	1102	1.70	9.17	19.3	27.8			
186	224	951	1.95	7.91	18.1	28.1			
199	240	889	2.95	7.40	17.5	28.7			
222	268	797	2.30	6.63	16.9	28.4			
272	329	648	2.85	5.39	15.6	28.7			
114	138	1544	0.80	12.84	18.5	19.3	CG082-22P-180M-04E CF082-22P-180M-04E	226 230	148
136	164	1301	0.90	10.82	17.1	19.8			
142	171	1246	0.90	10.37	17.1	19.4			
166	200	1066	1.05	8.87	15.7	20.3			
167	201	1061	1.00	8.83	15.9	19.9			
199	240	890	1.15	7.40	14.8	20.3			
236	284	750	1.30	6.24	13.8	20.6			
287	347	615	1.45	5.12	12.7	21.0			



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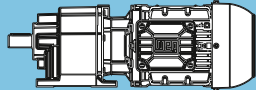
P _N = 22 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
22 kW		26 kW			F _{rN} kN	F _{r2N} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
9.5	12	22040	0.85	154.21	99.8	20.5	CG163-22P-180L-04F CF163-22P-180L-04F	822 845	166
11	13	18929	1.00	132.44	110.6	23.3			
13	16	16068	1.15	112.42	118.4	25.9			
15	18	13898	1.30	97.24	123.2	27.9			
16	19	13068	1.40	91.43	124.8	28.6			
17	21	12260	1.50	85.78	126.2	29.4			
19	23	10898	1.70	76.25	128.4	30.6			
20	24	10529	1.75	73.67	129.0	30.9			
22	27	9367	1.95	65.54	130.6	32.0			
24	29	8760	2.10	61.29	131.3	32.5			
29	35	7269	2.50	50.86	132.9	33.9			
35	42	6062	3.00	42.41	134.0	35.0			
45	54	4717	3.00	33.00	135	36.2	CG162-22P-180L-04F CF162-22P-180L-04F	797 820	166
83	100	2529	3.00	17.70	136	37.9			
13	15	16704	0.80	116.88	86.2	10.8	CG143-22P-180L-04F CF143-22P-180L-04F	593 611	162
15	18	14429	0.95	100.96	93.2	13.0			
17	21	12158	1.10	85.07	98.8	15.3			
18	21	11933	1.10	83.49	99.3	15.5			
20	24	10470	1.25	73.25	102.2	17.0			
21	26	9819	1.35	68.70	103.4	17.7			
23	28	9146	1.45	63.99	104.5	18.3			
26	31	8071	1.65	56.47	106.0	19.4			
27	32	7900	1.65	55.27	106.3	19.6			
31	37	6853	1.90	47.95	107.6	20.6			
32	39	6533	2.00	45.71	107.9	21.0			
39	47	5376	2.45	37.61	109.0	22.1	CG142-22P-180L-04F CF142-22P-180L-04F	579 597	162
48	57	4419	2.90	30.92	109.8	23.1			
39	47	5357	1.35	37.48	109.1	22.1			
46	55	4614	2.05	32.28	109.7	22.9			
53	64	3991	2.95	27.92	110.1	23.5			
69	83	3055	1.35	21.37	110.6	23.7	CG133-22P-180L-04F CF133-22P-180L-04F	446 448	158
80	96	2631	2.05	18.41	110.8	24.3			
92	111	2276	2.95	15.92	111.0	24.7			
21	26	9892	0.85	69.21	54.9	18.2			
22	26	9643	0.85	67.47	56.1	18.5	CG132-22P-180L-04F CF132-22P-180L-04F	437 439	158
25	31	8252	1.00	57.74	61.9	20.1			
26	32	8026	1.00	56.16	62.7	20.3			
29	36	7127	1.15	49.87	65.6	21.4			
33	40	6408	1.25	44.83	67.5	22.2			
35	42	6027	1.35	42.17	68.5	22.6			
43	52	4918	1.65	34.41	70.9	23.9			
53	64	3990	2.05	27.92	72.4	24.9			
66	80	3186	2.55	22.29	73.5	25.9			
47	57	4425	1.35	30.96	71.7	24.4	CG102-22P-180L-04F CF102-22P-180L-04F	338 342	154
55	67	3812	2.05	26.67	72.7	25.1			
64	77	3283	2.45	22.97	73.4	25.8			
73	88	2867	2.80	20.06	73.9	26.2			
83	101	2520	1.35	17.63	74.2	26.0			
97	117	2170	2.05	15.19	74.5	26.5			
112	136	1869	2.65	13.08	74.5	26.9			
58	70	3617	1.25	25.31	32.6	22.6	CG102-22P-180L-04F CF102-22P-180L-04F	338 342	154
67	81	3125	1.45	21.87	30.6	23.2			
79	95	2675	1.70	18.71	28.5	23.8			
91	110	2310	1.95	16.16	26.9	24.3			
100	121	2100	1.30	14.69	26.2	23.5			
108	130	1953	2.35	13.67	25.1	24.7			
116	140	1815	1.50	12.70	24.6	24.0			
132	159	1594	2.85	11.15	23.1	25.2			
135	163	1553	1.75	10.86	23.1	24.5			
157	189	1341	2.05	9.38	21.8	24.9			
185	224	1134	2.40	7.93	20.4	25.2			
227	274	925	2.95	6.47	18.8	25.6			

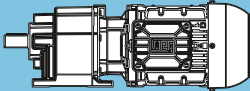
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P _N = 22 kW								IE3	
50 Hz	60 Hz				at 50 Hz			m kg	Dimension sheet see page
22 kW	26 kW								
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN			
66	80	3173	0.95	22.20	21.6	25.3	CG092-22P-180L-04F CF092-22P-180L-04F	299 297	150
78	94	2700	1.15	18.89	24.8	26.0			
91	110	2298	1.35	16.08	24.7	26.6			
106	128	1982	1.55	13.87	23.1	27.1			
116	140	1810	1.05	12.66	22.6	26.4			
126	153	1663	1.80	11.63	21.5	27.5			
136	165	1540	1.20	10.77	21.1	26.9			
155	188	1352	2.10	9.46	19.7	28.0			
160	194	1310	1.40	9.17	19.7	27.4			
186	224	1130	1.65	7.91	18.5	27.7			
199	240	1057	2.50	7.40	17.8	28.4			
222	268	948	1.95	6.63	17.2	28.1			
272	329	771	2.40	5.39	15.8	28.4			
142	171	1482	0.80	10.37	17.5	18.8	CG082-22P-180L-04F CF082-22P-180L-04F	247 251	148
166	200	1268	0.90	8.87	16.1	19.9			
167	201	1261	0.85	8.83	16.3	19.4			
199	240	1058	0.95	7.40	15.1	19.9			
236	284	892	1.10	6.24	14.1	20.3			
287	347	731	1.25	5.12	13.0	20.7			

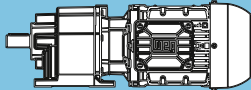


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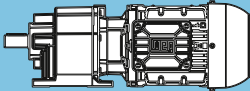
P _N = 30 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
30 kW		36 kW			F _{rN} kN	F _{rIN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b						
13	16	21331	0.85	110.19	102.5	21.1	CG163-22P-200L-04E CF163-22P-200L-04E	880 903	166
15	18	18824	1.00	97.24	110.9	23.4			
16	19	17699	1.05	91.43	114.1	24.4			
17	21	16605	1.10	85.78	117.0	25.4			
19	23	14760	1.25	76.25	121.4	27.1			
20	24	14261	1.30	73.67	122.4	27.5			
23	27	12687	1.45	65.54	125.5	29.0			
24	29	11865	1.55	61.29	126.9	29.7			
26	31	10979	1.65	56.72	128.3	30.5			
29	35	9845	1.85	50.86	129.9	31.6			
35	42	8210	2.20	42.41	132.0	33.0			
41	49	7057	2.60	36.45	133.1	34.1			
47	56	6107	2.90	31.55	134.0	35.0			
45	54	6388	2.20	33.00	133.7	34.7	CG162-22P-200L-04E CF162-22P-200L-04E	855 878	166
84	101	3426	2.20	17.70	135.7	37.0			
18	21	16162	0.85	83.49	88.0	11.3	CG143-22P-200L-04E CF143-22P-200L-04E	651 669	162
20	24	14181	0.95	73.25	93.9	13.3			
22	26	13300	1.00	68.70	96.2	14.2			
23	28	12387	1.05	63.99	98.3	15.1			
26	32	10932	1.20	56.47	101.4	16.5			
27	32	10700	1.25	55.27	101.8	16.8			
31	37	9282	1.45	47.95	104.3	18.2			
32	39	8849	1.50	45.71	104.9	18.6			
36	43	7923	1.65	40.93	106.2	19.6			
39	47	7282	1.80	37.61	107.1	20.2			
48	58	5985	2.15	30.92	108.5	21.5			
56	68	5082	2.40	26.25	109.3	22.4			
66	79	4338	2.70	22.41	109.9	23.2			
53	64	5405	2.20	27.92	109.0	22.1	CG142-22P-200L-04E CF142-22P-200L-04E	637 655	162
60	72	4768	2.75	24.63	109.5	22.7			
93	112	3082	2.20	15.92	110.6	23.7			
105	127	2719	3.00	14.05	110.8	24.2			
30	36	9654	0.85	49.87	56.1	18.5	CG133-22P-200L-04E CF133-22P-200L-04E	504 506	158
33	40	8679	0.95	44.83	60.2	19.6			
35	42	8163	1.00	42.17	62.2	20.2			
43	52	6661	1.25	34.41	66.9	21.9			
53	64	5404	1.50	27.92	69.9	23.3			
66	80	4315	1.90	22.29	71.9	24.6			
64	78	4446	1.80	22.97	71.7	24.4	CG132-22P-200L-04E CF132-22P-200L-04E	495 497	158
74	89	3884	2.10	20.06	72.6	25.1			
85	103	3355	2.40	17.33	73.3	25.7			
103	124	2774	2.90	14.33	72.1	26.3			
113	136	2531	1.95	13.08	69.3	25.9			
130	156	2211	2.25	11.42	68.1	26.4			
150	180	1910	2.60	9.87	66.8	26.8			
79	95	3622	1.25	18.71	29.9	22.6	CG102-22P-200L-04E CF102-22P-200L-04E	396 400	154
92	110	3129	1.45	16.16	28.0	23.2			
108	130	2646	1.75	13.67	26.1	23.8			
133	160	2159	2.10	11.15	23.9	24.5			
136	164	2103	1.30	10.86	24.0	23.5			
158	190	1817	1.50	9.38	22.5	24.0			
164	197	1752	2.60	9.05	21.9	25.0			
187	224	1536	1.80	7.93	21.0	24.5			
229	275	1253	2.20	6.47	19.3	25.0			
282	339	1017	2.70	5.25	17.8	25.4			
92	111	3112	1.00	16.08	22.1	25.4	CG092-22P-200L-04E CF092-22P-200L-04E	357 355	150
107	128	2685	1.15	13.87	24.3	26.0			
127	153	2252	1.35	11.63	22.4	26.7			
156	188	1831	1.55	9.46	20.5	27.3			
161	194	1775	1.05	9.17	20.5	26.4			
187	225	1531	1.20	7.91	19.2	26.9			
200	241	1432	1.85	7.40	18.4	27.9			
223	268	1284	1.45	6.63	17.8	27.4			
274	330	1044	1.75	5.39	16.3	27.9			
351	422	816	2.25	4.22	14.8	28.4			

P_N = 37 kW								IE3				
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page			
37 kW		44 kW			F_{rN} kN	F_{aN} kN						
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B									
15	18	23217	0.80	97.24	94.9	19.4	CG163-22P-200L-04F CF163-22P-200L-04F	907 930	166			
16	19	21829	0.85	91.43	100.6	20.7						
17	21	20479	0.90	85.78	105.5	21.9						
19	23	18204	1.00	76.25	112.7	24.0						
20	24	17588	1.05	73.67	114.4	24.5						
23	27	15647	1.20	65.54	119.4	26.3						
24	29	14634	1.25	61.29	121.6	27.2						
26	31	13541	1.35	56.72	123.9	28.2						
29	35	12142	1.50	50.86	126.4	29.5						
35	42	10126	1.80	42.41	129.6	31.3						
41	49	8703	2.10	36.45	131.4	32.6	CG162-22P-200L-04F CF162-22P-200L-04F	882 905	166			
47	56	7532	2.35	31.55	132.7	33.7						
45	54	7879	1.80	33.00	132.3	33.3						
59	71	6005	3.00	25.15	134.1	35.0						
84	101	4225	1.80	17.70	135.3	36.1						
22	26	16403	0.80	68.70	87.2	11.1				CG143-22P-200L-04F CF143-22P-200L-04F	678 696	162
23	28	15278	0.90	63.99	90.8	12.2						
26	32	13483	1.00	56.47	95.7	14.0						
27	32	13197	1.00	55.27	96.4	14.3						
31	37	11447	1.15	47.95	100.3	16.0						
32	39	10914	1.20	45.71	101.4	16.6						
36	44	9771	1.35	40.93	103.5	17.7						
39	47	8981	1.45	37.61	104.7	18.5						
48	58	7382	1.75	30.92	106.9	20.1						
56	68	6268	1.95	26.25	108.2	21.2						
66	80	5350	2.20	22.41	109.1	22.1	CG142-22P-200L-04F CF142-22P-200L-04F	664 682	162			
53	64	6667	1.80	27.92	107.8	20.8						
60	72	5881	2.25	24.63	108.6	21.6						
70	84	5050	2.60	21.15	109.3	22.4						
93	112	3802	1.80	15.92	110.2	22.8						
105	127	3353	2.45	14.05	108.7	23.4						
123	148	2880	2.80	12.06	105.7	24.0						
35	42	10068	0.80	42.17	54.1	18.0				CG133-22P-200L-04F CF133-22P-200L-04F	531 533	158
43	52	8215	1.00	34.41	62.0	20.1						
53	64	6666	1.25	27.92	66.2	21.9						
66	80	5321	1.55	22.29	68.1	23.4						
64	78	5483	1.50	22.97	68.0	23.2	CG132-22P-200L-04F CF132-22P-200L-04F	522 524	158			
74	89	4790	1.70	20.06	68.2	24.0						
85	103	4137	1.95	17.33	68.4	24.8						
103	124	3422	2.35	14.33	67.8	25.6						
113	136	3122	1.60	13.08	65.0	25.1						
125	151	2816	2.85	11.79	66.8	26.3						
130	156	2727	1.85	11.42	64.3	25.7						
150	181	2356	2.10	9.87	63.5	26.2						
181	218	1948	2.55	8.16	62.1	26.8						
79	95	4468	1.05	18.71	31.2	21.5	CG102-22P-200L-04F CF102-22P-200L-04F	423 427	154			
92	110	3859	1.20	16.16	29.1	22.3						
108	130	3263	1.40	13.67	27.0	23.1						
133	160	2663	1.70	11.15	24.6	23.8						
136	164	2594	1.05	10.86	24.8	22.7						
158	190	2240	1.25	9.38	23.2	23.3						
164	197	2160	2.10	9.05	22.5	24.5						
187	225	1894	1.45	7.93	21.6	23.9						
205	247	1725	2.65	7.22	20.4	25.0						
229	275	1546	1.75	6.47	19.8	24.5						
282	339	1254	2.20	5.25	18.2	25.0						
353	425	1001	2.70	4.19	16.6	25.5						

Legend see page 29

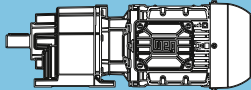
P _N = 45 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
45 kW		55 kW			F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B						
19	23	22140	0.85	76.25	99.4	20.4	CG163-22P-225S/M-04F CF163-22P-225S/M-04F	1044 1067	166
20	24	21391	0.85	73.67	102.2	21.1			
23	27	19030	0.95	65.54	110.3	23.2			
24	29	17798	1.05	61.29	113.9	24.3			
26	31	16469	1.10	56.72	117.4	25.5			
29	35	14767	1.25	50.86	121.3	27.1			
35	42	12315	1.50	42.41	126.1	29.3			
41	49	10585	1.75	36.45	128.9	30.9			
47	56	9161	1.95	31.55	130.8	32.2			
45	54	9582	1.50	33.00	130.3	31.8	CG162-22P-225S/M-04F CF162-22P-225S/M-04F	1019 1042	166
59	71	7304	2.50	25.15	132.9	33.9			
70	84	6133	2.95	21.12	134.0	34.9			
84	101	5138	1.50	17.70	134.7	35.2			
110	132	3917	2.60	13.49	135.4	36.5			
26	32	16398	0.80	56.47	87.2	11.1	CG143-22P-225S/M-04F CF143-22P-225S/M-04F	815 833	162
27	32	16050	0.85	55.27	88.4	11.4			
31	37	13923	0.95	47.95	94.6	13.5			
32	39	13273	1.00	45.71	96.3	14.2			
36	44	11884	1.10	40.93	99.4	15.6			
39	47	10922	1.20	37.61	101.4	16.6			
48	58	8978	1.45	30.92	104.7	18.5			
56	68	7623	1.60	26.25	106.6	19.9			
66	80	6506	1.80	22.41	107.9	21.0			
53	64	8108	1.50	27.92	106.0	19.4			
60	72	7152	1.85	24.63	107.2	20.3			
70	84	6142	2.15	21.15	108.3	21.3			
84	101	5111	2.55	17.60	109.3	22.4			
93	112	4624	1.50	15.92	105.4	21.8			
105	127	4078	2.00	14.05	104.1	22.5			
123	148	3503	2.30	12.06	101.7	23.2			
43	52	9992	0.85	34.41	51.2	18.1	CG133-22P-225S/M-04F CF133-22P-225S/M-04F	668 670	158
53	64	8107	1.00	27.92	56.6	20.2			
66	80	6472	1.25	22.29	60.5	22.1			
64	78	6669	1.20	22.97	60.1	21.9	CG132-22P-225S/M-04F CF132-22P-225S/M-04F	659 661	158
74	89	5825	1.40	20.06	61.3	22.8			
85	103	5032	1.60	17.33	62.5	23.8			
103	124	4161	1.95	14.33	62.9	24.7			
113	136	3797	1.30	13.08	59.9	24.2			
125	151	3424	2.35	11.79	62.7	25.6			
130	156	3317	1.50	11.42	59.9	24.8			
150	181	2865	1.75	9.87	59.7	25.5			
153	184	2815	2.85	9.69	61.7	26.3			
180	217	2390	3.35	8.23	60.7	26.8			
181	218	2369	2.10	8.16	58.9	26.2			
211	254	2040	3.95	7.03	59.5	27.2			
220	265	1950	2.55	6.71	57.7	26.8			
268	323	1603	3.10	5.52	56.1	27.3			
316	380	1361	3.65	4.69	54.6	27.6			
370	446	1161	4.30	4.00	53.1	27.9			

Legend see page 29

P_N = 55 kW								IE3	
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page
55 kW		66 kW			F_{rN} kN	F_{aN} kN			
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B						
23	27	23259	0.80	65.54	94.7	19.4	CG163-22P-225S/M-04G CF163-22P-225S/M-04G	1092 1115	166
24	29	21753	0.85	61.29	100.9	20.7			
26	31	20128	0.90	56.72	106.7	22.2			
29	35	18049	1.00	50.86	113.2	24.1			
35	42	15052	1.20	42.41	120.7	26.8			
41	49	12938	1.40	36.45	125.0	28.7			
47	57	11196	1.60	31.55	128.0	30.3			
59	71	8927	2.05	25.15	131.1	32.4	CG162-22P-225S/M-04G CF162-22P-225S/M-04G	1067 1090	166
70	85	7495	2.45	21.12	132.7	33.7			
85	103	6168	2.95	17.38	133.9	34.9			
110	132	4787	2.10	13.49	134.9	35.6			
131	158	4019	2.85	11.33	135.4	36.4			
31	37	17017	0.80	47.95	85.1	10.4	CG143-22P-225S/M-04G CF143-22P-225S/M-04G	863 881	162
32	39	16223	0.85	45.71	87.8	11.2			
36	44	14525	0.90	40.93	93.0	12.9			
39	47	13349	1.00	37.61	96.1	14.1			
48	58	10973	1.20	30.92	101.3	16.5			
56	68	9317	1.30	26.25	103.5	18.2			
66	80	7952	1.50	22.41	103.8	19.5			
60	72	8741	1.50	24.63	103.6	18.7	CG142-22P-225S/M-04G CF142-22P-225S/M-04G	849 867	162
70	84	7507	1.75	21.15	103.7	20.0			
84	101	6246	2.10	17.60	103.2	21.2			
101	122	5183	2.55	14.60	101.9	22.3			
105	127	4985	1.65	14.05	98.2	21.4			
123	148	4281	1.90	12.06	96.7	22.2			
147	178	3562	2.60	10.04	94.9	23.1			
53	64	9908	0.85	27.92	44.6	18.2			
66	80	7910	1.05	22.29	50.9	20.5			
74	89	7120	1.15	20.06	52.6	21.4	CG132-22P-225S/M-04G CF132-22P-225S/M-04G	707 709	158
85	103	6150	1.35	17.33	55.0	22.5			
103	125	5086	1.60	14.33	56.7	23.7			
125	151	4185	1.95	11.79	57.6	24.7			
130	156	4054	1.25	11.42	54.4	23.8			
150	181	3502	1.45	9.87	55.0	24.6			
153	184	3440	2.35	9.69	57.6	25.6			
180	217	2921	2.75	8.23	57.2	26.2			
181	219	2896	1.75	8.16	55.0	25.4			
211	254	2493	3.25	7.03	56.5	26.7			
220	266	2383	2.10	6.71	54.5	26.2			
268	323	1959	2.55	5.52	53.5	26.8			
316	381	1663	3.00	4.69	52.4	27.2			
370	446	1420	3.50	4.00	51.2	27.5			



Legend see page 29

P_N = 75 kW								IE3		
50 Hz		60 Hz		i	at 50 Hz			m kg	Dimension sheet see page	
75 kW		90 kW			F_{rN} kN	F_{aN} kN				
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B							
35	42	20525	0.90	42.41	105.4	21.9	CG163-22P-250S/M-04F CF163-22P-250S/M-04F	1196	166	
41	49	17642	1.05	36.45	114.3	24.5		1219		
47	56	15268	1.15	31.55	120.2	26.6				
59	71	12173	1.50	25.15	126.4	29.4	CG162-22P-250S/M-04F CF162-22P-250S/M-04F	1171	166	
70	84	10221	1.80	21.12	129.4	31.2				1194
85	102	8411	2.15	17.38	131.7	32.9				
100	120	7156	2.55	14.79	133.0	34.0				
110	132	6528	1.55	13.49	130.7	33.8				
116	139	6182	2.95	12.77	133.9	34.9				
131	157	5481	2.10	11.33	128.9	34.8				
159	191	4510	2.50	9.32	126.1	35.8				
187	225	3837	2.95	7.93	123.2	36.5				

Legend see page 29

Selection tables - Gear units

Structure of the selection tables

1 Type	2 $i_{ges.}$	3 M_{2max}	4 n_2	5 i_{exakt}	6 n_{1max}	7 IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	-
						8 IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
9 NEMA adapter																		
						N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
C002																		
2 stages	10																	
$n_1=1400 \text{ min}^{-1}$	11																	
Maximum torque 50 Nm	12																	

1 Type	2 $i_{ges.}$	13 SERVO adapter										15 Input unit									
		13 n_{1max}	14 Adapter size										15 n_{1max}	16 Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110

- 1 Type of gear unit
- 2 Total ratio
- 3 Permissible output torque at S1 operation ($f_b = 1.0$)
- 4 Output speed (gear unit) at $n_1 = 1400 \text{ min}^{-1}$
- 5 Exact mathematical ratio
- 6 Maximum permissible input speed gear unit. valid for direct mounting and IEC / NEMA adapter
Max. perm. input speed IEC / NEMA adapter: I63 - I132 / N56 - N213 = 3000 min^{-1} , I160 - I280 / N254 - N364 = 2500 min^{-1}
Max. perm. motor speed (Direct mounting): motor frame size 63 - 180 = 3000 min^{-1} , 200 - 250 = 2500 min^{-1} .
Higher motor speed on request
- 7 Possible motor frame sizes (Direct mounting)
- 8 Possible IEC adapter sizes
- 9 Possible NEMA adapter sizes
- 10 Number of gear stages
- 11 Motor speed
- 12 Maximum torque
- 13 Maximum input speed - SERVO adapter
- 14 Possible SERVO adapter sizes
- 15 Maximum input speed - direct mounting, IEC / NEMA adapter and input unit
Higher input speeds on request
- 16 Possible input shafts of the input unit

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	-	-	-	-	-	-	-	-	-
						IEC adapter												
						163	171	180	-	-	-	-	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	-	-	-	-	-	-	-	-	-	-	-	
C002	47.44	50	30	759/16	6000													
	42.34	50	33	1863/44	6000													
	36.85	50	38	737/20	6000													
	32.89	50	43	1809/55	6000													
	29.33	50	48	88/3	6000													
	26.18	50	53	288/11	6000													
	23.00	50	61	23/1	6000													
	20.53	50	68	2484/121	6000													
	17.29	50	81	121/7	6000													
	16.86	31	83	2967/176	6000													
	15.43	50	91	108/7	6000													
	13.54	50	103	176/13	6000													
	13.10	43	107	2881/220	6000													
	12.08	50	116	1728/143	6000													
	Maximum torque 50 Nm	10.42	45	134	344/33	6000												
		9.97	50	140	319/32	6000												
		8.90	50	157	783/88	6000												
		8.17	45	171	989/121	6000												
		6.88	49	204	55/8	6000												
		6.14	42	228	43/7	6000												
		6.14	50	228	135/22	6000												
		4.81	39	291	688/143	6000												
3.54		35	395	1247/352	6000													
2.44		31	573	215/88	6000													
C012	66.50	85	21	133/2	6000													
	59.59	85	23	1311/22	6000													
	51.80	85	27	259/5	6000													
	46.42	85	30	2553/55	6000													
	42.00	85	33	42/1	6000													
	37.64	85	37	414/11	6000													
	33.09	85	42	364/11	6000													
	29.65	85	47	3588/121	6000													
	25.50	85	55	51/2	6000													
	25.05	41	56	551/22	6000													
	22.85	85	61	3519/154	6000													
	19.92	85	70	259/13	6000													
	19.51	66	72	1073/55	6000													
	17.85	85	78	2553/143	6000													
	15.82	66	89	174/11	6000													
	14.88	85	94	119/8	6000													
	13.33	85	105	1173/88	6000													
	12.83	85	109	77/6	6000													
	12.46	66	112	1508/121	6000													
	11.50	85	122	23/2	6000													
	11.20	84	125	56/5	6000													
	10.04	81	139	552/55	6000													
9.60	66	146	1479/154	6000														
8.22	76	170	189/23	6000														
7.50	66	187	1073/143	6000														
7.36	74	190	81/11	6000														
5.60	66	250	493/88	6000														
4.83	66	290	29/6	6000														
4.22	66	332	232/55	6000														
3.09	63	452	783/253	6000														

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	-	-	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	-	-	-	-	-	-	-	-	-	
C032	42.88	184	33	2573/60	6000												
	38.95	168	36	5063/130	6000												
	34.88	200	40	279/8	6000												
	31.67	200	44	1647/52	6000												
	27.71	200	51	1829/66	6000												
	25.17	200	56	3599/143	6000												
	24.03	103	58	913/38	6000												
	21.40	200	65	899/42	6000												
	19.54	128	72	1485/76	6000												
	19.44	200	72	1769/91	6000												
	17.09	200	82	1333/78	6000												
	15.53	130	90	295/19	6000												
	15.52	200	90	2623/169	6000												
	12.92	194	108	155/12	6000												
	11.99	130	117	1595/133	6000												
	11.73	198	119	305/26	6000												
	9.82	180	143	589/60	6000												
	9.57	130	146	2365/247	6000												
	8.92	183	157	1159/130	6000												
	7.64	169	183	527/69	6000												
	7.24	130	193	275/38	6000												
	6.94	171	202	2074/299	6000												
5.96	158	235	155/26	6000													
5.50	130	255	11/2	6000													
5.41	159	259	915/169	6000													
4.28	130	327	1870/437	6000													
3.34	130	419	825/247	6000													
C033	286.32	200	4.9	20615/72	6000												
	260.03	200	5.4	40565/156	6000												
	223.03	200	6.3	8029/36	6000												
	202.55	200	6.9	15799/78	6000												
	180.83	200	7.7	1085/6	6000												
	164.23	200	8.5	2135/13	6000												
	142.47	200	9.8	14105/99	6000												
	129.39	200	11	4270/33	6000												
	109.79	200	13	2635/24	6000												
	99.71	200	14	5185/52	6000												
	85.78	200	16	40145/468	6000												
	77.90	200	18	78995/1014	6000												
	64.05	200	22	18445/288	6000												
	58.17	200	24	36295/624	6000												
	55.25	200	25	11935/216	6000												
	50.18	200	28	23485/468	6000												
	48.22	200	29	434/9	6000												
	43.79	200	32	1708/39	6000												
	35.38	200	40	3255/92	6000												
	32.13	200	44	19215/598	6000												

Type	$i_{ges.}$	SERVO adapter											Input unit										
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
C032	42.88	5000																					
	38.95	5000																					
	34.88	5000																					
	31.67	5000																					
	27.71	5000																					
	25.17	5000																					
	24.03	5000																					
	21.40	5000																					
	19.54	5000																					
	19.44	5000																					
	17.09	5000																					
	15.53	5000																					
	15.52	5000																					
	12.92	5000																					
	11.99	5000																					
	11.73	5000																					
	9.82	4200																					
	9.57	5000																					
	8.92	4200																					
	7.64	3600																					
	7.24	5000																					
	6.94	3600																					
	5.96	3200																					
	5.50	4200																					
	5.41	3200																					
	4.28	3600																					
	3.34	3200																					
C033	286.32	5000																					
	260.03	5000																					
	223.03	5000																					
	202.55	5000																					
	180.83	5000																					
	164.23	5000																					
	142.47	5000																					
	129.39	5000																					
	109.79	5000																					
	99.71	5000																					
	85.78	5000																					
	77.90	5000																					
	64.05	5000																					
	58.17	5000																					
	55.25	4600																					
	50.18	4600																					
	48.22	4200																					
	43.79	4200																					
	35.38	3600																					
	32.13	3600																					

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	-	-	-	-	-	-	-
						NEMA adapter												
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	-	-	-	-	-	-	-		
C052	58.85	250	24	1177/20	6000													
	53.50	227	26	107/2	6000													
	48.13	337	29	385/8	6000													
	43.75	307	32	175/4	6000													
	38.00	400	37	38/1	6000													
	35.67	151	39	107/3	6000													
	34.55	400	41	380/11	6000													
	29.46	400	48	825/28	6000													
	29.17	204	48	175/6	6000													
	26.79	400	52	375/14	6000													
	24.12	400	58	627/26	6000													
	23.03	267	61	760/33	6000													
	21.92	400	64	285/13	6000													
	18.56	400	75	297/16	6000													
	17.86	267	78	125/7	6000													
	16.88	400	83	135/8	6000													
	14.62	267	96	190/13	6000													
	14.03	400	100	561/40	6000													
	12.75	400	110	51/4	6000													
	11.48	400	122	264/23	6000													
	11.25	267	124	45/4	6000													
	10.43	400	134	240/23	6000													
	9.31	386	150	121/13	6000													
	8.50	267	165	17/2	6000													
	8.46	365	165	110/13	6000													
	7.79	347	180	187/24	5600													
	7.08	328	198	85/12	5600													
	6.96	267	201	160/23	6000													
	6.31	306	222	341/54	5000													
	6.09	299	230	341/56	4800													
	5.74	289	244	155/27	5000													
5.64	259	248	220/39	6000														
5.54	283	253	155/28	4800														
4.72	230	296	85/18	5600														
3.83	200	366	310/81	5000														
3.69	195	379	155/42	4800														
C053	328.43	400	4.3	2299/7	6000													
	298.57	400	4.7	2090/7	6000													
	267.93	400	5.2	3751/14	6000													
	243.57	400	5.7	1705/7	6000													
	213.71	400	6.6	1496/7	6000													
	194.29	400	7.2	1360/7	6000													
	165.45	400	8.5	8107/49	6000													
	150.41	400	9.3	7370/49	6000													
	132.97	400	11	12100/91	6000													
	120.88	400	12	11000/91	6000													
	101.55	400	14	5687/56	6000													
	92.32	400	15	2585/28	6000													
	77.79	400	18	1089/14	6000													
	70.71	400	20	495/7	6000													
	61.63	400	23	9922/161	6000													
	56.02	400	25	9020/161	6000													
	49.20	400	28	4477/91	6000													
	44.73	400	31	4070/91	6000													

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit											
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
C052	58.85	5000												3000										
	53.50	5000												3000										
	48.13	5000												3000										
	43.75	5000												3000										
	38.00	5000												3000										
	35.67	5000												3000										
	34.55	5000												3000										
	29.46	5000												3000										
	29.17	5000												3000										
	26.79	5000												3000										
	24.12	5000												3000										
	23.03	5000												3000										
	21.92	5000												3000										
	18.56	5000												3000										
	17.86	5000												3000										
	16.88	5000												3000										
	14.62	5000												3000										
	14.03	4800												3000										
	12.75	4800												3000										
	11.48	4200												3000										
	11.25	5000												3000										
	10.43	4200												3000										
	9.31	3700												3000										
	8.50	4800												3000										
	8.46	3700												3000										
	7.79	3300												3000										
	7.08	3300												3000										
	6.96	4200												3000										
	6.31	3000												3000										
	6.09	2900												2900										
	5.74	3000												3000										
	5.64	3700												3000										
	5.54	2900												2900										
	4.72	3300												3000										
	3.83	3000												3000										
	3.69	2900												2900										
C053	328.43	5000												3000										
	298.57	5000												3000										
	267.93	5000												3000										
	243.57	5000												3000										
	213.71	5000												3000										
	194.29	5000												3000										
	165.45	5000												3000										
	150.41	5000												3000										
	132.97	5000												3000										
	120.88	5000												3000										
	101.55	5000												3000										
	92.32	5000												3000										
	77.79	4800												3000										
	70.71	4800												3000										
	61.63	4200												3000										
	56.02	4200												3000										
	49.20	3700												3000										
	44.73	3700												3000										

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	-	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	-	-	-	-	-	-	-		
C062	60.00	420	23	60/1	6000													
	55.02	385	25	3081/56	6000													
	47.55	600	29	6800/143	6000													
	43.60	563	32	6715/154	6000													
	36.92	600	38	480/13	6000													
	33.86	600	41	237/7	6000													
	33.43	234	42	234/7	6000													
	30.30	600	46	5120/169	6000													
	27.78	600	50	2528/91	6000													
	26.49	342	53	2040/77	6000													
	23.46	600	60	305/13	6000													
	21.51	600	65	4819/224	6000													
	20.57	377	68	144/7	6000													
	17.85	600	78	232/13	6000													
	16.88	377	83	1536/91	6000													
	16.36	600	86	2291/140	6000													
	14.72	600	95	4400/299	6000													
	13.49	600	104	4345/322	6000													
	13.07	377	107	183/14	6000													
	12.07	600	116	2040/169	6000													
	Maximum torque 600 Nm	11.07	600	126	4029/364	6000												
		10.26	600	137	400/39	5600												
		9.94	377	141	348/35	6000												
		9.40	589	149	395/42	5600												
		8.43	547	166	2960/351	5000												
		8.20	377	171	1320/161	6000												
		8.13	534	172	740/91	4800												
		7.73	517	181	2923/378	5000												
		7.46	504	188	2923/392	4800												
		6.73	377	208	612/91	6000												
		6.69	469	209	2000/299	4400												
		6.13	443	228	1975/322	4400												
5.71		371	245	40/7	5600													
4.70		325	298	296/63	5000													
4.53		318	309	222/49	4800													
3.73		279	376	600/161	4400													
C063	375.71	600	3.7	83032/221	6000													
	344.51	600	4.1	819941/2380	6000													
	307.24	600	4.6	67900/221	6000													
	281.73	600	5.0	38315/136	6000													
	242.60	600	5.8	589760/2431	6000													
	222.46	600	6.3	291194/1309	6000													
	188.11	600	7.4	291000/1547	6000													
	172.49	600	8.1	574725/3332	6000													
	153.96	600	9.1	442320/2873	6000													
	141.17	600	9.9	436791/3094	6000													
	118.51	600	12	26190/221	6000													
	108.67	600	13	206901/1904	6000													
	89.54	600	16	1164/13	6000													
	82.10	600	17	22989/280	6000													
	73.28	600	19	372480/5083	6000													
	67.19	600	21	183912/2737	6000													
	59.42	600	24	170720/2873	6000													
	54.49	600	26	84293/1547	6000													
49.74	600	28	1940/39	5600														
45.61	600	31	7663/168	5600														

Legend see page 99

Type	$i_{ges.}$	SERVO adapter											Input unit										
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
C062	60.00	5000													3000								
	55.02	5000													3000								
	47.55	5000													3000								
	43.60	5000													3000								
	36.92	5000													3000								
	33.86	5000													3000								
	33.43	5000													3000								
	30.30	5000													3000								
	27.78	5000													3000								
	26.49	5000													3000								
	23.46	5000													3000								
	21.51	5000													3000								
	20.57	5000													3000								
	17.85	5000													3000								
	16.88	5000													3000								
	16.36	5000													3000								
	14.72	4500													3000								
	13.49	4500													3000								
	13.07	5000													3000								
	12.07	3900													3000								
	11.07	3900													3000								
	10.26	3600													3000								
	9.94	5000													3000								
	9.40	3600													3000								
	8.43	3200													3000								
	8.20	4500													3000								
	8.13	3100													3000								
	7.73	3200													3000								
	7.46	3100													3000								
	6.73	3900													3000								
	6.69	2800													2800								
	6.13	2800													2800								
	5.71	3600													3000								
	4.70	3200													3000								
	4.53	3100													3000								
	3.73	2800													2800								
C063	375.71	5000													3000								
	344.51	5000													3000								
	307.24	5000													3000								
	281.73	5000													3000								
	242.60	5000													3000								
	222.46	5000													3000								
	188.11	5000													3000								
	172.49	5000													3000								
	153.96	5000													3000								
	141.17	5000													3000								
	118.51	5000													3000								
	108.67	5000													3000								
	89.54	5000													3000								
	82.10	5000													3000								
	73.28	4500													3000								
	67.19	4500													3000								
	59.42	3900													3000								
	54.49	3900													3000								
	49.74	3600													3000								
	45.61	3600													3000								

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{imax}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	-	-	-	-	-	-
						NEMA adapter												
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C072	38.92	820	36	506/13	6000													
	35.41	820	40	5984/169	6000													
	30.55	820	46	1955/64	6000													
	27.79	820	50	1445/52	6000													
	23.58	802	59	943/40	6000													
	21.45	780	65	1394/65	6000													
	20.65	686	68	1342/65	6000													
	19.50	757	72	39/2	6000													
	17.74	736	79	408/23	6000													
	16.59	720	84	1725/104	6000													
	16.20	671	86	1037/64	6000													
	15.09	700	93	2550/169	6000													
	14.38	689	97	115/8	5600													
	13.08	670	107	170/13	5600													
	2 stages $n_1=1400\text{ min}^{-1}$	12.51	618	112	2501/200	6000												
		12.14	654	115	437/36	5000												
		11.71	647	120	1311/112	4800												
		11.04	637	127	1292/117	5000												
		10.65	630	131	969/91	4800												
		10.34	582	135	2379/230	6000												
		10.00	617	140	10/1	4400												
		9.10	600	154	2720/299	4400												
		8.80	552	159	915/104	6000												
		7.63	528	184	61/8	5600												
6.44		500	217	1159/180	5000													
6.21		494	225	3477/560	4800													
5.30	470	264	122/23	4400														
C073	351.33	820	4.0	14053/40	6000													
	319.60	820	4.4	1598/5	6000													
	278.44	820	5.0	18377/66	6000													
	253.30	820	5.5	108664/429	6000													
	216.20	820	6.5	1081/5	6000													
	196.68	820	7.1	12784/65	6000													
	177.39	820	7.9	34592/195	6000													
	161.38	820	8.7	409088/2535	6000													
	137.38	820	10	65941/480	6000													
	124.97	820	11	48739/390	6000													
	104.50	820	13	31349/300	6000													
	95.06	820	15	92684/975	6000													
	86.17	820	16	517/6	6000													
	78.39	820	18	70312/897	6000													
	70.68	820	20	18377/260	6000													
	64.30	820	22	54332/845	6000													
	60.06	820	23	1081/18	5600													
	54.63	820	26	6392/117	5600													
	49.38	820	28	39997/810	5000													
	47.62	819	29	39997/840	4800													
	44.92	794	31	236504/5265	5000													
	43.32	782	32	59126/1365	4800													
	39.17	765	36	235/6	4400													
	35.63	726	39	31960/897	4400													

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
C072	38.92	5000													2500										
	35.41	5000													2500										
	30.55	5000													2500										
	27.79	5000													2500										
	23.58	5000													2500										
	21.45	5000													2500										
	20.65	5000													2500										
	19.50	4700													2500										
	17.74	4700													2500										
	16.59	4200													2500										
	16.20	5000													2500										
	15.09	4200													2500										
	14.38	3700													2500										
	13.08	3700													2500										
	12.51	5000													2500										
	12.14	3300													2500										
	11.71	3200													2500										
	11.04	3300													2500										
	10.65	3200													2500										
	10.34	4700													2500										
	10.00	2900													2500										
	9.10	2900													2500										
	8.80	4200													2500										
	7.63	3700													2500										
	6.44	3300													2500										
	6.21	3200													2500										
	5.30	2900													2500										
C073	351.33	5000													3000										
	319.60	5000													3000										
	278.44	5000													3000										
	253.30	5000													3000										
	216.20	5000													2500										
	196.68	5000													2500										
	177.39	5000													2500										
	161.38	5000													2500										
	137.38	5000													2500										
	124.97	5000													2500										
	104.50	5000													2500										
	95.06	5000													2500										
	86.17	4700													2500										
	78.39	4700													2500										
	70.68	4200													2500										
	64.30	4200													2500										
	60.06	3700													2500										
	54.63	3700													2500										
	49.38	3300													2500										
	47.62	3200													2500										
	44.92	3300													2500										
	43.32	3200													2500										
	39.17	2900													2500										
	35.63	2900													2500										



Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
C082	54.18	1550	26	4930/91	6000													
	42.88	1550	33	9605/224	6000													
	37.44	1550	37	3145/84	6000													
	33.09	1550	42	1853/56	6000													
	31.23	1117	45	406/13	6000													
	27.98	1549	50	4505/161	6000													
	24.72	1120	57	791/32	6000													
	24.05	1479	58	8755/364	6000													
	21.58	1316	65	259/12	6000													
	21.00	1418	67	7055/336	5600													
	19.08	1306	73	763/40	6000													
	17.99	1353	78	3400/189	5000													
	17.35	1338	81	850/49	4800													
	16.13	1298	87	371/23	6000													
	15.31	1288	91	2465/161	4400													
	13.87	1233	101	721/52	6000													
	12.84	1220	109	4675/364	3900													
	12.10	1177	116	581/48	5600													
	10.82	1158	129	3485/322	3500													
	10.37	1117	135	280/27	5000													
10.00	1103	140	10/1	4800														
8.87	1090	158	1615/182	3100														
8.83	1057	159	203/23	4400														
7.40	996	189	385/52	3900														
6.24	939	224	287/46	3500														
5.12	878	274	133/26	3100														
C083	368.94	1550	3.8	909075/2464	6000													
	284.84	1550	4.9	893265/3136	6000													
	238.89	1550	5.9	86955/364	6000													
	187.48	1550	7.5	671925/3584	6000													
	144.69	1550	9.7	64821/448	6000													
	119.68	1550	12	308295/2576	6000													
	101.80	1550	14	592875/5824	6000													
	88.23	1550	16	39525/448	5600													
	74.50	1550	19	50065/672	5000													
	71.84	1550	19	450585/6272	4800													
61.37	1550	23	39525/644	4400														

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit									
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
C082	54.18	5000												2500								
	42.88	5000												2500								
	37.44	5000												2500								
	33.09	5000												2500								
	31.23	5000												2500								
	27.98	5000												2500								
	24.72	5000												2500								
	24.05	4600												2500								
	21.58	5000												2500								
	21.00	4200												2500								
	19.08	5000												2500								
	17.99	3700												2500								
	17.35	3600												2500								
	16.13	5000												2500								
	15.31	3300												2500								
	13.87	4600												2500								
	12.84	2900												2500								
	12.10	4200												2500								
	10.82	2600												2500								
	10.37	3700												2500								
	10.00	3600												2500								
	8.87	-												2300								
	8.83	3300												2500								
	7.40	2900												2500								
	6.24	2600												2500								
	5.12	-												2300								
C083	368.94	5000												3000								
	284.84	5000												2500								
	238.89	5000												2500								
	187.48	5000												2500								
	144.69	5000												2500								
	119.68	5000												2500								
	101.80	4600												2500								
	88.23	4200												2500								
	74.50	3700												2500								
	71.84	3600												2500								
	61.37	3300												2500								



Legend see page 99

C

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
						NEMA adapter												
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
C092	39.60	2970	35	198/5	6000													
	33.48	2992	42	770/23	6000													
	28.98	2981	48	1507/52	6000													
	25.67	3000	55	77/3	5600													
	22.58	1694	62	1242/55	6000													
	22.20	3000	63	1199/54	5000													
	21.41	2569	65	1199/56	4800													
	19.09	1706	73	210/11	6000													
	18.89	3000	74	869/46	4400													
	16.53	1700	85	9453/572	6000													
	16.08	3000	87	209/13	3900													
	14.64	1819	96	161/11	5600													
	13.87	3000	101	319/23	3500													
	12.66	1819	111	2507/198	5000													
	12.21	1465	115	7521/616	4800													
	11.63	2990	120	605/52	3100													
	10.77	1819	130	237/22	4400													
	9.46	2805	148	473/50	2700													
	9.17	1819	153	1311/143	3900													
	7.91	1819	177	87/11	3500													
7.40	2600	189	429/58	2300														
6.63	1819	211	345/52	3100														
5.39	1819	260	2967/550	2700														
4.22	1819	332	2691/638	2300														
C093	306.73	3000	4.6	7975/26	6000													
	242.77	3000	5.8	31075/128	6000													
	211.98	3000	6.6	10175/48	6000													
	187.34	3000	7.5	5995/32	6000													
	158.42	3000	8.8	14575/92	6000													
	154.24	3000	9.1	14036/91	6000													
	136.18	3000	10	28325/208	6000													
	122.08	3000	11	13673/112	6000													
	118.88	3000	12	22825/192	5600													
	106.60	3000	13	4477/42	6000													
	101.85	3000	14	2750/27	5000													
	98.21	3000	14	1375/14	4800													
	94.21	3000	15	13189/140	6000													
	86.68	3000	16	7975/92	4400													
	79.66	3000	18	12826/161	6000													
	72.72	3000	19	15125/208	3900													
	68.48	3000	20	12463/182	6000													
	61.28	3000	23	11275/184	3500													
	59.78	3000	23	10043/168	5600													
	51.22	3000	27	9680/189	5000													
50.24	2923	28	5225/104	3100														
49.39	2995	28	2420/49	4800														
43.59	2859	32	7018/161	4400														
36.57	2677	38	6655/182	3900														
30.81	2510	45	4961/161	3500														
25.26	2331	55	2299/91	3100														

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit									
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
C092	39.60	5000												2500								
	33.48	5000												2500								
	28.98	5000												2500								
	25.67	4500												2500								
	22.58	5000												2500								
	22.20	4000												2500								
	21.41	3900												2500								
	19.09	5000												2500								
	18.89	3600												2500								
	16.53	5000												2500								
	16.08	3100												2500								
	14.64	4500												2500								
	13.87	2800												2500								
	12.66	4000												2500								
	12.21	3900												2500								
	11.63	-												2500								
	10.77	3600												2500								
	9.46	-												2200								
	9.17	3100												2500								
	7.91	2800												2500								
	7.40	-												1900								
	6.63	-												2500								
	5.39	-												2200								
	4.22	-												1900								
C093	306.73	5000												2500								
	242.77	5000												2500								
	211.98	5000												2500								
	187.34	5000												2500								
	158.42	5000												2500								
	154.24	5000												2500								
	136.18	5000												2500								
	122.08	5000												2500								
	118.88	4500												2500								
	106.60	5000												2500								
	101.85	4000												2500								
	98.21	3900												2500								
	94.21	5000												2500								
	86.68	3600												2500								
	79.66	5000												2500								
	72.72	3100												2500								
	68.48	5000												2500								
	61.28	2800												2500								
	59.78	4500												2500								
	51.22	4000												2500								
	50.24	0												2500								
	49.39	3900												2500								
	43.59	3600												2500								
	36.57	3100												2500								
	30.81	2800												2500								
	25.26	0												2500								

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C094	3282.02	3000	0.43	170665/52	6000													
	2683.89	3000	0.52	279125/104	6000													
	2597.68	3000	0.54	665005/256	6000													
	2268.18	3000	0.62	217745/96	6000													
	2124.27	3000	0.66	1087625/512	6000													
	2119.23	3000	0.66	27550/13	6000													
	1854.82	3000	0.75	356125/192	6000													
	1677.34	3000	0.83	53675/32	6000													
	1643.20	3000	0.85	598125/364	6000													
	1464.58	3000	0.96	17575/12	6000													
	1344.90	3000	1.0	454575/338	6000													
	1300.57	3000	1.1	2330625/1792	6000													
	1135.60	3000	1.2	254375/224	6000													
	1064.47	3000	1.3	1771275/1664	6000													
	1035.22	3000	1.4	215325/208	6000													
	929.45	3000	1.5	193325/208	6000													
	819.36	3000	1.7	839025/1024	6000													
	782.16	3000	1.8	81345/104	6000													
	715.43	3000	2.0	91575/128	6000													
	640.13	3000	2.2	191400/299	6000													
	619.07	3000	2.3	316965/512	6000													
	540.55	3000	2.6	34595/64	6000													
	519.08	3000	2.7	87725/169	6000													
	506.66	3000	2.8	93225/184	6000													
	442.39	3000	3.2	10175/23	6000													
	434.54	3000	3.2	135575/312	5600													
	410.85	3000	3.4	341825/832	6000													
	358.73	3000	3.9	111925/312	6000													
	352.17	3000	4.0	247225/702	5000													
	343.93	3000	4.1	528275/1536	5600													
	339.59	3000	4.1	247225/728	4800													
	300.30	3000	4.7	172975/576	5600													
	278.74	3000	5.0	963325/3456	5000													
	268.78	3000	5.2	963325/3584	4800													
243.38	3000	5.8	315425/1296	5000														
234.69	3000	6.0	315425/1344	4800														

Legend see page 99

Type	$i_{ges.}$	SERVO adapter											Input unit										
		n_{1max}	Adapter size										n_{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
C094	3282.02	5000												3000									
	2683.89	5000												3000									
	2597.68	5000												3000									
	2268.18	5000												3000									
	2124.27	5000												3000									
	2119.23	5000												3000									
	1854.82	5000												3000									
	1677.34	5000												3000									
	1643.20	5000												3000									
	1464.58	5000												3000									
	1344.90	5000												3000									
	1300.57	5000												3000									
	1135.60	5000												3000									
	1064.47	5000												3000									
	1035.22	5000												3000									
	929.45	5000												3000									
	819.36	5000												3000									
	782.16	5000												3000									
	715.43	5000												3000									
	640.13	5000												3000									
	619.07	5000												3000									
	540.55	5000												3000									
	519.08	5000												3000									
	506.66	5000												3000									
	442.39	5000												3000									
	434.54	4500												3000									
	410.85	5000												3000									
	358.73	5000												3000									
	352.17	4000												3000									
	343.93	4500												3000									
	339.59	3900												3000									
	300.30	4500												3000									
	278.74	4000												3000									
	268.78	3900												3000									
	243.38	4000												3000									
	234.69	3900												3000									

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Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
						NEMA adapter												
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
C102	33.01	3695	42	6437/195	6000													
	29.16	4500	48	1312/45	5600													
	25.31	4500	55	2050/81	5000													
	24.40	2930	57	1025/42	4800													
	21.87	4500	64	328/15	4400													
	19.17	2146	73	11461/598	6000													
	18.71	4500	75	3649/195	3900													
	16.93	2698	83	1168/69	5600													
	16.16	4500	87	5576/345	3500													
	14.69	2698	95	9125/621	5000													
	14.17	1701	99	9125/644	4800													
	13.67	4500	102	41/3	3100													
	12.70	2698	110	292/23	4400													
	11.15	4500	126	1394/125	2700													
	10.86	2698	129	6497/598	3900													
	9.38	2698	149	4964/529	3500													
	9.05	4500	155	1312/145	2300													
	7.93	2698	176	365/46	3100													
	7.22	4500	194	1517/210	2100													
	6.47	2698	216	3723/575	2700													
5.25	2698	266	3504/667	2300														
4.19	2698	334	2701/644	2100														
C103	246.43	4500	5.7	141696/575	6000													
	208.33	4500	6.7	110208/529	6000													
	180.35	4500	7.8	269616/1495	6000													
	159.72	4500	8.8	18368/115	5600													
	138.17	4500	10	143008/1035	5000													
	133.24	4500	11	107256/805	4800													
	122.02	4500	11	15252/125	6000													
	117.56	4500	12	310944/2645	4400													
	103.15	4500	14	35588/345	6000													
	100.05	4500	14	149568/1495	3900													
	89.30	4500	16	174127/1950	6000													
	86.31	4500	16	228288/2645	3500													
	79.08	4500	18	17794/225	5600													
	72.40	4500	19	21648/299	3100													
	68.41	4500	20	138539/2025	5000													
	65.97	4500	21	138539/2100	4800													
	58.87	4500	24	169248/2875	2700													
	58.21	4500	24	100409/1725	4400													
	49.54	4500	28	48298/975	3900													
	46.03	4500	30	153504/3335	2300													
42.74	4500	33	73718/1725	3500														
35.85	4500	39	13981/390	3100														
29.15	4500	48	54653/1875	2700														
22.79	4500	61	16523/725	2300														

Legend see page 99

Type	$i_{ges.}$	SERVO adapter											Input unit									
		n_{1max}	Adapter size										n_{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
C102	33.01	5000												2500								
	29.16	4800												2500								
	25.31	4200												2500								
	24.40	4100												2500								
	21.87	3700												2500								
	19.17	5000												2500								
	18.71	3300												2500								
	16.93	4800												2500								
	16.16	3000												2500								
	14.69	4200												2500								
	14.17	4100												2500								
	13.67	-												2500								
	12.70	3700												2500								
	11.15	-												2300								
	10.86	3300												2500								
	9.38	3000												2500								
	9.05	-												2000								
	7.93	-												2500								
	7.22	-												1800								
	6.47	-												2300								
	5.25	-												2000								
	4.19	-												1800								
C103	246.43	5000												2500								
	208.33	5000												2500								
	180.35	5000												2500								
	159.72	4800												2500								
	138.17	4200												2500								
	133.24	4100												2500								
	122.02	5000												2500								
	117.56	3700												2500								
	103.15	5000												2500								
	100.05	3300												2500								
	89.30	5000												2500								
	86.31	3000												2500								
	79.08	4800												2500								
	72.40	-												2500								
	68.41	4200												2500								
	65.97	4100												2500								
	58.87	-												2300								
	58.21	3700												2500								
	49.54	3300												2500								
	46.03	-												2000								
	42.74	3000												2500								
	35.85	-												2500								
	29.15	-												2300								
	22.79	-												2000								

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	112	132	-	-	-	-	-
						IEC adapter											
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-		
C104	2636.78	4500	0.53	7580736/2875	6000												
	2229.16	4500	0.63	5896128/2645	6000												
	2156.24	4500	0.65	247968/115	6000												
	1822.91	4500	0.77	964320/529	6000												
	1702.59	4500	0.82	10768896/6325	6000												
	1439.39	4500	0.97	8375808/5819	6000												
	1320.15	4500	1.1	212544/161	6000												
	1116.07	4500	1.3	590400/529	6000												
4 stages	1080.49	4500	1.3	8076672/7475	6000												
	913.46	4500	1.5	6281856/6877	6000												
	831.69	4500	1.7	478224/575	6000												
$n_1=1400 \text{ min}^{-1}$	703.12	4500	2.0	371952/529	6000												
	628.39	4500	2.2	1806624/2875	6000												
	531.25	4500	2.6	1405152/2645	6000												
Maximum torque 4500 Nm	514.28	4500	2.7	6801408/13225	6000												
	434.78	4500	3.2	5289984/12167	6000												
	417.03	4500	3.4	3117312/7475	6000												
	352.56	4500	4.0	2424576/6877	6000												
	349.11	4500	4.0	200736/575	5600												
	295.14	4500	4.7	156128/529	5600												
	282.94	4500	4.9	162688/575	5000												
	272.83	4500	5.1	1098144/4025	4800												
	239.20	4500	5.9	1138816/4761	5000												
	230.65	4500	6.1	122016/529	4800												

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit									
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
C104	2636.78	5000												3000								
	2229.16	5000												3000								
	2156.24	5000												3000								
	1822.91	5000												3000								
	1702.59	5000												3000								
	1439.39	5000												3000								
	1320.15	5000												3000								
	1116.07	5000												3000								
	1080.49	5000												3000								
	913.46	5000												3000								
	831.69	5000												3000								
	703.12	5000												3000								
	628.39	5000												3000								
	531.25	5000												3000								
	514.28	5000												3000								
	434.78	5000												3000								
	417.03	5000												3000								
	352.56	5000												3000								
	349.11	4800												3000								
	295.14	4800												3000								
	282.94	4200												3000								
	272.83	4100												3000								
	239.20	4200												3000								
	230.65	4100												3000								

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	-	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
C132	35.51	5325	39	2983/84	5600														
	30.96	5885	45	836/27	5000														
	29.86	3583	47	209/7	4800														
	26.67	7730	52	4294/161	4400														
	22.97	8000	61	2090/91	3900														
	20.22	3032	69	2669/132	5600														
	20.06	8000	70	3230/161	3500														
	17.63	3351	79	476/27	5000														
	17.33	8000	81	1577/91	3100														
	17.00	2040	82	17/1	4800														
	15.19	4401	92	3842/253	4400														
	14.33	8000	98	2508/175	2700														
	13.08	4884	107	170/13	3900														
	11.79	8000	119	342/29	2300														
	Maximum torque 8000 Nm	11.42	4945	123	2890/253	3500													
		9.87	4945	142	1411/143	3100													
		9.69	8000	144	475/49	2100													
		8.23	8000	170	1786/217	1900													
		8.16	4945	172	204/25	2700													
		7.03	8000	199	836/119	1700													
6.71		4945	208	2142/319	2300														
5.52		4945	254	425/77	2100														
4.69		4945	299	1598/341	1900														
4.00		4945	350	4/1	1700														
C133	204.88	8000	6.8	74575/364	6000														
	180.95	8000	7.7	3800/21	5600														
	157.08	8000	8.9	59375/378	5000														
	151.47	8000	9.2	59375/392	4800														
	135.71	8000	10	950/7	4400														
	116.14	8000	12	42275/364	3900														
	101.85	8000	14	259521/2548	6000														
	100.31	8000	14	16150/161	3500														
	89.96	8000	16	4408/49	5600														
	84.82	8000	17	2375/28	3100														
	78.09	8000	18	68875/882	5000														
	75.30	8000	19	206625/2744	4800														
	69.21	8000	20	969/14	2700														
	67.47	8000	21	3306/49	4400														
	57.74	8000	24	147117/2548	3900														
	56.16	8000	25	11400/203	2300														
	49.87	8000	28	56202/1127	3500														
	44.83	8000	31	17575/392	2100														
	42.17	8000	33	8265/196	3100														
	34.41	8000	41	84303/2450	2700														
27.92	8000	50	1368/49	2300															
22.29	8000	63	61161/2744	2100															

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit											
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
C132	35.51	5000												2500										
	30.96	4500												2500										
	29.86	4400												2500										
	26.67	4000												2500										
	22.97	3500												2500										
	20.22	5000												2500										
	20.06	3200												1800										
	17.63	4500												2500										
	17.33	-												1800										
	17.00	4400												2500										
	15.19	4000												2500										
	14.33	-												1800										
	13.08	3500												2500										
	11.79	-												1800										
	11.42	3200												1800										
	9.87	-												1800										
	9.69	-												1800										
	8.23	-												1700										
	8.16	-												1800										
	7.03	-												1500										
	6.71	-												1800										
	5.52	-												1800										
	4.69	-												1700										
	4.00	-												1500										
C133	204.88	5000												2500										
	180.95	5000												2500										
	157.08	4500												2500										
	151.47	4400												2500										
	135.71	4000												2500										
	116.14	3500												2500										
	101.85	5000												2500										
	100.31	3200												1800										
	89.96	5000												2500										
	84.82	-												1800										
	78.09	4500												2500										
	75.30	4400												2500										
	69.21	-												1800										
	67.47	4000												2500										
	57.74	3500												2500										
	56.16	-												1800										
	49.87	3200												1800										
	44.83	-												1800										
	42.17	-												1800										
	34.41	-												1800										
	27.92	-												1800										
	22.29	-												1800										

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
C134	1891.77	8000	0.74	437000/231	6000													
	1642.17	8000	0.85	6828125/4158	6000													
	1460.54	8000	0.96	214700/147	6000													
	1418.83	8000	0.99	109250/77	6000													
	1267.83	8000	1.1	6709375/5292	6000													
	1224.91	8000	1.1	334400/273	6000													
	1095.41	8000	1.3	53675/49	6000													
	1063.29	8000	1.3	2612500/2457	6000													
	961.31	8000	1.5	40375/42	6000													
	918.68	8000	1.5	83600/91	6000													
	834.47	8000	1.7	5046875/6048	6000													
	741.90	8000	1.9	15580/21	6000													
	720.98	8000	1.9	40375/56	6000													
	644.01	8000	2.2	486875/756	6000													
	613.66	8000	2.3	98800/161	6000													
	556.43	8000	2.5	3895/7	6000													
	532.69	8000	2.6	771875/1449	6000													
	521.98	8000	2.7	47500/91	6000													
	460.25	8000	3.0	74100/161	6000													
	453.11	8000	3.1	1484375/3276	6000													
	452.38	8000	3.1	9500/21	5600													
	392.69	8000	3.6	296875/756	5600													
	391.48	8000	3.6	35625/91	6000													
	382.01	8000	3.7	72200/189	5000													
	368.37	8000	3.8	18050/49	4800													
	339.29	8000	4.1	2375/7	5600													
	331.61	8000	4.2	1128125/3402	5000													
	319.76	8000	4.4	1128125/3528	4800													
	314.70	8000	4.4	152000/483	4400													
	286.51	8000	4.9	18050/63	5000													
	276.28	8000	5.1	27075/98	4800													
	273.18	8000	5.1	1187500/4347	4400													
	236.02	8000	5.9	38000/161	4400													

C

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit													
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				
C134	1891.77	5000														3000										
	1642.17	5000														3000										
	1460.54	5000														2500										
	1418.83	5000														3000										
	1267.83	5000														2500										
	1224.91	5000														2500										
	1095.41	5000														2500										
	1063.29	5000														2500										
	961.31	5000														2500										
	918.68	5000														2500										
	834.47	5000														2500										
	741.90	5000														2500										
	720.98	5000														2500										
	644.01	5000														2500										
	613.66	5000														2500										
	556.43	5000														2500										
	532.69	5000														2500										
	521.98	5000														2500										
	460.25	5000														2500										
	453.11	5000														2500										
	452.38	5000														2500										
	392.69	5000														2500										
	391.48	5000														2500										
	382.01	4500														2500										
	368.37	4400														2500										
	339.29	5000														2500										
	331.61	4500														2500										
	319.76	4400														2500										
	314.70	4000														2500										
	286.51	4500														2500										
	276.28	4400														2500										
	273.18	4000														2500										
	236.02	4000														2500										



Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	l250	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
C142	37.48	7123	37	1012/27	5000													
	32.28	9361	43	1485/46	4400													
	27.92	11759	50	363/13	3900													
	24.63	13000	57	1133/46	3500													
	21.37	4062	66	2116/99	5000													
	21.15	13000	66	275/13	3100													
	18.41	5338	76	405/22	4400													
	17.60	13000	80	88/5	2700													
	15.92	6706	88	207/13	3900													
	14.60	13000	96	847/58	2300													
	14.05	8155	100	309/22	3500													
	12.18	13000	115	341/28	2100													
	12.06	8032	116	1725/143	3100													
	10.47	13000	134	649/62	1900													
	10.04	9095	139	552/55	2700													
	9.06	13000	155	154/17	1700													
	8.33	9017	168	483/58	2300													
	6.94	9095	202	2139/308	2100													
5.97	9095	235	4071/682	1900														
5.17	8816	271	966/187	1700														
C143	206.88	13000	6.8	39721/192	5600													
	180.38	13000	7.8	19481/108	5000													
	173.94	13000	8.0	2783/16	4800													
	155.38	13000	9.0	1243/8	4400													
	133.80	13000	10	13915/104	3900													
	116.88	13000	12	935/8	3500													
	113.27	13000	12	146795/1296	5600													
	100.96	13000	14	20999/208	3100													
	98.76	13000	14	71995/729	5000													
	95.23	11428	15	10285/108	4800													
	85.07	13000	16	105655/1242	4400													
	83.49	13000	17	8349/100	2700													
	73.25	13000	19	51425/702	3900													
	68.70	13000	20	15939/232	2300													
	63.99	13000	22	79475/1242	3500													
	56.47	13000	25	6325/112	2100													
	55.27	13000	25	77605/1404	3100													
	47.95	13000	29	11891/248	1900													
45.71	13000	31	2057/45	2700														
40.93	13000	34	2783/68	1700														
37.61	13000	37	6545/174	2300														
30.92	12705	45	23375/756	2100														
26.25	12096	53	43945/1674	1900														
22.41	11535	62	605/27	1700														

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit									
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
C142	37.48	4800												2500								
	32.28	4200												2500								
	27.92	3700												2500								
	24.63	3400												1800								
	21.37	4800												2500								
	21.15	-												1800								
	18.41	4200												2500								
	17.60	-												1800								
	15.92	3700												2500								
	14.60	-												1800								
	14.05	3400												1800								
	12.18	-												1800								
	12.06	-												1800								
	10.47	-												1800								
	10.04	-												1800								
	9.06	-												1600								
	8.33	-												1800								
	6.94	-												1800								
	5.97	-												1800								
	5.17	-												1600								
C143	206.88	5000												2500								
	180.38	4800												2500								
	173.94	4600												2500								
	155.38	4200												2500								
	133.80	3700												2500								
	116.88	3400												1800								
	113.27	5000												2500								
	100.96	-												1800								
	98.76	4800												2500								
	95.23	4600												2500								
	85.07	4200												2500								
	83.49	-												1800								
	73.25	3700												2500								
	68.70	-												1800								
	63.99	3400												1800								
	56.47	-												1800								
	55.27	-												1800								
	47.95	-												1800								
	45.71	-												1800								
	40.93	-												1600								
	37.61	-												1800								
	30.92	-												1800								
	26.25	-												1800								
	22.41	-												1600								



Legend see page 99

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
C144	2162.84	13000	0.65	415265/192	6000													
	1885.79	13000	0.74	203665/108	6000													
	1669.82	13000	0.84	4488473/2688	6000													
	1624.38	13000	0.86	12995/8	6000													
	1455.92	13000	0.96	314479/216	6000													
	1400.42	13000	1.0	436931/312	6000													
	1398.80	13000	1.0	145475/104	6000													
	1254.10	13000	1.1	140459/112	6000													
	1221.03	13000	1.1	428582/351	6000													
	1099.05	13000	1.3	3376285/3072	6000													
	1079.94	13000	1.3	1572395/1456	6000													
	1051.77	13000	1.3	13673/13	6000													
	958.27	13000	1.5	1655885/1728	6000													
	905.71	13000	1.5	153065/169	6000													
	848.21	13000	1.7	1628561/1920	6000													
	825.43	13000	1.7	105655/128	6000													
	739.56	13000	1.9	798721/1080	6000													
	710.80	13000	2.0	1182775/1664	6000													
	701.59	13000	2.0	22451/32	6000													
4 stages	637.04	13000	2.2	50963/80	6000													
	611.72	13000	2.3	11011/18	6000													
$n_1=1400 \text{ min}^{-1}$	596.77	13000	2.3	993025/1664	6000													
	548.57	13000	2.6	114103/208	6000													
	526.92	13000	2.7	48477/92	6000													
Maximum torque 13000 Nm	520.33	13000	2.7	487025/936	6000													
	517.20	13000	2.7	198605/384	5600													
	453.75	13000	3.1	1815/4	6000													
	450.95	13000	3.1	97405/216	5600													
	448.20	13000	3.1	93225/208	6000													
	436.75	13000	3.2	754699/1728	5000													
	421.15	13000	3.3	754699/1792	4800													
	388.44	13000	3.6	6215/16	5600													
	385.96	13000	3.6	1043625/2704	6000													
	380.80	13000	3.7	370139/972	5000													
	367.20	13000	3.8	52877/144	4800													
	359.79	13000	3.9	8635/24	4400													
	334.50	13000	4.2	69575/208	5600													
	328.01	13000	4.3	23617/72	5000													
	316.30	13000	4.4	70851/224	4800													
	313.70	13000	4.5	8470/27	4400													
	282.46	13000	5.0	264385/936	5000													
	272.37	13000	5.1	793155/2912	4800													
	270.22	13000	5.2	6215/23	4400													
	232.69	13000	6.0	3025/13	4400													

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit										
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
C144	2162.84	5000												3000									
	1885.79	5000												3000									
	1669.82	5000												2500									
	1624.38	5000												3000									
	1455.92	5000												2500									
	1400.42	5000												2500									
	1398.80	5000												3000									
	1254.10	5000												2500									
	1221.03	5000												2500									
	1099.05	5000												2500									
	1079.94	5000												2500									
	1051.77	5000												2500									
	958.27	5000												2500									
	905.71	5000												2500									
	848.21	5000												2500									
	825.43	5000												2500									
	739.56	5000												2500									
	710.80	5000												2500									
	701.59	5000												2500									
	637.04	5000												2500									
	611.72	5000												2500									
	596.77	5000												2500									
	548.57	5000												2500									
	526.92	5000												2500									
	520.33	5000												2500									
	517.20	5000												2500									
	453.75	5000												2500									
	450.95	5000												2500									
	448.20	5000												2500									
	436.75	4800												2500									
	421.15	4600												2500									
	388.44	5000												2500									
	385.96	5000												2500									
	380.80	4800												2500									
	367.20	4600												2500									
	359.79	4200												2500									
	334.50	5000												2500									
	328.01	4800												2500									
	316.30	4600												2500									
	313.70	4200												2500									
	282.46	4800												2500									
	272.37	4600												2500									
	270.22	4200												2500									
	232.69	4200												2500									

Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
C162	33.00	13926	42	33/1	3900													
2 stages	25.15	18000	56	327/13	3100													
	21.12	18000	66	528/25	2700													
	17.70	7468	79	407/23	3900													
	17.38	18000	81	504/29	2300													
	14.79	18000	95	207/14	2100													
	$n_1=1400 \text{ min}^{-1}$	13.49	10003	104	4033/299	3100												
		12.77	18000	110	396/31	1900												
	Maximum torque 18000 Nm	11.33	11261	124	6512/575	2700												
		11.12	18000	126	189/17	1700												
		9.32	11197	150	6216/667	2300												
7.93		11261	177	111/14	2100													
6.85		11261	204	4884/713	1900													
5.96	11261	235	2331/391	1700														
C163	234.67	18000	6.0	704/3	5000													
3 stages	202.12	18000	6.9	106920/529	4400													
	174.82	18000	8.0	52272/299	3900													
	154.21	18000	9.1	81576/529	3500													
	132.44	18000	11	39600/299	3100													
	130.53	18000	11	15272/117	5000													
	112.42	18000	12	33615/299	4400													
	110.19	18000	13	12672/115	2700													
	97.24	18000	14	16434/169	3900													
	91.43	18000	15	60984/667	2300													
	$n_1=1400 \text{ min}^{-1}$	85.78	18000	16	25647/299	3500												
76.25		18000	18	12276/161	2100													
73.67		18000	19	12450/169	3100													
65.54		18000	21	46728/713	1900													
61.29		18000	23	3984/65	2700													
56.72		18000	25	22176/391	1700													
50.86		18000	28	19173/377	2300													
42.41		18000	33	7719/182	2100													
36.45		18000	38	14691/403	1900													
31.55		17437	44	6972/221	1700													

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
C162	33.00	-													2500										
	25.15	-													1800										
	21.12	-													1800										
	17.70	-													2500										
	17.38	-													1800										
	14.79	-													1800										
	13.49	-													1800										
	12.77	-													1800										
	11.33	-													1800										
	11.12	-													1700										
	9.32	-													1800										
	7.93	-													1800										
	6.85	-													1800										
	5.96	-													1700										
C163	234.67	-													2500										
	202.12	-													2500										
	174.82	-													2500										
	154.21	-													1800										
	132.44	-													1800										
	130.53	-													2500										
	112.42	-													2500										
	110.19	-													1800										
	97.24	-													2500										
	91.43	-													1800										
	85.78	-													1800										
	76.25	-													1800										
	73.67	-													1800										
	65.54	-													1800										
	61.29	-													1800										
	56.72	-													1700										
	50.86	-													1800										
	42.41	-													1800										
	36.45	-													1800										
	31.55	-													1700										



Legend see page 99

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	-	-	-		
C164	2093.95	18000	0.67	81664/39	6000													
	1803.51	18000	0.78	12402720/6877	6000													
	1657.33	18000	0.84	4972/3	6000													
	1559.96	18000	0.9	6063552/3887	6000													
	1447.11	18000	0.97	13024/9	6000													
	1427.45	18000	0.98	1510245/1058	6000													
	1278.93	18000	1.1	19184/15	6000													
	1246.39	18000	1.1	659340/529	6000													
	1234.69	18000	1.1	369171/299	6000													
	1101.54	18000	1.3	582714/529	6000													
	1081.51	18000	1.3	74624/69	6000													
	1078.07	18000	1.3	322344/299	6000													
	952.78	18000	1.5	1424412/1495	6000													
	931.50	18000	1.5	11333520/12167	6000													
	929.64	18000	1.5	36256/39	6000													
	811.56	18000	1.7	7304/9	5600													
	805.70	18000	1.7	5540832/6877	6000													
	800.70	18000	1.7	5506380/6877	6000													
	698.99	18000	2.0	369765/529	5600													
	695.31	18000	2.0	56320/81	5000													
	692.57	18000	2.0	2692008/3887	6000													
	670.48	18000	2.1	14080/21	4800													
	604.60	18000	2.3	180774/299	5600													
	598.87	18000	2.3	316800/529	5000													
	591.77	18000	2.4	40832/69	4400													
	577.48	18000	2.4	2138400/3703	4800													
	517.99	18000	2.7	154880/299	5000													
	509.69	18000	2.7	6201360/12167	4400													
	499.49	18000	2.8	1045440/2093	4800													
	496.41	18000	2.8	19360/39	3900													
	440.86	18000	3.2	3031776/6877	4400													
	427.56	18000	3.3	2940300/6877	3900													
	418.32	18000	3.3	28864/69	3500													
	369.82	18000	3.8	1437480/3887	3900													
	360.30	18000	3.9	4383720/12167	3500													
	342.97	18000	4.1	13376/39	3100													
	311.64	18000	4.5	2143152/6877	3500													
	295.40	18000	4.7	2031480/6877	3100													
	255.51	18000	5.5	993168/3887	3100													

Legend see page 99

Type	i _{ges.}	SERVO adapter											Input unit											
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
C164	2093.95	5000												2500										
	1803.51	5000												2500										
	1657.33	5000												2500										
	1559.96	5000												2500										
	1447.11	5000												2500										
	1427.45	5000												2500										
	1278.93	5000												2500										
	1246.39	5000												2500										
	1234.69	5000												2500										
	1101.54	5000												2500										
	1081.51	5000												2500										
	1078.07	5000												2500										
	952.78	5000												2500										
	931.50	5000												2500										
	929.64	5000												2500										
	811.56	5000												2500										
	805.70	5000												2500										
	800.70	5000												2500										
	698.99	5000												2500										
	695.31	4900												2500										
	692.57	5000												2500										
	670.48	4700												2500										
	604.60	5000												2500										
	598.87	4900												2500										
	591.77	4300												2500										
	577.48	4700												2500										
	517.99	4900												2500										
	509.69	4300												2500										
	499.49	4700												2500										
	496.41	3800												2500										
	440.86	4300												2500										
	427.56	3800												2500										
	418.32	3500												2500										
	369.82	3800												2500										
	360.30	3500												2500										
	342.97	-												2500										
	311.64	3500												2500										
	295.40	-												2500										
	255.51	-												2500										



Legend see page 99

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
C165	22405.25	18000	0.06	4369024/195	6000													
	18322.05	18000	0.08	714560/39	6000													
	15484.09	18000	0.09	696784/45	6000													
	14467.28	18000	0.10	564224/39	6000													
	12662.22	18000	0.11	113960/9	6000													
	11217.58	18000	0.12	1020800/91	6000													
	9998.22	18000	0.14	89984/9	6000													
	9181.16	18000	0.15	1551616/169	6000													
5 stages	7752.38	18000	0.18	162800/21	6000													
	7067.08	18000	0.20	91872/13	6000													
	6345.03	18000	0.22	247456/39	6000													
$n_1=1400 \text{ min}^{-1}$	5339.57	18000	0.26	347072/65	6000													
	4884.00	18000	0.29	4884/1	6000													
	4369.98	18000	0.32	1306624/299	6000													
Maximum torque 18000 Nm	3690.13	18000	0.38	55352/15	6000													
	3543.61	18000	0.40	1796608/507	6000													
	3020.06	18000	0.46	208384/69	6000													
	2966.43	18000	0.47	347072/117	5600													
	2448.96	18000	0.57	286528/117	6000													
	2404.16	18000	0.58	2531584/1053	5000													
	2318.30	18000	0.60	632896/273	4800													
	2050.07	18000	0.68	55352/27	5600													
	1661.50	18000	0.84	403744/243	5000													
	1602.16	18000	0.87	100936/63	4800													

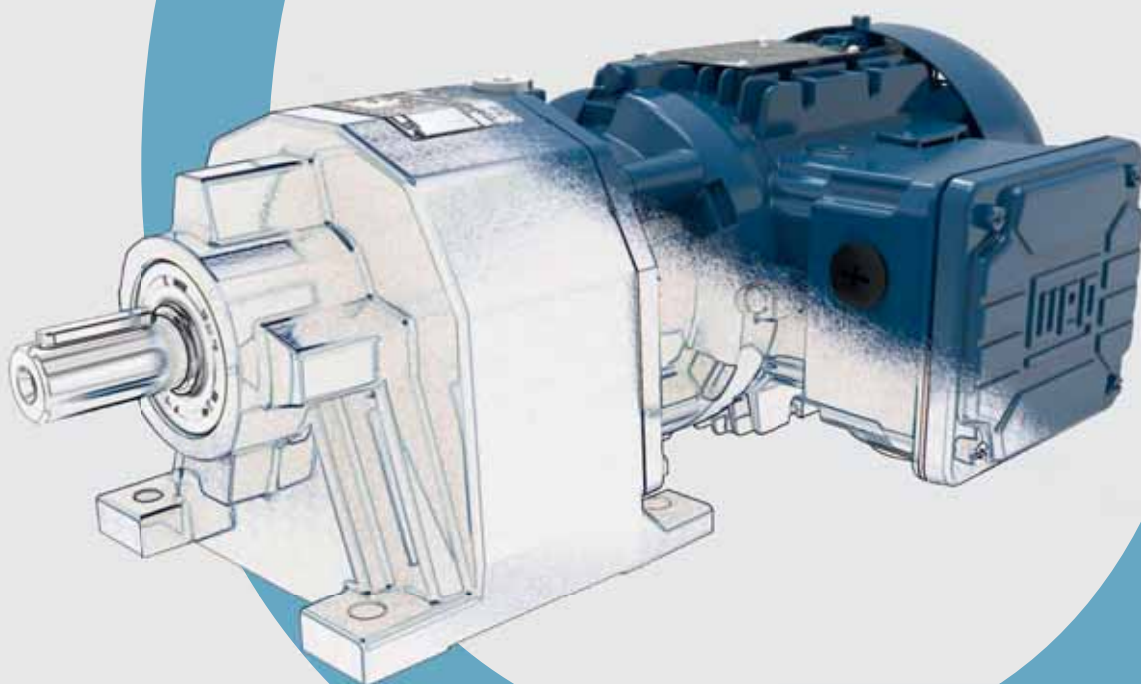
C

Legend see page 99

Type	$i_{ges.}$	SERVO adapter											Input unit									
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
C165	22405.25	5000												3000								
	18322.05	5000												3000								
	15484.09	5000												3000								
	14467.28	5000												3000								
	12662.22	5000												3000								
	11217.58	5000												3000								
	9998.22	5000												3000								
	9181.16	5000												3000								
	7752.38	5000												3000								
	7067.08	5000												3000								
	6345.03	5000												3000								
	5339.57	5000												3000								
	4884.00	5000												3000								
	4369.98	5000												3000								
	3690.13	5000												3000								
	3543.61	5000												3000								
	3020.06	5000												3000								
	2966.43	5000												3000								
	2448.96	5000												3000								
	2404.16	4900												3000								
	2318.30	4700												3000								
	2050.07	5000												3000								
	1661.50	4900												3000								
	1602.16	4700												3000								

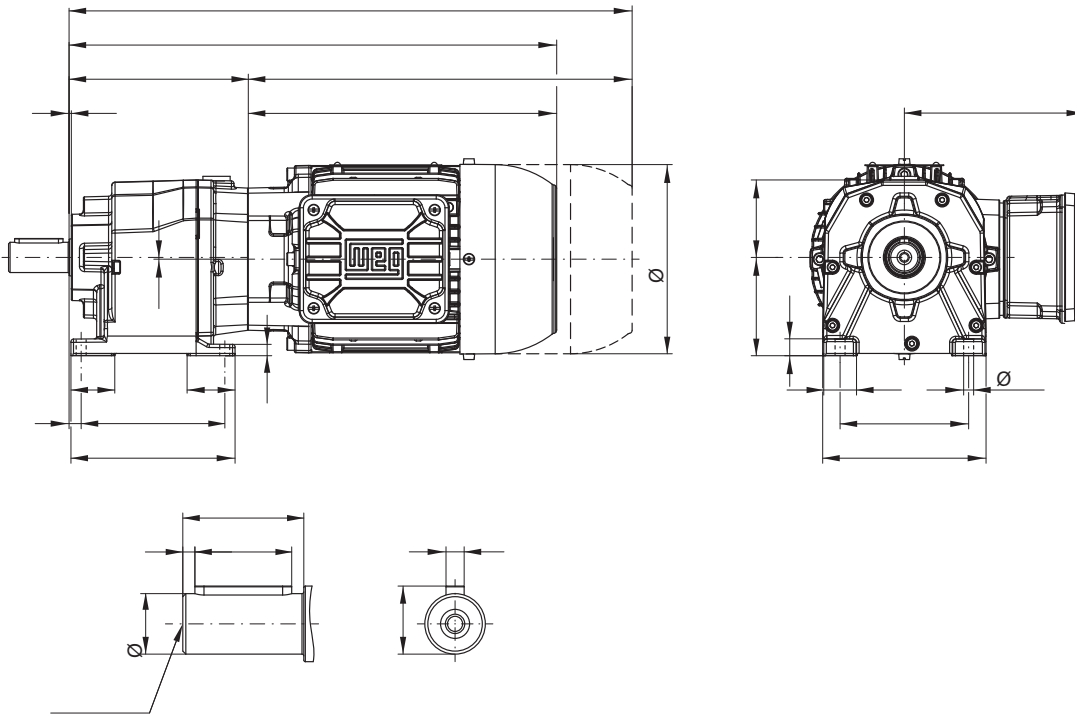
Legend see page 99

Dimension sheets Geared Motors



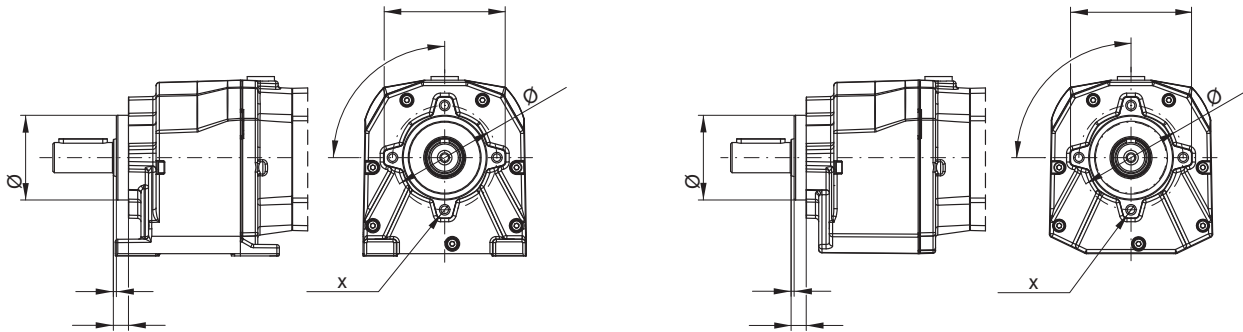
CG00 - Foot mounted

C



CW00 - Foot mounted with B14 flange execution + centring and threaded hole

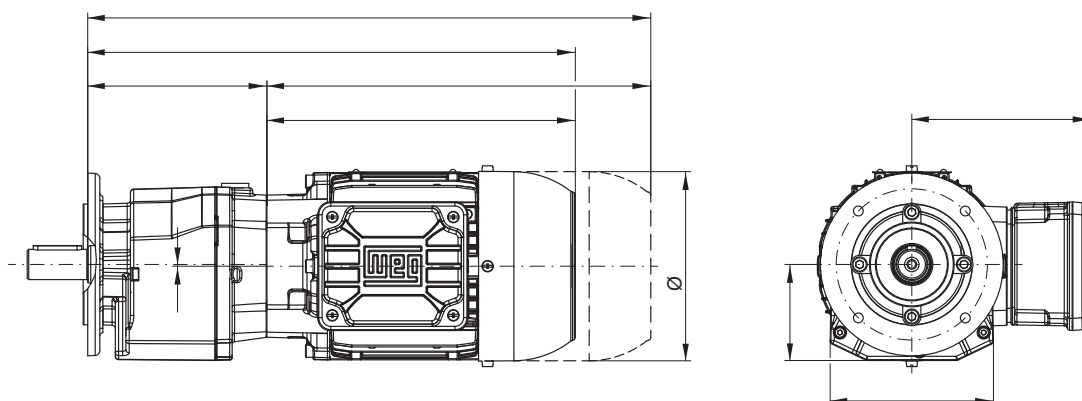
CC00 - B14 flange execution + centring and threaded hole



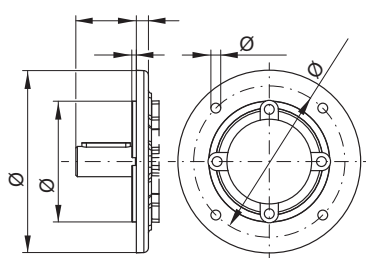
Motor fr.	63	71	80	L80
Dimension				
AC	126	141	159	159
AD	128	136	145	145
k	323	357	365	389
kB	367	406	423	447
LB	204	238	246	270
LB1	248	287	304	328

Motor dimension sheets see page 496
 Description of motor lengths LB and LB1 see page 500

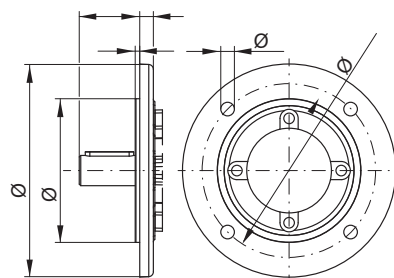
CF00 - Flange execution



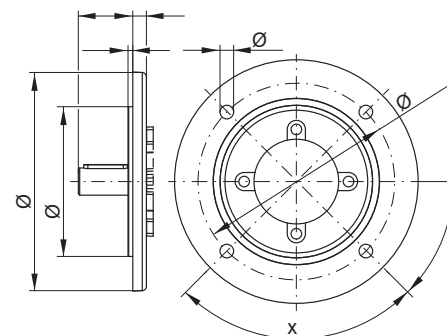
Flange Ø 120



Flange Ø 140

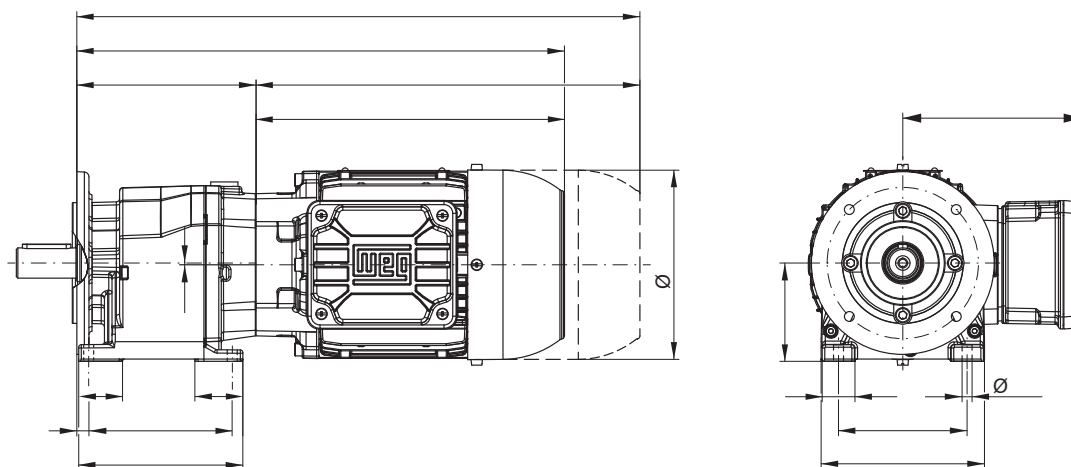


Flange Ø 160



CA00 - Foot mounted and B5 flange execution

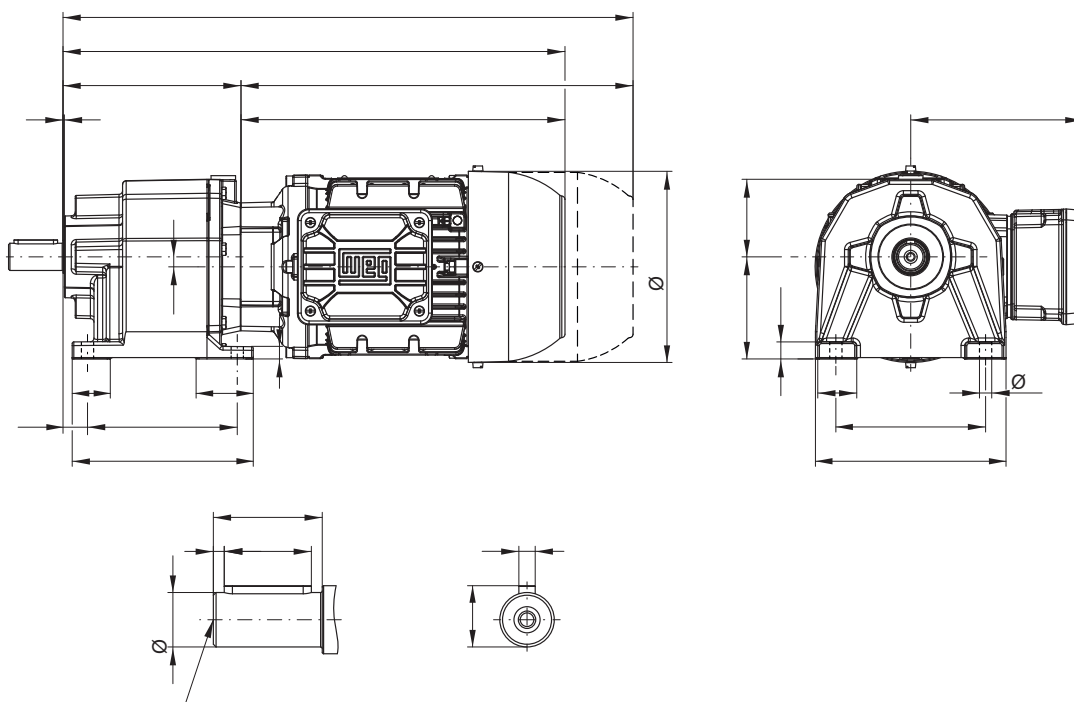
mountable flange sizes on the housing: Ø 120



Dimensions in mm.

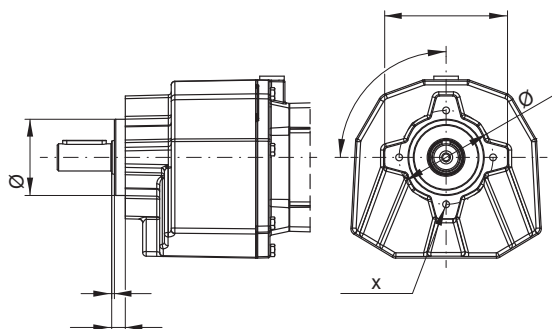
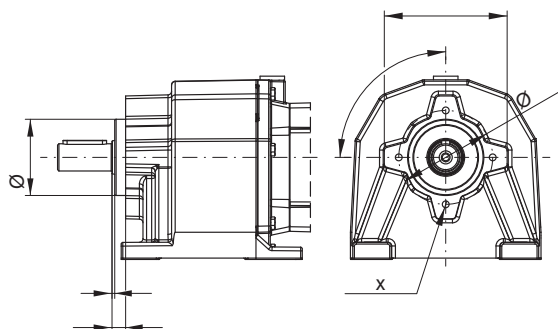
CG01 - Foot mounted

C



CW01 - Foot mounted with B14 flange execution + centring and threaded hole

CC01 - B14 flange execution + centring and threaded hole

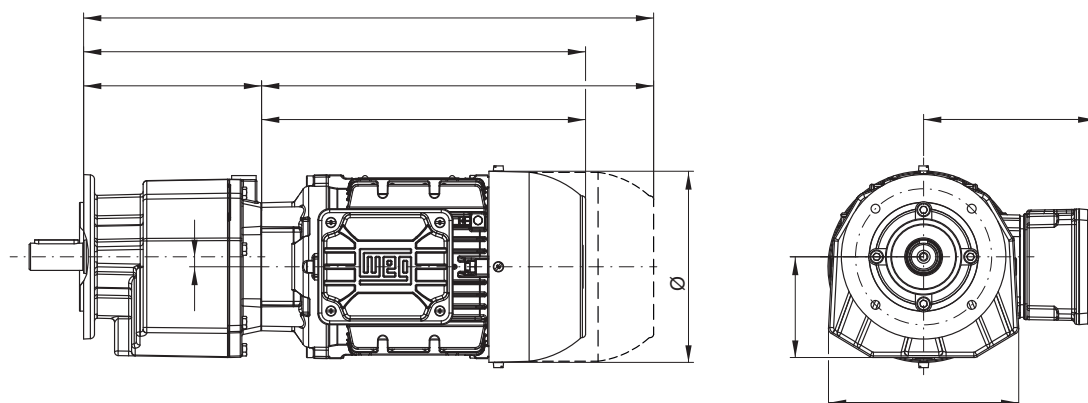


Motor fr.	63	71	80	L80	90S/L
Dimension					
AC	126	141	159	159	178
AD	128	136	145	145	155
k	335	369	377	401	419
kB	379	418	435	459	492
LB	204	238	246	270	288
LB1	248	287	304	328	361

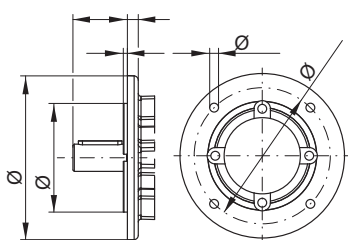
Motor dimension sheets see page 496

Description of motor lengths LB and LB1 see page 500

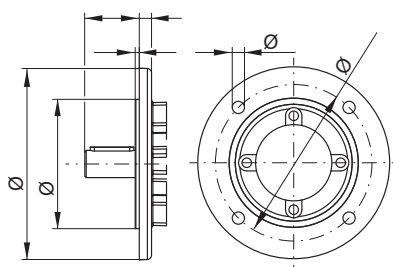
CF01 - Flange execution



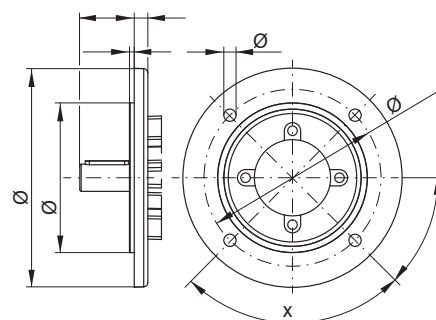
Flange Ø 120



Flange Ø 140

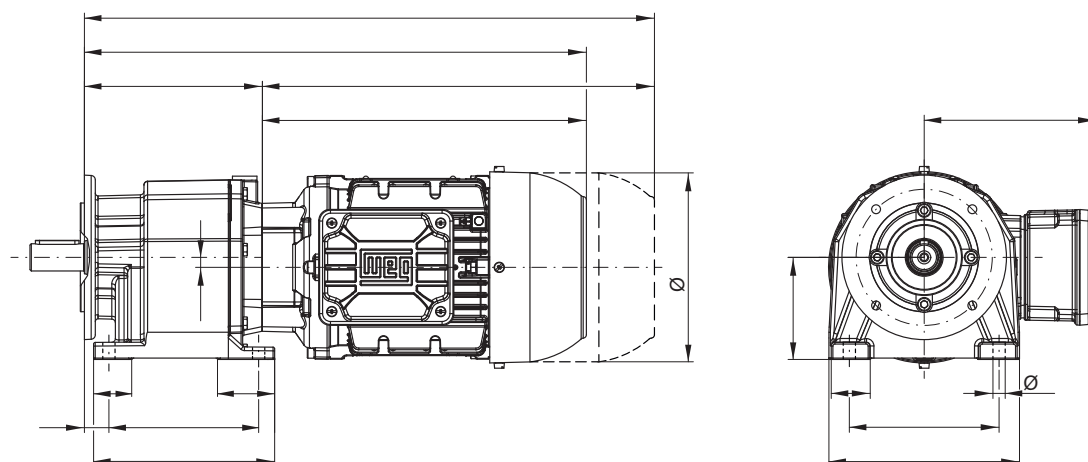


Flange Ø 160



CA01 - Foot mounted and B5 flange execution

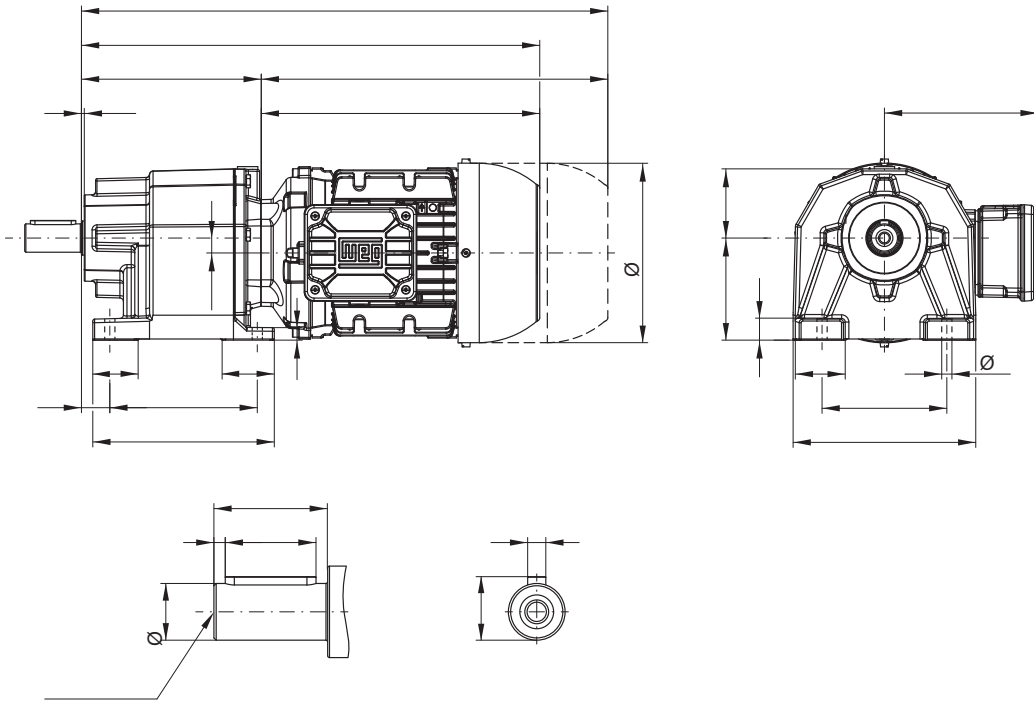
mountable flange sizes on the housing: Ø 120 and Ø 140



Dimensions in mm.

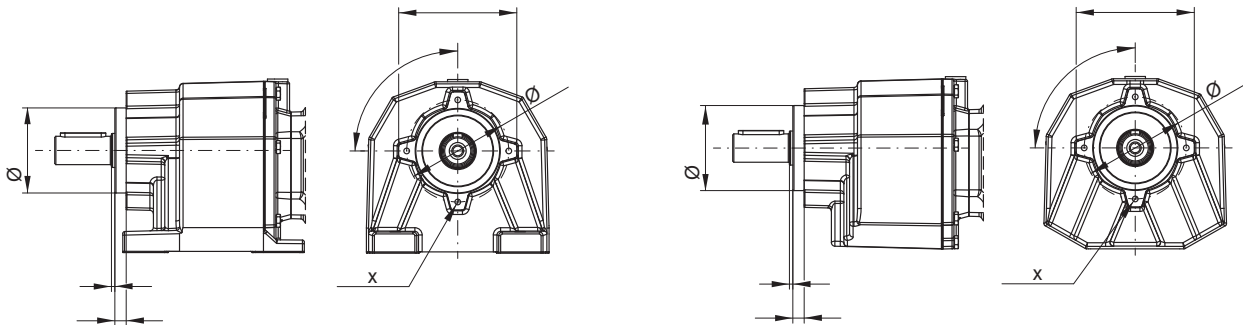
CG03 - Foot mounted

C



CW03 - Foot mounted with B14 flange execution + centring and threaded hole

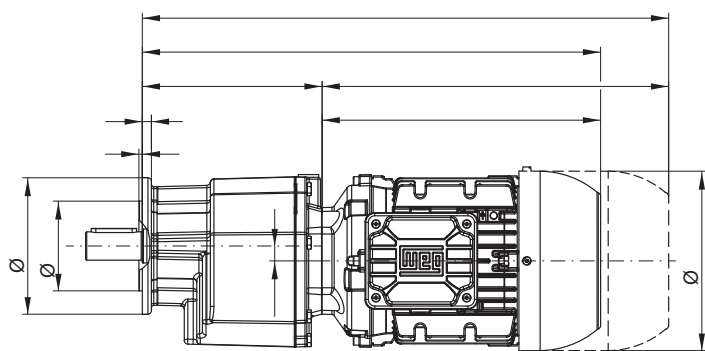
CC03 - B14 flange execution + centring and threaded hole



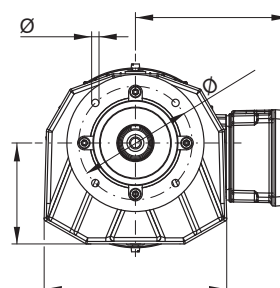
Motor fr.	63	71	80	L80	90S/L	100L	L100L
Dimension							
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	363	397	405	429	447	497	535
kB	407	446	463	487	520	581	619
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 496
 Description of motor lengths LB and LB1 see page 500

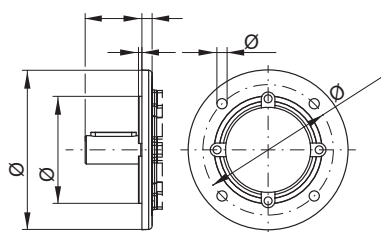
CF03 - Flange execution



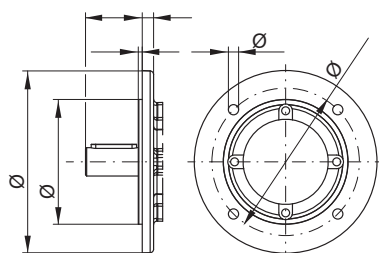
Flange Ø 120



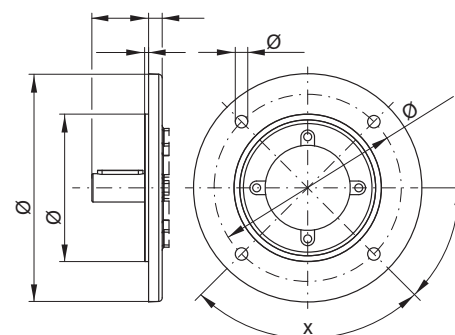
Flange Ø 140



Flange Ø 160

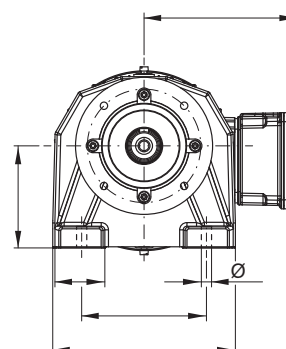
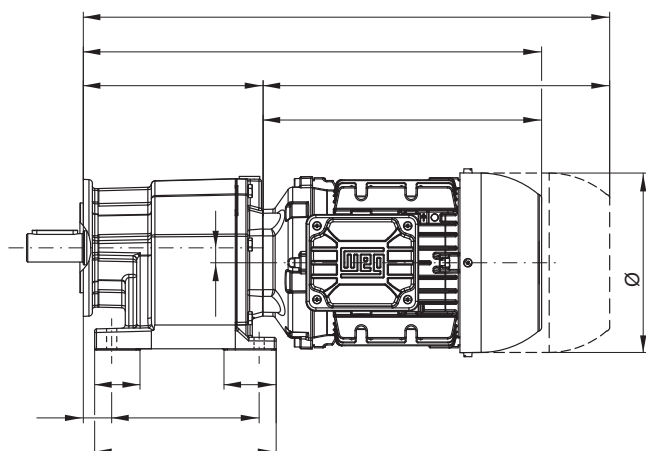


Flange Ø 200



CA03 - Foot mounted and B5 flange execution

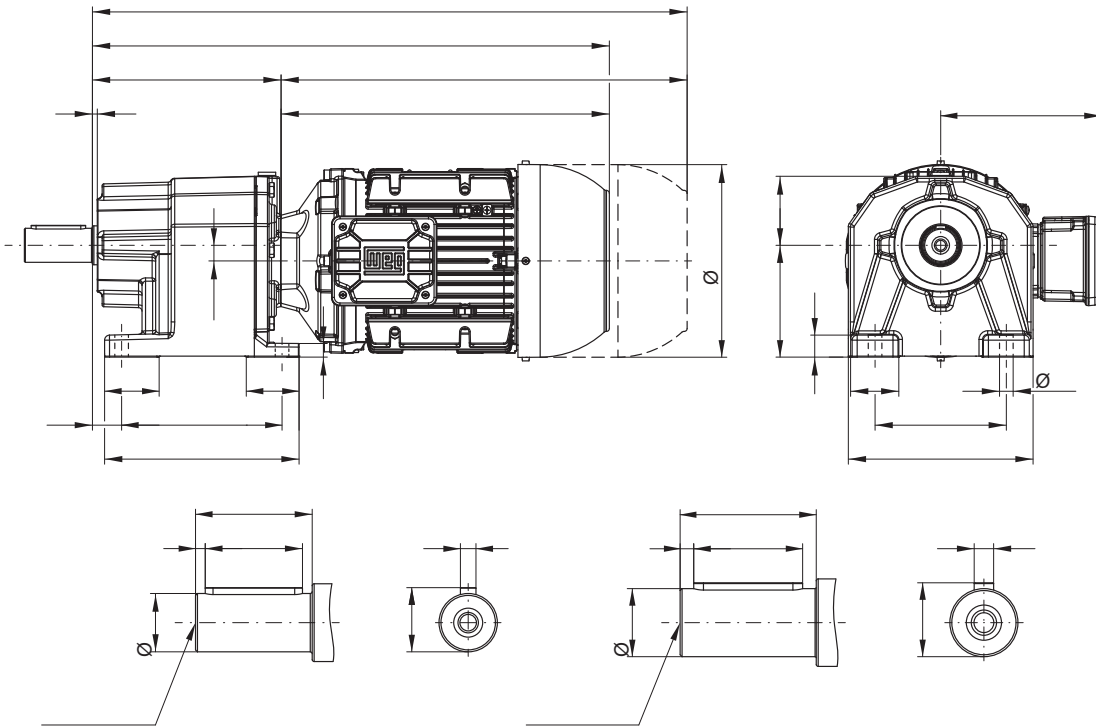
mountable flange sizes on the housing: Ø 120, Ø 140 and Ø 160



Dimensions in mm.

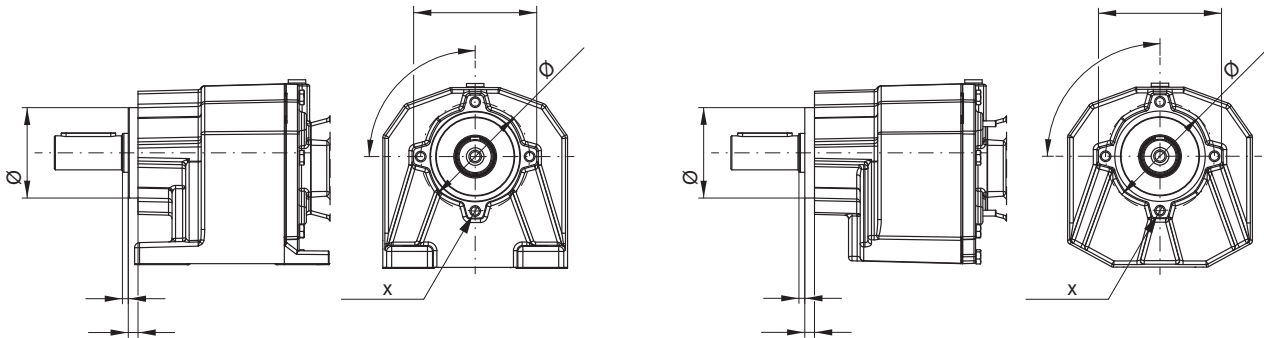
CG05 - Foot mounted

C



CW05 - Foot mounted with B14 flange execution + centring and threaded hole

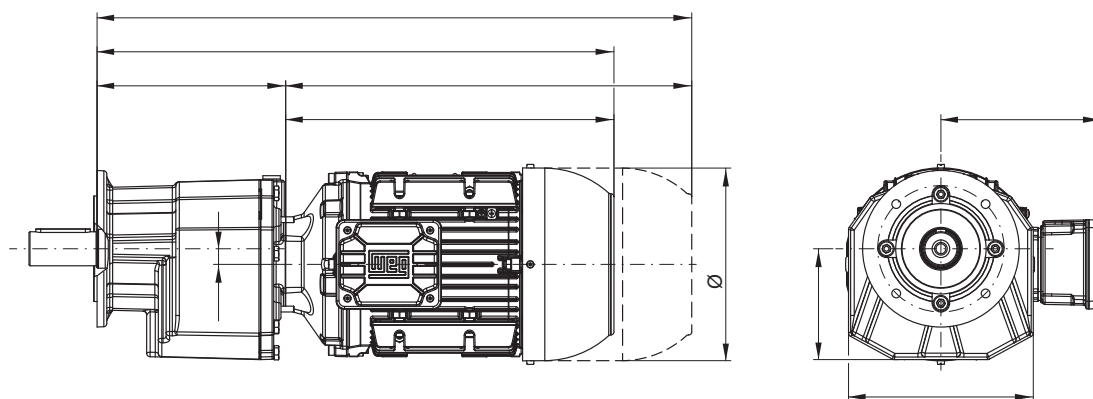
CC05 - B14 flange execution + centring and threaded hole



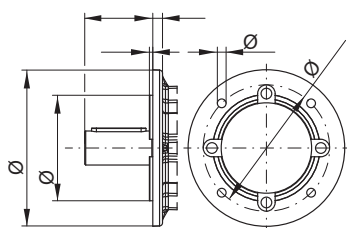
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	398	432	440	464	482	532	570	542	607	645
kB	442	481	498	522	555	616	654	629	725	763
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496
 Description of motor lengths LB and LB1 see page 500

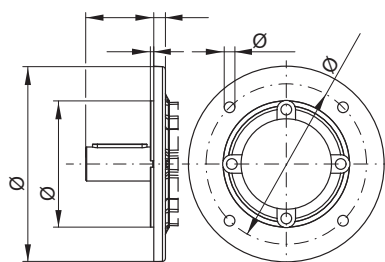
CF05 - Flange execution



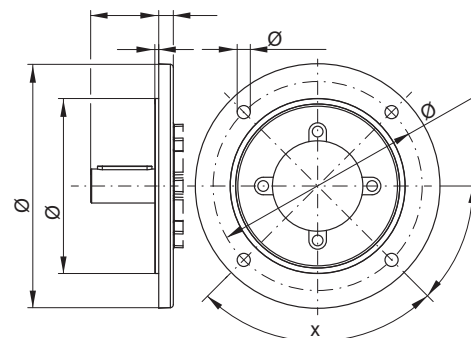
Flange Ø 160



Flange Ø 200

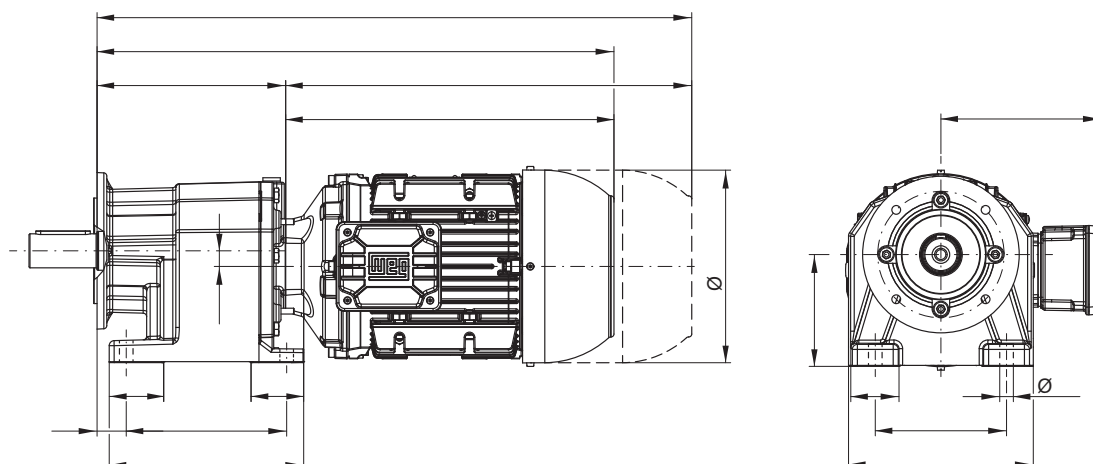


Flange Ø 250



CA05 - Foot mounted and B5 flange execution

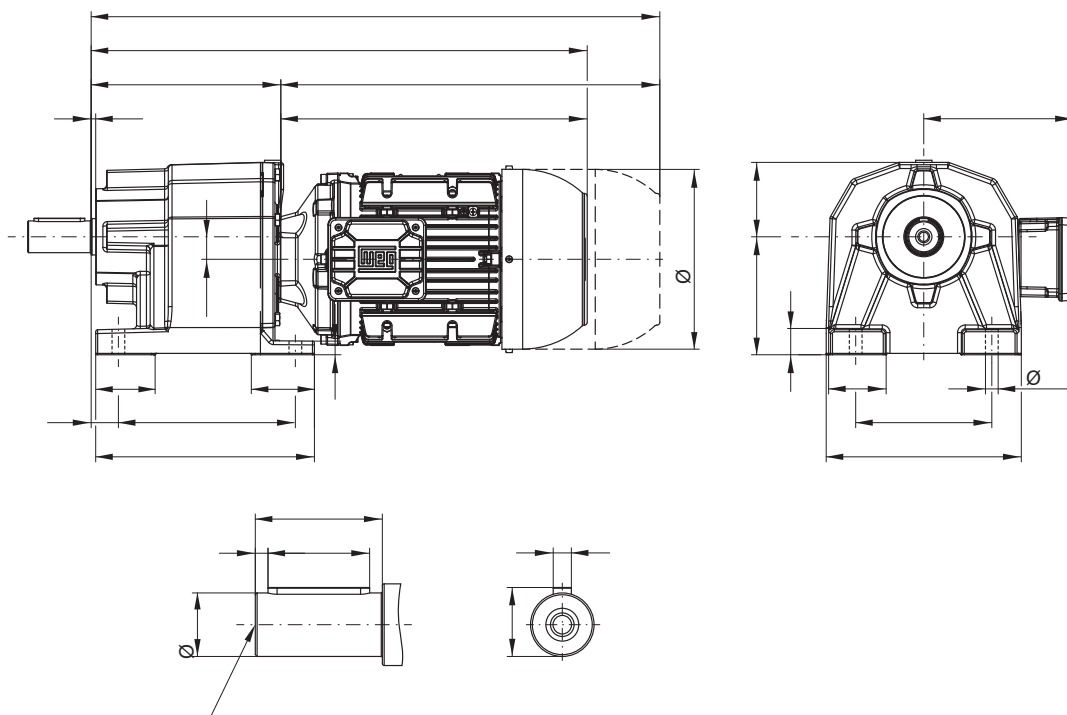
mountable flange sizes on the housing: Ø 160 and Ø 200



Dimensions in mm.

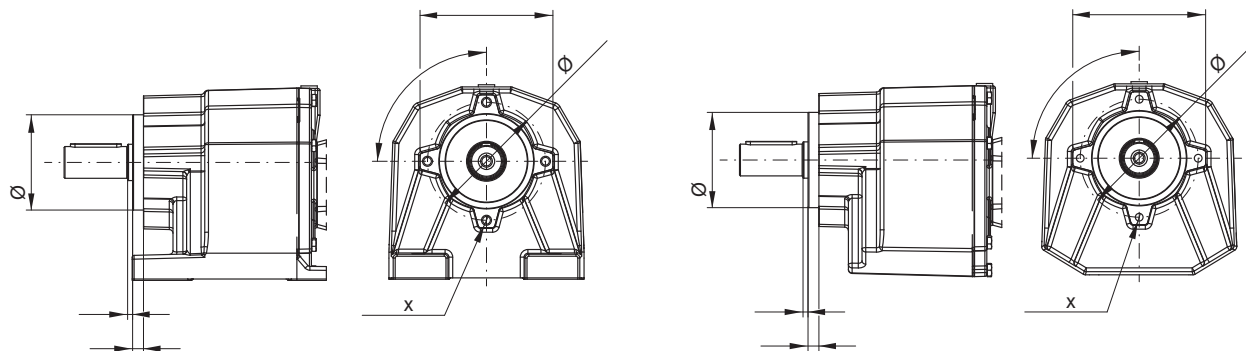
CG06 - Foot mounted

C



CW06 - Foot mounted with B14 flange execution + centring and threaded hole

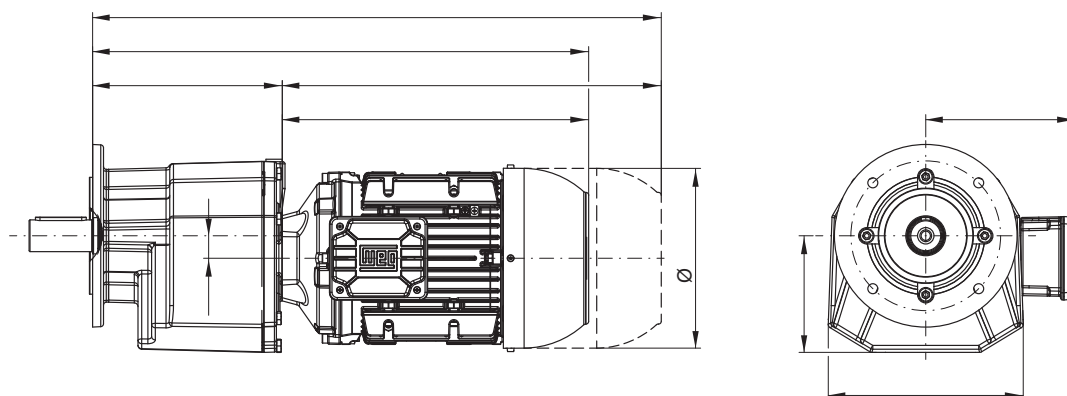
CC06 - B14 flange execution + centring and threaded hole



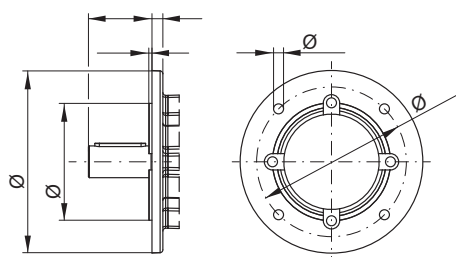
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	413	447	455	479	497	547	585	557	622	660
kB	457	496	513	537	570	631	669	644	740	778
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496
 Description of motor lengths LB and LB1 see page 500

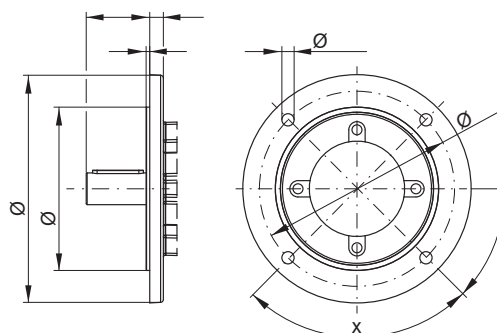
CF06 - Flange execution



Flange Ø 200

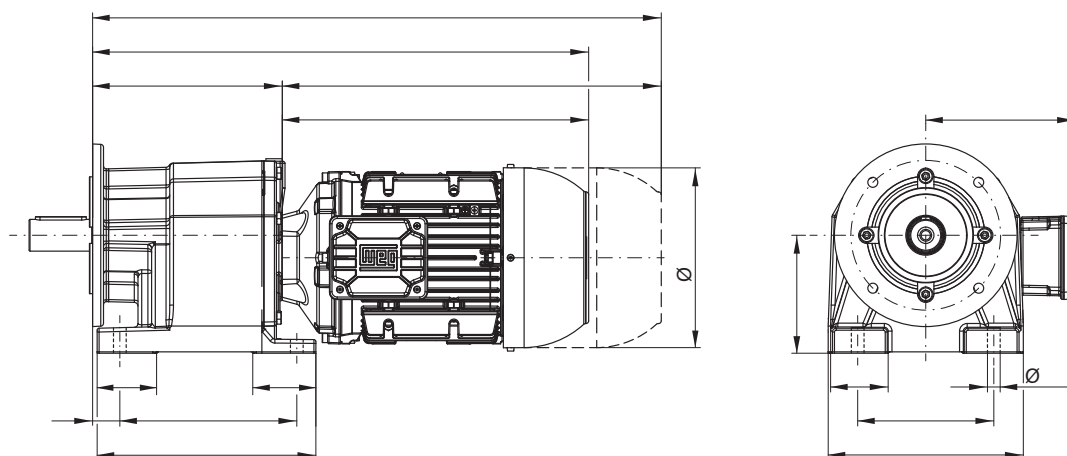


Flange Ø 250



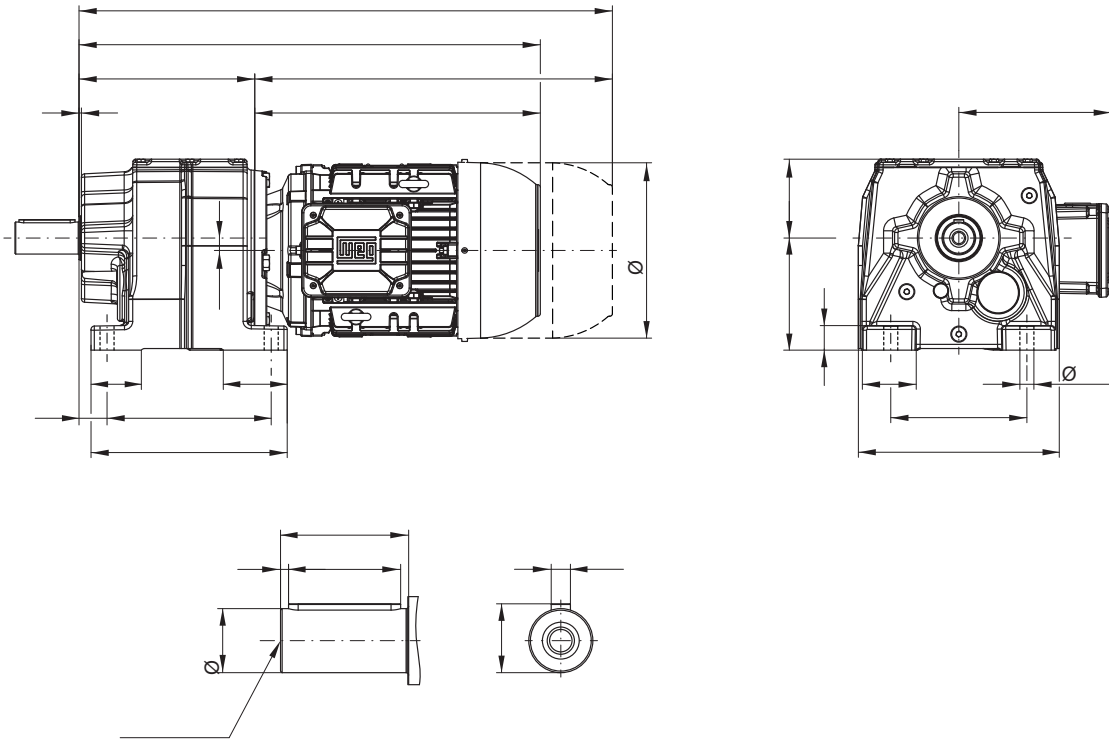
CA06 - Foot mounted and B5 flange execution

mountable flange sizes on the housing: \varnothing 200



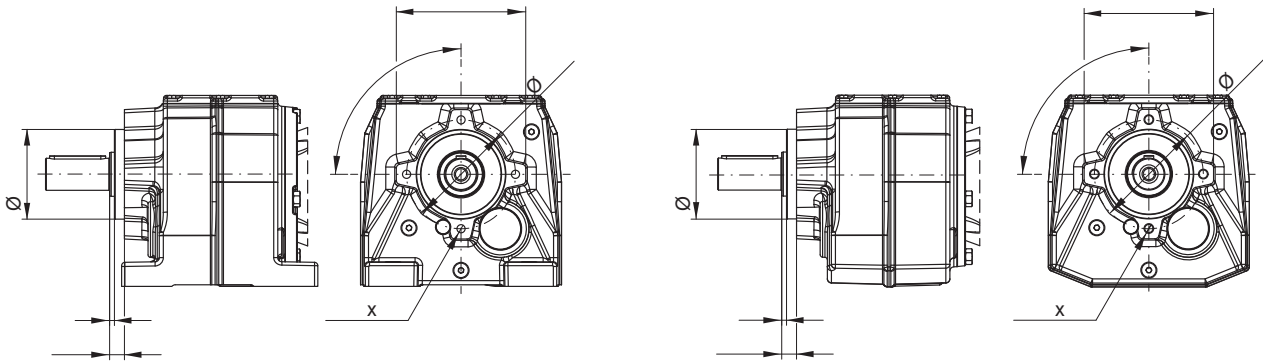
Dimensions in mm.

CG07 - Foot mounted



CW07 - Foot mounted with B14 flange execution + centring and threaded hole

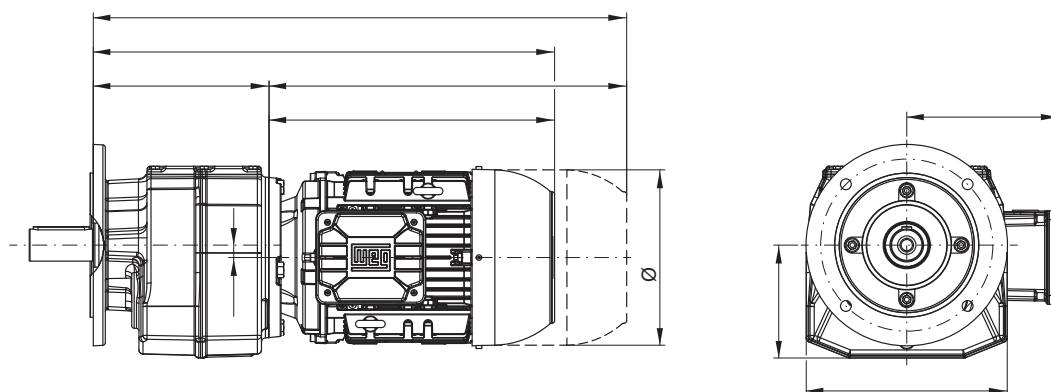
CC07 - B14 flange execution + centring and threaded hole



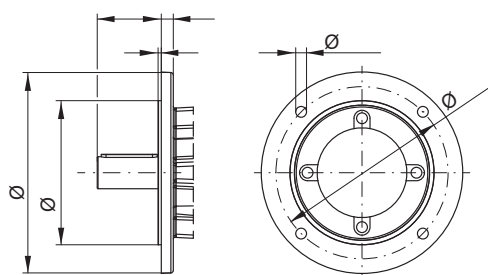
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	424	458	466	490	508	558	596	568	633	671	765	809
kB	468	507	524	548	581	642	680	655	751	789	889	933
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496; Gear unit size C07 corresponds to motor flange FR-200.
Description of motor lengths LB and LB1 see page 500

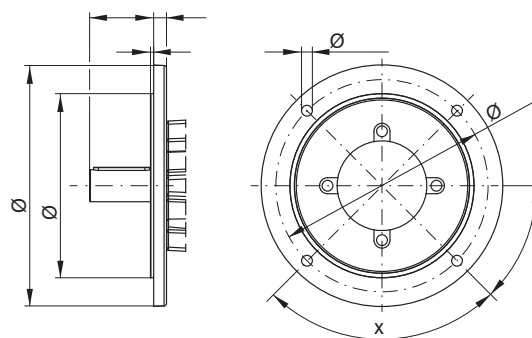
CF07 - Flange execution



Flange Ø 250

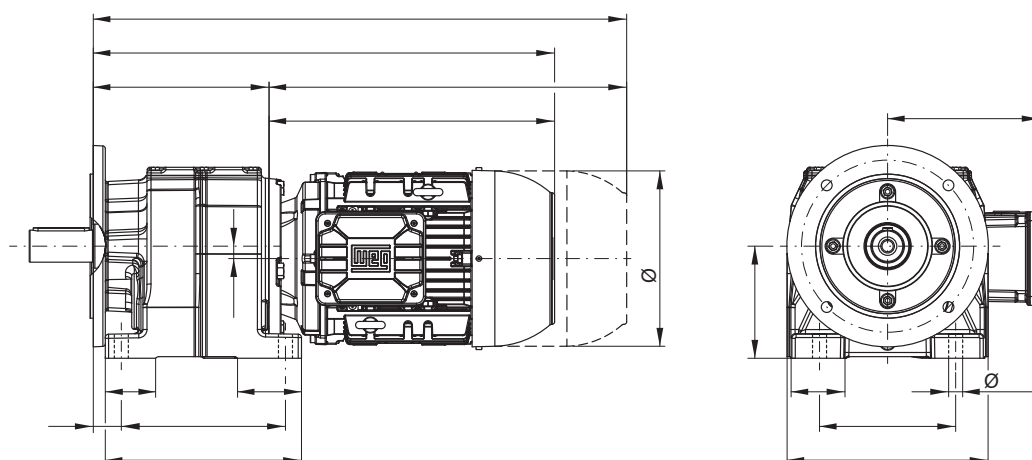


Flange Ø 300



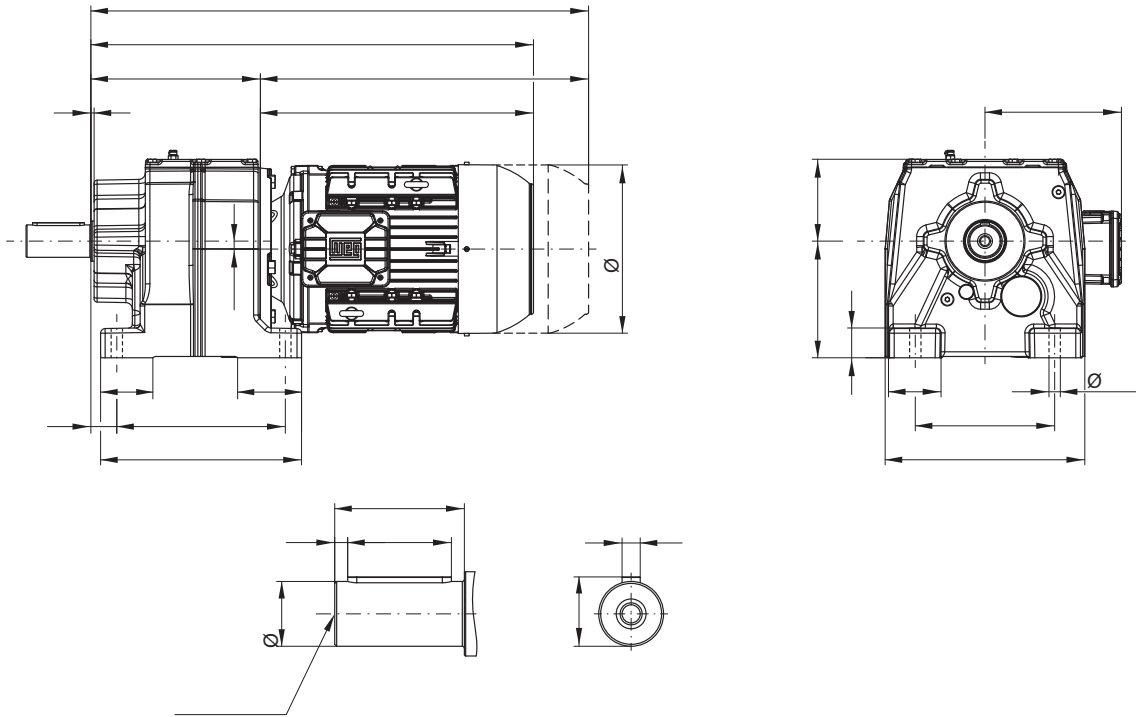
CA07 - Foot mounted and B5 flange execution

mountable flange sizes on the housing: Ø 250



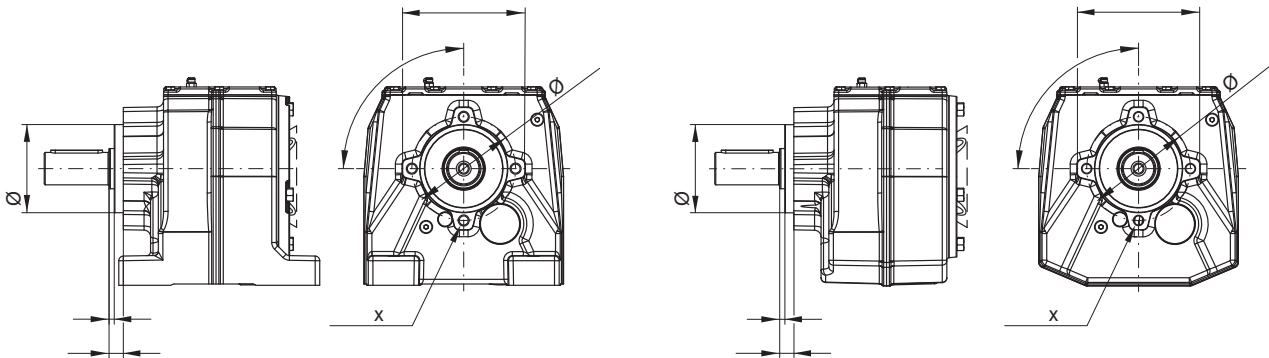
Dimensions in mm.

CG08 - Foot mounted



CW08 - Foot mounted with B14 flange execution + centring and threaded hole

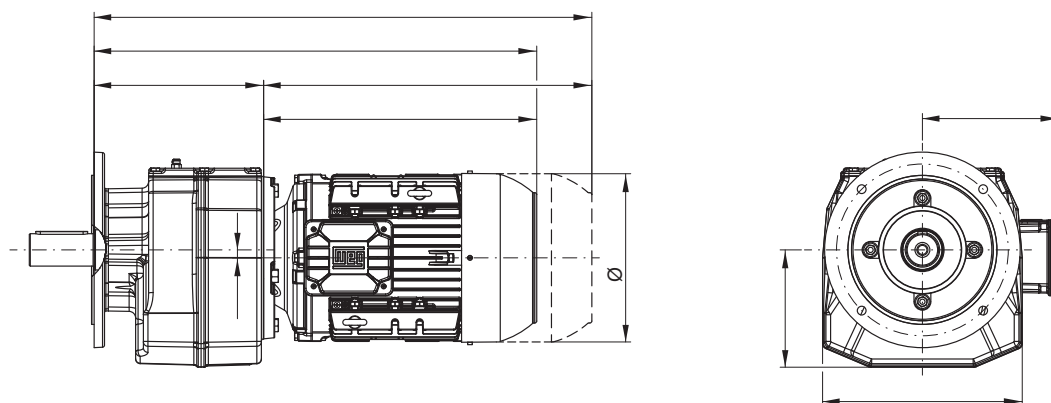
CC08 - B14 flange execution + centring and threaded hole



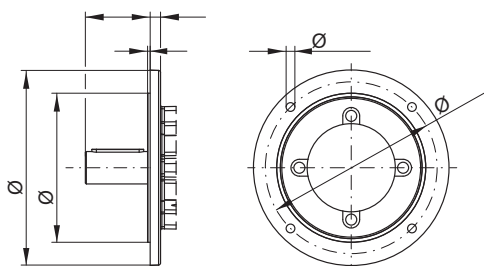
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281
k	466	500	508	532	550	600	638	610	675	713	802	846	870	908
kB	510	549	566	590	623	684	722	697	793	831	926	970	988	1026
LB	204	238	246	270	288	338	376	348	413	451	540	584	608	646
LB1	248	287	304	328	361	422	460	435	531	569	664	708	726	764

Motor dimension sheets see page 496; Gear unit size C08 corresponds to motor flange FR-250.
Description of motor lengths LB and LB1 see page 500

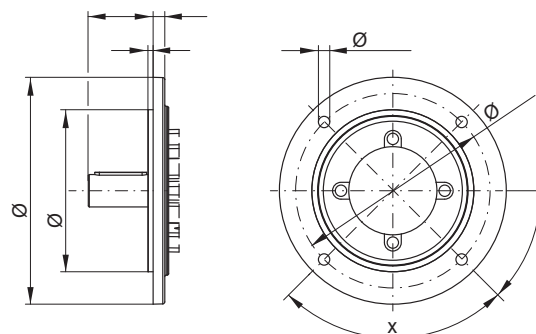
CF08 - Flange execution



Flange Ø 300

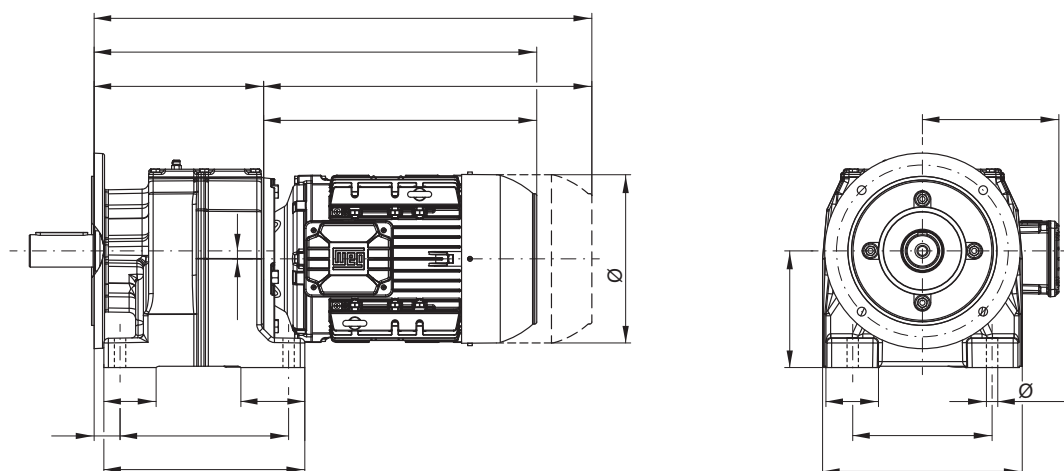


Flange Ø 350



CA08 - Foot mounted and B5 flange execution

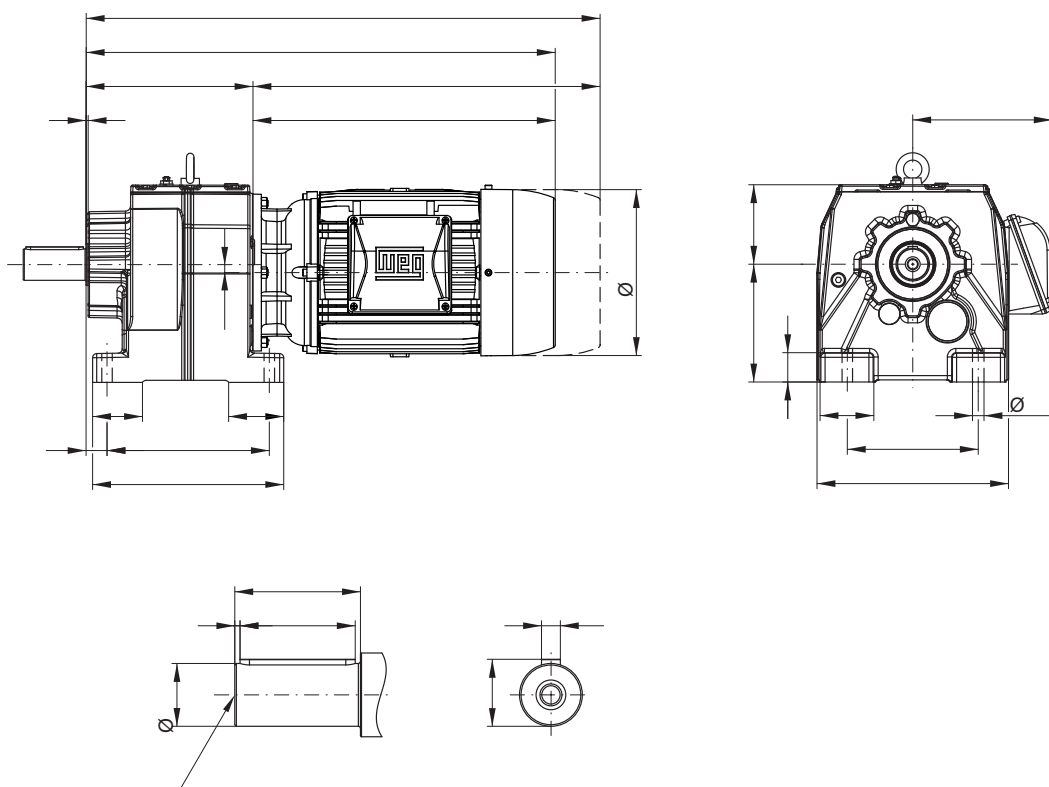
mountable flange sizes on the housing: Ø 300



Dimensions in mm.

CG092 / CG093 - Foot mounted

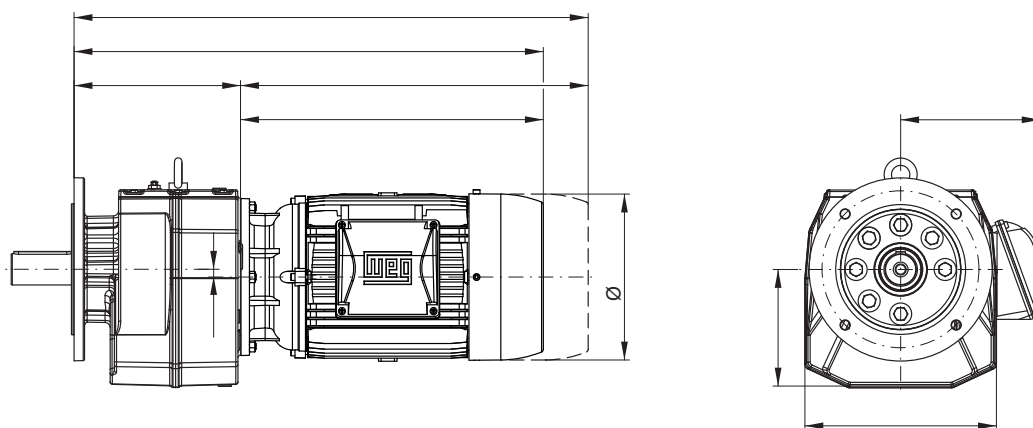
C



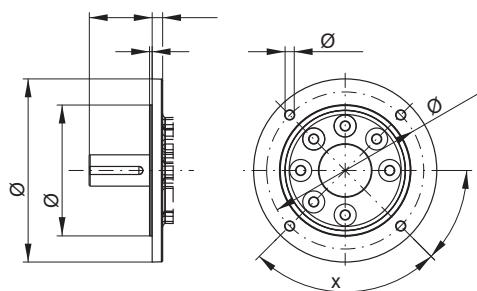
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	523	557	565	589	607	657	695	667	732	770	854	898	922	960	1052
kB	567	606	623	647	680	741	779	754	850	888	978	1022	1040	1078	1178
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 496; Gear unit size C092/C093 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 500

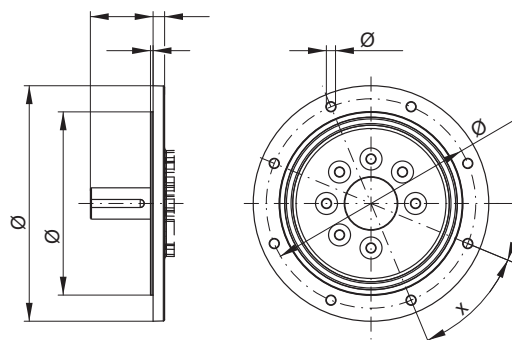
CF092 / CF093 - Flange execution



Flange Ø 350



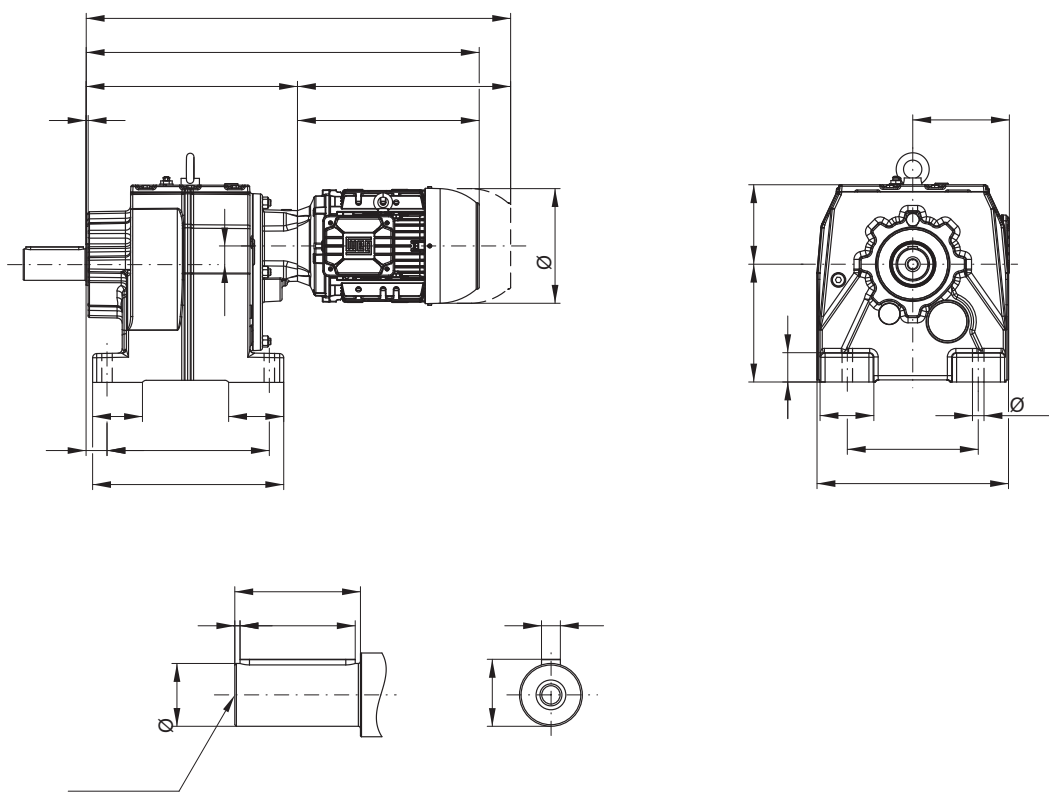
Flange Ø 450



Dimensions in mm.

CG094 - Foot mounted

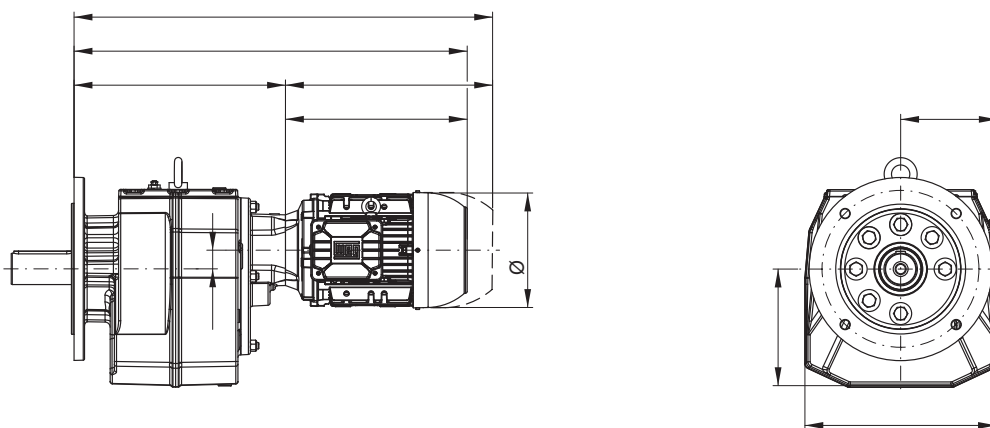
C



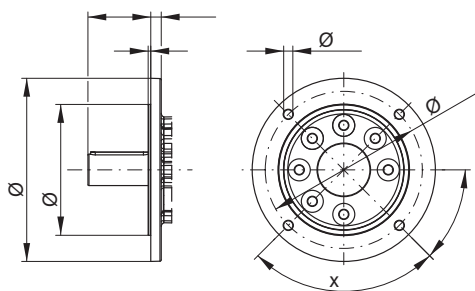
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	608	642	650	674	692	742	780	752	817	855
kB	652	691	708	732	765	826	864	839	935	973
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496; Gear unit size C094 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 500

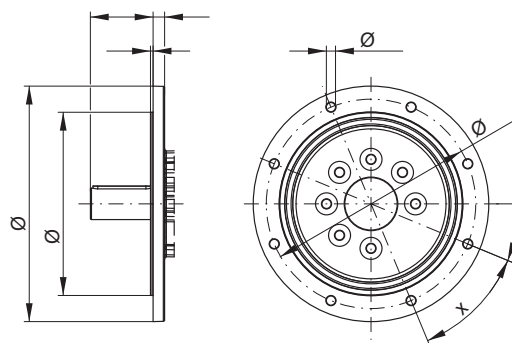
CF094 - Flange execution



Flange Ø 350



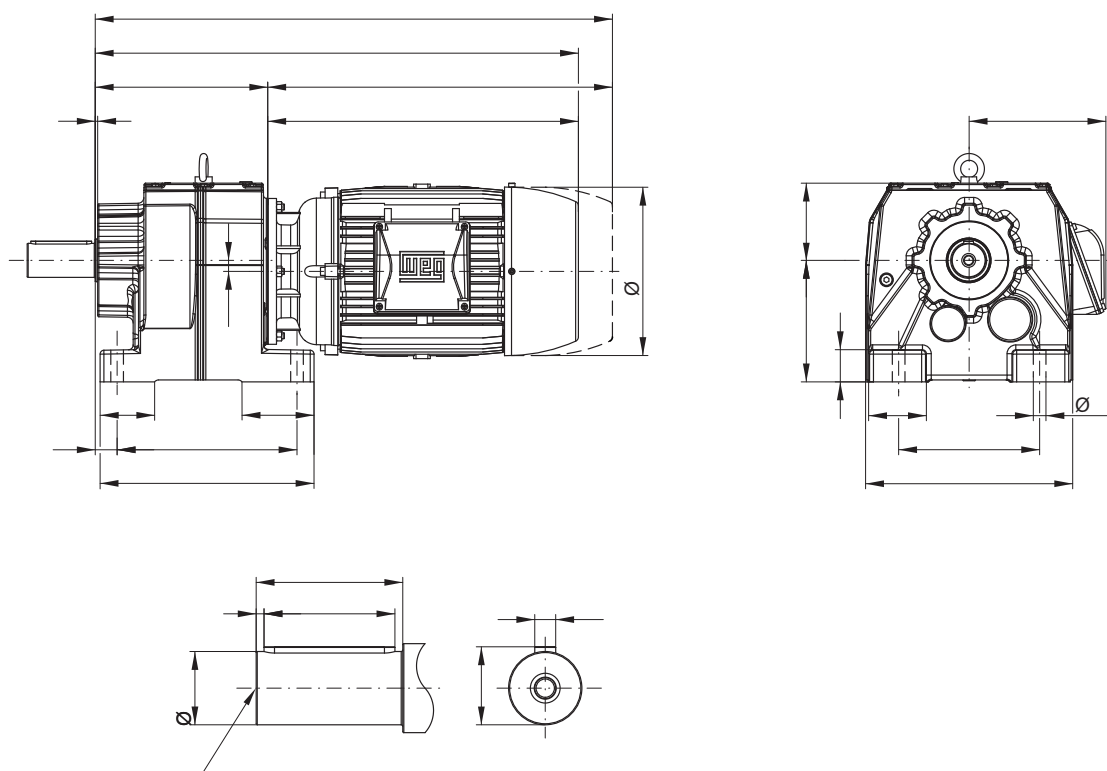
Flange Ø 450



Dimensions in mm.

CG102 / CG103 - Foot mounted

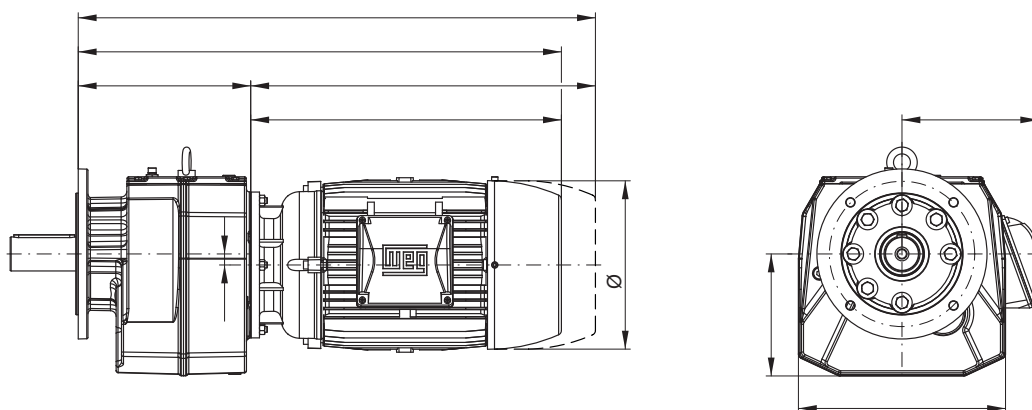
C



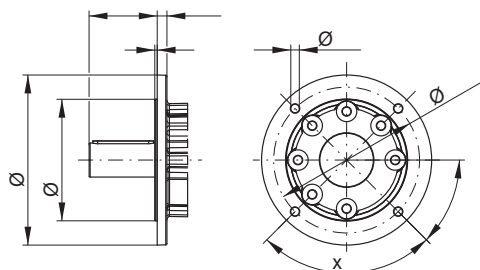
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	559	593	601	625	643	693	731	703	768	806	900	934	958	996	1088
kB	603	642	659	683	716	777	815	790	886	924	1014	1058	1076	1114	1214
LB	204	238	246	270	288	338	376	348	413	451	545	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 496; Gear unit size C102/C103 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 500

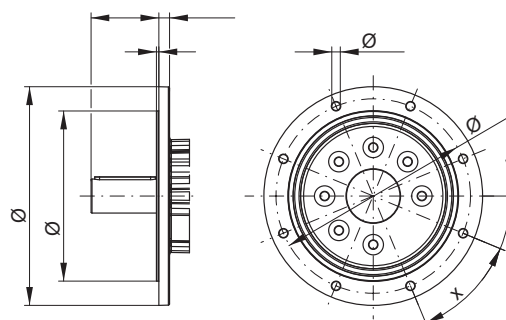
CF102 / CF103 - Flange execution



Flange Ø 350



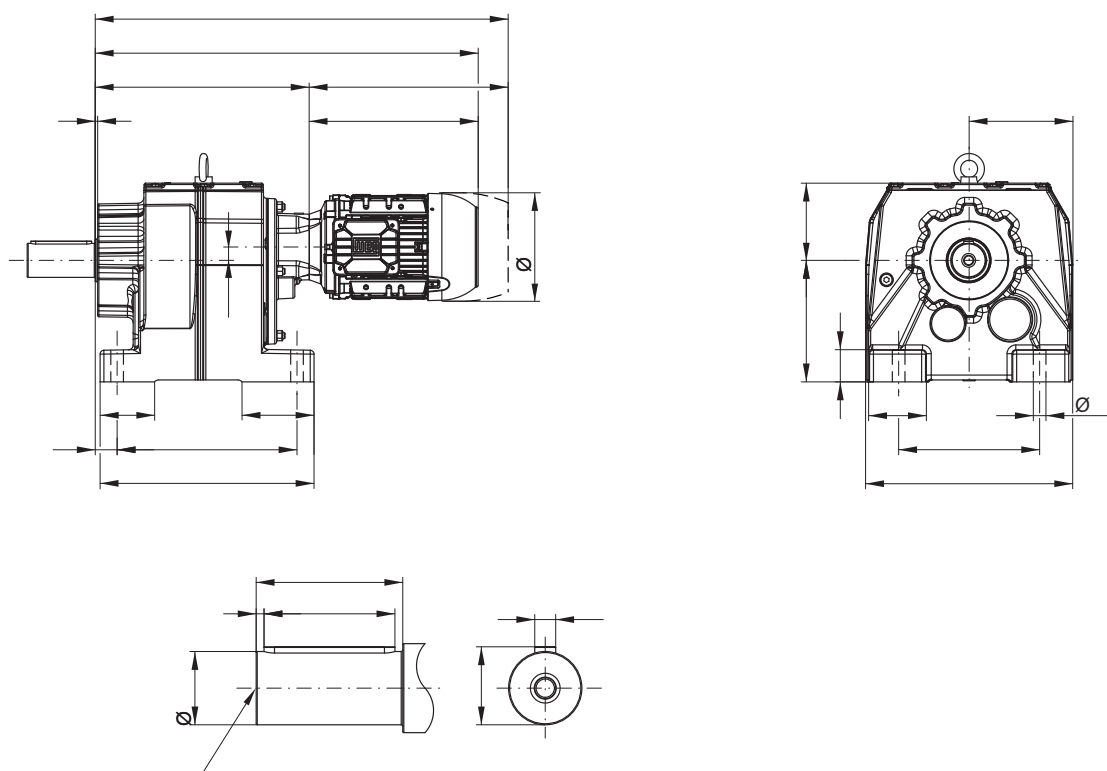
Flange Ø 450



Dimensions in mm.

CG104 - Foot mounted

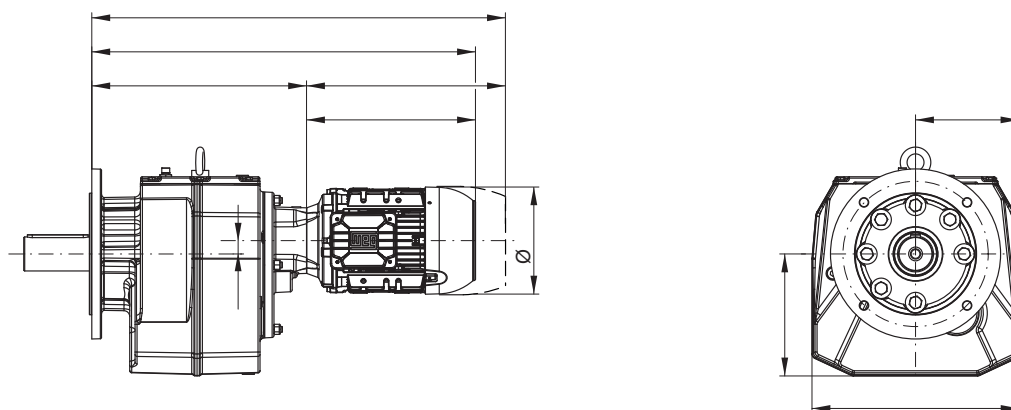
C



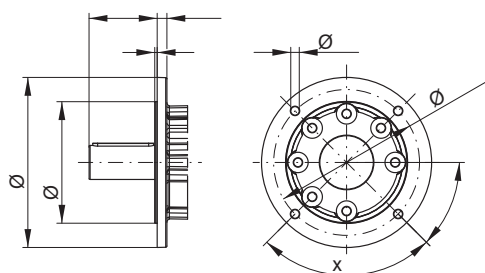
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	644	678	686	710	728	778	816	788	853	891
kB	688	727	744	768	801	862	900	875	971	1009
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496; Gear unit size C104 corresponds to motor flange FR-300.
Description of motor lengths LB and LB1 see page 500

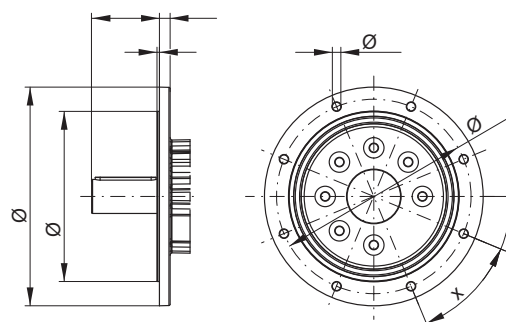
CF104 - Flange execution



Flange Ø 350



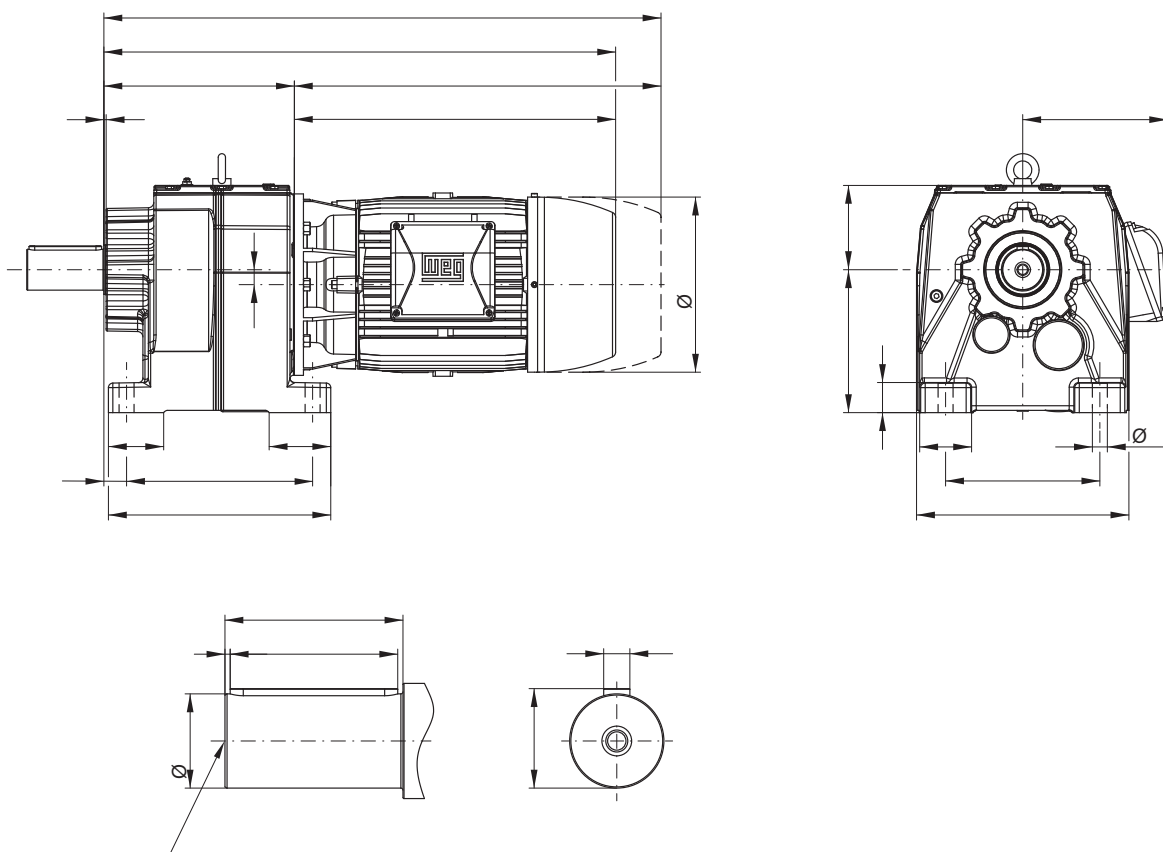
Flange Ø 450



Dimensions in mm.

CG132 / CG133 - Foot mounted

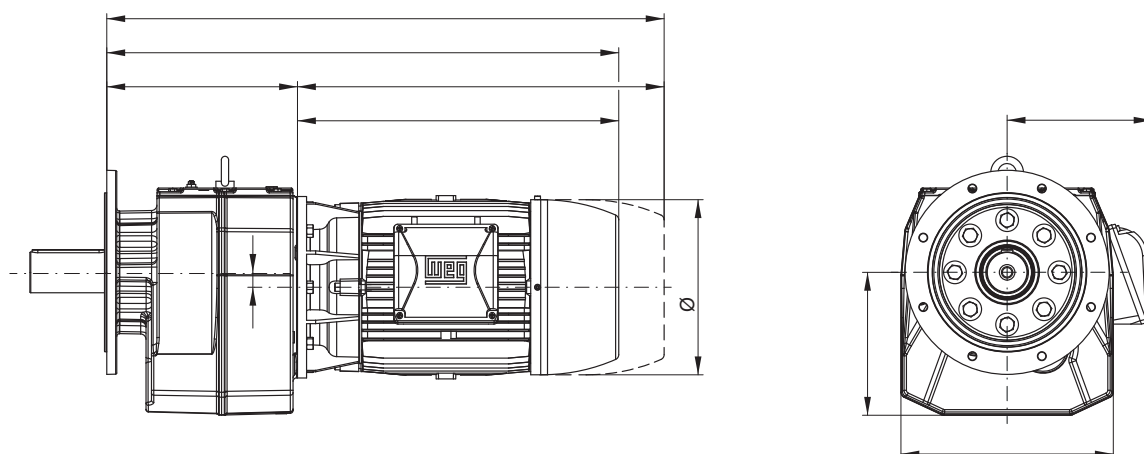
C



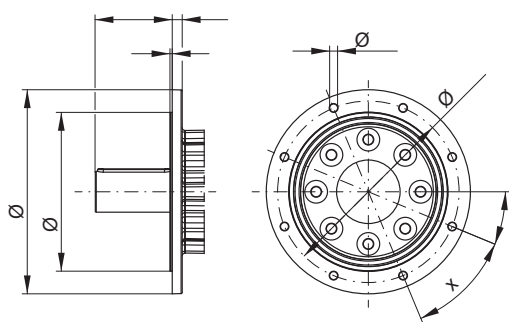
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	768	833	871	942	986	1010	1048	1140	1248
kB	-	-	-	-	-	-	-	855	951	989	1066	1110	1128	1166	1266	1366
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 496; Gear unit size C132/C133 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 500

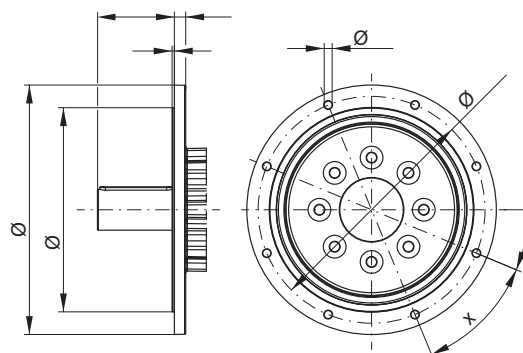
CF132 / CF133 - Flange execution



Flange Ø 450



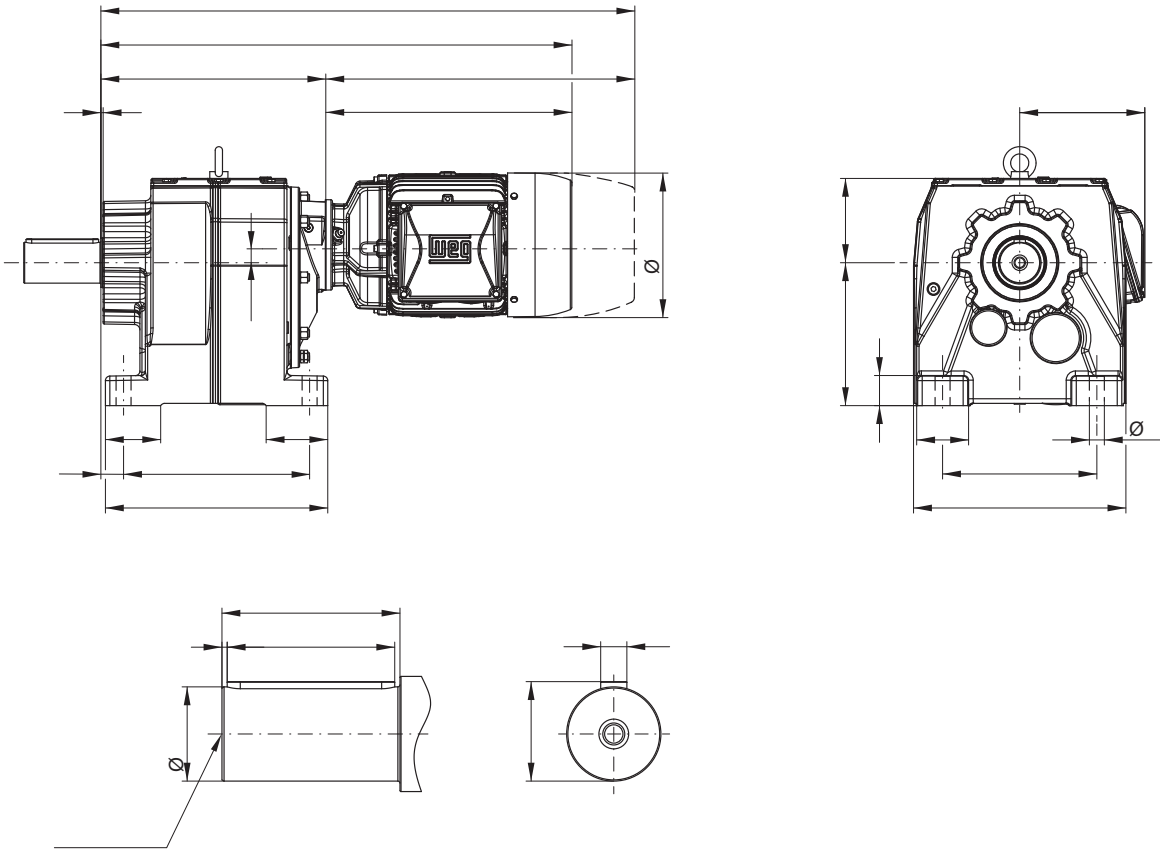
Flange Ø 550



Dimensions in mm.

CG134 - Foot mounted

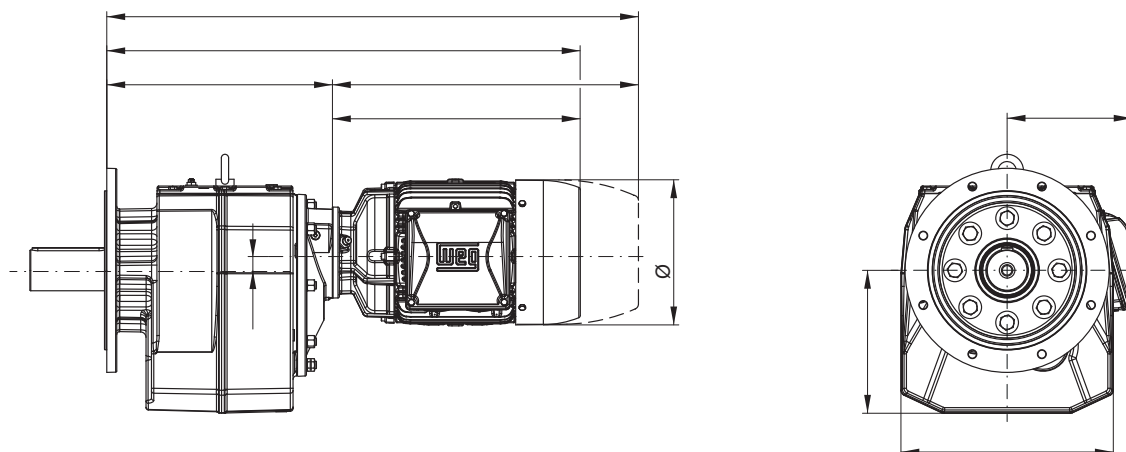
C



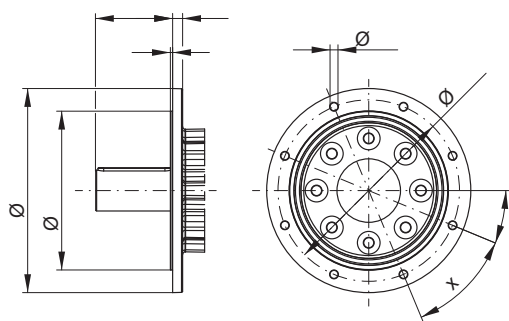
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	701	735	743	767	785	835	873	845	910	948	1042	1086
kB	745	784	801	825	858	919	957	932	1028	1066	1166	1210
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496; Gear unit size C134 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 500

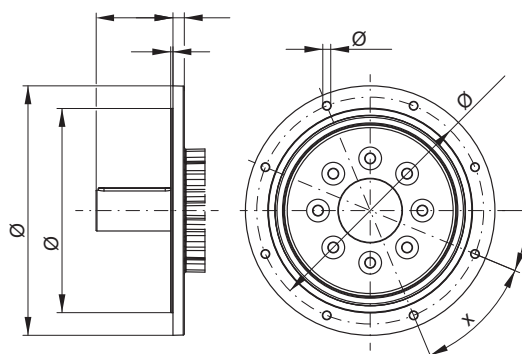
CF134 - Flange execution



Flange Ø 450



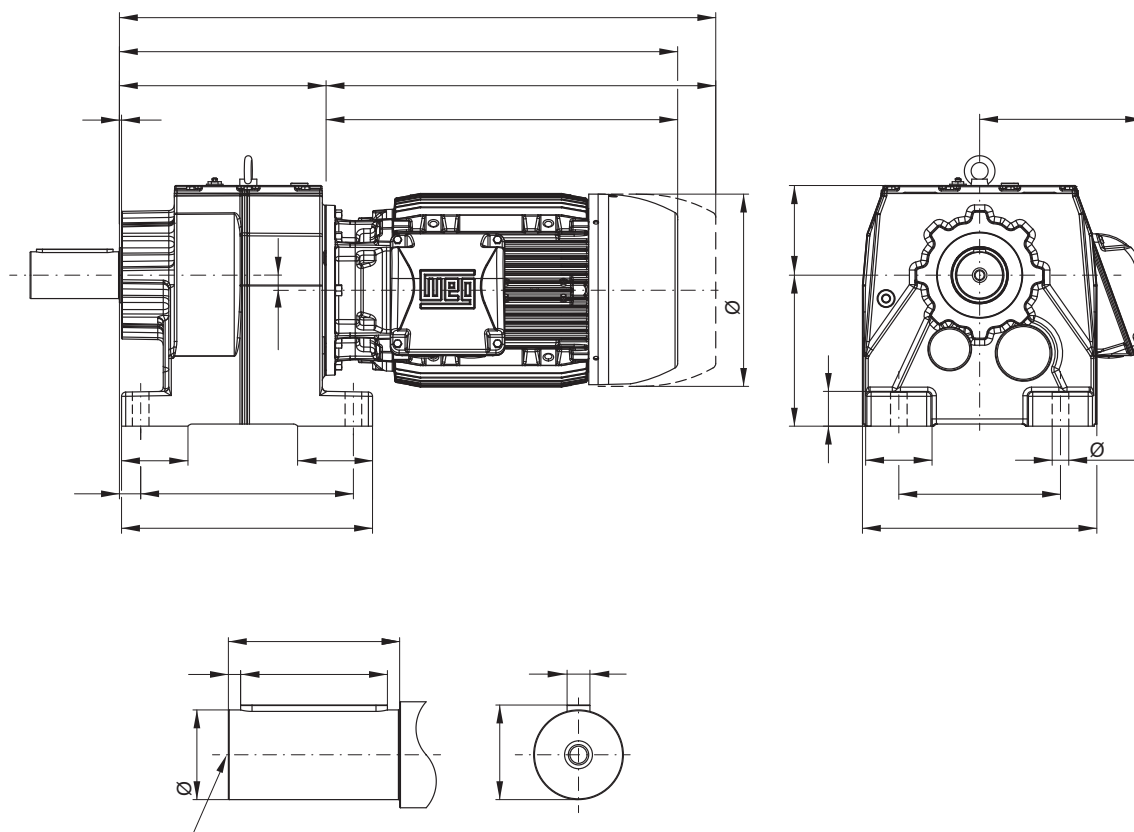
Flange Ø 550



Dimensions in mm.

CG142 / CG143 - Foot mounted

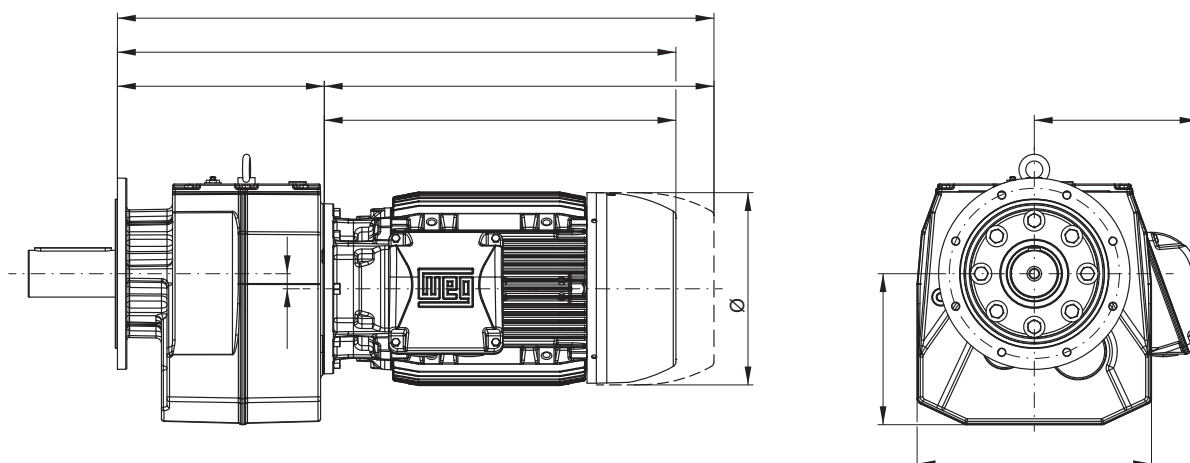
C



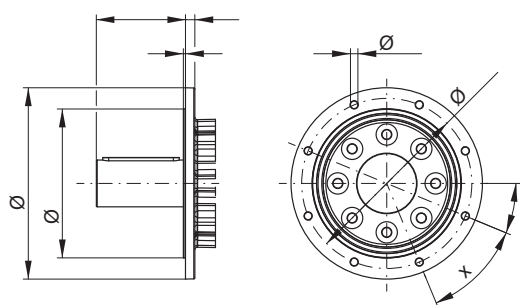
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	834	899	937	1008	1052	1076	1114	1206	1314
kB	-	-	-	-	-	-	-	921	1017	1055	1132	1176	1194	1232	1332	1432
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 496; Gear unit size C142/143 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 500

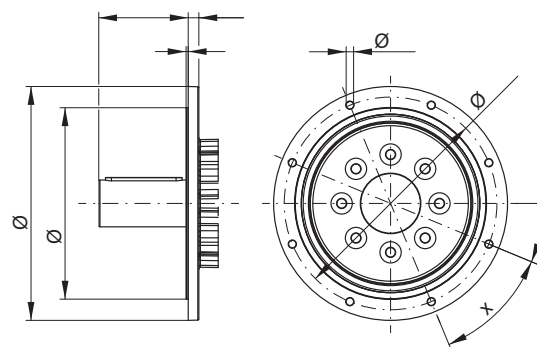
CF142 / CG143 - Flange execution



Flange Ø 450



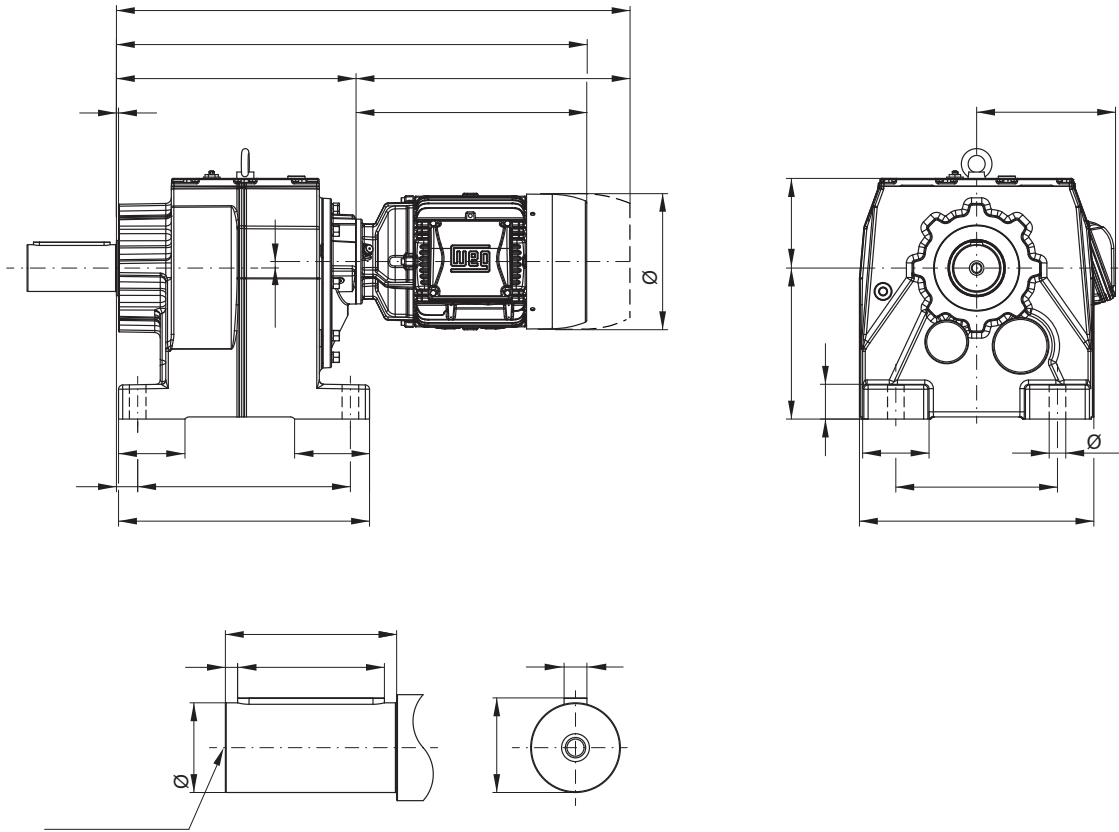
Flange Ø 550



Dimensions in mm.

CG144 - Foot mounted

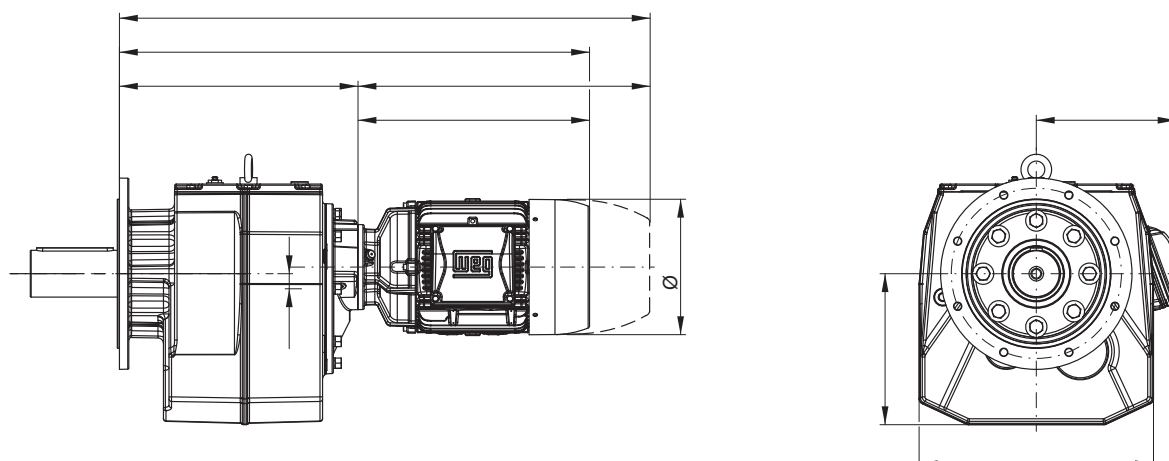
C



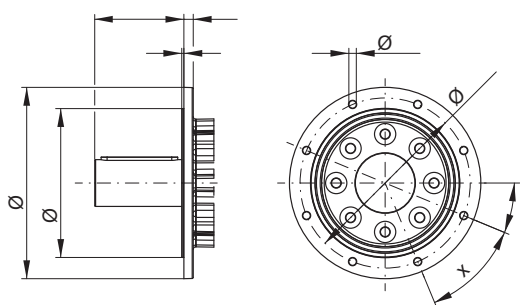
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	767	801	809	833	851	901	939	911	976	1014	1108	1152
kB	811	850	867	891	924	985	1023	998	1094	1132	1232	1276
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496; Gear unit size C144 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 500

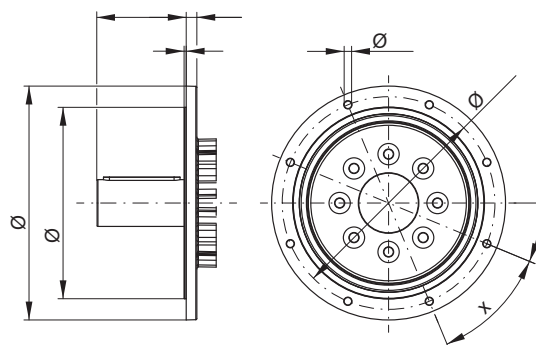
CF144 - Flange execution



Flange Ø 450



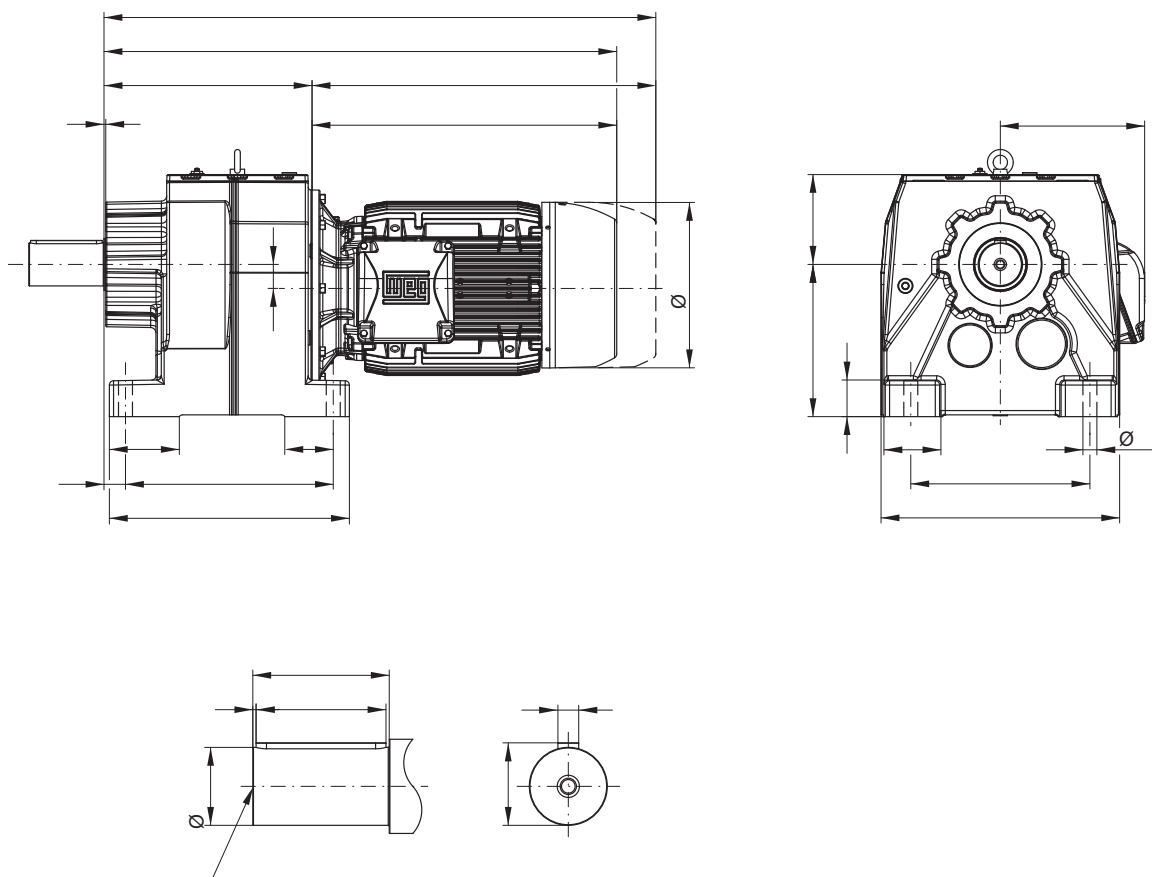
Flange Ø 550



Dimensions in mm.

CG162 / CG163 - Foot mounted

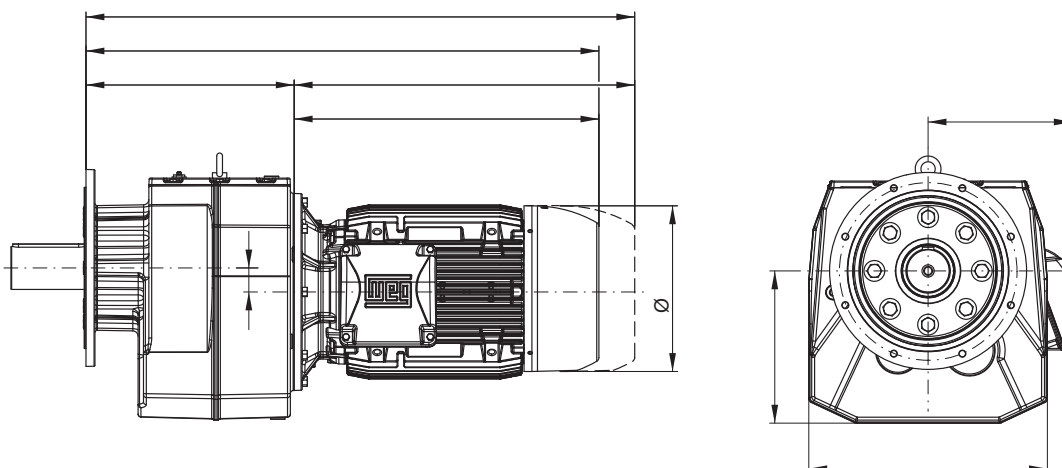
C



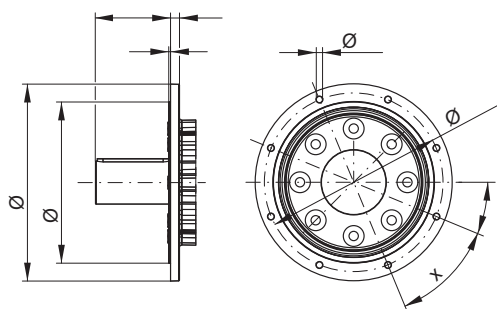
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	250S/M
AC	-	-	-	-	-	-	-	-	-	-	329	329	347	347	386	453	482
AD	-	-	-	-	-	-	-	-	-	-	266	266	281	281	317	385	403
k	-	-	-	-	-	-	-	-	-	-	1087	1131	1155	1193	1285	1393	1432
kB	-	-	-	-	-	-	-	-	-	-	1211	1255	1273	1311	1411	1511	1550
LB	-	-	-	-	-	-	-	-	-	-	506	550	574	612	704	812	851
LB1	-	-	-	-	-	-	-	-	-	-	630	674	692	730	830	930	969

Motor dimension sheets see page 496; Gear unit size C162/C163 corresponds to motor flange FR-550.
Description of motor lengths LB and LB1 see page 500

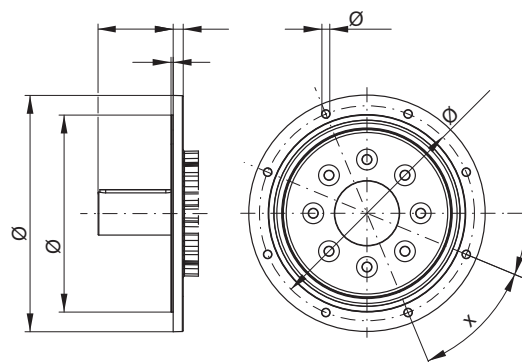
CF162 / CF163 - Flange execution



Flange Ø 550



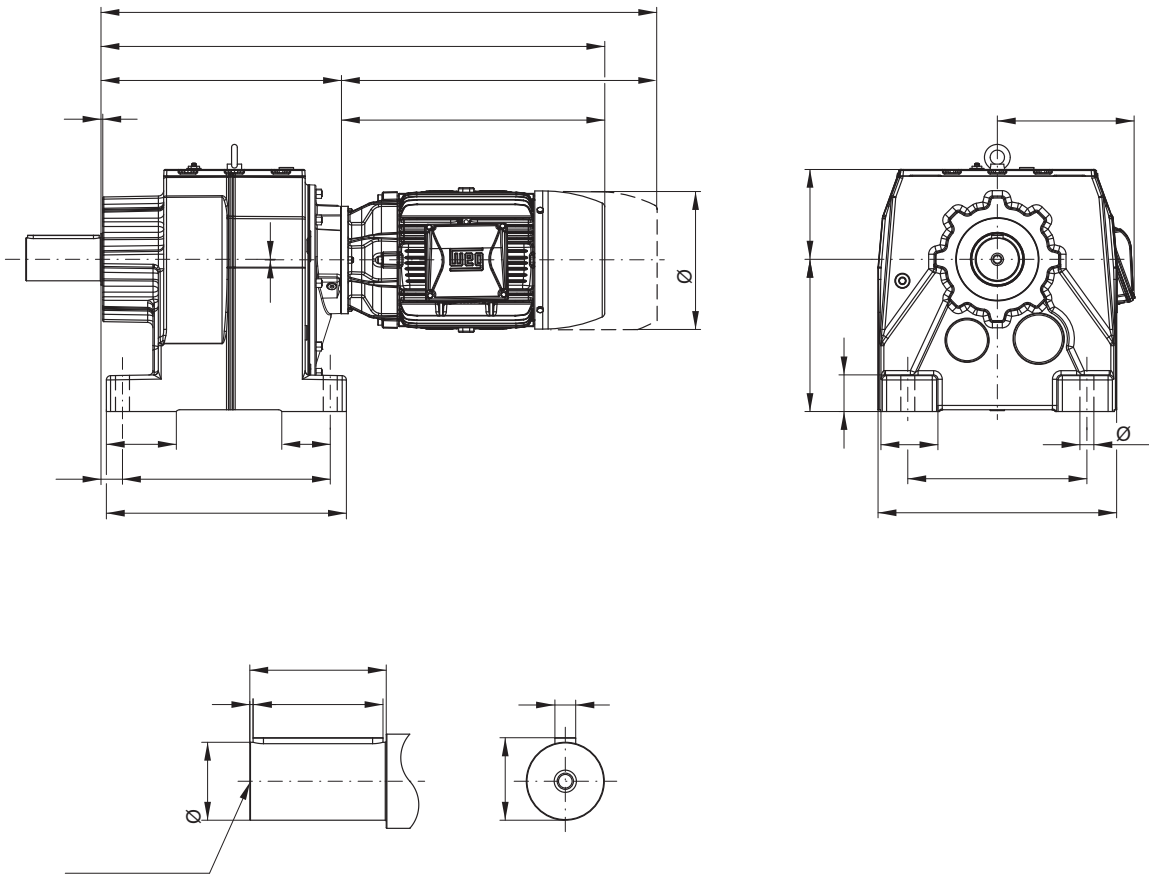
Flange Ø 660



Dimensions in mm.

CG164 - Foot mounted

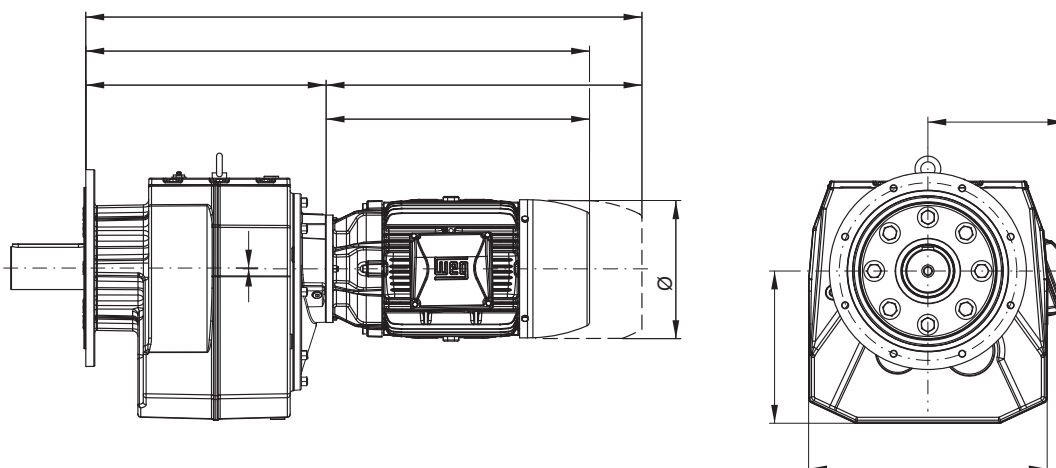
C



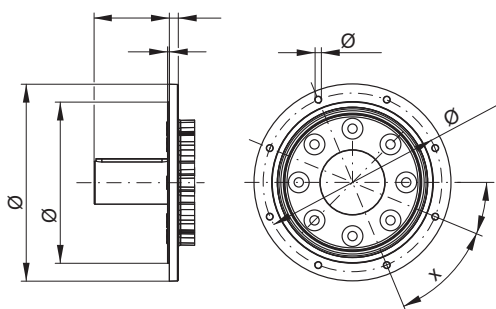
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
kB	916	955	972	996	1029	1090	1128	1103	1199	1237	1327	1371	1389	1427	1527
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 496; Gear unit size C164 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 500

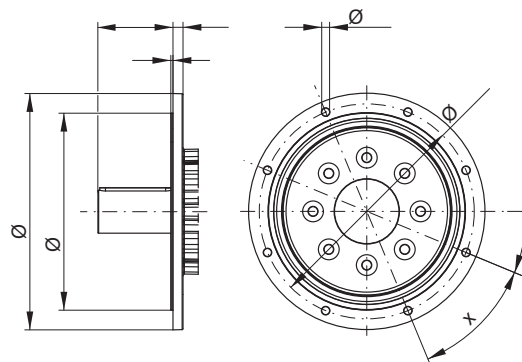
CF164 - Flange execution



Flange Ø 550



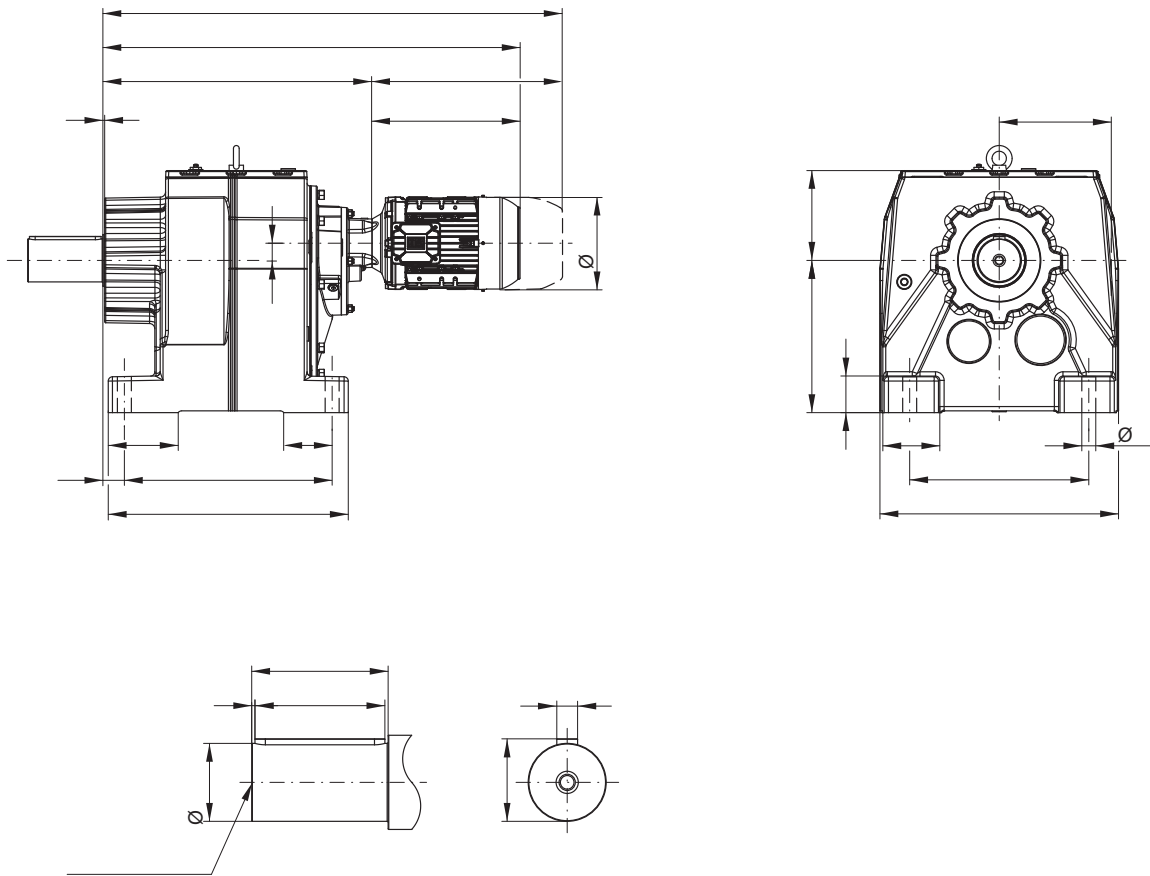
Flange Ø 660



Dimensions in mm.

CG165 - Foot mounted

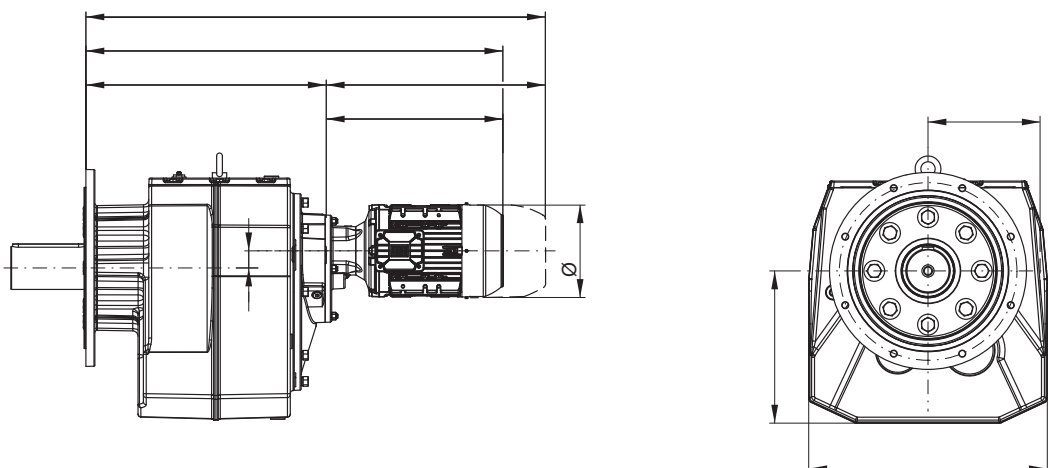
C



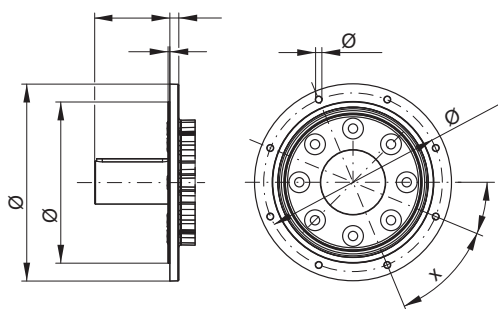
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	955	989	997	1021	1039	1089	1127	1099	1164	1202
kB	999	1038	1055	1079	1112	1173	1211	1186	1282	1320
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496; Gear unit size C165 corresponds to motor flange FR-400.
Description of motor lengths LB and LB1 see page 500

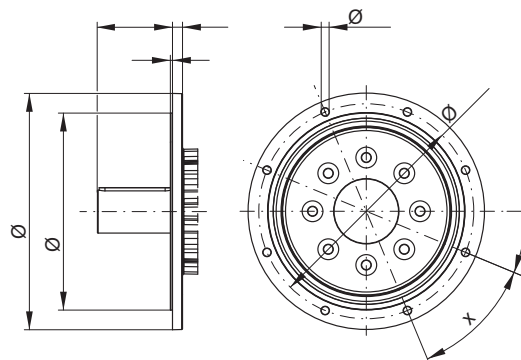
CF165 - Flange execution



Flange Ø 550



Flange Ø 660

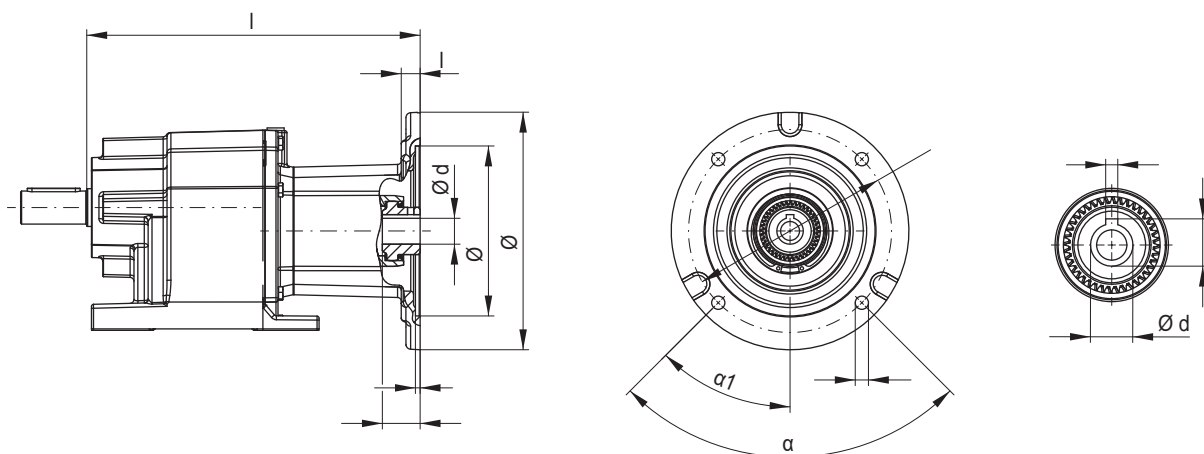


Dimensions in mm.

Dimension sheets Input types



IEC Adapter I63 to I280



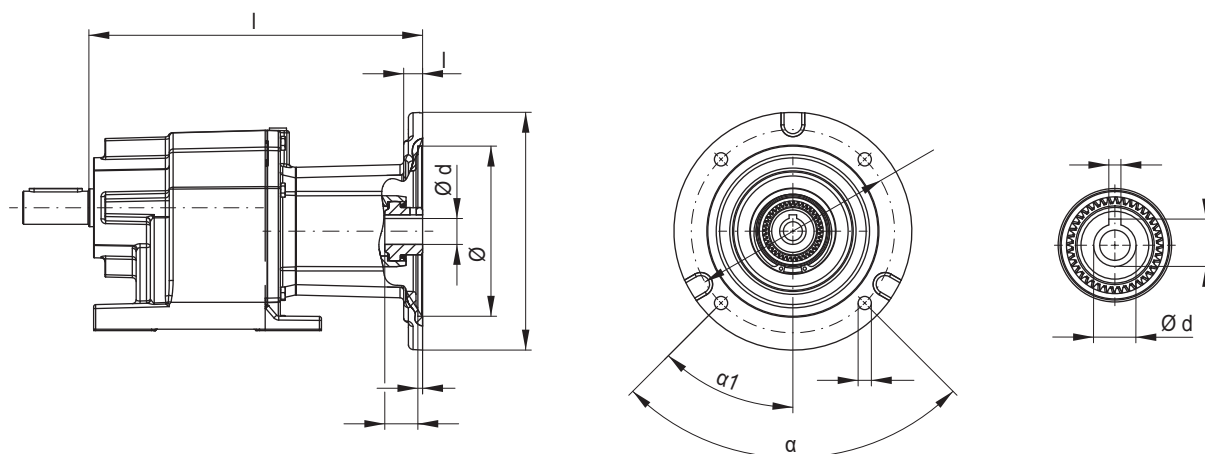
Type	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
p	154	154	200	200	250	250	300	350	350	400	450	550	550
n	95	110	130	130	180	180	230	250	250	300	350	450	450
la	22.5	10	13	13	15	20	15	35	35	20	20	20	20
m	115	130	165	165	215	215	265	300	300	350	400	500	500
t	4.5	4.5	4.5	4.5	5	5	5	5	5	5.5	5	5	5
s	M8x16	M8x10	11	11	13.5	13.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5
α	90	90	90	90	90	90	90	90	90	90	45	45	45
α ₁	35	45	45	45	45	45	45	45	45	45	45	45	45
d	11	14	19	24	28	28	38	42	48	55	60	65	75
f	4	5	6	8	8	8	10	12	14	16	18	18	20
ga	12.8	16.3	21.8	27.3	31.3	31.3	41.3	45.3	51.8	59.3	64.4	69.4	79.9
E ¹⁾	25	32	43	47.5	63	100	85.5	111.5	111.5	114.5	140	146	146

¹⁾ Maximum motor shaft length for motors with key

Gear unit size	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
		l											
C00	150.5	150.5	178.5	-	-	-	-	-	-	-	-	-	-
C01	163	163	191	191	-	-	-	-	-	-	-	-	-
C03	190.5	190.5	218.5	218.5	249.5	-	-	-	-	-	-	-	-
C05	226	226	254	254	285	338	349	-	-	-	-	-	-
C06	241	241	269	269	300	353	364	-	-	-	-	-	-
C07	252.5	252.5	280.5	280.5	311.5	364.5	375.5	461.5	-	-	-	-	-
C08	293.5	293.5	321.5	321.5	352.5	405.5	416.5	498.5	498.5	-	-	-	-
C09	343	343	371	371	402	455	466	550.5	550.5	579	-	-	-
C10	379	379	407	407	438	491	502	586.5	586.5	615	-	-	-
C13	-	-	-	-	-	545.5	556.5	638.5	638.5	667	697	-	-
C14	-	-	-	-	-	611.5	622.5	704.5	704.5	733	763	852	-
C16	-	-	-	-	-	-	-	783.5	783.5	812	842	931	931

Dimensions in mm.

NEMA Adapter N56 to N364

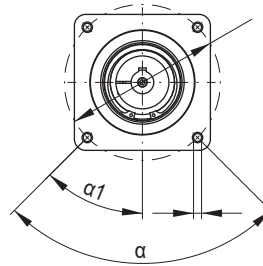
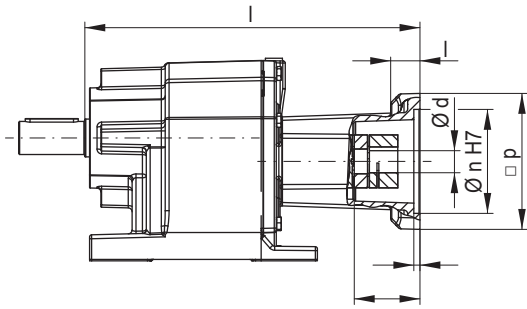


Type	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
p	170	170	250	250	300	225	280	350	400
n	114.3	114.3	215.9	215.9	215.9	215.9	266.7	317.5	317.5
la	13	13	10	16.8	10	30	35	15	15
m	149.225	149.225	184.15	184.15	184.15	184.15	228.6	279.4	279.4
t	4.5	4.5	5	3.2	5	5	3	5	5
s	11	11	14	14	14	14	14	19	19
α	90	90	90	90	90	90	90	90	90
α ₁	45	45	45	45	45	45	45	45	45
d	15.875	22.225	28.575	28.575	34.925	41.275	47.625	53.975	60.325
f	4.775	4.775	6.350	6.350	7.950	9.525	12.700	12.700	15.875
ga	18.008	24.486	31.521	31.521	38.557	45.618	53.238	59.690	67.335
E ¹⁾	55	55	67.5	96.8	80.5	105.5	111.5	109.5	109.5

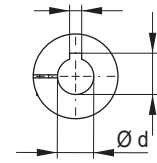
¹⁾ Maximum motor shaft length for motors with key

Gear unit size	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
	l								
C00	178.5	178.5	-	-	-	-	-	-	-
C01	191	191	-	-	-	-	-	-	-
C03	218.5	218.5	249.5	-	-	-	-	-	-
C05	254	254	285	338	349	-	-	-	-
C06	269	269	300	353	364	-	-	-	-
C07	280.5	280.5	311.5	364.5	375.5	461.5	-	-	-
C08	321.5	321.5	352.5	405.5	416.5	498.5	501.5	-	-
C09	371	371	402	455	466	550.5	553.5	601	-
C10	407	407	438	491	502	586.5	589.5	637	-
C13	-	-	-	545.5	556.5	638.5	641.5	689	704.5
C14	-	-	-	611.5	622.5	704.5	707.5	755	770.5
C16	-	-	-	-	-	783.5	786.5	849.5	849.5

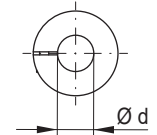
SERVO Adapter S92 to S190



Shaft with key



Smooth shaft



Type	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190									
p	101	144	144	144	144	144	144	197	197	197									
n	80	95	95	110	110	110	130	114.3	130	180									
la	17.5	31	31	31	31	31	31	35	32	38									
m	100	115	130	130	145	165	165	200	215	215									
t	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5									
s	M6x12	M8x16	M8x16	M8x16	M8x16	M8x16	M8x16	13.5	15	15									
alpha	90°	90°	90°	90°	90°	90°	90°	90°	90°	90°									
alpha_1	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°									
d ¹⁾	14	16	19	19	19	22	24	28	24	24	32	35	32	38	38				
f	5	5	6	6	6	8	8	8	8	8	10	10	10	10	10				
ga	16.3	18.3	21.8	21.8	21.8	27.3	21.8	27.3	21.8	24.8	27.3	31.3	27.3	27.3	35.3	38.3	35.3	41.3	41.3
E ²⁾	46	46	34	67	67	54	67	54	76	63	63	63	54	63	63	66	74	60	87
E ³⁾	46	46	46	67	67	67	67	67	76	76	76	63	67	76	63	87	74	60	87

¹⁾ Other shaft diameters on request

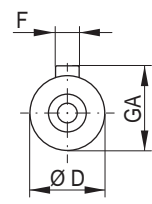
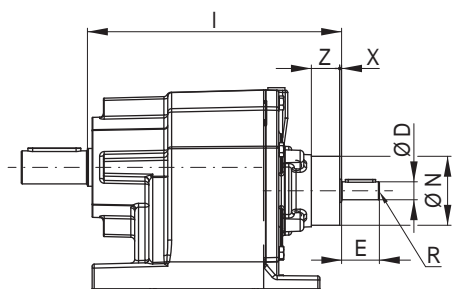
²⁾ Maximum motor shaft length for motors with key

³⁾ Maximum motor shaft length for motors with smooth shaft

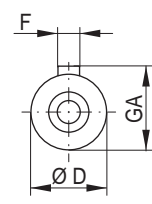
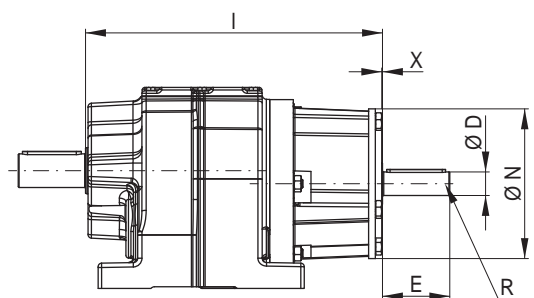
Gear unit size	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190
	I									
C00	216	264	264	264	264	264	264	-	-	-
C01	228.5	276.5	276.5	276.5	276.5	276.5	276.5	-	-	-
C03	256	304	304	304	304	304	304	-	-	-
C05	291.5	339.5	339.5	339.5	339.5	339.5	339.5	410	404	431
C06	306.5	354.5	354.5	354.5	354.5	354.5	354.5	425	419	446
C07	318	366	366	366	366	366	366	436.5	430.5	457.5
C08	359	407	407	407	407	407	407	477.5	471.5	498.5
C09	408.5	456.5	456.5	456.5	456.5	456.5	456.5	527	521	548
C10	444.5	492.5	492.5	492.5	492.5	492.5	492.5	563	557	584
C13	-	-	-	-	-	-	-	617.5	611.5	638.5
C14	-	-	-	-	-	-	-	683.5	677.5	704.5
C16	-	-	-	-	-	-	-	-	-	-

Dimensions in mm.

Input Unit U2, U3



Input Unit U5, U6, U7



Type	Input shaft [mm]						
	19x40	24x50	28x60	38x80	42x110	48x110	55x110
	U2	U3	U5			U6	U7
D	19	24	28	38	42	48	55
F	6	8	8	10	12	14	16
GA	21.5	27	31	41	45	51.5	59
E	40	50	60	80	110	110	110
N	73	101	178			235	290
X	2	2.5	1.9			6.5	4
Z	3	35	-			-	-
R	M6	M10	M10	M12	M16	M16	M20

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	< Ø 55 mm	k6
	≥ Ø 55 mm	m6

Gear unit size	Input shaft [mm]				
	19x40	24x50	28x60 38x80 42x110	48x110	55x110
	U2	U3	U5	U6	U7
	I				
C00	178.5	-	-	-	-
C01	191	-	-	-	-
C03	218.5	-	-	-	-
C05	254	286	-	-	-
C06	269	301	-	-	-
C07	280.5	312.5	355	-	-
C08	321.5	353.5	392	-	-
C09	371	403	444	466	-
C10	407	439	480	502	-
C13	-	493.5	532	554	623
C14	-	559.5	598	620	689
C16	-	-	677	699	768



Parallel shaft gear units and
Parallel shaft geared motors F

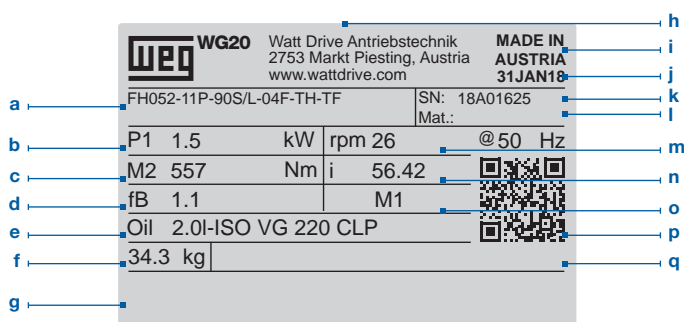


Technical Data

Size	F02	F03	F04	F05	F06	F07	F08	F09	F10	F12	F15
Power [kW]	0.12 - 1.5	0.12 - 3	0.12 - 3	0.12 - 9.2	0.12 - 15	0.12 - 15	0.12 - 22	0.12 - 37	0.12 - 55	0.12 - 55	0.12 - 75
Torque [Nm]	130	220	400	600	820	1500	3000	4500	8000	13000	18000
Ratio	3.93	3.85	4.26	4.98	4.41	4.29	4.09	4.16	4.38	4.64	5.84
	97.85	70.17	422.98	487.67	412.64	385.37	3836.13	3086.96	2276.77	2307.03	24805.81
Number of stages	2	2	2 / 3	2 / 3	2 / 3	2 / 3	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4	2 / 3 / 4 / 5
Housing material	aluminium					cast iron					
Solid shaft	Type	with key acc. to DIN 6885.1 and threaded bore acc. to DIN 332 sheet 2									
	Tolerance	< Ø 55: k6 / ≥ Ø 55: m6									
	Material	standard: C45E (1.1191) / stainless steel on request									
Hollow shaft	Type	with key acc. to DIN 6885.1									
	Tolerance	H7									
	Material	standard: C45E (1.1191) / stainless steel on request									
Flanges	Tolerance	centring ≤ 250: j6 / > 250: h6 acc. to DIN EN 50347									
	Material	cast iron									
Gear wheels	Type	honed - designed and produced according to DIN 3990/3991 - Q7									
	Material	16MnCr5 (1.7131) case hardened – minimum 58HRC									
Shaft seals	Type	type AS acc. to DIN 3760									
	Material	standard NBR / special FKM									
Bearing	standard / reinforced										
Lubricants	Type	standard CLP 220 / special CLP HC 220									
	Quantity	depending on mounting position									
Axle height	acc. to DIN 747: ≤ 50: -0.4; > 50 to ≤ 250: -0.5; > 250: -1										

General information

1. Nameplate



a	Type code	j	Production date
b	Motor power	k	Serial number
c	Output torque	l	Material number
d	Service factor	m	Output speed and Frequency
e	Type and quantity of lubricant	n	Total gear ratio
f	Weight	o	Mounting position
g	Space for ATEX code (if applicable)	p	QR-Code linked online to additional information
h	Manufacturer address	q	Space for additional information
i	Country of origin		

2. Type code

FH073-EX-11P-90S/L-04F ...

1 2 3 4 5 6 7 8 9 10

FH073-EX-I112-HT

1 2 3 4 5 11 12

1	Type:	F = Parallel shaft gear unit																																																								
2	Design:	B = Output shaft on both sides D = Hollow shaft with shrink disc F = B5 flange execution with output shaft H = Hollow shaft O = B5 flange execution with hollow shaft P = B5 flange execution with hollow shaft and shrink disc S = Output shaft T = Hollow shaft with rubber buffer U = Hollow shaft with shrink disc and rubber buffer																																																								
3	Size:	02 03 04 05 06 07 08 09 10 12 15																																																								
4	Number of stages:	2 = 2 gear stages 3 = 3 gear stages 4 = 4 gear stages 5 = 5 gear stages																																																								
5	ATEX execution:	when operated in explosive atmospheres, see page 15																																																								
6	Motor type:	14P = Integral motor aluminium IE3 11P = Integral motor aluminium IE3 22P = Integral motor cast iron IE3																																																								
7	Motor frame size:	63 71 80 L80 90S/L 100L L100L 112M 132S 132M L132M 160M 160L 180M 180L 200L 225S/M 250S/M																																																								
8	Number of poles:	04 = 4 poles 06 = 6 poles																																																								
9	Power indicator:	D E F G																																																								
10	Motor modules:	see from page 501																																																								
11	Adapters, Input unit:	<table border="0" style="width: 100%;"> <tr> <td>IEC adapter</td> <td>I63</td> <td>I71</td> <td>I80</td> <td>I90</td> <td>I100</td> <td>I112</td> <td>I132</td> </tr> <tr> <td></td> <td>I160</td> <td>I180</td> <td>I200</td> <td>I225</td> <td>I250</td> <td>I280</td> <td></td> </tr> <tr> <td>NEMA adapter</td> <td>N56</td> <td>N143</td> <td>N182</td> <td>N184</td> <td>N213</td> <td></td> <td></td> </tr> <tr> <td></td> <td>N254</td> <td>N284</td> <td>N324</td> <td>N364</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SERVO adapter</td> <td>S92</td> <td>S105</td> <td>S114</td> <td>S115</td> <td>S130</td> <td></td> <td></td> </tr> <tr> <td></td> <td>S141</td> <td>S142</td> <td>S180</td> <td>S189</td> <td>S190</td> <td></td> <td></td> </tr> <tr> <td>Input unit</td> <td>U2</td> <td>U3</td> <td>U5</td> <td>U6</td> <td>U7</td> <td></td> <td></td> </tr> </table> Direct mounting (IEC): IEC63 IEC71 IEC80 IEC90 IEC100 IEC112 IEC132 IEC160 IEC180 IEC200 IEC225 IEC250	IEC adapter	I63	I71	I80	I90	I100	I112	I132		I160	I180	I200	I225	I250	I280		NEMA adapter	N56	N143	N182	N184	N213				N254	N284	N324	N364				SERVO adapter	S92	S105	S114	S115	S130				S141	S142	S180	S189	S190			Input unit	U2	U3	U5	U6	U7		
IEC adapter	I63	I71	I80	I90	I100	I112	I132																																																			
	I160	I180	I200	I225	I250	I280																																																				
NEMA adapter	N56	N143	N182	N184	N213																																																					
	N254	N284	N324	N364																																																						
SERVO adapter	S92	S105	S114	S115	S130																																																					
	S141	S142	S180	S189	S190																																																					
Input unit	U2	U3	U5	U6	U7																																																					
12	High/Low temperature execution:	HT LT																																																								

Type code Motor see page 477

3. Range

Size	F02	F03	F04	F05	F06	F07	F08	F09	F10	F12	F15
Housing material	Aluminium				Cast iron						

4. Design

B	Output shaft on both sides	P	B5 flange execution with hollow shaft and shrink disc
D	Hollow shaft with shrink disc	S	Output shaft
F	B5 flange execution with output shaft	T	Hollow shaft with rubber buffer
H	Hollow shaft	U	Hollow shaft with shrink disc and rubber buffer
O	B5 flange execution with hollow shaft		

5. Venting the gear unit

The parallel shaft gear unit sizes F02 to F05 are neither equipped with a venting nor an oil drain screw. They are supplied with lifetime-lubrication.

By default, the parallel shaft gear units from F06 are equipped with venting screws with a safety strap for transportation (see illustration). The rubber strap (a) of the venting screw must be removed entirely before the initial startup. The venting screw is placed accordingly to the mounting position (see chapter Mounting positions, page 185)



6. Overhung and axial loads

The overhung loads (F_{rN}) indicated in the respective selection tables apply to gear units with the force acting on the shaft center ($x=l/2$). The permissible overhung loads listed are based on the least favourable loading direction and calculated for standard shafts and standard bearings. Other load directions and action can be calculated with equations Q1 to Q3. If transmission elements are placed on the output shaft, an appropriate factor (f_z) has to be taken into consideration when determining the overhung load.

Gear wheels	Sprockets		V-belts	Flat belts
$f_z=1.1$ ($z \leq 17$)	$f_z=1.2$ ($z \leq 13$)	$f_z=1.1$ ($z > 13$)	$f_z=1.8$	$f_z=2.5$

Use the following equations Q1 and Q2 to calculate the permissible radial loads on the output shaft. Q3 is to calculate the real existing shaft loads for your application. The results are to be compared by using the equation Q4.

Q1 $F_{zL} = F_{rN} \cdot a_1$

Q2 $F_{zW} = F_W \cdot a_2$

Q3 $F_{Qvorh} = \frac{2 \cdot M_2}{d_0} \cdot f_z$

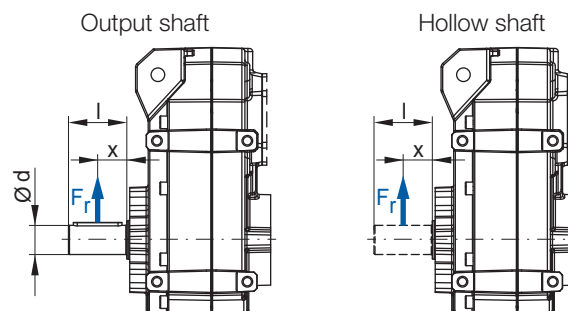
Q4 $F_{Qvorh} \leq F_{zL}$
 $F_{Qvorh} \leq F_{zW}$

Variable	Unit	Description
a1		Load action factor - output shaft bearing from Table 1
a2		Load action factor - output shaft from Table 1
d0	[m]	Effective diameter of the transmission element
M2	[Nm]	Geared motor output torque (from selection tables) or required calculated output torque
FzL	[N]	Permissible overhung load for output shaft bearings
FzW	[N]	Permissible overhung load for output shaft
FrN	[N]	Permissible overhung load from selection tables
FW	[N]	Permissible overhung load - Output shaft x=l/2 from Table 2
FQvorh	[N]	Existing overhung load at gear shaft
fz		Factor for transmission element
Mmax	[Nm]	Highest possible output torque for coupling operation (Table 2)

Always use both equations Q1 and Q2 for your calculations.

x / l						
0	0.25	0.5	0.75	1	1.5	2
a1 → Equation Q1						
1.39	1.18	1.00	0.85	0.73	0.52	0.38
a2 → Equation Q2						
2.00	2.00	1.00	0.55	0.38	0.23	0.17

Table 1: Load action factors a1, a2



Intermediate values can be interpolated linearly. Combined load ($F_r \neq 0$; $F_a = 0$) on request.

Output shaft [mm]		Mmax at Fr = 0	Output torque M2 [Nm]													
			130	220	400	600	820	1500	3000	4500	8000	13000	18000			
Ø d	l		Fw [kN] at x/l = 0.5 → Equation Q2													
20	40	160	2.2													
25	50	300	5.5	4.5												
30	60	500	7.5	7.0	5.0											
35	70	800		11.0	10.0	8.3										
40	80	1170			13.0	12.0	10.7									
50	100	2250			24.0	24.0	23.0	21.0								
60	120	3740					31.0	30.0	23.0							
70	140	5850						45.0	41.0	36.0						
90	170	11700							72.0	70.0	61.0					
110	210	20800								106.0	103.0	93.0				
120	210	26700									129.0	121.0	109.0			

Table 2: Permissible overhung load - output shaft x = l/2

The axial loads (F_{aN}) for the respective execution (output shaft or hollow shaft), given in the following selection tables, are valid at radial force $F_{rN} = 0$. If there are axial loads or radial and axial components acting on the drive which are extraordinarily high, we recommend to contact the manufacturer.

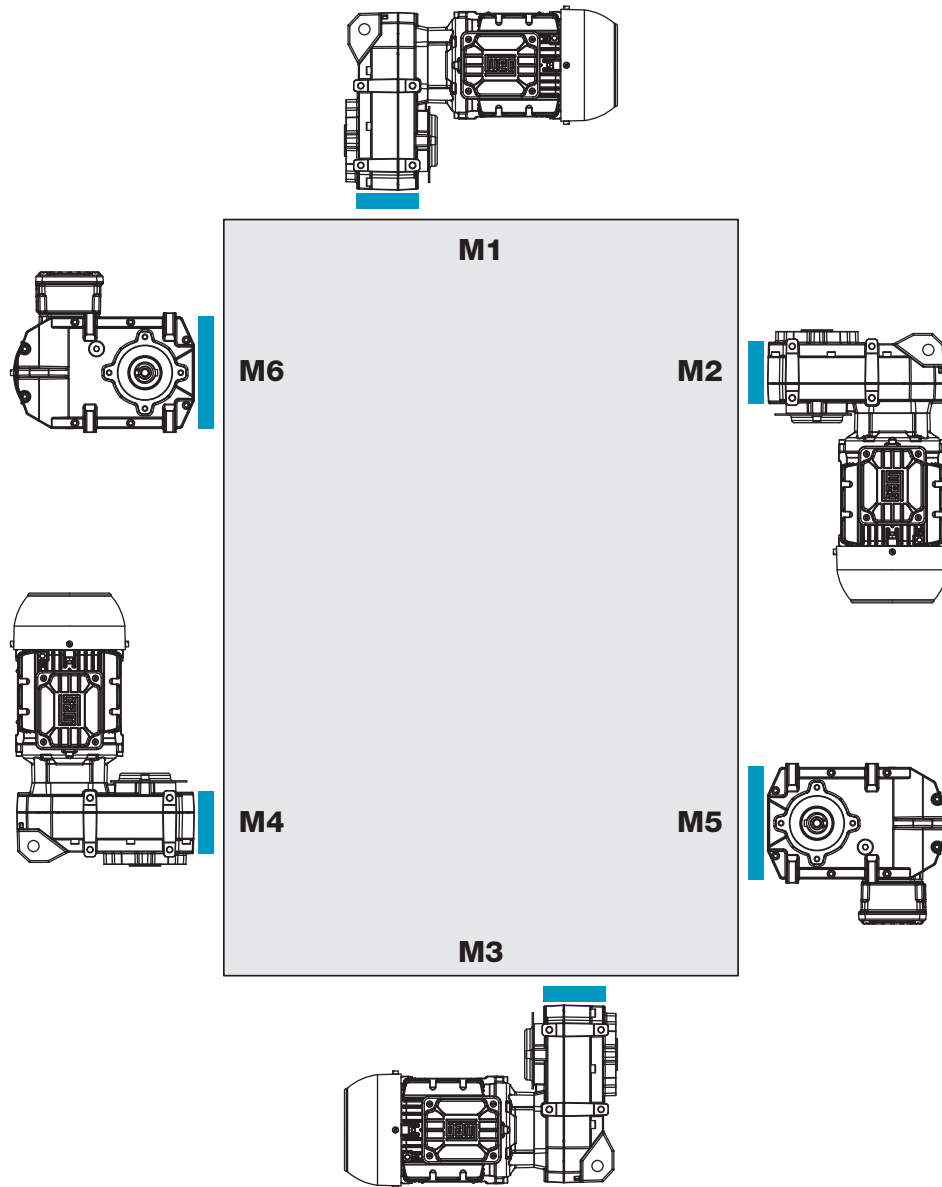
7. Mounting positions, Position of the terminal box and Cable entry

Mounting positions - Sizes F02 to F05

Gear units F02 to F05 are not ventilated and supplied with lifetime lubrication

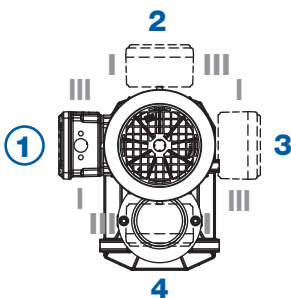
 Reference area

F



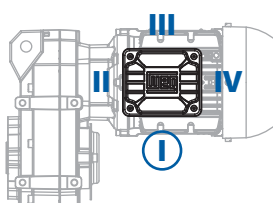
Position of the terminal box

Standard: Position 1

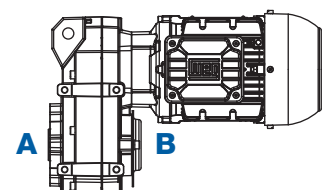


Cable entry

Standard: Position I



Side indication



Mounting positions - Sizes F06 to F15

⊙ Venting screw

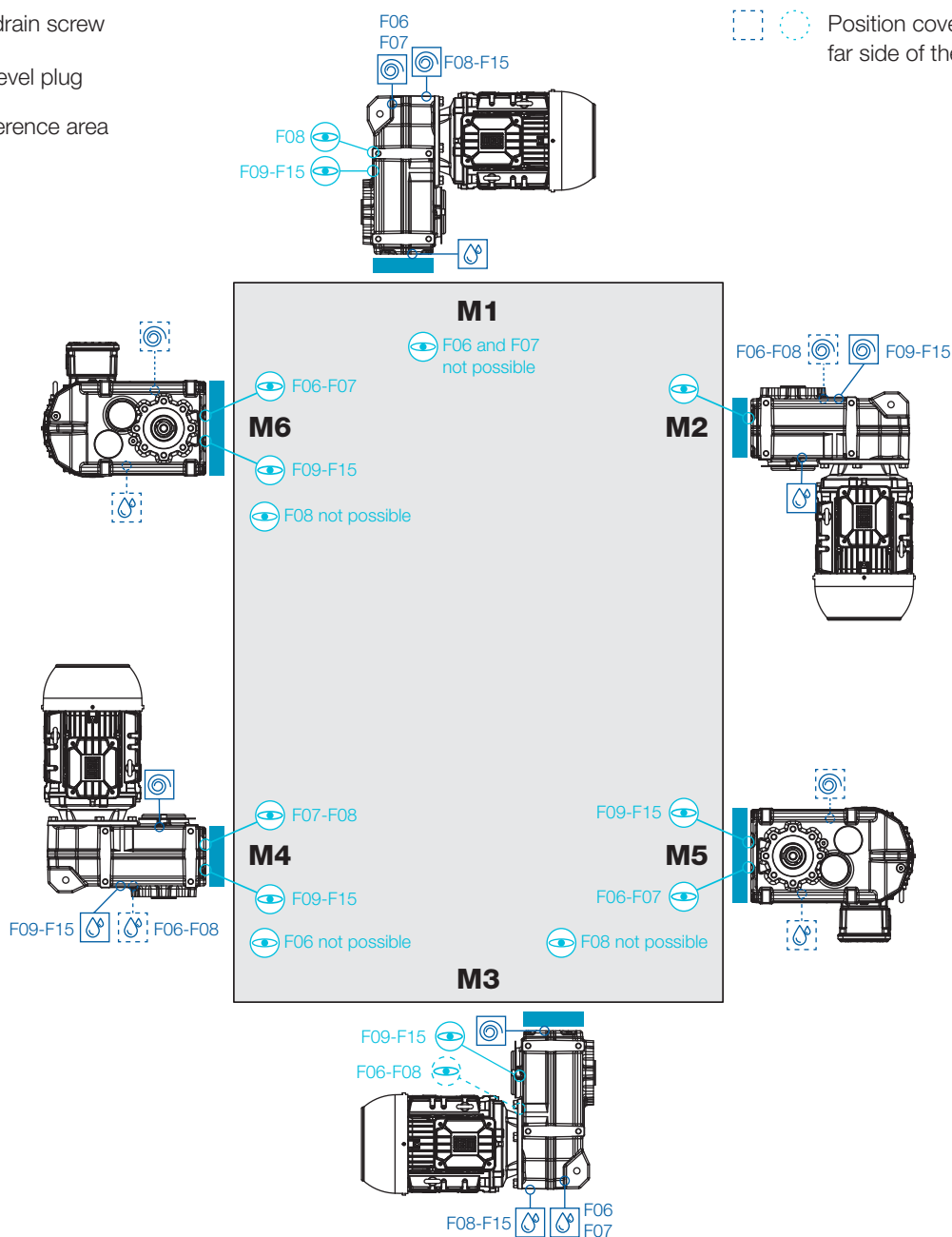
⊙ Oil drain screw

👁 Oil level plug

■ Reference area

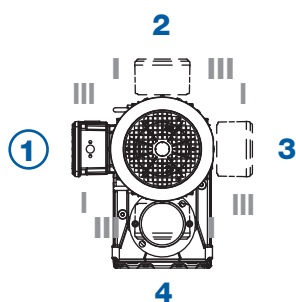
□ ○ Position visible on this side

▭ ◌ Position covered or on the far side of the gear unit



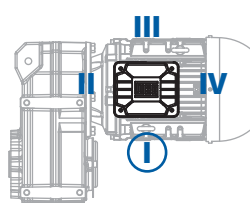
Position of the terminal box

Standard: Position 1

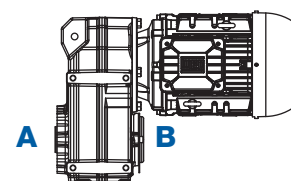


Cable entry

Standard: Position I



Side indication



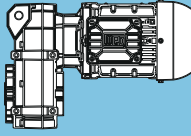
Selection tables - Geared motors

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20°C.

The selection tables are calculated with following motor data:

Power (IEC frame size)	Motor series (IE class)
up to 0.55 kW (63 - 80)	14P (IE3) - aluminium
0.75 - 9.2 kW (80 - 132)	11P (IE3) - aluminium
11 - 75 kW (160 - 250)	22P (IE3) - cast iron

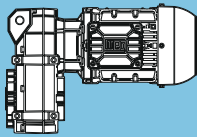
Structure of the selection tables

1											2		
P _N = 0.12 kW											IE3		
50 Hz		60 Hz		M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.12 kW		0.14 kW					Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	F _{rN} kN	F _{aN} kN				F _{rN} kN	F _{aN} kN					
3	4	5	6	7	8	9	10	11	12	13	14		

- 1 Rated power of the motor
- 2 Given values are based on the respective efficiency class
- 3 Output speed at 50 Hz
- 4 Output speed at 60 Hz
- 5 Output torque
- 6 Service factor
- 7 Total ratio
- 8 Permissible radial load - Execution with output shaft at midpoint of the shaft (standard bearing) at axial load=0
- 9 Permissible axial load - Execution with output shaft (standard bearing) at axial load=0
- 10 Permissible radial load - Execution with hollow shaft at midpoint of x=l/2 (standard bearing) at axial load=0
- 11 Permissible axial load - Execution with hollow shaft (standard bearing) at axial load=0
- 12 Geared motor type
- 13 Weight
- 14 Page reference for dimension sheet

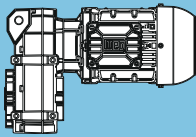
*) Increased rated power at 60 Hz can only be reached together with increased voltage within the wide range (for details see page 485).

Increased rated power
1.2 x P _N

P _N = 0.12 kW										IE3	
50 Hz 0.12 kW	60 Hz 0.14 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.05	0.07	18714	1.00	17143.10	75.1	114.6	75.1	114.6	FH155-14P-63-06F	685	320
0.06	0.07	17440	1.05	16017.35	80.4	115.7	80.4	115.7			
0.07	0.08	15147	1.20	14018.89	88.3	117.6	88.3	117.6			
0.08	0.10	11746	1.55	11069.46	97.1	120.4	97.1	120.4			
0.09	0.11	10703	1.70	10164.86	99.2	121.2	99.2	121.2			
0.11	0.13	8875	2.05	8582.99	102.4	122.7	102.4	122.7			
0.12	0.15	8007	2.25	7824.26	103.7	123.4	103.7	123.4			
0.13	0.16	7078	2.55	7024.85	104.9	124.2	104.9	124.2			
0.06	0.07	17782	1.05	24805.81	79.0	115.4	79.0	115.4	FH155-14P-63-04E	685	320
0.07	0.08	14355	1.30	20285.13	90.6	118.2	90.6	118.2			
0.08	0.10	12008	1.50	17143.10	96.5	120.1	96.5	120.1			
0.09	0.11	11133	1.65	16017.35	98.4	120.9	98.4	120.9			
0.10	0.12	9619	1.90	14018.89	101.2	122.1	101.2	122.1			
0.11	0.14	8411	2.15	12419.47	103.1	123.1	103.1	123.1			
0.13	0.16	7381	2.45	11069.46	104.5	123.9	104.5	123.9			
0.14	0.17	6690	2.70	10164.86	105.3	124.5	105.3	124.5			
0.30	0.37	3407	1.35	3086.96	33.6	40.5	33.6	40.5	FH094-14P-63-06F	175	306
0.35	0.44	2851	1.60	2609.75	35.6	41.2	35.6	41.2			
0.37	0.45	2752	1.65	2524.38	35.9	41.4	35.9	41.4			
0.43	0.53	2293	2.00	2134.14	37.2	42.0	37.2	42.0			
0.46	0.57	2128	2.15	1993.28	37.6	42.2	37.6	42.2			
0.55	0.68	1770	2.55	1685.14	38.3	42.7	38.3	42.7			
0.60	0.74	1603	2.85	1545.54	38.6	42.9	38.6	42.9			
0.46	0.56	2174	2.10	3086.96	37.5	42.1	37.5	42.1	FH094-14P-63-04E	175	306
0.54	0.66	1808	2.50	2609.75	38.2	42.6	38.2	42.6			
0.56	0.68	1742	2.60	2524.38	38.4	42.7	38.4	42.7			
0.29	0.36	3534	0.85	3137.02	**	**	**	**	FH084-14P-63-06F	121	302
0.30	0.38	3413	0.90	3036.24	15.2	25.1	15.2	25.1			
0.35	0.43	2962	1.05	2651.12	19.7	34.8	19.7	34.8			
0.37	0.46	2768	1.10	2482.91	21.2	38.1	21.2	38.1			
0.43	0.53	2402	1.25	2167.97	23.5	41.3	23.5	41.3			
0.47	0.58	2159	1.40	1960.53	24.7	41.7	24.7	41.7			
0.48	0.59	2111	1.45	1920.62	25.0	41.7	25.0	41.7			
0.54	0.67	1866	1.65	1711.85	26.0	42.1	26.0	42.1			
0.59	0.73	1703	1.80	1571.96	26.6	42.4	26.6	42.4			
0.61	0.75	1643	1.85	1520.15	26.8	42.5	26.8	42.5			
0.70	0.86	1417	2.15	1327.33	27.5	42.8	27.5	42.8			
0.74	0.92	1320	2.30	1244.18	27.8	43.0	27.8	43.0			
0.76	0.94	1281	2.35	1209.99	27.9	43.0	27.9	43.0			
0.85	1.0	1136	2.65	1086.37	28.2	43.2	28.2	43.2			
0.37	0.45	2816	1.10	3836.13	20.8	37.3	20.8	37.3	FH084-14P-63-04E	120	302
0.45	0.55	2279	1.35	3137.02	24.1	41.5	24.1	41.5			
0.46	0.57	2202	1.40	3036.24	24.5	41.6	24.5	41.6			
0.53	0.65	1906	1.60	2651.12	25.9	42.1	25.9	42.1			
0.57	0.69	1778	1.70	2482.91	26.3	42.3	26.3	42.3			
0.65	0.79	1533	2.00	2167.97	27.2	42.6	27.2	42.6			
0.72	0.88	1375	2.20	1960.53	27.6	42.9	27.6	42.9			
0.73	0.90	1344	2.25	1920.62	27.7	42.9	27.7	42.9			
0.82	1.0	1183	2.55	1711.85	28.1	43.2	28.1	43.2			
0.89	1.1	1075	2.80	1571.96	28.3	43.3	28.3	43.3			
0.92	1.1	1036	2.90	1520.15	28.4	43.4	28.4	43.4			
2.2	2.8	511	1.65	412.64	11.1	13.6	11.1	13.6	FH063-14P-63-06F	37	296
2.4	3.0	469	1.75	378.37	11.3	13.7	11.3	13.7			
2.7	3.4	418	2.00	337.44	11.6	13.9	11.6	13.9			
3.0	3.7	383	2.15	309.42	11.7	14.0	11.7	14.0			
3.5	4.3	330	2.50	266.44	11.9	14.2	11.9	14.2			
3.8	4.7	303	2.75	244.32	12.0	14.3	12.0	14.3			
3.4	4.2	337	2.45	412.64	11.9	14.2	11.9	14.2	FH063-14P-63-04E	37	296
3.7	4.5	309	2.70	378.37	12.0	14.2	12.0	14.2			
4.2	5.1	275	3.00	337.44	12.1	14.4	12.1	14.4			

Legend see page 187

** ... on request

P _N = 0.12 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
0.12 kW		0.14 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			i	F _{rN} kN	F _{aN} kN	F _{rN} kN			
1.9	2.3	604	1.00	487.67	6.0	10.2	6.0	3.5	FH053-14P-63-06F	21	294	
2.1	2.6	552	1.10	445.56	6.8	10.3	6.8	3.6				
2.4	3	471	1.30	379.87	7.7	10.6	7.7	3.9				
2.7	3.3	430	1.40	347.07	8.1	10.7	8.1	4.0				
3.0	3.7	382	1.60	308.00	8.5	10.8	8.5	4.1				
3.3	4.1	349	1.75	281.41	8.7	10.9	8.7	4.2				
3.8	4.7	301	2.00	242.67	9.0	11.1	9.0	4.4				
4.2	5.1	275	2.20	221.71	9.1	11.2	9.1	4.5				
4.9	6.1	232	2.60	187.00	9.3	11.3	9.3	4.6				
5.4	6.7	212	2.85	170.85	9.4	11.3	9.4	4.6				
2.9	3.5	398	1.55	487.67	8.3	10.8	8.3	4.1	FH053-14P-63-04E	21	294	
3.2	3.9	363	1.65	445.56	8.6	10.9	8.6	4.2				
3.7	4.5	310	1.95	379.87	8.9	11.1	8.9	4.4				
4.0	5.0	283	2.15	347.07	9.1	11.1	9.1	4.4				
4.6	5.6	251	2.40	308.00	9.2	11.2	9.2	4.5				
5.0	6.1	230	2.65	281.41	9.3	11.3	9.3	4.6				
2.2	2.7	524	0.80	422.98	**	**	**	**	FH043-14P-63-06F	15	292	
2.4	3.0	478	0.85	385.85	**	**	**	**				
2.8	3.5	408	1.00	329.48	3.6	5.7	3.6	2.4				
3.1	3.8	372	1.10	300.55	4.4	7.5	4.4	2.6				
3.5	4.3	331	1.25	267.14	5.1	8.3	5.1	2.7				
3.8	4.7	302	1.35	243.69	5.4	8.4	5.4	2.8				
4.4	5.4	261	1.55	210.48	5.9	8.6	5.9	3.0				
4.8	5.9	238	1.70	192.00	6.1	8.7	6.1	3.1				
5.7	7.0	201	2.00	162.19	6.4	8.8	6.4	3.2				
6.3	7.7	183	2.20	147.96	6.5	8.9	6.5	3.3				
7.3	9.0	157	2.55	126.72	6.6	8.9	6.6	3.3				
8.0	9.9	143	2.80	115.60	6.7	9.0	6.7	3.4				
3.3	4.1	345	1.20	422.98	4.8	8.3	4.8	2.7	FH043-14P-63-04E	15	292	
3.6	4.5	315	1.30	385.85	5.3	8.4	5.3	2.8				
4.3	5.2	269	1.50	329.48	5.8	8.5	5.8	2.9				
4.7	5.7	245	1.65	300.55	6.0	8.6	6.0	3.0				
5.3	6.4	218	1.85	267.14	6.3	8.7	6.3	3.1				
5.8	7.1	199	2.05	243.69	6.4	8.8	6.4	3.2				
6.7	8.2	172	2.35	210.48	6.6	8.9	6.6	3.3				
7.3	9.0	157	2.60	192.00	6.6	8.9	6.6	3.3				
13	16	87	2.55	70.17	4.9	3.1	4.9	3.1	FH032-14P-63-06F	14	290	
15	18	79	2.80	63.63	5.0	3.3	5.0	3.3				
9.5	12	121	1.10	97.85	4.8	2.0	4.8	2.0	FH022-14P-63-06F	11	288	
11	13	109	1.20	88.09	4.9	2.3	4.9	2.3				
12	15	94	1.40	76.22	5.0	2.2	5.0	2.2				
13	17	85	1.55	68.62	5.0	2.4	5.0	2.4				
15	18	77	1.70	61.80	5.1	2.3	5.1	2.3				
17	20	69	1.90	55.64	5.1	2.4	5.1	2.4				
19	23	60	2.20	48.69	5.1	2.4	5.1	2.4				
21	26	54	2.40	43.83	5.2	2.5	5.2	2.5				
25	30	46	2.80	37.52	5.2	2.5	5.2	2.5				
29	36	39	1.35	31.79	5.2	2.6	5.2	2.6				
37	46	31	2.75	24.76	5.2	2.6	5.2	2.6				

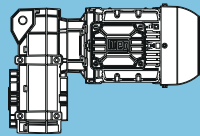
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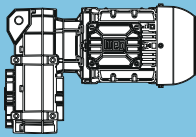
** ... on request

$P_N = 0.12 \text{ kW}$

IE3

50 Hz 0.12 kW n_{50} min ⁻¹	60 Hz 0.14 kW n_{60} min ⁻¹	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
14	18	80	1.65	97.85	5.1	2.3	5.1	2.3	FH022-14P-63-04E	11	288
16	20	72	1.85	88.09	5.1	2.4	5.1	2.4			
18	23	62	2.10	76.22	5.1	2.4	5.1	2.4			
20	25	56	2.35	68.62	5.2	2.5	5.2	2.5			
23	28	50	2.60	61.80	5.2	2.5	5.2	2.5			
25	31	45	2.90	55.64	5.2	2.6	5.2	2.6			
29	35	40	3.30	48.69	5.2	2.5	5.2	2.5			
32	39	36	3.65	43.83	5.2	2.6	5.2	2.6			
37	46	31	4.25	37.52	5.2	2.6	5.2	2.6			
42	51	28	4.75	33.78	5.2	2.6	5.2	2.6			
44	54	26	2.05	31.79	5.2	2.6	5.2	2.6			
48	59	24	5.45	29.32	5.2	2.6	5.2	2.6			
53	65	22	6.05	26.39	5.2	2.7	5.2	2.7			
57	69	20	4.20	24.76	5.2	2.7	5.2	2.7			
64	79	18	7.30	21.89	5.2	2.6	5.2	2.6			
70	86	16	5.15	20.08	5.3	2.7	5.3	2.7			
71	87	16	8.10	19.70	5.3	2.7	5.3	2.7			
85	104	13	9.70	16.48	5.2	2.7	5.2	2.7			
89	109	13	6.55	15.82	5.1	2.7	5.1	2.7			
95	116	12	10.75	14.84	5.0	2.7	5.0	2.7			
115	141	10	8.45	12.19	4.7	2.7	4.7	2.7			
116	142	10	13.20	12.09	4.7	2.7	4.7	2.7			
129	158	9	14.65	10.89	4.5	2.7	4.5	2.7			
148	181	8	10.85	9.52	4.3	2.7	4.3	2.7			
198	242	6	14.50	7.11	3.9	2.7	3.9	2.7			
263	321	4	19.25	5.35	3.5	2.7	3.5	2.7			
358	438	3	22.50	3.93	3.2	2.7	3.2	2.7			

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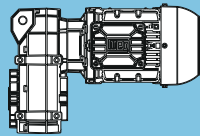
$P_N = 0.18 \text{ kW}$										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.18 kW		0.22 kW		Output shaft		Hollow shaft					
n_{50} min ⁻¹	n_{60} min ⁻¹	M_2 Nm	f_B	i	F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
0.06	0.08	23835	0.80	14018.89	**	**	**	**	FH155-14P-71-06E	688	320
0.07	0.09	21008	0.90	12419.47	63.4	109.6	63.4	109.6			
0.08	0.10	18629	1.00	11069.46	75.5	114.7	75.5	114.7			
0.09	0.11	17019	1.10	10164.86	82.0	116.0	82.0	116.0			
0.10	0.13	14223	1.30	8582.99	91.0	118.3	91.0	118.3			
0.12	0.14	12899	1.40	7824.26	94.4	119.4	94.4	119.4			
0.13	0.16	11463	1.60	7024.85	97.7	120.6	97.7	120.6			
0.15	0.19	9498	1.90	5911.67	101.4	122.2	101.4	122.2			
0.17	0.21	8598	2.10	5407.29	102.8	122.9	102.8	122.9			
0.19	0.23	7574	2.40	4838.19	104.2	123.8	104.2	123.8			
0.22	0.27	6231	2.90	4085.50	105.8	124.9	105.8	124.9			
0.07	0.08	22436	0.85	20285.13	**	**	**	**	FH155-14P-63-04F	685	320
0.08	0.10	18815	1.00	17143.10	74.7	114.6	74.7	114.6			
0.09	0.11	17535	1.05	16017.35	80.0	115.6	80.0	115.6			
0.10	0.12	15229	1.20	14018.89	88.0	117.5	88.0	117.5			
0.11	0.14	13388	1.35	12419.47	93.2	119.0	93.2	119.0			
0.12	0.15	11810	1.55	11069.46	97.0	120.3	97.0	120.3			
0.14	0.17	10762	1.70	10164.86	99.1	121.2	99.1	121.2			
0.16	0.20	8924	2.05	8582.99	102.3	122.7	102.3	122.7			
0.18	0.22	8051	2.25	7824.26	103.6	123.4	103.6	123.4			
0.20	0.24	7116	2.55	7024.85	104.8	124.2	104.8	124.2			
0.40	0.49	3748	2.15	2276.77	58.8	65.0	58.8	65.0	FH104-14P-71-06E	283	310
0.46	0.56	3206	2.50	1976.36	59.6	65.6	59.6	65.6			
0.51	0.63	2810	2.85	1757.78	60.2	66.0	60.2	66.0			
0.53	0.65	2719	2.95	1707.58	60.3	66.1	60.3	66.1			
0.29	0.36	5361	0.85	3086.96	**	**	**	**	FH094-14P-71-06E	178	306
0.34	0.43	4505	1.00	2609.75	27.9	39.0	27.9	39.0			
0.36	0.44	4348	1.05	2524.38	28.9	39.2	28.9	39.2			
0.42	0.52	3646	1.25	2134.14	32.6	40.2	32.6	40.2			
0.45	0.56	3391	1.35	1993.28	33.6	40.5	33.6	40.5			
0.53	0.66	2838	1.60	1685.14	35.6	41.2	35.6	41.2			
0.58	0.72	2587	1.75	1545.54	36.4	41.6	36.4	41.6			
0.69	0.85	2155	2.10	1306.62	37.5	42.1	37.5	42.1			
0.71	0.88	2078	2.20	1264.97	37.7	42.2	37.7	42.2			
0.84	1.0	1724	2.65	1069.42	38.4	42.7	38.4	42.7			
0.92	1.1	1553	2.90	973.69	38.7	42.9	38.7	42.9			
0.45	0.55	3425	1.35	3086.96	33.5	40.5	33.5	40.5	FH094-14P-63-04F	175	306
0.53	0.65	2866	1.60	2609.75	35.6	41.2	35.6	41.2			
0.55	0.67	2767	1.65	2524.38	35.9	41.3	35.9	41.3			
0.65	0.80	2310	1.95	2134.14	37.1	41.9	37.1	41.9			
0.69	0.85	2144	2.10	1993.28	37.5	42.2	37.5	42.2			
0.82	1.0	1779	2.55	1685.14	38.3	42.6	38.3	42.6			
0.89	1.1	1615	2.80	1545.54	38.6	42.9	38.6	42.9			
0.42	0.51	3773	0.80	2167.97	**	**	**	**	FH084-14P-71-06E	123	302
0.46	0.57	3398	0.90	1960.53	15.4	25.6	15.4	25.6			
0.47	0.58	3322	0.95	1920.62	16.3	27.5	16.3	27.5			
0.53	0.65	2949	1.05	1711.85	19.8	35.1	19.8	35.1			
0.57	0.71	2697	1.15	1571.96	21.7	39.2	21.7	39.2			
0.59	0.73	2602	1.20	1520.15	22.3	40.6	22.3	40.6			
0.68	0.84	2258	1.35	1327.33	24.3	41.5	24.3	41.5			
0.72	0.89	2108	1.45	1244.18	25.0	41.7	25.0	41.7			
0.74	0.92	2046	1.50	1209.99	25.3	41.8	25.3	41.8			
0.83	1.0	1826	1.65	1086.37	26.2	42.2	26.2	42.2			
0.94	1.2	1593	1.90	957.69	27.0	42.5	27.0	42.5			
0.98	1.2	1514	2.00	914.22	27.2	42.7	27.2	42.7			
1.1	1.3	1374	2.20	836.22	27.6	42.9	27.6	42.9			
1.2	1.5	1214	2.50	748.21	28.0	43.1	28.0	43.1			
1.4	1.8	1004	3.00	631.81	28.5	43.5	28.5	43.5			

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** ... on request

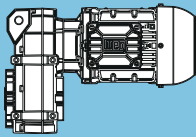
P_N = 0.18 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.18 kW		0.22 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.44	0.54	3553	0.85	3137.02	**	**	**	**	FH084-14P-63-04F	121	302
0.45	0.56	3432	0.90	3036.24	14.9	24.5	14.9	7.2			
0.52	0.64	2978	1.05	2651.12	19.6	34.6	19.6	7.9			
0.56	0.68	2784	1.10	2482.91	21.1	37.9	21.1	8.2			
0.64	0.78	2416	1.25	2167.97	23.4	41.3	23.4	8.8			
0.70	0.87	2171	1.40	1960.53	24.7	41.7	24.7	9.2			
0.72	0.89	2122	1.45	1920.62	24.9	41.7	24.9	9.2			
0.81	0.99	1880	1.60	1711.85	26.0	42.1	26.0	9.6			
0.88	1.1	1716	1.75	1571.96	26.6	42.4	26.6	9.9			
0.91	1.1	1652	1.85	1520.15	26.8	42.5	26.8	10.0			
1.0	1.3	1425	2.15	1327.33	27.5	42.8	27.5	10.3			
1.1	1.4	1327	2.30	1244.18	27.8	43.0	27.8	10.5			
1.3	1.6	1142	2.65	1086.37	28.2	43.2	28.2	10.7			
2.3	2.9	736	2.05	385.37	19.4	17.5	19.4	6.3	FH073-14P-71-06E	63	298
2.9	3.6	583	2.60	305.42	19.8	17.8	19.8	6.6			
2.2	2.7	788	1.05	412.64	8.9	12.7	8.9	2.8	FH063-14P-71-06E	40	296
2.4	2.9	723	1.15	378.37	9.6	12.9	9.6	2.9			
2.7	3.3	645	1.30	337.44	10.2	13.2	10.2	3.2			
2.9	3.6	591	1.40	309.42	10.6	13.3	10.6	3.4			
3.4	4.2	509	1.65	266.44	11.1	13.6	11.1	3.7			
3.7	4.5	467	1.80	244.32	11.4	13.7	11.4	3.8			
4.4	5.4	395	2.10	206.59	11.7	14.0	11.7	4.0			
4.8	5.9	362	2.30	189.44	11.8	14.1	11.8	4.1			
5.3	6.6	323	2.55	169.09	11.9	14.2	11.9	4.3			
5.8	7.2	296	2.80	155.05	12.0	14.3	12.0	4.3			
3.3	4.1	514	1.60	412.64	11.1	13.6	11.1	3.6	FH063-14P-63-04F	37	296
3.6	4.5	471	1.75	378.37	11.3	13.7	11.3	3.8			
4.1	5.0	420	2.00	337.44	11.6	13.9	11.6	3.9			
4.5	5.5	385	2.15	309.42	11.7	14.0	11.7	4.0			
5.2	6.4	332	2.50	266.44	11.9	14.2	11.9	4.2			
5.6	7.0	304	2.70	244.32	12.0	14.3	12.0	4.3			
2.4	2.9	726	0.85	379.87	**	**	**	**	FH053-14P-71-06E	23	294
2.6	3.2	663	0.95	347.07	4.9	7.8	4.9	3.3			
2.9	3.6	588	1.05	308.00	6.3	10.2	6.3	3.5			
3.2	3.9	537	1.15	281.41	7.0	10.3	7.0	3.6			
3.7	4.6	463	1.30	242.67	7.8	10.6	7.8	3.9			
4.1	5.0	423	1.45	221.71	8.1	10.7	8.1	4.0			
4.8	5.9	357	1.70	187.00	8.6	10.9	8.6	4.2			
5.3	6.5	326	1.85	170.85	8.8	11.0	8.8	4.3			
6.2	7.6	279	2.20	146.10	9.1	11.1	9.1	4.4			
6.7	8.3	255	2.35	133.49	9.2	11.2	9.2	4.5			
8.3	10	208	2.90	109.08	9.4	11.4	9.4	4.7			
2.8	3.5	607	1.00	487.67	6.0	10.1	6.0	3.4	FH053-14P-63-04F	21	294
3.1	3.8	555	1.10	445.56	6.7	10.3	6.7	3.6			
3.6	4.5	473	1.30	379.87	7.7	10.6	7.7	3.9			
4.0	4.9	432	1.40	347.07	8.1	10.7	8.1	4.0			
4.5	5.5	384	1.60	308.00	8.4	10.8	8.4	4.1			
4.9	6.0	351	1.75	281.41	8.7	10.9	8.7	4.2			
5.7	7.0	302	2.00	242.67	9.0	11.1	9.0	4.4			
6.2	7.7	276	2.20	221.71	9.1	11.1	9.1	4.4			
7.4	9.1	233	2.60	187.00	9.3	11.3	9.3	4.6			
8.1	10	213	2.85	170.85	9.4	11.3	9.4	4.6			
10	13	167	2.25	87.38	9.5	11.5	9.5	4.8	FH052-14P-71-06E	23	294
11	14	152	2.25	79.84	9.6	11.5	9.6	4.8			
19	23	92	2.25	48.15	9.7	11.6	9.7	4.9			

Legend see page 187

** ... on request

P _N = 0.18 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
0.18 kW		0.22 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
3.4	4.2	510	0.80	267.14	**	**	**	**	FH043-14P-71-06E	17	292			
3.7	4.6	465	0.90	243.69	1.5	1.4	1.5	1.4						
4.3	5.3	402	1.00	210.48	3.8	6.2	3.8	2.5						
4.7	5.8	367	1.10	192.00	4.5	7.7	4.5	2.6						
5.5	6.8	310	1.30	162.19	5.3	8.4	5.3	2.8						
6.1	7.5	283	1.45	147.96	5.7	8.5	5.7	2.9						
7.1	8.8	242	1.70	126.72	6.1	8.6	6.1	3.0						
7.8	9.6	221	1.85	115.60	6.2	8.7	6.2	3.1						
9.5	12	181	2.25	94.61	6.5	8.9	6.5	3.3						
10	13	165	2.45	86.31	6.6	8.9	6.6	3.3						
13	16	136	2.95	71.24	6.7	9.0	6.7	3.4						
3.3	4.0	527	0.80	422.98	**	**	**	**				FH043-14P-63-04F	15	292
3.6	4.4	481	0.85	385.85	**	**	**	**						
4.2	5.2	410	1.00	329.48	3.6	5.7	3.6	2.4						
4.6	5.7	374	1.10	300.55	4.3	7.3	4.3	2.6						
5.2	6.4	333	1.25	267.14	5.0	8.3	5.0	2.7						
5.7	7.0	304	1.35	243.69	5.4	8.4	5.4	2.8						
6.6	8.1	262	1.55	210.48	5.9	8.6	5.9	3.0						
7.2	8.9	239	1.70	192.00	6.1	8.7	6.1	3.1						
8.5	10	202	2.00	162.19	6.4	8.8	6.4	3.2						
9.3	11	184	2.20	147.96	6.5	8.9	6.5	3.3						
11	13	158	2.55	126.72	6.6	8.9	6.6	3.3						
12	15	144	2.80	115.60	6.7	9.0	6.7	3.4						
12	15	145	2.25	75.79	6.7	9.0	6.7	3.4	FH042-14P-71-06E	17	292			
13	16	132	2.25	69.14	6.8	9.0	6.8	3.4						
22	27	79	2.25	41.20	6.9	9.1	6.9	3.5						
13	16	134	1.65	70.17	4.6	2.8	4.6	2.8	FH032-14P-71-06E	16	290			
14	17	122	1.85	63.63	4.7	3.1	4.7	3.1						
16	19	109	2.05	57.07	4.8	3.0	4.8	3.0						
17	21	99	2.25	51.75	4.8	3.2	4.8	3.2						
20	24	87	2.55	45.35	4.9	3.1	4.9	3.1						
22	27	79	2.85	41.12	5.0	3.3	5.0	3.3						
33	40	53	2.30	27.67	5.1	3.4	5.1	3.4						
20	24	87	2.55	70.17	4.9	3.1	4.9	3.1	FH032-14P-63-04F	14	290			
22	27	79	2.80	63.63	5.0	3.3	5.0	3.3						
10	13	168	0.80	88.09	**	**	**	**	FH022-14P-71-06E	14	288			
12	15	146	0.90	76.22	4.6	1.9	4.6	1.9						
13	16	131	1.00	68.62	4.7	2.2	4.7	2.2						
15	18	118	1.15	61.80	4.8	2.0	4.8	2.0						
16	20	106	1.25	55.64	4.9	2.3	4.9	2.3						
18	23	93	1.40	48.69	5.0	2.2	5.0	2.2						
21	25	84	1.60	43.83	5.0	2.4	5.0	2.4						
24	30	72	1.85	37.52	5.1	2.3	5.1	2.3						
27	33	65	2.05	33.78	5.1	2.5	5.1	2.5						
28	35	61	0.90	31.79	5.1	2.5	5.1	2.5						
31	38	56	2.35	29.32	5.2	2.4	5.2	2.4						
34	42	50	2.60	26.39	5.2	2.5	5.2	2.5						
36	45	47	1.80	24.76	5.2	2.5	5.2	2.5						
45	55	38	2.20	20.08	5.2	2.6	5.2	2.6						
57	70	30	2.80	15.82	5.2	2.6	5.2	2.6						

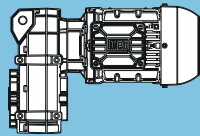
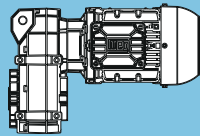
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Legend see page 187

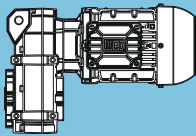
** ... on request

P_N = 0.18 kW

IE3

50 Hz 0.18 kW	60 Hz 0.22 kW	M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
14	17	122	1.10	97.85	4.8	2.0	4.8	2.0	 FH022-14P-63-04F	11	288
16	19	110	1.20	88.09	4.9	2.3	4.9	2.3			
18	22	95	1.40	76.22	5.0	2.2	5.0	2.2			
20	25	85	1.55	68.62	5.0	2.4	5.0	2.4			
22	28	77	1.70	61.80	5.1	2.3	5.1	2.3			
25	31	69	1.90	55.64	5.1	2.4	5.1	2.4			
28	35	61	2.15	48.69	5.1	2.4	5.1	2.4			
31	39	55	2.40	43.83	5.2	2.5	5.2	2.5			
37	45	47	2.80	37.52	5.2	2.5	5.2	2.5			
41	50	42	3.10	33.78	5.2	2.6	5.2	2.6			
43	53	40	1.35	31.79	5.2	2.6	5.2	2.6			
47	58	37	3.60	29.32	5.2	2.5	5.2	2.5			
52	64	33	4.00	26.39	5.2	2.6	5.2	2.6			
56	69	31	2.75	24.76	5.2	2.6	5.2	2.6			
63	78	27	4.80	21.89	5.2	2.6	5.2	2.6			
69	85	25	3.40	20.08	5.2	2.6	5.2	2.6			
70	86	25	5.30	19.70	5.2	2.6	5.2	2.6			
84	103	21	6.35	16.48	5.2	2.6	5.2	2.6			
87	107	20	4.30	15.82	5.2	2.7	5.2	2.7			
93	115	18	7.05	14.84	5.1	2.7	5.1	2.7			
113	139	15	5.55	12.19	4.7	2.7	4.7	2.7			
114	141	15	8.65	12.09	4.7	2.7	4.7	2.7			
127	156	14	9.60	10.89	4.6	2.7	4.6	2.7			
145	179	12	7.10	9.52	4.3	2.7	4.3	2.7			
194	239	9	9.50	7.11	3.9	2.7	3.9	2.7			
258	318	7	12.65	5.35	3.6	2.7	3.6	2.7			
351	433	5	14.75	3.93	3.2	2.7	3.2	2.7			

Legend see page 187

P _N = 0.25 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.30 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.09	0.12	22621	0.80	10164.86	**	**	**	**	FH155-14P-80-06D	688	320
0.11	0.14	18955	0.95	8582.99	74	114.4	74.0	114.4			
0.12	0.15	17191	1.05	7824.26	81.3	115.9	81.3	115.9			
0.14	0.17	15316	1.20	7024.85	87.8	117.4	87.8	117.4			
0.16	0.20	12724	1.45	5911.67	94.9	119.6	94.9	119.6			
0.18	0.22	11549	1.60	5407.29	97.5	120.5	97.5	120.5			
0.20	0.25	10227	1.80	4838.19	100.1	121.6	100.1	121.6			
0.23	0.29	8481	2.15	4085.5	103	123.0	103.0	123.0			
0.24	0.30	8102	2.25	3923.28	103.5	123.4	103.5	123.4			
0.29	0.35	6745	2.70	3343.64	105.2	124.5	105.2	124.5			
0.10	0.12	21535	0.85	14018.89	**	**	**	**	FH155-14P-71-04E	686	320
0.11	0.14	18980	0.95	12419.47	73.9	114.4	73.9	114.4			
0.12	0.15	16787	1.10	11069.46	82.8	116.2	82.8	116.2			
0.14	0.17	15337	1.20	10164.86	87.7	117.4	87.7	117.4			
0.16	0.20	12784	1.45	8582.99	94.7	119.5	94.7	119.5			
0.18	0.22	11564	1.60	7824.26	97.5	120.5	97.5	120.5			
0.20	0.24	10303	1.75	7024.85	100.0	121.5	100.0	121.5			
0.23	0.29	8492	2.15	5911.67	103.0	123.0	103.0	123.0			
0.26	0.31	7688	2.35	5407.29	104.1	123.7	104.1	123.7			
0.29	0.35	6754	2.70	4838.19	105.2	124.5	105.2	124.5			
0.41	0.51	4858	2.70	2307.03	86.9	92.8	86.9	92.8	FH124-14P-80-06D	423	314
0.42	0.52	5018	1.60	2276.77	56.1	63.6	56.1	63.6	FH104-14P-80-06D	283	310
0.48	0.60	4302	1.90	1976.36	57.7	64.4	57.7	64.4			
0.54	0.67	3787	2.15	1757.78	58.7	65.0	58.7	65.0			
0.56	0.69	3671	2.20	1707.58	58.9	65.1	58.9	65.1			
0.63	0.78	3240	2.50	1525.85	59.6	65.6	59.6	65.6			
0.65	0.80	3117	2.60	1474.19	59.8	65.7	59.8	65.7			
0.72	0.90	2747	2.95	1318.33	60.3	66.1	60.3	66.1			
0.61	0.75	3360	2.40	2276.77	59.4	65.4	59.4	65.4	FH104-14P-71-04E	281	310
0.70	0.86	2868	2.80	1976.36	60.1	66.0	60.1	66.0			
0.37	0.45	5945	0.80	2609.75	**	**	**	**	FH094-14P-80-06D	178	306
0.38	0.47	5750	0.80	2524.38	**	**	**	**			
0.45	0.56	4831	0.95	2134.14	25.6	38.6	25.6	38.6			
0.48	0.59	4503	1.00	1993.28	27.9	39.0	27.9	39.0			
0.57	0.7	3776	1.20	1685.14	32.0	40.0	32.0	40.0			
0.62	0.77	3442	1.35	1545.54	33.4	40.4	33.4	40.4			
0.73	0.91	2880	1.60	1306.62	35.5	41.2	35.5	41.2			
0.75	0.94	2782	1.65	1264.97	35.8	41.3	35.8	41.3			
0.89	1.1	2323	1.95	1069.42	37.1	41.9	37.1	41.9			
0.98	1.2	2098	2.15	973.69	37.6	42.2	37.6	42.2			
1.2	1.4	1741	2.60	823.17	38.4	42.7	38.4	42.7			
1.3	1.6	1533	2.95	735.68	38.7	43.0	38.7	43.0			
0.45	0.55	4836	0.95	3086.96	25.6	38.6	25.6	38.6			
0.53	0.65	4055	1.15	2609.75	30.6	39.6	30.6	39.6			
0.55	0.67	3922	1.15	2524.38	31.2	39.8	31.2	39.8			
0.65	0.80	3282	1.40	2134.14	34.1	40.7	34.1	40.7			
0.69	0.85	3053	1.50	1993.28	34.9	41.0	34.9	41.0			
0.82	1.0	2549	1.80	1685.14	36.5	41.6	36.5	41.6			
0.89	1.1	2324	1.95	1545.54	37.1	41.9	37.1	41.9			
1.1	1.3	1932	2.35	1306.62	38.0	42.4	38.0	42.4			
1.3	1.6	1542	2.95	1069.42	38.7	43.0	38.7	43.0			

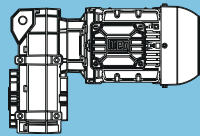
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** ... on request

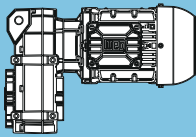
P_N = 0.25 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
0.25 kW		0.30 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
0.56	0.69	3899	0.80	1711.85	**	**	**	**	FH084-14P-80-06D	124	302			
0.61	0.75	3573	0.85	1571.96	**	**	**	**						
0.63	0.78	3448	0.90	1520.15	14.7	24.1	14.7	7.2						
0.72	0.89	2993	1.05	1327.33	19.4	34.2	19.4	7.9						
0.77	0.95	2799	1.10	1244.18	20.9	37.5	20.9	8.2						
0.79	0.98	2717	1.15	1209.99	21.5	38.8	21.5	8.3						
0.88	1.1	2429	1.25	1086.37	23.3	41.3	23.3	8.8						
1.0	1.2	2124	1.45	957.69	24.9	41.7	24.9	9.2						
1.1	1.4	1839	1.65	836.22	26.1	42.2	26.1	9.7						
1.3	1.6	1632	1.85	748.21	26.9	42.5	26.9	10.0						
1.5	1.9	1356	2.25	631.81	27.7	42.9	27.7	10.4						
1.6	2.0	1296	2.35	606.72	27.8	43.0	27.8	10.5						
1.8	2.3	1084	2.80	517.08	28.3	43.3	28.3	10.8						
1.9	2.3	1063	2.85	507.90	28.4	43.4	28.4	10.9						
0.56	0.68	3914	0.80	2482.91	**	**	**	**	FH084-14P-71-04E	121	302			
0.64	0.78	3403	0.90	2167.97	15.3	25.4	15.3	7.3						
0.70	0.87	3065	1.00	1960.53	18.8	32.9	18.8	7.8						
0.72	0.89	3003	1.00	1920.62	19.3	34.0	19.3	7.9						
0.81	0.99	2660	1.15	1711.85	21.9	39.7	21.9	8.4						
0.88	1.1	2433	1.25	1571.96	23.3	41.2	23.3	8.7						
0.91	1.1	2348	1.30	1520.15	23.8	41.4	23.8	8.9						
1.0	1.3	2033	1.50	1327.33	25.3	41.9	25.3	9.4						
1.1	1.4	1898	1.60	1244.18	25.9	42.1	25.9	9.6						
1.3	1.6	1640	1.85	1086.37	26.8	42.5	26.8	10.0						
1.4	1.8	1431	2.10	957.69	27.5	42.8	27.5	10.3						
1.5	1.9	1357	2.25	914.22	27.7	42.9	27.7	10.4						
1.7	2.0	1231	2.45	836.22	28.0	43.1	28.0	10.6						
1.8	2.3	1086	2.80	748.21	28.3	43.3	28.3	10.8						
1.9	2.3	1046	2.90	723.59	28.4	43.4	28.4	10.9						
2.5	3.1	963	1.60	385.37	18.6	17.0	18.6	5.8	FH073-14P-80-06D	63	298			
3.1	3.9	764	2.00	305.42	19.3	17.4	19.3	6.2						
4.0	5.0	593	2.55	237.15	19.8	17.8	19.8	6.5						
3.6	4.4	667	2.25	385.37	19.6	17.6	19.6	6.4	FH073-14P-71-04E	61	298			
4.5	5.6	528	2.85	305.42	19.9	17.9	19.9	6.7						
2.3	2.9	1032	0.80	412.64	**	**	**	**	FH063-14P-80-06D	40	296			
2.5	3.1	946	0.90	378.37	6.8	10.5	6.8	2.2						
2.8	3.5	844	1.00	337.44	8.3	12.5	8.3	2.6						
3.1	3.8	774	1.10	309.42	9.1	12.7	9.1	2.8						
3.6	4.5	666	1.25	266.44	10.1	13.1	10.1	3.1						
3.9	4.9	611	1.35	244.32	10.5	13.2	10.5	3.3						
4.6	5.7	516	1.60	206.59	11.1	13.6	11.1	3.6						
5.0	6.3	474	1.75	189.44	11.3	13.7	11.3	3.7						
5.6	7.0	423	1.95	169.09	11.6	13.9	11.6	3.9						
6.2	7.6	388	2.15	155.05	11.7	14.0	11.7	4.0						
7.3	9.1	325	2.55	130.15	11.9	14.2	11.9	4.2						
8.0	9.9	298	2.75	119.35	12.0	14.3	12.0	4.3						
3.3	4.1	714	1.15	412.64	9.6	12.9	9.6	3.0				FH063-14P-71-04E	38	296
3.6	4.5	655	1.30	378.37	10.1	13.1	10.1	3.2						
4.1	5.0	584	1.45	337.44	10.7	13.4	10.7	3.4						
4.5	5.5	535	1.55	309.42	11.0	13.5	11.0	3.5						
5.2	6.4	461	1.80	266.44	11.4	13.8	11.4	3.8						
5.6	7.0	423	1.95	244.32	11.6	13.9	11.6	3.9						
6.7	8.2	357	2.30	206.59	11.8	14.1	11.8	4.1						
7.3	9.0	328	2.55	189.44	11.9	14.2	11.9	4.2						
8.2	10	293	2.85	169.09	12.0	14.3	12.0	4.4						

Legend see page 187

** ... on request

P _N = 0.25 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.25 kW		0.30 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.1	3.9	770	0.80	308.00	**	**	**	**	FH053-14P-80-06D	24	294
3.4	4.2	704	0.85	281.41	**	**	**	**			
3.9	4.9	607	1.00	242.67	6.0	10.1	6.0	3.4			
4.3	5.3	554	1.10	221.71	6.8	10.3	6.8	3.6			
5.1	6.3	468	1.30	187.00	7.7	10.6	7.7	3.9			
5.6	6.9	427	1.40	170.85	8.1	10.7	8.1	4.0			
6.5	8.1	365	1.65	146.1	8.6	10.9	8.6	4.2			
7.2	8.9	334	1.80	133.49	8.8	11.0	8.8	4.3			
8.8	11	273	2.25	109.08	9.1	11.2	9.1	4.5			
9.6	12	249	2.40	99.66	9.2	11.2	9.2	4.5			
10	13	235	2.60	94.11	9.3	11.3	9.3	4.6			
11	14	215	2.80	85.99	9.4	11.3	9.4	4.6			
12	14	205	2.95	82.13	9.4	11.4	9.4	4.7			
3.1	3.8	771	0.80	445.56	**	**	**	**	FH053-14P-71-04E	22	294
3.6	4.5	657	0.95	379.87	5.1	8.2	5.1	3.3			
4.0	4.9	600	1.00	347.07	6.1	10.1	6.1	3.4			
4.5	5.5	533	1.15	308.00	7.0	10.4	7.0	3.7			
4.9	6.0	487	1.25	281.41	7.5	10.5	7.5	3.8			
5.7	7.0	420	1.45	242.67	8.2	10.7	8.2	4.0			
6.2	7.7	384	1.60	221.71	8.4	10.8	8.4	4.1			
7.4	9.1	324	1.90	187.00	8.8	11.0	8.8	4.3			
8.1	10	296	2.05	170.85	9.0	11.1	9.0	4.4			
9.4	12	253	2.40	146.10	9.2	11.2	9.2	4.5			
10	13	231	2.60	133.49	9.3	11.3	9.3	4.6			
11	14	218	1.70	87.38	9.3	11.3	9.3	4.6	FH052-14P-80-06D	24	294
12	15	200	1.70	79.84	9.4	11.4	9.4	4.7			
13	17	179	2.85	71.46	9.5	11.5	9.5	4.8			
15	18	163	2.80	65.29	9.5	11.5	9.5	4.8			
20	25	120	1.70	48.15	9.6	11.5	9.6	4.8			
24	30	98	2.85	39.38	9.7	11.6	9.7	4.9			
16	19	151	2.50	87.38	9.6	11.5	9.6	4.8	FH052-14P-71-04E	22	294
17	21	138	2.50	79.84	9.6	11.6	9.6	4.9			
29	35	83	2.45	48.15	9.7	11.6	9.7	4.9			
4.5	5.6	526	0.80	210.48	**	**	**	**	FH043-14P-80-06D	18	292
5.0	6.2	480	0.85	192.00	**	**	**	**			
5.9	7.3	405	1.00	162.19	3.7	6.0	3.7	2.5			
6.5	8.0	370	1.10	147.96	4.4	7.5	4.4	2.6			
7.5	9.4	317	1.30	126.72	5.2	8.4	5.2	2.8			
8.3	10	289	1.40	115.6	5.6	8.5	5.6	2.9			
10	13	237	1.70	94.61	6.1	8.7	6.1	3.1			
11	14	216	1.90	86.31	6.3	8.7	6.3	3.1			
12	15	204	2.00	81.63	6.4	8.8	6.4	3.2			
13	16	186	2.15	74.46	6.5	8.8	6.5	3.2			
15	18	162	2.50	64.98	6.6	8.9	6.6	3.3			
4.6	5.7	520	0.80	300.55	**	**	**	**	FH043-14P-71-04E	16	292
5.2	6.4	462	0.90	267.14	1.7	1.8	1.7	1.8			
5.7	7.0	422	0.95	243.69	3.3	5.1	3.3	2.4			
6.6	8.1	364	1.10	210.48	4.5	7.7	4.5	2.6			
7.2	8.9	332	1.25	192.00	5.0	8.3	5.0	2.7			
8.5	10	281	1.45	162.19	5.7	8.5	5.7	2.9			
9.3	11	256	1.60	147.96	5.9	8.6	5.9	3.0			
11	13	219	1.85	126.72	6.2	8.7	6.2	3.1			
12	15	200	2.05	115.60	6.4	8.8	6.4	3.2			
15	18	164	2.45	94.61	6.6	8.9	6.6	3.3			
16	20	149	2.70	86.31	6.7	9.0	6.7	3.4			
13	16	189	1.70	75.79	6.5	8.8	6.5	3.2	FH042-14P-80-06D	18	292
14	17	173	1.70	69.14	6.6	8.9	6.6	3.3			
15	19	155	2.60	61.98	6.6	8.9	6.6	3.3			
17	21	141	2.85	56.54	6.7	9.0	6.7	3.4			
23	29	103	1.70	41.20	6.9	9.0	6.9	3.4			
28	35	84	2.85	33.69	6.9	9.1	6.9	3.5			

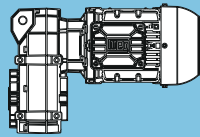
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** ... on request

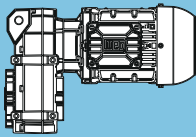
$P_N = 0.25 \text{ kW}$

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.30 kW			Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹	M_2 Nm	f_b		F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
18	22	131	2.50	75.79	6.8	9.0	6.8	3.4	FH042-14P-71-04E	16	292
20	25	120	2.45	69.14	6.8	9.1	6.8	3.5			
33	41	71	2.50	41.2	7.0	9.1	7.0	3.5			
14	17	175	1.30	70.17	4.1	2.6	4.1	2.6	FH032-14P-80-06D	17	290
15	19	159	1.40	63.63	4.3	2.9	4.3	2.9			
17	21	143	1.55	57.07	4.5	2.8	4.5	2.8			
18	23	129	1.75	51.75	4.6	3.1	4.6	3.1			
21	26	113	1.95	45.35	4.7	2.9	4.7	2.9			
23	29	103	2.15	41.12	4.8	3.2	4.8	3.2			
27	34	88	2.55	35.03	4.9	3.1	4.9	3.1			
30	37	79	2.80	31.76	5.0	3.3	5.0	3.3			
35	43	69	1.75	27.67	5.0	3.3	5.0	3.3			
42	53	56	2.65	22.50	5.1	3.4	5.1	3.4			
20	24	121	1.85	70.17	4.7	2.9	4.7	2.9	FH032-14P-71-04E	14	290
22	27	110	2.00	63.63	4.8	3.2	4.8	3.2			
24	30	99	2.25	57.07	4.8	3.0	4.8	3.0			
27	33	90	2.50	51.75	4.9	3.3	4.9	3.3			
30	37	78	2.85	45.35	5.0	3.2	5.0	3.2			
50	61	48	2.50	27.67	5.1	3.4	5.1	3.4			
14	17	172	0.80	68.62	**	**	**	**	FH022-14P-80-06D	14	288
15	19	155	0.85	61.80	**	**	**	**			
17	21	139	0.95	55.64	4.6	2.1	4.6	2.1			
20	24	122	1.10	48.69	4.8	2	4.8	2			
22	27	110	1.20	43.83	4.9	2.3	4.9	2.3			
25	32	94	1.40	37.52	5	2.2	5	2.2			
28	35	84	1.55	33.78	5	2.4	5	2.4			
33	40	73	1.80	29.32	5.1	2.3	5.1	2.3			
36	45	66	2.00	26.39	5.1	2.5	5.1	2.5			
39	48	62	1.40	24.76	5.1	2.5	5.1	2.5			
44	54	55	2.40	21.89	5.2	2.4	5.2	2.4			
48	59	50	1.70	20.08	5.2	2.5	5.2	2.5			
51	63	47	2.80	18.88	5.2	2.5	5.2	2.5			
60	75	40	2.15	15.82	5.2	2.6	5.2	2.6			
78	97	30	2.80	12.19	5.2	2.6	5.2	2.6			
14	17	169	0.80	97.85	**	**	**	**	FH022-14P-71-04E	12	288
16	19	152	0.90	88.09	4.5	2.1	4.5	2.1			
18	22	132	1.00	76.22	4.7	2.0	4.7	2.0			
20	25	119	1.10	68.62	4.8	2.2	4.8	2.2			
22	28	107	1.25	61.80	4.9	2.1	4.9	2.1			
25	31	96	1.40	55.64	5.0	2.3	5.0	2.3			
28	35	84	1.55	48.69	5.0	2.2	5.0	2.2			
31	39	76	1.75	43.83	5.1	2.4	5.1	2.4			
37	45	65	2.05	37.52	5.1	2.4	5.1	2.4			
41	50	58	2.25	33.78	5.2	2.5	5.2	2.5			
43	53	55	1.00	31.79	5.2	2.5	5.2	2.5			
47	58	51	2.60	29.32	5.2	2.4	5.2	2.4			
52	64	46	2.85	26.39	5.2	2.5	5.2	2.5			
56	69	43	2.00	24.76	5.2	2.6	5.2	2.6			
63	78	38	3.45	21.89	5.2	2.5	5.2	2.5			
69	85	35	2.45	20.08	5.2	2.6	5.2	2.6			
70	86	34	3.85	19.70	5.2	2.6	5.2	2.6			
84	103	29	4.60	16.48	5.2	2.6	5.2	2.6			
87	107	27	3.10	15.82	5.2	2.6	5.2	2.6			
93	115	26	5.10	14.84	5.1	2.6	5.1	2.6			
113	139	21	4.00	12.19	4.8	2.7	4.8	2.7			
114	141	21	6.25	12.09	4.8	2.6	4.8	2.6			
127	156	19	6.95	10.89	4.6	2.7	4.6	2.7			
145	179	16	5.15	9.52	4.4	2.7	4.4	2.7			
194	239	12	6.85	7.11	4.0	2.7	4.0	2.7			
258	318	9	9.10	5.35	3.6	2.7	3.6	2.7			
351	433	7	10.60	3.93	3.2	2.7	3.2	2.7			

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** ... on request

P _N = 0.37 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.37 kW		0.44 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.13	0.16	23888	0.80	7024.85	**	**	**	**	FH155-14P-80-06E	690	320
0.16	0.19	19948	0.95	5911.67	69.2	113.6	69.2	113.6			
0.17	0.21	18200	1.00	5407.29	77.3	115.1	77.3	115.1			
0.19	0.24	16159	1.15	4838.19	85.0	116.7	85.0	116.7			
0.23	0.28	13506	1.35	4085.5	92.9	118.9	92.9	118.9			
0.24	0.29	12936	1.40	3923.28	94.4	119.4	94.4	119.4			
0.28	0.34	10856	1.70	3343.64	98.9	121.1	98.9	121.1			
0.34	0.42	8623	2.10	2711.35	102.8	122.9	102.8	122.9			
0.35	0.43	8443	2.15	2661.75	103.0	123.1	103.0	123.1			
0.41	0.50	7033	2.60	2269.72	104.9	124.2	104.9	124.2			
0.14	0.17	22919	0.80	10164.86	**	**	**	**	FH155-14P-71-04F	687	320
0.16	0.20	19205	0.95	8582.99	72.9	114.2	72.9	114.2			
0.18	0.22	17417	1.05	7824.26	80.5	115.7	80.5	115.7			
0.20	0.24	15518	1.20	7024.85	87.1	117.3	87.1	117.3			
0.24	0.29	12925	1.40	5911.67	94.4	119.4	94.4	119.4			
0.26	0.32	11731	1.55	5407.29	97.1	120.4	97.1	120.4			
0.29	0.35	10389	1.75	4838.19	99.8	121.5	99.8	121.5			
0.34	0.42	8615	2.10	4085.5	102.8	122.9	102.8	122.9			
0.42	0.51	6852	2.65	3343.64	105.1	124.4	105.1	124.4			
0.40	0.49	7553	2.40	2318.3	104.3	123.8	104.3	123.8			
0.46	0.57	6384	2.85	1996.74	105.6	124.8	105.6	124.8			
0.40	0.49	7738	1.70	2307.03	83.1	90.0	83.1	90.0			
0.46	0.57	6677	1.95	2011.51	84.8	91.1	84.8	91.1			
0.52	0.64	5839	2.25	1781.14	85.8	91.9	85.8	91.9			
0.53	0.66	5669	2.30	1732.67	86.1	92.0	86.1	92.0			
0.60	0.73	5018	2.60	1552.98	86.8	92.7	86.8	92.7			
0.62	0.76	4796	2.75	1493.78	87.0	92.9	87.0	92.9			
0.60	0.74	4932	2.65	2307.03	86.9	92.7	86.9	92.7			
0.41	0.50	7843	1.05	2276.77	46.5	60.4	46.5	60.4			
0.47	0.58	6767	1.20	1976.36	50.9	61.6	50.9	61.6			
0.53	0.65	5981	1.35	1757.78	53.5	62.5	53.5	62.5			
0.54	0.67	5799	1.40	1707.58	54.0	62.7	54.0	62.7			
0.61	0.75	5139	1.60	1525.85	55.8	63.4	55.8	63.4			
0.63	0.77	4955	1.65	1474.19	56.3	63.7	56.3	63.7			
0.70	0.86	4394	1.85	1318.33	57.5	64.3	57.5	64.3			
0.72	0.89	4257	1.90	1279.68	57.8	64.4	57.8	64.4			
0.80	0.99	3817	2.10	1156.94	58.6	64.9	58.6	64.9			
0.84	1.0	3625	2.25	1105.64	59.0	65.1	59.0	65.1			
0.92	1.1	3258	2.50	1004.29	59.6	65.5	59.6	65.5			
1.0	1.3	2861	2.80	892.89	60.1	66.0	60.1	66.0			
1.1	1.3	2769	2.90	867.71	60.2	66.1	60.2	66.1			
0.61	0.75	5084	1.60	2276.77	56.0	63.5	56.0	63.5			
0.71	0.87	4368	1.85	1976.36	57.6	64.3	57.6	64.3			
0.79	0.97	3845	2.10	1757.78	58.6	64.9	58.6	64.9			
0.82	1.0	3728	2.15	1707.58	58.8	65.0	58.8	65.0			
0.91	1.1	3290	2.45	1525.85	59.5	65.5	59.5	65.5			
0.95	1.2	3165	2.55	1474.19	59.7	65.6	59.7	65.6			
1.1	1.3	2789	2.90	1318.33	60.2	66.1	60.2	66.1			
0.55	0.68	5865	0.80	1685.14	**	**	**	**	FH094-14P-80-06E	180	306
0.60	0.74	5368	0.85	1545.54	**	**	**	**			
0.71	0.87	4511	1.00	1306.62	27.9	39.0	27.9	39.0			
0.73	0.90	4358	1.05	1264.97	28.8	39.2	28.8	39.2			
0.86	1.1	3654	1.25	1069.42	32.5	40.2	32.5	40.2			
0.95	1.2	3306	1.40	973.69	34.0	40.6	34.0	40.6			
1.1	1.4	2767	1.65	823.17	35.9	41.3	35.9	41.3			
1.3	1.5	2452	1.85	735.68	36.8	41.8	36.8	41.8			
1.5	1.8	2039	2.25	621.95	37.8	42.3	37.8	42.3			
1.8	2.2	1631	2.80	509.01	38.6	42.8	38.6	42.8			
1.9	2.3	1558	2.90	488.23	38.7	42.9	38.7	42.9			

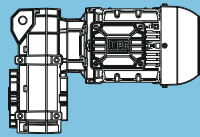
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** ... on request

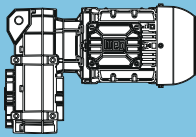
$P_N = 0.37 \text{ kW}$

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW			Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹	M_2 Nm	f_b		F_{rN} kN	F_{aIN} kN	F_{rN} kN	F_{aIN} kN			
0.55	0.68	5826	0.80	2524.38	**	**	**	**	FH094-14P-71-04F	177	306
0.65	0.80	4895	0.95	2134.14	25.1	38.5	25.1	38.5			
0.70	0.86	4563	1.00	1993.28	27.5	39.0	27.5	39.0			
0.83	1.0	3826	1.20	1685.14	31.7	39.9	31.7	39.9			
0.90	1.1	3494	1.30	1545.54	33.2	40.4	33.2	40.4			
1.1	1.3	2924	1.55	1306.62	35.4	41.1	35.4	41.1			
1.3	1.6	2354	1.95	1069.42	37.0	41.9	37.0	41.9			
1.4	1.8	2125	2.15	973.69	37.6	42.2	37.6	42.2			
1.7	2.1	1767	2.55	823.17	38.3	42.7	38.3	42.7			
1.9	2.3	1557	2.90	735.68	38.7	42.9	38.7	42.9			
0.85	1.0	3781	0.80	1086.37	**	**	**	**	FH084-14P-80-06E	126	302
0.97	1.2	3313	0.95	957.69	16.4	27.7	16.4	27.7			
1.0	1.2	3162	0.95	914.22	17.9	30.9	17.9	30.9			
1.1	1.4	2881	1.05	836.22	20.3	36.2	20.3	36.2			
1.2	1.5	2562	1.20	748.21	22.5	41.1	22.5	41.1			
1.3	1.6	2472	1.25	723.59	23.1	41.2	23.1	41.2			
1.5	1.8	2145	1.40	631.81	24.8	41.7	24.8	41.7			
1.6	1.9	2003	1.50	592.20	25.4	41.9	25.4	41.9			
1.8	2.2	1731	1.75	517.08	26.5	42.3	26.5	42.3			
1.9	2.4	1597	1.90	480.21	27.0	42.5	27.0	42.5			
2.2	2.7	1378	2.20	419.30	27.6	42.9	27.6	42.9			
2.3	2.8	1315	2.30	401.99	27.8	43.0	27.8	43.0			
2.6	3.2	1129	2.70	351.00	28.2	43.3	28.2	43.3			
2.8	3.5	1040	2.90	325.80	28.4	43.4	28.4	43.4			
0.81	1.0	3951	0.80	1711.85	**	**	**	**	FH084-14P-71-04F	122	302
0.89	1.1	3620	0.85	1571.96	**	**	**	**			
0.92	1.1	3494	0.90	1520.15	14.1	22.8	14.1	22.8			
1.1	1.3	3038	1.00	1327.33	19.0	33.3	19.0	33.3			
1.2	1.4	2758	1.10	1209.99	21.2	38.1	21.2	38.1			
1.3	1.6	2461	1.25	1086.37	23.1	41.2	23.1	41.2			
1.5	1.8	2156	1.40	957.69	24.8	41.7	24.8	41.7			
1.7	2.0	1864	1.65	836.22	26.0	42.1	26.0	42.1			
1.9	2.3	1654	1.85	748.21	26.8	42.5	26.8	42.5			
2.2	2.7	1376	2.20	631.81	27.6	42.9	27.6	42.9			
2.4	2.9	1282	2.35	592.20	27.9	43.0	27.9	43.0			
2.7	3.3	1101	2.75	517.08	28.3	43.3	28.3	43.3			
2.6	3.2	1370	2.20	358.52	27.6	42.9	27.6	42.9	FH083-14P-80-06E	113	300
3.3	4.0	1084	2.80	283.76	28.3	43.3	28.3	43.3			
2.4	3.0	1472	1.05	385.37	15.8	16.0	15.8	16.0	FH073-14P-80-06E	65	298
3.0	3.7	1167	1.30	305.42	17.7	16.6	17.7	16.6			
3.9	4.8	906	1.70	237.15	18.8	17.2	18.8	17.2			
4.8	5.9	743	2.05	194.58	19.4	17.5	19.4	17.5			
6.1	7.6	576	2.65	150.69	19.8	17.8	19.8	17.8			
3.6	4.4	976	1.55	385.37	18.5	17.0	18.5	17.0	FH073-14P-71-04F	62	298
4.6	5.6	774	1.95	305.42	19.3	17.4	19.3	17.4			
5.9	7.2	601	2.50	237.15	19.8	17.8	19.8	17.8			
3.5	4.3	1018	0.85	266.44	**	**	**	**	FH063-14P-80-06E	42	296
3.8	4.7	933	0.90	244.32	7.0	10.9	7.0	10.9			
4.5	5.5	789	1.05	206.59	8.9	12.7	8.9	12.7			
4.9	6.0	724	1.15	189.44	9.6	12.9	9.6	12.9			
5.5	6.7	646	1.30	169.09	10.2	13.2	10.2	13.2			
6.0	7.4	592	1.40	155.05	10.6	13.3	10.6	13.3			
7.1	8.8	497	1.65	130.15	11.2	13.6	11.2	13.6			
7.8	9.6	456	1.80	119.35	11.4	13.8	11.4	13.8			
9.4	12	376	2.20	98.34	11.8	14.0	11.8	14.0			
10	13	344	2.40	90.17	11.9	14.1	11.9	14.1			
11	14	307	2.70	80.48	12.0	14.3	12.0	14.3			
13	15	282	2.95	73.80	12.1	14.3	12.1	14.3			

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** ... on request

P _N = 0.37 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.4	4.1	1045	0.80	412.64	**	**	**	**	FH063-14P-71-04F	39	296
3.7	4.5	958	0.90	378.37	6.5	9.9	6.5	2.2			
4.1	5.1	855	1.00	337.44	8.1	12.5	8.1	2.5			
4.5	5.5	784	1.05	309.42	9.0	12.7	9.0	2.7			
5.2	6.4	675	1.25	266.44	10.0	13.1	10.0	3.1			
5.7	7.0	619	1.35	244.32	10.4	13.2	10.4	3.3			
6.8	8.3	523	1.60	206.59	11.0	13.6	11.0	3.6			
7.4	9.0	480	1.75	189.44	11.3	13.7	11.3	3.7			
8.3	10	428	1.95	169.09	11.5	13.9	11.5	3.9			
9.0	11	393	2.10	155.05	11.7	14.0	11.7	4.0			
11	13	330	2.50	130.15	11.9	14.2	11.9	4.2			
12	14	302	2.75	119.35	12.0	14.3	12.0	4.3			
4.9	6.1	714	0.85	187.00	**	**	**	**	FH053-14P-80-06E	26	294
5.4	6.7	653	0.95	170.85	5.2	8.4	5.2	3.3			
6.3	7.8	558	1.10	146.10	6.7	10.3	6.7	3.6			
6.9	8.5	510	1.20	133.49	7.3	10.4	7.3	3.7			
8.5	10	417	1.45	109.08	8.2	10.7	8.2	4.0			
9.3	11	381	1.60	99.66	8.5	10.8	8.5	4.1			
9.8	12	360	1.70	94.11	8.6	10.9	8.6	4.2			
11	13	328	1.85	85.99	8.8	11.0	8.8	4.3			
12	15	287	2.10	75.04	9.0	11.1	9.0	4.4			
15	19	230	2.65	60.26	9.3	11.3	9.3	4.6			
17	21	210	2.85	55.06	9.4	11.4	9.4	4.7			
4.5	5.6	780	0.80	308.00	**	**	**	**	FH053-14P-71-04F	23	294
5.0	6.1	713	0.85	281.41	**	**	**	**			
5.7	7.0	615	1.00	242.67	5.9	9.9	5.9	3.4			
6.3	7.7	562	1.10	221.71	6.7	10.3	6.7	3.6			
7.5	9.1	474	1.30	187.00	7.7	10.6	7.7	3.9			
8.2	10	433	1.40	170.85	8.1	10.7	8.1	4.0			
9.5	12	370	1.65	146.10	8.5	10.9	8.5	4.2			
10	13	338	1.80	133.49	8.8	11.0	8.8	4.3			
13	16	276	2.20	109.08	9.1	11.2	9.1	4.5			
14	17	252	2.40	99.66	9.2	11.2	9.2	4.5			
17	21	208	2.90	82.13	9.4	11.4	9.4	4.7			
11	13	334	1.15	87.38	8.8	11.0	8.8	4.3	FH052-14P-80-06E	26	294
12	14	305	1.15	79.84	8.9	11.1	8.9	4.4			
13	16	273	1.85	71.46	9.1	11.2	9.1	4.5			
14	17	249	1.85	65.29	9.2	11.2	9.2	4.5			
16	20	216	2.80	56.42	9.4	11.3	9.4	4.6			
19	24	184	1.15	48.15	9.5	11.2	9.5	4.5			
23	29	150	1.85	39.38	9.6	11.3	9.6	4.6			
16	20	221	1.70	87.38	9.3	11.3	9.3	4.6	FH052-14P-71-04F	22	294
17	21	202	1.70	79.84	9.4	11.4	9.4	4.7			
20	24	181	2.80	71.46	9.5	11.4	9.5	4.7			
21	26	165	2.80	65.29	9.5	11.5	9.5	4.8			
29	36	122	1.70	48.15	9.6	11.5	9.6	4.8			
35	43	100	2.80	39.38	9.7	11.6	9.7	4.9			
7.3	9.0	484	0.85	126.72	**	**	**	**			
8.0	9.9	442	0.95	115.60	2.6	3.6	2.6	2.3			
9.8	12	361	1.15	94.61	4.6	7.9	4.6	2.6			
11	13	330	1.25	86.31	5.1	8.3	5.1	2.7			
12	15	284	1.45	74.46	5.6	8.5	5.6	2.9			
13	16	272	1.50	71.24	5.8	8.5	5.8	2.9			
14	18	248	1.65	64.98	6.0	8.6	6.0	3.0			
18	22	200	2.05	52.27	6.4	8.8	6.4	3.2			
19	24	182	2.20	47.68	6.5	8.9	6.5	3.3			

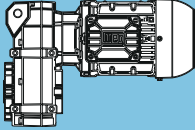
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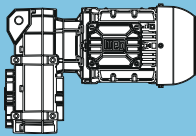
P_N = 0.37 kW

IE3

50 Hz 0.37 kW	60 Hz 0.44 kW	M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
6.6	8.1	533	0.80	210.48	**	**	**	**	FH043-14P-71-04F	17	292
7.3	8.9	486	0.85	192.00	**	**	**	**			
8.6	11	411	1.00	162.19	3.5	5.5	3.5	2.4			
9.4	12	375	1.10	147.96	4.3	7.3	4.3	2.6			
11	13	321	1.25	126.72	5.2	8.4	5.2	2.8			
12	15	293	1.40	115.60	5.5	8.5	5.5	2.9			
15	18	240	1.70	94.61	6.1	8.6	6.1	3.0			
16	20	219	1.85	86.31	6.2	8.7	6.2	3.1			
20	24	180	2.25	71.24	6.5	8.9	6.5	3.3			
21	26	165	2.45	64.98	6.6	8.9	6.6	3.3			
12	15	290	1.15	75.79	5.6	8.5	5.6	2.9	FH043-14P-80-06E	20	292
13	16	264	1.15	69.14	5.9	8.6	5.9	3.0			
15	18	237	1.70	61.98	6.1	8.7	6.1	3.1			
16	20	216	1.85	56.54	6.3	8.7	6.3	3.1			
19	23	187	2.15	48.94	6.5	8.8	6.5	3.2			
21	26	171	2.35	44.64	6.6	8.9	6.6	3.3			
22	28	157	1.15	41.20	6.6	8.7	6.6	3.1			
24	30	145	2.80	37.95	6.7	9.0	6.7	3.4			
27	34	129	1.85	33.69	6.8	8.8	6.8	3.2			
18	23	192	1.70	75.79	6.4	8.8	6.4	3.2	FH042-14P-71-04F	17	292
20	25	175	1.70	69.14	6.5	8.9	6.5	3.3			
23	28	157	2.55	61.98	6.6	8.9	6.6	3.3			
25	30	143	2.80	56.54	6.7	9.0	6.7	3.4			
34	42	104	1.70	41.20	6.9	9.0	6.9	3.4			
41	51	85	2.80	33.69	6.9	9.1	6.9	3.5			
13	16	268	0.85	70.17	**	**	**	**	FH032-14P-80-06E	19	290
15	18	243	0.95	63.63	2.8	2.6	2.8	2.6			
16	20	218	1.05	57.07	3.4	2.3	3.4	2.3			
18	22	198	1.15	51.75	3.8	2.8	3.8	2.8			
20	25	173	1.30	45.35	4.1	2.6	4.1	2.6			
22	28	157	1.45	41.12	4.3	3.0	4.3	3.0			
26	33	134	1.65	35.03	4.6	2.8	4.6	2.8			
29	36	121	1.85	31.76	4.7	3.1	4.7	3.1			
33	41	107	2.10	27.97	4.8	3.0	4.8	3.0			
36	45	97	2.30	25.36	4.9	3.2	4.9	3.2			
41	51	86	1.75	22.50	4.9	3.2	4.9	3.2			
44	54	81	2.75	21.14	4.9	3.2	4.9	3.2			
52	64	68	2.20	17.88	5.0	3.3	5.0	3.3			
67	83	53	2.85	13.81	5.1	3.4	5.1	3.4			
20	24	178	1.25	70.17	4.1	2.6	4.1	2.6	FH032-14P-71-04F	15	290
22	27	161	1.40	63.63	4.3	2.9	4.3	2.9			
24	30	145	1.55	57.07	4.5	2.8	4.5	2.8			
27	33	131	1.70	51.75	4.6	3.1	4.6	3.1			
31	38	115	1.95	45.35	4.7	2.9	4.7	2.9			
34	42	104	2.15	41.12	4.8	3.2	4.8	3.2			
40	49	89	2.50	35.03	4.9	3.1	4.9	3.1			
44	54	80	2.75	31.76	4.9	3.3	4.9	3.3			
50	62	70	1.70	27.67	5.0	3.3	5.0	3.3			
62	76	57	2.60	22.50	5.0	3.4	5.0	3.4			

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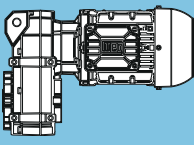
** ... on request

P _N = 0.37 kW										IE3			
50 Hz		60 Hz		M ₂	f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW					Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	F _{rN} kN	F _{aN} kN				F _{rN} kN	F _{aN} kN					
21	26	167	0.80	43.83	**	**	**	**					
25	30	143	0.95	37.52	4.6	1.9	4.6	1.9					
27	34	129	1.05	33.78	4.7	2.2	4.7	2.2					
32	39	112	1.20	29.32	4.9	2.1	4.9	2.1					
35	43	101	1.30	26.39	4.9	2.3	4.9	2.3					
37	46	95	0.90	24.76	5.0	2.3	5.0	2.3					
42	52	84	1.60	21.89	5.0	2.3	5.0	2.3					
46	57	77	1.10	20.08	5.1	2.4	5.1	2.4					
47	58	75	1.75	19.70	5.1	2.4	5.1	2.4					
49	60	72	1.85	18.88	5.1	2.3	5.1	2.3					
54	67	65	2.05	17.00	5.1	2.5	5.1	2.5					
56	69	63	2.10	16.48	5.1	2.4	5.1	2.4					
58	72	60	1.40	15.82	5.1	2.5	5.1	2.5					
62	77	57	2.30	14.84	5.2	2.5	5.2	2.5					
76	94	47	1.85	12.19	5.2	2.5	5.2	2.5					
77	94	46	2.85	12.09	5.2	2.5	5.2	2.5					
97	120	36	2.35	9.52	5.1	2.6	5.1	2.6					
23	28	157	0.85	61.80	**	**	**	**					
25	31	141	0.95	55.64	4.6	2.1	4.6	2.1					
29	35	123	1.10	48.69	4.8	2.0	4.8	2.0					
32	39	111	1.20	43.83	4.9	2.3	4.9	2.3					
37	46	95	1.40	37.52	5.0	2.2	5.0	2.2					
41	51	86	1.55	33.78	5.0	2.4	5.0	2.4					
48	58	74	1.80	29.32	5.1	2.3	5.1	2.3					
53	65	67	1.95	26.39	5.1	2.5	5.1	2.5					
56	69	63	1.35	24.76	5.1	2.5	5.1	2.5					
64	78	55	2.35	21.89	5.2	2.4	5.2	2.4					
69	85	51	1.70	20.08	5.2	2.5	5.2	2.5					
71	87	50	2.65	19.70	5.2	2.5	5.2	2.5					
85	104	42	3.15	16.48	5.2	2.5	5.2	2.5					
88	108	40	2.10	15.82	5.2	2.6	5.2	2.6					
94	115	38	3.50	14.84	5.2	2.6	5.2	2.6					
114	140	31	2.75	12.19	4.8	2.6	4.8	2.6					
115	141	31	4.25	12.09	4.8	2.6	4.8	2.6					
128	157	28	4.75	10.89	4.6	2.6	4.6	2.6					
147	180	24	3.50	9.52	4.4	2.6	4.4	2.6					
196	241	18	4.70	7.11	4.0	2.7	4.0	2.7					
261	320	14	6.20	5.35	3.6	2.7	3.6	2.7					
355	435	10	7.25	3.93	3.2	2.7	3.2	2.7					
										FH022-14P-80-06E		16	288
										FH022-14P-71-04F		13	288

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Legend see page 187

** ... on request

P _N = 0.55 kW										IE3		
50 Hz		60 Hz		at 50 Hz							m kg	Dimension sheet see page
0.55 kW		0.66 kW		Output shaft		Hollow shaft						
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aIN} kN	F _{rN} kN	F _{aIN} kN				
0.20	0.24	23938	0.80	4838.19	**	**	**	**	FH155-14P-L80-06F	691	320	
0.23	0.28	20111	0.90	4085.50	68.4	113.5	68.4	113.5				
0.24	0.29	19263	0.95	3923.28	72.6	114.2	72.6	114.2				
0.28	0.35	16249	1.15	3343.64	84.7	116.7	84.7	116.7				
0.29	0.35	15961	1.15	3284.26	85.7	116.9	85.7	116.9				
0.35	0.43	13008	1.40	2711.35	94.2	119.3	94.2	119.3				
0.36	0.43	12737	1.45	2661.75	94.8	119.5	94.8	119.5				
0.42	0.51	10722	1.70	2269.72	99.2	121.2	99.2	121.2				
0.51	0.63	8490	2.15	1839.52	103.0	123.0	103.0	123.0				
0.20	0.24	23131	0.80	7024.85	**	**	**	**	FH155-14P-80-04E	689	320	
0.24	0.29	19316	0.95	5911.67	72.3	114.1	72.3	114.1				
0.26	0.32	17578	1.05	5407.29	79.9	115.6	79.9	115.6				
0.29	0.36	15607	1.20	4838.19	86.9	117.2	86.9	117.2				
0.35	0.42	13044	1.40	4085.5	94.1	119.3	94.1	119.3				
0.36	0.44	12494	1.45	3923.28	95.4	119.7	95.4	119.7				
0.42	0.51	10485	1.75	3343.64	99.6	121.4	99.6	121.4				
0.43	0.52	10298	1.75	3284.26	100	121.5	100	121.5				
0.52	0.63	8306	2.20	2711.35	103.2	123.2	103.2	123.2				
0.53	0.65	8133	2.25	2661.75	103.5	123.3	103.5	123.3				
0.63	0.76	6775	2.70	2269.72	105.2	124.4	105.2	124.4				
0.41	0.50	11361	1.60	2318.30	97.9	120.7	97.9	120.7	FH154-14P-L80-06F	678	318	
0.47	0.58	9664	1.90	1996.74	101.1	122.1	101.1	122.1				
0.52	0.63	8826	2.05	1834.90	102.5	122.8	102.5	122.8				
0.55	0.67	8256	2.20	1727.10	103.3	123.2	103.3	123.2				
0.59	0.72	7595	2.40	1602.16	104.2	123.8	104.2	123.8				
0.60	0.73	7476	2.45	1580.39	104.4	123.9	104.4	123.9				
0.67	0.82	6615	2.75	1415.96	105.4	124.6	105.4	124.6				
0.68	0.84	6433	2.80	1379.93	105.6	124.7	105.6	124.7				
0.69	0.84	6360	2.85	1366.97	105.7	124.8	105.7	124.8				
0.61	0.74	7283	2.50	2318.3	104.6	124	104.6	124	FH154-14P-80-04E	676	318	
0.71	0.86	6156	2.95	1996.74	105.9	124.9	105.9	124.9				
0.41	0.50	11517	1.15	2307.03	74.9	86.4	74.9	86.4	FH124-14P-L80-06F	426	314	
0.47	0.57	9959	1.35	2011.51	78.8	87.9	78.8	87.9				
0.53	0.65	8764	1.50	1781.14	81.3	89.1	81.3	89.1				
0.55	0.67	8508	1.55	1732.67	81.8	89.3	81.8	89.3				
0.61	0.74	7563	1.75	1552.98	83.4	90.2	83.4	90.2				
0.63	0.77	7260	1.80	1493.78	83.9	90.5	83.9	90.5				
0.71	0.86	6434	2.05	1337.70	85.1	91.3	85.1	91.3				
0.73	0.89	6252	2.10	1302.43	85.3	91.5	85.3	91.5				
0.81	0.99	5569	2.35	1172.32	86.2	92.1	86.2	92.1				
0.82	1.0	5461	2.40	1151.94	86.3	92.2	86.3	92.2				
0.84	1.0	5307	2.45	1121.89	86.5	92.4	86.5	92.4				
0.92	1.1	4775	2.75	1022.15	87.0	92.9	87.0	92.9				
0.98	1.2	4485	2.90	966.09	87.3	93.2	87.3	93.2				
0.62	0.75	7477	1.75	2307.03	83.6	90.3	83.6	90.3	FH124-14P-80-04E	424	314	
0.71	0.86	6439	2.05	2011.51	85.1	91.3	85.1	91.3				
0.80	0.97	5631	2.35	1781.14	86.1	92.1	86.1	92.1				
0.82	0.99	5466	2.40	1732.67	86.3	92.2	86.3	92.2				
0.91	1.1	4838	2.70	1552.98	87.0	92.8	87.0	92.8				
0.95	1.2	4625	2.85	1493.78	87.2	93.0	87.2	93.0				
0.48	0.58	10009	0.80	1976.36	**	**	**	**	FH104-14P-L80-06F	286	310	
0.54	0.66	8847	0.95	1757.78	41.3	59.3	41.3	59.3				
0.55	0.68	8595	0.95	1707.58	42.7	59.6	42.7	59.6				
0.62	0.76	7648	1.05	1525.85	47.4	60.7	47.4	60.7				
0.64	0.78	7374	1.10	1474.19	48.5	61.0	48.5	61.0				
0.72	0.88	6554	1.25	1318.33	51.6	61.9	51.6	61.9				
0.74	0.90	6349	1.30	1279.68	52.3	62.1	52.3	62.1				
0.82	1.0	5716	1.40	1156.94	54.3	62.8	54.3	62.8				
0.85	1.0	5440	1.50	1105.64	55.1	63.1	55.1	63.1				
0.94	1.2	4911	1.65	1004.29	56.4	63.7	56.4	63.7				
1.1	1.3	4331	1.85	892.89	57.7	64.3	57.7	64.3				
1.2	1.5	3705	2.20	775.08	58.8	65.0	58.8	65.0				
1.3	1.6	3516	2.30	738.55	59.2	65.3	59.2	65.3				
1.4	1.7	3155	2.55	669.67	59.7	65.7	59.7	65.7				
1.5	1.8	3001	2.70	641.10	59.9	65.8	59.9	65.8				

P _N = 0.55 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.55 kW		0.66 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.62	0.76	7579	1.10	2276.77	47.7	60.7	47.7	60.7	FH104-14P-80-04E	284	310
0.72	0.87	6539	1.25	1976.36	51.7	61.9	51.7	61.9			
0.81	0.98	5780	1.40	1757.78	54.1	62.7	54.1	62.7			
0.83	1.0	5603	1.45	1707.58	54.6	62.9	54.6	62.9			
0.93	1.1	4966	1.65	1525.85	56.3	63.6	56.3	63.6			
0.96	1.2	4788	1.70	1474.19	56.7	63.8	56.7	63.8			
1.1	1.3	4246	1.90	1318.33	57.8	64.4	57.8	64.4			
1.2	1.5	3680	2.20	1156.94	58.9	65.1	58.9	65.1			
1.3	1.6	3503	2.30	1105.64	59.2	65.3	59.2	65.3			
1.4	1.7	3149	2.55	1004.29	59.7	65.7	59.7	65.7			
1.6	1.9	2759	2.90	892.89	60.2	66.1	60.2	66.1			
0.88	1.1	5405	0.85	1069.42	**	**	**	**	FH094-14P-L80-06F	181	306
0.97	1.2	4901	0.95	973.69	25.1	38.5	25.1	38.5			
1.1	1.4	4118	1.10	823.17	30.2	39.5	30.2	39.5			
1.3	1.6	3657	1.25	735.68	32.5	40.2	32.5	40.2			
1.5	1.9	3060	1.50	621.95	34.9	40.9	34.9	40.9			
1.6	1.9	2957	1.55	602.09	35.3	41.1	35.3	41.1			
1.9	2.3	2469	1.85	509.01	36.7	41.7	36.7	41.7			
2.3	2.8	1965	2.30	412.76	37.9	42.4	37.9	42.4			
2.7	3.3	1611	2.80	345.53	38.6	42.9	38.6	42.9			
2.9	3.5	1535	2.95	331.24	38.7	43.0	38.7	43.0			
0.84	1.0	5679	0.80	1685.14	**	**	**	**	FH094-14P-80-04E	179	306
0.92	1.1	5187	0.90	1545.54	22.7	38.1	22.7	38.1			
1.1	1.3	4359	1.05	1306.62	28.8	39.2	28.8	39.2			
1.3	1.6	3531	1.30	1069.42	33.1	40.3	33.1	40.3			
1.5	1.8	3195	1.45	973.69	34.4	40.8	34.4	40.8			
1.7	2.1	2673	1.70	823.17	36.2	41.5	36.2	41.5			
1.9	2.3	2370	1.90	735.68	37.0	41.9	37.0	41.9			
2.3	2.8	1970	2.30	621.95	37.9	42.4	37.9	42.4			
2.4	2.9	1899	2.40	602.09	38.1	42.5	38.1	42.5			
2.8	3.4	1573	2.90	509.01	38.7	42.9	38.7	42.9			
2.9	3.5	1502	3.00	488.23	38.8	43.0	38.8	43.0			
3.3	4.0	1604	2.85	288.50	38.6	42.9	38.6	42.9			
1.3	1.5	3789	0.80	748.21	**	**	**	**	FH084-14P-L80-06F	127	302
1.5	1.8	3180	0.95	631.81	17.7	30.5	17.7	7.6			
1.6	1.9	3047	1.00	606.72	19.0	33.3	19.0	7.8			
1.8	2.2	2576	1.20	517.08	22.5	41.0	22.5	8.5			
1.9	2.3	2530	1.20	507.90	22.7	41.1	22.7	8.6			
2.0	2.4	2382	1.30	480.21	23.6	41.3	23.6	8.8			
2.3	2.8	2063	1.50	419.30	25.2	41.8	25.2	9.3			
2.4	2.9	1974	1.55	401.99	25.6	42.0	25.6	9.5			
2.7	3.3	1706	1.80	351.00	26.6	42.4	26.6	9.9			
2.9	3.5	1574	1.95	325.80	27.0	42.6	27.0	10.1			
3.3	4.1	1357	2.25	284.47	27.7	42.9	27.7	10.4			
1.3	1.6	3654	0.85	1086.37	**	**	**	**	FH084-14P-80-04E	125	302
1.5	1.8	3208	0.95	957.69	17.5	30.1	17.5	7.6			
1.6	1.9	3056	1.00	914.22	18.9	33.1	18.9	7.8			
1.7	2.1	2784	1.10	836.22	21.1	37.9	21.1	8.2			
1.9	2.3	2475	1.25	748.21	23.1	41.2	23.1	8.7			
2.0	2.4	2389	1.30	723.59	23.6	41.3	23.6	8.8			
2.2	2.7	2073	1.45	631.81	25.1	41.8	25.1	9.3			
2.3	2.8	1983	1.55	606.72	25.5	41.9	25.5	9.4			
2.4	2.9	1931	1.60	592.20	25.7	42.0	25.7	9.5			
2.7	3.3	1672	1.80	517.08	26.7	42.4	26.7	9.9			
2.8	3.4	1639	1.85	507.90	26.8	42.5	26.8	10.0			
3.0	3.6	1544	1.95	480.21	27.1	42.6	27.1	10.1			
3.4	4.1	1328	2.30	419.30	27.8	43.0	27.8	10.5			
3.5	4.3	1268	2.40	401.99	27.9	43.0	27.9	10.5			
4.0	4.9	1091	2.75	351.00	28.3	43.3	28.3	10.8			
4.4	5.3	1002	3.00	325.80	28.5	43.5	28.5	11.0			

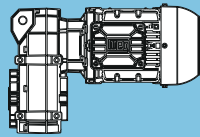
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** ... on request

P_N = 0.55 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW	0.66 kW	M ₂ Nm	f _b		Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
2.6	3.2	1993	1.55	358.52	25.5	41.9	25.5	9.4	FH083-14P-L80-06F	114	300
3.3	4.1	1577	1.95	283.76	27.0	42.6	27.0	10.1			
3.8	4.7	1377	2.20	247.77	27.6	42.9	27.6	10.4			
4.3	5.3	1217	2.50	218.97	28.0	43.1	28.0	10.6			
5.1	6.2	1029	2.95	185.17	28.4	43.4	28.4	10.9			
5.2	6.4	1002	3.00	180.28	28.5	43.5	28.5	11.0			
4.0	4.8	1326	2.30	358.52	27.8	43.0	27.8	10.5	FH083-14P-80-04E	112	300
5.0	6.1	1050	2.90	283.76	28.4	43.4	28.4	10.9			
3.1	3.8	1698	0.90	305.42	13.9	15.5	13.9	4.3	FH073-14P-L80-06F	66	298
4.0	4.9	1318	1.15	237.15	16.8	16.3	16.8	5.1			
4.9	5.9	1082	1.40	194.58	18.1	16.8	18.1	5.5			
6.3	7.7	838	1.80	150.69	19.1	17.3	19.1	6.0			
8.2	10	637	2.40	114.62	19.7	17.7	19.7	6.5			
10	12	525	2.90	94.52	19.9	17.9	18.6	6.7			
3.7	4.5	1425	1.10	385.37	16.1	16.1	16.1	4.8	FH073-14P-80-04E	64	298
4.6	5.6	1130	1.35	305.42	17.9	16.7	17.9	5.4			
6.0	7.3	877	1.75	237.15	18.9	17.2	18.9	6.0			
7.3	8.8	720	2.10	194.58	19.4	17.5	19.4	6.3			
9.4	11	557	2.70	150.69	19.9	17.9	19.0	6.6			
5.0	6.1	1053	0.80	189.44	**	**	**	**			
5.6	6.8	940	0.90	169.09	6.9	10.8	6.9	2.3	FH063-14P-L80-06F	43	296
6.1	7.4	862	1.00	155.05	8.0	12.4	8.0	2.5			
7.3	8.9	723	1.15	130.15	9.6	12.9	9.6	3.0			
7.9	9.7	663	1.25	119.35	10.1	13.1	10.1	3.1			
9.6	12	547	1.55	98.34	10.9	13.5	10.9	3.5			
10	13	501	1.65	90.17	11.2	13.6	11.2	3.7			
12	14	447	1.85	80.48	11.4	13.8	11.4	3.9			
13	16	410	2.00	73.80	11.6	13.9	11.6	4.0			
14	18	363	2.30	65.26	11.8	14.1	11.8	4.1			
16	19	333	2.50	59.84	11.9	14.2	11.9	4.2			
17	21	304	2.75	54.63	12.0	14.3	12.0	4.3			
19	23	278	2.95	50.10	12.1	14.3	12.1	4.4			
5.3	6.5	986	0.85	266.44	**	**	**	**			
5.8	7.0	904	0.95	244.32	7.4	11.8	7.4	2.3			
6.9	8.3	764	1.10	206.59	9.2	12.8	9.2	2.8			
7.5	9.1	701	1.20	189.44	9.8	13.0	9.8	3.0			
8.4	10	625	1.35	169.09	10.4	13.2	10.4	3.3			
9.2	11	574	1.45	155.05	10.7	13.4	10.7	3.4			
11	13	481	1.75	130.15	11.3	13.7	11.3	3.7			
12	14	441	1.90	119.35	11.5	13.8	11.5	3.9			
14	17	364	2.30	98.34	11.8	14.1	11.8	4.1			
16	19	334	2.50	90.17	11.9	14.2	11.9	4.2			
18	21	298	2.80	80.48	12.0	14.3	12.0	4.3			
19	23	276	3.00	49.67	12.1	14.4	12.1	4.4			
7.1	8.7	742	0.85	133.49	**	**	**	**	FH053-14P-L80-06F	27	294
8.7	11	606	1.00	109.08	6.0	10.1	6.0	3.4			
9.5	12	554	1.10	99.66	6.8	10.3	6.8	3.6			
10	12	523	1.15	94.11	7.1	10.4	7.1	3.7			
11	13	478	1.25	85.99	7.6	10.5	7.6	3.8			
12	14	456	1.35	82.13	7.8	10.6	7.8	3.9			
13	15	417	1.45	75.04	8.2	10.7	8.2	4.0			
16	19	335	1.80	60.26	8.8	11.0	8.8	4.3			
17	21	306	2.00	55.06	8.9	11.1	8.9	4.4			
7.6	9.2	692	0.90	187.00	4.3	6.5	4.3	3.2	FH053-14P-80-04E	25	294
8.3	10	632	0.95	170.85	5.6	9.2	5.6	3.3			
9.7	12	540	1.15	146.10	6.9	10.3	6.9	3.6			
11	13	494	1.25	133.49	7.5	10.5	7.5	3.8			
13	16	403	1.50	109.08	8.3	10.8	8.3	4.1			
14	17	369	1.65	99.66	8.6	10.9	8.6	4.2			
15	18	348	1.75	94.11	8.7	10.9	8.7	4.2			
17	20	318	1.90	85.99	8.9	11.0	8.9	4.3			
19	23	278	2.20	75.04	9.1	11.1	9.1	4.4			
24	29	223	2.70	60.26	9.3	11.3	9.3	4.6			
26	31	204	2.95	55.06	9.4	11.4	9.4	4.7			

P _N = 0.55 kW										IE3		
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page	
0.55 kW		0.66 kW		Output shaft		Hollow shaft						
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
11	13	486	0.80	87.38	**	**	**	**	FH052-14P-L80-06F	27	294	
12	14	444	0.80	79.84	**	**	**	**				
13	16	397	1.30	71.46	8.3	10.8	8.3	4.1				
14	18	363	1.30	65.29	8.6	10.9	8.6	4.2				
17	20	314	1.95	56.42	8.9	11	8.9	4.3				
18	22	287	2.10	51.55	9.0	11.1	9.0	4.4				
20	24	268	0.80	48.15	**	**	**	**				
22	26	243	2.50	43.75	9.2	11.3	9.2	4.6				
24	29	222	2.70	39.97	9.3	11.3	9.3	4.6				
30	37	173	2.10	31.09	9.5	11.3	9.5	4.6				
39	48	134	2.70	24.11	9.6	11.4	9.6	4.7				
16	20	323	1.15	87.38	8.8	11.0	8.8	4.3	FH052-14P-80-04E	25	294	
18	22	295	1.15	79.84	9.0	11.1	9.0	4.4				
20	24	264	1.90	71.46	9.2	11.2	9.2	4.5				
22	26	242	1.90	65.29	9.3	11.3	9.3	4.6				
25	30	209	2.90	56.42	9.4	11.4	9.4	4.7				
29	36	178	1.15	48.15	9.5	11.2	9.5	4.5				
36	44	146	1.90	39.38	9.6	11.4	9.6	4.7				
10	12	526	0.80	94.61	**	**	**	**	FH043-14P-L80-06F	21	292	
11	13	480	0.85	86.31	**	**	**	**				
12	14	454	0.90	81.63	2.1	2.6	2.1	2.3				
13	16	396	1.05	71.24	3.9	6.4	3.9	2.5				
13	16	414	1.00	74.46	3.5	5.5	3.5	2.4				
15	18	361	1.15	64.98	4.6	7.9	4.6	2.6				
18	22	291	1.40	52.27	5.6	8.5	5.6	2.9				
20	24	265	1.55	47.68	5.8	8.6	5.8	3.0				
11	14	469	0.90	126.72	1.2	0.7	1.2	0.7	FH043-14P-80-04E	19	292	
12	15	428	0.95	115.6	3.1	4.7	3.1	2.4				
15	18	350	1.15	94.61	4.8	8.3	4.8	2.7				
16	20	319	1.30	86.31	5.2	8.4	5.2	2.8				
17	21	302	1.35	81.63	5.4	8.4	5.4	2.8				
19	23	275	1.50	74.46	5.7	8.5	5.7	2.9				
20	24	264	1.55	71.24	5.9	8.6	5.9	3.0				
22	26	240	1.70	64.98	6.1	8.7	6.1	3.1				
27	33	193	2.10	52.27	6.4	8.8	6.4	3.2				
30	36	176	2.30	47.68	6.5	8.9	6.5	3.3				
12	15	421	0.80	75.79	**	**	**	**	FH042-14P-L80-06F	21	292	
14	17	384	0.80	69.14	**	**	**	**				
15	19	344	1.20	61.98	4.9	8.3	4.9	2.7				
17	20	314	1.30	56.54	5.3	8.4	5.3	2.8				
19	24	272	1.50	48.94	5.8	8.5	5.8	2.9				
21	26	248	1.65	44.64	6.0	8.6	6.0	3.0				
23	28	229	0.80	41.20	**	**	**	**				
25	30	211	1.90	37.95	6.3	8.7	6.3	3.1				
27	33	192	2.10	34.62	6.4	8.8	6.4	3.2				
28	34	187	1.30	33.69	6.5	8.6	6.5	3.0				
30	37	173	2.35	31.06	6.6	8.9	6.6	3.3				
33	41	157	2.55	28.33	6.6	8.9	6.6	3.3				
36	43	148	2.10	26.60	6.7	8.8	6.7	3.2				
46	56	115	2.70	20.63	6.8	8.9	6.8	3.3				
19	23	280	1.15	75.79	5.7	8.5	5.7	2.9	FH042-14P-80-04E	19	292	
21	25	256	1.15	69.14	5.9	8.6	5.9	3.0				
23	28	229	1.75	61.98	6.2	8.7	6.2	3.1				
25	30	209	1.90	56.54	6.3	8.8	6.3	3.2				
29	35	181	2.25	48.94	6.5	8.9	6.5	3.3				
32	39	165	2.45	44.64	6.6	8.9	6.6	3.3				
34	42	152	1.15	41.20	6.7	8.7	6.7	3.1				
37	45	140	2.85	37.95	6.7	9.0	6.7	3.4				
42	51	125	1.90	33.69	6.8	8.9	6.8	3.3				

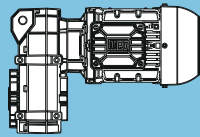
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** ... on request

P_N = 0.55 kW

IE3

50 Hz 0.55 kW n ₅₀ min ⁻¹	60 Hz 0.66 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
18	22	288	0.80	51.75	**	**	**	**	FH032-14P-L80-06F	20	290
21	25	252	0.90	45.35	2.6	2.1	2.6	2.1			
23	28	229	1.00	41.12	3.2	2.6	3.2	2.6			
27	33	195	1.15	35.03	3.8	2.4	3.8	2.4			
30	36	177	1.25	31.76	4.1	2.9	4.1	2.9			
34	41	155	1.45	27.97	4.3	2.7	4.3	2.7			
37	46	141	1.60	25.36	4.5	3.0	4.5	3.0			
42	51	125	1.20	22.50	4.6	3.0	4.6	3.0			
45	55	118	1.90	21.14	4.7	2.9	4.7	2.9			
49	60	107	2.10	19.17	4.8	3.2	4.8	3.2			
53	65	99	1.55	17.88	4.8	3.1	4.8	3.1			
59	72	89	2.50	16.06	4.9	3.1	4.9	3.1			
65	79	81	2.75	14.57	4.9	3.3	4.9	3.3			
68	84	77	2.00	13.81	5.0	3.3	5.0	3.3			
86	105	61	2.45	11.03	5.0	3.3	5.0	3.3			
20	25	260	0.85	70.17	**	**	**	**	FH032-14P-80-04E	18	290
22	27	235	0.95	63.63	3.0	2.6	3.0	2.6			
25	30	211	1.05	57.07	3.5	2.3	3.5	2.3			
27	33	191	1.15	51.75	3.9	2.8	3.9	2.8			
31	38	168	1.35	45.35	4.2	2.6	4.2	2.6			
35	42	152	1.45	41.12	4.4	3.0	4.4	3.0			
41	49	130	1.70	35.03	4.6	2.8	4.6	2.8			
45	54	117	1.90	31.76	4.7	3.1	4.7	3.1			
51	61	103	2.15	27.97	4.8	3.0	4.8	3.0			
56	68	94	2.35	25.36	4.9	3.2	4.9	3.2			
63	76	83	1.80	22.50	4.9	3.2	4.9	3.2			
67	81	78	2.85	21.14	5.0	3.2	5.0	3.2			
79	96	66	2.30	17.88	5.0	3.3	5.0	3.3			
103	125	51	2.95	13.81	5.1	3.4	5.1	3.4			
32	39	163	0.80	29.32	**	**	**	**			
36	44	147	0.90	26.39	4.6	2.1	4.6	2.1			
43	53	122	1.10	21.89	4.8	2.0	4.8	2.0			
47	58	112	0.80	20.08	**	**	**	**			
48	59	109	1.20	19.70	4.9	2.3	4.9	2.3			
50	61	105	1.25	18.88	4.9	2.1	4.9	2.1			
56	68	94	1.40	17.00	5.0	2.3	5.0	2.3			
57	70	92	1.45	16.48	5.0	2.2	5.0	2.2			
60	73	88	1.00	15.82	5.0	2.4	5.0	2.4			
64	78	82	1.60	14.84	5.1	2.4	5.1	2.4			
78	95	68	1.25	12.19	5.1	2.5	5.1	2.5			
87	106	61	2.15	10.89	5.1	2.5	5.1	2.5			
99	121	53	1.60	9.52	5.2	2.5	5.2	2.5			
133	162	40	2.15	7.11	4.6	2.6	4.6	2.6			
154	188	34	2.50	6.13	4.4	2.6	4.4	2.6			
177	216	30	2.85	5.35	4.2	2.6	4.2	2.6			

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** ... on request

P _N = 0.55 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
32	39	162	0.85	43.83	**	**	**	**	**	FH022-14P-80-04E	15	288
38	46	139	0.95	37.52	4.6	1.9	4.6	1.9				
42	51	125	1.05	33.78	4.8	2.2	4.8	2.2				
48	59	108	1.20	29.32	4.9	2.1	4.9	2.1				
54	65	98	1.35	26.39	5.0	2.3	5.0	2.3				
57	69	92	0.95	24.76	5.0	2.4	5.0	2.4				
65	79	81	1.65	21.89	5.1	2.3	5.1	2.3				
71	86	74	1.15	20.08	5.1	2.4	5.1	2.4				
72	87	73	1.80	19.70	5.1	2.4	5.1	2.4				
75	91	70	1.90	18.88	5.1	2.3	5.1	2.3				
84	101	63	2.10	17.00	5.1	2.5	5.1	2.5				
86	104	61	2.15	16.48	5.1	2.4	5.1	2.4				
90	109	59	1.45	15.82	5.2	2.5	5.2	2.5				
96	116	55	2.40	14.84	5.2	2.5	5.2	2.5				
116	141	45	1.90	12.19	4.9	2.6	4.9	2.6				
117	142	45	2.95	12.09	4.9	2.5	4.9	2.5				
130	158	40	3.25	10.89	4.7	2.6	4.7	2.6				
149	181	35	2.40	9.52	4.5	2.6	4.5	2.6				
200	242	26	3.20	7.11	4.0	2.6	4.0	2.6				
232	281	23	3.75	6.13	3.8	2.7	3.8	2.7				
265	321	20	4.25	5.35	3.6	2.7	3.6	2.7				
361	438	15	5.00	3.93	3.2	2.7	3.2	2.7				

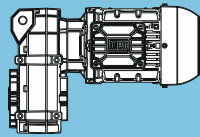


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** ... on request

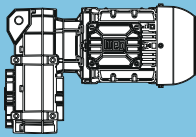
P_N = 0.75 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.28	0.34	22679	0.80	3343.64	**	**	**	**	FH155-11P-90S/L-06E	697	320
0.29	0.35	22220	0.85	3284.26	**	**	**	**			
0.35	0.42	18203	1.00	2711.35	77.3	115.1	77.3	115.1			
0.41	0.50	15082	1.20	2269.72	88.5	117.6	88.5	117.6			
0.51	0.62	12036	1.50	1839.52	96.5	120.1	96.5	120.1			
0.30	0.36	21517	0.85	4838.19	**	**	**	**	FH155-11P-80-04F	691	320
0.35	0.43	18030	1.00	4085.50	78.0	115.2	78.0	115.2			
0.36	0.44	17270	1.05	3923.28	81.0	115.8	81.0	115.8			
0.43	0.52	14568	1.25	3343.64	90.0	118.0	90.0	118.0			
0.44	0.53	14272	1.30	3284.26	90.9	118.3	90.9	118.3			
0.53	0.64	11632	1.55	2711.35	97.3	120.5	97.3	120.5			
0.54	0.65	11390	1.60	2661.75	97.8	120.7	97.8	120.7			
0.63	0.77	9563	1.90	2269.72	101.3	122.2	101.3	122.2			
0.78	0.95	7552	2.40	1839.52	104.3	123.8	104.3	123.8			
0.41	0.49	15865	1.15	2318.30	86.0	117.0	86.0	117.0	FH154-11P-90S/L-06E	684	318
0.47	0.57	13553	1.35	1996.74	92.8	118.9	92.8	118.9			
0.51	0.62	12378	1.50	1834.90	95.7	119.8	95.7	119.8			
0.54	0.66	11626	1.55	1727.10	97.3	120.5	97.3	120.5			
0.59	0.71	10719	1.70	1602.16	99.2	121.2	99.2	121.2			
0.66	0.81	9376	1.95	1415.96	101.6	122.3	101.6	122.3			
0.68	0.83	9118	2.00	1379.93	102.0	122.5	102.0	122.5			
0.69	0.84	9032	2.00	1366.97	102.1	122.6	102.1	122.6			
0.77	0.94	7959	2.30	1219.56	103.7	123.5	103.7	123.5			
0.79	0.96	7798	2.35	1197.38	103.9	123.6	103.9	123.6			
0.89	1.1	6770	2.70	1054.87	105.2	124.4	105.2	124.4			
0.91	1.1	6605	2.75	1031.30	105.4	124.6	105.4	124.6			
0.62	0.75	10153	1.80	2318.30	100.2	121.7	100.2	121.7	FH154-11P-80-04F	678	318
0.72	0.87	8637	2.10	1996.74	102.7	122.9	102.7	122.9			
0.78	0.95	7871	2.30	1834.90	103.8	123.5	103.8	123.5			
0.83	1.0	7363	2.45	1727.10	104.5	124.0	104.5	124.0			
0.89	1.1	6759	2.70	1602.16	105.2	124.5	105.2	124.5			
0.90	1.1	6667	2.70	1580.39	105.3	124.5	105.3	124.5			
0.41	0.5	15984	0.85	2307.03	**	**	**	**	FH124-11P-90S/L-06E	432	314
0.47	0.57	13879	0.95	2011.51	67.4	84.1	67.4	84.1			
0.53	0.64	12214	1.10	1781.14	72.9	85.7	72.9	85.7			
0.54	0.66	11882	1.10	1732.67	73.9	86.1	73.9	86.1			
0.61	0.74	10584	1.25	1552.98	77.3	87.3	77.3	87.3			
0.63	0.77	10160	1.30	1493.78	78.3	87.7	78.3	87.7			
0.70	0.86	9042	1.45	1337.70	80.7	88.8	80.7	88.8			
0.72	0.88	8786	1.50	1302.43	81.3	89.0	81.3	89.0			
0.80	0.98	7843	1.70	1172.32	83.0	89.9	83.0	89.9			
0.82	0.99	7707	1.70	1151.94	83.2	90.1	83.2	90.1			
0.84	1.0	7490	1.75	1121.89	83.5	90.3	83.5	90.3			
0.92	1.1	6768	1.95	1022.15	84.6	91.0	84.6	91.0			
0.97	1.2	6370	2.05	966.09	85.2	91.4	85.2	91.4			
1.0	1.3	5929	2.20	904.76	85.7	91.8	85.7	91.8			
1.1	1.3	5746	2.30	880.46	86.0	92.0	86.0	92.0			
1.2	1.5	5084	2.60	788.86	86.7	92.6	86.7	92.6			
1.3	1.5	4793	2.75	748.37	87.0	92.9	87.0	92.9			
0.62	0.75	10314	1.30	2307.03	78.0	87.6	78.0	87.6	FH124-11P-80-04F	426	314
0.71	0.87	8919	1.50	2011.51	81.0	88.9	81.0	88.9			
0.80	0.98	7833	1.70	1781.14	83.0	90.0	83.0	90.0			
0.83	1.0	7604	1.75	1732.67	83.3	90.2	83.3	90.2			
0.92	1.1	6759	1.95	1552.98	84.6	91.0	84.6	91.0			
0.96	1.2	6475	2.05	1493.78	85.0	91.3	85.0	91.3			
1.1	1.3	5738	2.30	1337.70	86.0	92.0	86.0	92.0			
1.2	1.5	4956	2.65	1172.32	86.8	92.7	86.8	92.7			
1.3	1.6	4713	2.80	1121.89	87.1	93.0	87.1	93.0			

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** ... on request

P _N = 0.75 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.75 kW		0.90 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.62	0.75	10593	0.80	1525.85	**	**	**	**	FH104-11P-90S/L-06E	292	310
0.64	0.78	10235	0.80	1474.19	**	**	**	**			
0.71	0.87	9115	0.90	1318.33	39.7	59.0	39.7	59.0			
0.73	0.89	8830	0.95	1279.68	41.4	59.3	41.4	59.3			
0.81	0.99	7950	1.05	1156.94	46.0	60.3	46.0	60.3			
0.85	1.0	7582	1.10	1105.64	47.7	60.7	47.7	60.7			
0.94	1.1	6859	1.20	1004.29	50.6	61.5	50.6	61.5			
1.1	1.3	6060	1.35	892.89	53.3	62.4	53.3	62.4			
1.2	1.5	5218	1.55	775.08	55.6	63.4	55.6	63.4			
1.3	1.6	4951	1.65	738.55	56.3	63.7	56.3	63.7			
1.4	1.7	4462	1.80	669.67	57.4	64.2	57.4	64.2			
1.5	1.8	4254	1.90	641.10	57.8	64.4	57.8	64.4			
1.7	2.1	3622	2.25	553.91	59.0	65.1	59.0	65.1			
2.0	2.4	3040	2.65	472.61	59.9	65.8	59.9	65.8			
0.63	0.76	10390	0.80	2276.77	**	**	**	**	FH104-11P-80-04F	286	310
0.72	0.88	8982	0.90	1976.36	40.5	59.2	40.5	59.2			
0.81	0.99	7940	1.05	1757.78	46.1	60.3	46.1	60.3			
0.84	1.0	7713	1.05	1707.58	47.1	60.6	47.1	60.6			
0.94	1.1	6850	1.20	1525.85	50.6	61.5	50.6	61.5			
0.97	1.2	6605	1.25	1474.19	51.5	61.8	51.5	61.8			
1.1	1.3	5870	1.40	1318.33	53.8	62.6	53.8	62.6			
1.2	1.5	5109	1.60	1156.94	55.9	63.5	55.9	63.5			
1.3	1.6	4872	1.65	1105.64	56.5	63.7	56.5	63.7			
1.4	1.7	4389	1.85	1004.29	57.5	64.3	57.5	64.3			
1.6	1.9	3862	2.10	892.89	58.6	64.9	58.6	64.9			
1.8	2.2	3304	2.45	775.08	59.5	65.5	59.5	65.5			
1.9	2.4	3129	2.60	738.55	59.7	65.7	59.7	65.7			
2.1	2.6	2808	2.85	669.67	60.2	66.0	60.2	66.0			
2.2	2.7	2671	3.00	641.10	60.3	66.2	60.3	66.2			
1.1	1.4	5715	0.80	823.17	**	**	**	**	FH094-11P-90S/L-06E	187	306
1.3	1.6	5087	0.90	735.68	23.6	38.3	23.6	38.3			
1.5	1.8	4265	1.10	621.95	29.4	39.3	29.4	39.3			
1.6	1.9	4129	1.10	602.09	30.2	39.5	30.2	39.5			
1.8	2.2	3462	1.30	509.01	33.4	40.4	33.4	40.4			
1.9	2.3	3307	1.40	488.23	34.0	40.6	34.0	40.6			
2.3	2.8	2767	1.65	412.76	35.9	41.3	35.9	41.3			
2.7	3.3	2283	2.00	345.53	37.2	42.0	37.2	42.0			
2.8	3.5	2180	2.10	331.24	37.5	42.1	37.5	42.1			
3.4	4.1	1812	2.50	280.04	38.2	42.6	38.2	42.6			
1.1	1.3	5963	0.80	1306.62	**	**	**	**	FH094-11P-80-04F	181	306
1.3	1.6	4850	0.95	1069.42	25.5	38.6	25.5	38.6			
1.5	1.8	4398	1.05	973.69	28.6	39.2	28.6	39.2			
1.7	2.1	3688	1.25	823.17	32.4	40.1	32.4	40.1			
1.9	2.4	3276	1.40	735.68	34.1	40.7	34.1	40.7			
2.3	2.8	2741	1.65	621.95	35.9	41.4	35.9	41.4			
2.4	2.9	2648	1.70	602.09	36.2	41.5	36.2	41.5			
2.8	3.4	2206	2.05	509.01	37.4	42.1	37.4	42.1			
2.9	3.6	2107	2.15	488.23	37.6	42.2	37.6	42.2			
3.5	4.2	1749	2.60	412.76	38.4	42.7	38.4	42.7			
3.3	4.0	2198	2.05	288.50	37.4	42.1	37.4	42.1	FH093-11P-90S/L-06E	174	304
3.9	4.7	1858	2.45	243.90	38.1	42.5	38.1	42.5			
4.5	5.4	1609	2.80	211.14	38.6	42.9	38.6	42.9			
1.8	2.2	3582	0.85	517.08	**	**	**	**	FH084-11P-90S/L-06E	132	302
1.9	2.3	3512	0.90	507.90	13.9	22.4	13.9	22.4			
2.0	2.4	3313	0.95	480.21	16.3	27.5	16.3	27.5			
2.2	2.7	2881	1.05	419.30	20.3	36.2	20.3	36.2			
2.3	2.8	2823	1.10	411.63	20.8	37.2	20.8	37.2			
2.7	3.3	2387	1.30	351.00	23.6	41.3	23.6	41.3			
2.9	3.5	2207	1.40	325.80	24.5	41.6	24.5	41.6			
3.3	4.0	1911	1.60	284.47	25.8	42.1	25.8	42.1			

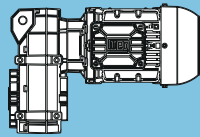
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** ... on request

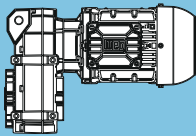
P_N = 0.75 kW

IE3

50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.75 kW	0.90 kW	M ₂ Nm	f _b	i	Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.7	2.1	3816	0.80	836.22	**	**	**	**	FH084-11P-80-04F	126	302
1.9	2.3	3401	0.90	748.21	15.3	25.4	15.3	7.3			
2.0	2.4	3282	0.95	723.59	16.7	28.3	16.7	7.4			
2.3	2.8	2848	1.10	631.81	20.6	36.8	20.6	8.1			
2.4	2.9	2735	1.10	606.72	21.4	38.6	21.4	8.3			
2.8	3.4	2312	1.30	517.08	24.0	41.4	24.0	8.9			
3.0	3.6	2134	1.45	480.21	24.9	41.7	24.9	9.2			
3.4	4.1	1848	1.65	419.30	26.1	42.2	26.1	9.7			
3.5	4.2	1810	1.70	411.63	26.2	42.2	26.2	9.7			
3.6	4.3	1768	1.70	401.99	26.4	42.3	26.4	9.8			
4.1	5.0	1525	2.00	351.00	27.2	42.6	27.2	10.1			
4.4	5.3	1406	2.15	325.80	27.5	42.8	27.5	10.3			
5.0	6.1	1210	2.50	284.47	28.0	43.1	28.0	10.6			
2.6	3.2	2732	1.10	358.52	21.4	38.6	21.4	8.3	FH083-11P-90S/L-06E	119	300
3.3	4.0	2162	1.40	283.76	24.7	41.7	24.7	9.2			
3.8	4.6	1888	1.60	247.77	25.9	42.1	25.9	9.6			
4.3	5.2	1668	1.80	218.97	26.7	42.4	26.7	9.9			
5.1	6.2	1411	2.15	185.17	27.5	42.8	27.5	10.3			
5.2	6.4	1374	2.20	180.28	27.6	42.9	27.6	10.4			
5.9	7.2	1213	2.50	159.17	28.0	43.1	28.0	10.6			
6.6	8.0	1087	2.80	142.69	28.3	43.3	28.3	10.8			
6.8	8.2	1059	2.85	138.95	28.4	43.4	28.4	10.9			
4.0	4.9	1796	1.70	358.52	26.3	42.2	26.3	9.7	FH083-11P-80-04F	113	300
5.0	6.1	1421	2.15	283.76	27.5	42.8	27.5	10.3			
5.8	7.0	1241	2.45	247.77	28.0	43.1	28.0	10.6			
6.5	7.9	1097	2.75	218.97	28.3	43.3	28.3	10.8			
4.0	4.8	1807	0.85	237.15	**	**	**	**	FH073-11P-90S/L-06E	72	298
4.8	5.9	1483	1.05	194.58	15.7	16.0	15.7	4.7			
6.2	7.6	1148	1.35	150.69	17.8	16.7	17.8	5.4			
8.2	10	873	1.75	114.62	18.9	17.2	18.9	6.0			
9.9	12	720	2.10	94.52	19.4	17.5	19.3	6.3			
12	15	591	2.55	77.53	19.8	17.8	17.8	6.5			
14	17	502	3.00	65.88	20.0	18.0	16.7	6.7			
3.7	4.5	1930	0.80	385.37	**	**	**	**	FH073-11P-80-04F	66	298
4.7	5.7	1530	1.00	305.42	15.3	15.9	15.3	4.6			
6.0	7.3	1188	1.30	237.15	17.6	16.6	17.6	5.3			
7.3	8.9	975	1.55	194.58	18.6	17.0	18.6	5.8			
9.5	12	755	2.00	150.69	19.3	17.5	19.3	6.2			
12	15	574	2.65	114.62	19.8	17.8	17.7	6.6			
7.2	8.8	992	0.85	130.15	**	**	**	**	FH063-11P-90S/L-06E	49	296
7.9	9.6	909	0.95	119.35	7.3	11.6	7.3	2.3			
9.6	12	749	1.10	98.34	9.3	12.8	9.3	2.9			
10	13	687	1.20	90.17	9.9	13.0	9.9	3.0			
12	14	613	1.35	80.48	10.5	13.3	10.5	3.3			
13	16	562	1.50	73.80	10.8	13.4	10.8	3.5			
14	18	497	1.65	65.26	11.2	13.6	11.2	3.7			
16	19	456	1.80	59.84	11.4	13.8	11.4	3.8			
17	21	416	2.00	54.63	11.6	13.9	11.6	4.0			
19	23	382	2.15	50.10	11.7	14.0	11.7	4.0			
6.9	8.4	1035	0.80	206.59	**	**	**	**	FH063-11P-80-04F	43	296
7.5	9.2	949	0.90	189.44	6.7	10.3	6.7	2.2			
8.5	10	847	1.00	169.09	8.2	12.5	8.2	2.6			
9.2	11	777	1.10	155.05	9.0	12.7	9.0	2.8			
11	13	652	1.30	130.15	10.2	13.1	10.2	3.2			
12	15	598	1.40	119.35	10.6	13.3	10.6	3.3			
15	18	493	1.70	98.34	11.2	13.7	11.2	3.7			
16	19	452	1.85	90.17	11.4	13.8	11.4	3.8			
18	22	403	2.05	80.48	11.6	13.9	11.6	4.0			
19	24	370	2.25	73.80	11.8	14.0	11.8	4.1			
22	27	327	2.55	65.26	11.9	14.2	11.9	4.2			
24	29	300	2.75	59.84	12.0	14.3	11.7	4.3			
26	32	274	3.00	54.63	12.1	14.4	11.3	4.4			

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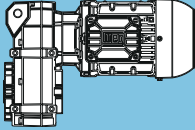
** ... on request

P _N = 0.75 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
19	23	378	2.20	49.67	11.7	14.0	11.7	4.1	FH062-11P-90S/L-06E	48	296
21	25	347	2.40	45.55	11.9	14.1	11.9	4.2			
23	27	317	2.60	41.66	12.0	14.2	11.9	4.3			
25	30	291	2.85	38.2	12.0	14.3	11.5	4.3			
46	56	156	2.75	20.49	12.4	14.6	9.2	4.6			
9.4	11	759	0.80	99.66	**	**	**	**	FH053-11P-90S/L-06E	33	294
10	12	717	0.85	94.11	**	**	**	**			
11	13	655	0.95	85.99	5.1	8.2	5.1	3.3			
11	14	626	1.00	82.13	5.7	9.5	5.7	3.4			
13	15	572	1.05	75.04	6.5	10.2	6.5	3.5			
16	19	459	1.35	60.26	7.8	10.6	7.8	3.9			
17	21	420	1.45	55.06	8.2	10.7	8.2	4.0			
9.8	12	732	0.85	146.10	**	**	**	**	FH053-11P-80-04F	26	294
11	13	669	0.90	133.49	4.8	7.5	4.8	3.2			
13	16	546	1.10	109.08	6.9	10.3	6.9	3.6			
14	17	499	1.20	99.66	7.4	10.5	7.4	3.8			
15	18	471	1.30	94.11	7.7	10.6	7.7	3.9			
17	20	431	1.40	85.99	8.1	10.7	8.1	4.0			
19	23	376	1.60	75.04	8.5	10.8	8.5	4.1			
24	29	302	2.00	60.26	9.0	11.1	9.0	4.4			
26	32	276	2.20	55.06	9.1	11.1	9.1	4.4			
13	16	545	0.95	71.46	6.9	10.3	6.9	3.6	FH052-11P-90S/L-06E	32	294
14	18	497	0.95	65.29	7.4	10.5	7.4	3.8			
17	20	430	1.40	56.42	8.1	10.7	8.1	4.0			
18	22	393	1.55	51.55	8.4	10.8	8.4	4.1			
21	26	333	1.80	43.75	8.8	11.0	8.8	4.3			
24	29	305	2.00	39.97	8.9	11.1	8.9	4.4			
26	32	273	2.20	35.81	9.1	11.2	9.1	4.5			
29	35	249	2.40	32.72	9.2	11.2	9.2	4.5			
30	37	237	1.55	31.09	9.3	11.0	9.3	4.3			
34	42	210	2.90	27.56	9.4	11.4	9.4	4.7			
39	47	184	2.00	24.11	9.5	11.2	9.5	4.5			
48	58	150	2.40	19.73	9.6	11.3	9.6	4.6			
16	20	438	0.85	87.38	**	**	**	**	FH052-11P-80-04F	26	294
18	22	400	0.85	79.84	**	**	**	**			
20	24	358	1.40	71.46	8.6	10.9	8.6	4.2			
22	27	327	1.40	65.29	8.8	11	8.8	4.3			
25	31	283	2.15	56.42	9.1	11.1	9.1	4.4			
28	34	258	2.35	51.55	9.2	11.2	9.2	4.5			
30	36	241	0.85	48.15	**	**	**	**			
33	40	219	2.75	43.75	9.3	11.3	9.3	4.6			
36	44	200	3.00	39.97	9.4	11.4	9.4	4.7			
46	56	156	2.35	31.09	9.5	11.3	9.5	4.6			
59	72	121	3.00	24.11	9.6	11.5	9.6	4.8			
14	18	495	0.85	64.98	**	**	**	**	FH043-11P-90S/L-06E	27	292
18	22	398	1.05	52.27	3.8	6.2	3.8	2.5			
20	24	363	1.15	47.68	4.5	7.7	4.5	2.6			
15	18	474	0.85	94.61	**	**	**	**	FH043-11P-80-04F	21	292
17	20	432	0.95	86.31	2.9	4.3	2.9	2.4			
18	21	409	1.00	81.63	3.6	5.7	3.6	2.4			
19	23	373	1.10	74.46	4.4	7.5	4.4	2.6			
20	24	357	1.15	71.24	4.7	8.1	4.7	2.6			
22	27	325	1.25	64.98	5.1	8.4	5.1	2.8			
27	33	262	1.55	52.27	5.9	8.6	5.9	3.0			
30	36	239	1.70	47.68	6.1	8.7	6.1	3.1			

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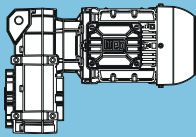
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** ... on request

P _N = 0.75 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.75 kW		0.90 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
15	18	472	0.85	61.98	**	**	**	**	FH042-11P-90S/L-06E	27	292
17	20	431	0.95	56.54	3.0	4.5	3.0	2.4			
19	23	373	1.10	48.94	4.4	7.5	4.4	2.6			
21	26	340	1.20	44.64	4.9	8.3	4.9	2.7			
25	30	289	1.40	37.95	5.6	8.5	5.6	2.9			
27	33	264	1.55	34.62	5.9	8.6	5.9	3.0			
28	34	257	0.95	33.69	5.9	8.2	5.9	2.6			
30	37	237	1.70	31.06	6.1	8.7	6.1	3.1			
33	40	216	1.90	28.33	6.3	8.7	6.3	3.1			
35	43	203	1.55	26.60	6.4	8.5	6.4	2.9			
39	48	182	2.20	23.91	6.5	8.8	6.5	3.2			
43	52	166	2.45	21.81	6.6	8.9	6.6	3.3			
46	56	157	2.00	20.63	6.6	8.7	6.6	3.1			
52	63	138	2.95	18.06	6.7	9.0	6.7	3.4			
56	68	129	2.40	16.88	6.8	8.8	6.8	3.2			
19	23	380	0.85	75.79	**	**	**	**			
21	25	346	0.85	69.14	**	**	**	**			
23	28	310	1.30	61.98	5.3	8.4	5.3	2.8			
25	31	283	1.40	56.54	5.7	8.5	5.7	2.9			
29	36	245	1.65	48.94	6.0	8.6	6.0	3.0			
32	39	224	1.80	44.64	6.2	8.7	6.2	3.1			
35	42	206	0.85	41.20	**	**	**	**			
38	46	190	2.15	37.95	6.4	8.8	6.4	3.2			
41	50	173	2.35	34.62	6.5	8.9	6.5	3.3			
42	52	169	1.40	33.69	6.6	8.6	6.6	3.0			
46	56	156	2.60	31.06	6.6	8.9	6.6	3.3			
50	61	142	2.85	28.33	6.7	9.0	6.7	3.4			
54	65	133	2.35	26.60	6.8	8.8	6.8	3.2			
69	84	103	3.00	20.63	6.9	9.0	6.9	3.4			
27	33	267	0.85	35.03	**	**	**	**	FH032-11P-90S/L-06E	25	290
30	36	242	0.95	31.76	2.8	2.6	2.8	2.6			
34	41	213	1.05	27.97	3.5	2.3	3.5	2.3			
37	45	193	1.15	25.36	3.8	2.8	3.8	2.8			
42	51	171	0.90	22.50	4.2	2.8	4.2	2.8			
44	54	161	1.40	21.14	4.3	2.7	4.3	2.7			
49	60	146	1.55	19.17	4.4	3.0	4.4	3.0			
53	64	136	1.15	17.88	4.5	3.0	4.5	3.0			
59	71	122	1.80	16.06	4.7	2.9	4.7	2.9			
65	79	111	2.00	14.57	4.8	3.2	4.8	3.2			
68	83	105	1.45	13.81	4.8	3.1	4.8	3.1			
75	92	95	2.35	12.50	4.9	3.1	4.9	3.1			
83	101	86	2.55	11.33	4.9	3.3	4.9	3.3			
85	104	84	1.80	11.03	4.9	3.2	4.9	3.2			
96	117	74	2.90	9.76	5.0	3.2	5.0	3.2			
106	129	67	3.00	8.85	5.0	3.4	5.0	3.4			
113	137	63	2.40	8.33	5.0	3.3	5.0	3.3			
25	30	286	0.80	57.07	**	**	**	**	FH032-11P-80-04F	19	290
28	34	259	0.85	51.75	**	**	**	**			
32	38	227	1.00	45.35	3.2	2.2	3.2	2.2			
35	42	206	1.10	41.12	3.6	2.7	3.6	2.7			
41	50	175	1.30	35.03	4.1	2.6	4.1	2.6			
45	55	159	1.40	31.76	4.3	2.9	4.3	2.9			
51	62	140	1.60	27.97	4.5	2.8	4.5	2.8			
52	63	139	0.90	27.67	4.5	2.9	4.5	2.9			
56	69	127	1.75	25.36	4.6	3.1	4.6	3.1			
64	77	113	1.35	22.50	4.7	3.1	4.7	3.1			
68	82	106	2.10	21.14	4.8	3.0	4.8	3.0			
75	91	96	2.30	19.17	4.9	3.2	4.9	3.2			
80	97	90	1.70	17.88	4.9	3.2	4.9	3.2			
89	108	80	2.75	16.06	4.9	3.2	4.9	3.2			
104	126	69	2.20	13.81	5.0	3.3	5.0	3.3			
130	158	55	2.75	11.03	5.1	3.4	5.1	3.4			

Legend see page 187

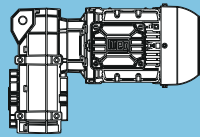
** ... on request

P _N = 0.75 kW										IE3		
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page	
0.75 kW		0.90 kW			Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
43	52	167	0.80	21.89	**	**	**	**	FH022-11P-90S/L-06E	23	288	
48	58	150	0.90	19.70	4.5	2.1	4.5	2.1				
50	61	144	0.95	18.88	4.6	1.9	4.6	1.9				
55	67	130	1.05	17.00	4.7	2.2	4.7	2.2				
57	69	126	1.05	16.48	4.8	2.0	4.8	2.0				
63	77	113	1.15	14.84	4.9	2.3	4.9	2.3				
77	94	93	0.95	12.19	5.0	2.3	5.0	2.3				
78	95	92	1.45	12.09	5.0	2.2	5.0	2.2				
86	105	83	1.60	10.89	5.0	2.4	5.0	2.4				
99	120	73	1.20	9.52	5.1	2.4	5.1	2.4				
132	161	54	1.60	7.11	4.8	2.5	4.8	2.5				
153	187	47	1.80	6.13	4.5	2.5	4.5	2.5				
176	214	41	2.10	5.35	4.3	2.6	4.3	2.6				
239	291	30	2.45	3.93	3.8	2.6	3.8	2.6				
42	52	169	0.80	33.78	**	**	**	**	FH022-11P-80-04F	17	288	
49	59	147	0.90	29.32	4.6	1.9	4.6	1.9				
54	66	132	1.00	26.39	4.7	2.2	4.7	2.2				
65	79	110	1.20	21.89	4.9	2.1	4.9	2.1				
71	87	101	0.85	20.08	**	**	**	**				
73	88	99	1.35	19.70	5.0	2.3	5.0	2.3				
76	92	95	1.40	18.88	5.0	2.2	5.0	2.2				
84	102	85	1.55	17.00	5.0	2.4	5.0	2.4				
87	106	83	1.60	16.48	5.1	2.3	5.1	2.3				
90	110	79	1.10	15.82	5.1	2.4	5.1	2.4				
96	117	74	1.75	14.84	5.1	2.4	5.1	2.4				
117	143	61	1.40	12.19	5.0	2.5	5.0	2.5				
118	144	61	2.15	12.09	5.0	2.4	5.0	2.4				
131	160	55	2.40	10.89	4.8	2.5	4.8	2.5				
150	183	48	1.80	9.52	4.5	2.5	4.5	2.5				
201	245	36	2.40	7.11	4.1	2.6	4.1	2.6				
233	284	31	2.75	6.13	3.8	2.6	3.8	2.6				
267	325	27	3.15	5.35	3.7	2.6	3.7	2.6				
364	443	20	3.70	3.93	3.3	2.7	3.3	2.7				

F

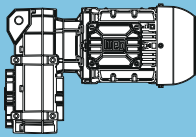
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** ... on request

P _N = 1.1 kW										IE3	
50 Hz 1.1 kW	60 Hz 1.3 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.44	0.53	21435	0.85	3343.64	**	**	**	**	FH155-11P-90S/L-04E	695	320
0.54	0.65	17204	1.05	2711.35	81.3	115.9	81.3	115.9			
0.55	0.66	16846	1.10	2661.75	82.6	116.2	82.6	116.2			
0.64	0.78	14218	1.30	2269.72	91.0	118.3	91.0	118.3			
0.79	0.96	11346	1.60	1839.52	97.9	120.7	97.9	120.7			
0.42	0.51	22053	0.85	2269.72	**	**	**	**	FH155-11P-100L-06D	701	320
0.52	0.63	17690	1.05	1839.52	79.4	115.5	79.4	115.5			
0.63	0.76	15002	1.20	2318.30	88.7	117.7	88.7	117.7	FH154-11P-90S/L-04E	682	318
0.73	0.88	12789	1.45	1996.74	94.7	119.5	94.7	119.5			
0.79	0.96	11704	1.55	1834.90	97.2	120.4	97.2	120.4			
0.84	1.0	10971	1.65	1727.10	98.7	121.0	98.7	121.0			
0.91	1.1	10115	1.80	1602.16	100.3	121.7	100.3	121.7			
0.92	1.1	9956	1.85	1580.39	100.6	121.8	100.6	121.8			
1.0	1.2	8847	2.05	1415.96	102.4	122.7	102.4	122.7			
1.1	1.3	8604	2.10	1379.93	102.8	122.9	102.8	122.9			
1.2	1.4	7510	2.40	1219.56	104.3	123.8	104.3	123.8			
1.4	1.7	6375	2.85	1054.87	105.7	124.8	105.7	124.8			
0.41	0.5	23114	0.80	2318.30	**	**	**	**	FH154-11P-100L-06D	688	318
0.48	0.58	19786	0.95	1996.74	70.0	113.8	70.0	113.8			
0.52	0.63	18145	1.00	1834.90	77.6	115.1	77.6	115.1			
0.56	0.67	17009	1.10	1727.10	82.0	116.0	82.0	116.0			
0.60	0.73	15746	1.15	1602.16	86.4	117.1	86.4	117.1			
0.61	0.74	15500	1.20	1580.39	87.2	117.3	87.2	117.3			
0.68	0.82	13802	1.35	1415.96	92.1	118.7	92.1	118.7			
0.70	0.84	13451	1.35	1379.93	93.1	119.0	93.1	119.0			
0.79	0.96	11790	1.55	1219.56	97.0	120.3	97.0	120.3			
0.80	0.97	11552	1.60	1197.38	97.5	120.5	97.5	120.5			
0.91	1.1	10093	1.80	1054.87	100.4	121.7	100.4	121.7			
0.93	1.1	9828	1.85	1029.25	100.8	121.9	100.8	121.9			
1.1	1.3	8473	2.15	898.51	103.0	123.0	103.0	123.0			
1.2	1.5	7178	2.55	773.88	104.7	124.1	104.7	124.1			
1.3	1.5	7112	2.55	766.77	104.8	124.2	104.8	124.2			
1.4	1.7	6105	2.95	669.37	105.9	125.0	105.9	125.0			
0.63	0.76	15114	0.90	2307.03	62.5	82.9	62.5	82.9	FH124-11P-90S/L-04E	430	314
0.72	0.87	13124	1.00	2011.51	70.0	84.9	70.0	84.9			
0.82	0.99	11550	1.15	1781.14	74.8	86.4	74.8	86.4			
0.84	1.0	11212	1.20	1732.67	75.7	86.7	75.7	86.7			
0.94	1.1	10008	1.30	1552.98	78.7	87.9	78.7	87.9			
0.97	1.2	9587	1.40	1493.78	79.6	88.3	79.6	88.3			
0.98	1.2	9576	1.40	1492.05	79.6	88.3	79.6	88.3			
1.1	1.3	8533	1.55	1337.70	81.7	89.3	81.7	89.3			
1.2	1.5	7401	1.80	1172.32	83.7	90.4	83.7	90.4			
1.3	1.5	7272	1.80	1151.94	83.9	90.5	83.9	90.5			
1.4	1.7	6386	2.05	1022.15	85.2	91.3	85.2	91.3			
1.5	1.8	5999	2.20	966.09	85.7	91.7	85.7	91.7			
1.6	1.9	5583	2.35	904.76	86.2	92.1	86.2	92.1			
1.7	2.0	5422	2.40	880.46	86.3	92.3	86.3	92.3			
1.8	2.2	4787	2.75	788.86	87.0	92.9	87.0	92.9			
1.9	2.3	4582	2.85	758.19	87.2	93.1	87.2	93.1			

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** ... on request

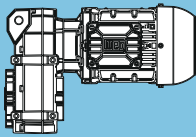
P _N = 1.1 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.55	0.67	17275	0.80	1732.67	**	**	**	**	FH124-11P-100L-06D	436	314
0.62	0.75	15452	0.85	1552.98	**	**	**	**			
0.64	0.78	14832	0.90	1493.78	63.7	83.2	63.7	83.2			
0.72	0.87	13228	1.00	1337.70	69.7	84.8	69.7	84.8			
0.74	0.89	12853	1.05	1302.43	70.9	85.1	70.9	85.1			
0.82	0.99	11522	1.15	1172.32	74.9	86.4	74.9	86.4			
0.83	1.0	11321	1.15	1151.94	75.4	86.6	75.4	86.6			
0.86	1.0	11003	1.20	1121.89	76.3	86.9	76.3	86.9			
0.94	1.1	9963	1.35	1022.15	78.8	87.9	78.8	87.9			
0.99	1.2	9398	1.40	966.09	80.0	88.4	80.0	88.4			
1.1	1.3	8765	1.50	904.76	81.3	89.1	81.3	89.1			
1.2	1.5	7564	1.75	788.86	83.4	90.2	83.4	90.2			
1.3	1.5	7255	1.80	758.19	83.9	90.5	83.9	90.5			
1.4	1.7	6435	2.05	679.51	85.1	91.3	85.1	91.3			
1.5	1.8	6153	2.15	652.50	85.5	91.6	85.5	91.6			
1.6	2.0	5461	2.40	585.14	86.3	92.2	86.3	92.2			
1.7	2.1	5224	2.50	562.05	86.6	92.5	86.6	92.5			
2.0	2.4	4415	2.95	484.00	87.4	93.2	87.4	93.2			
0.95	1.2	10037	0.80	1525.85	**	**	**	**	FH104-11P-90S/L-04E	290	310
0.99	1.2	9678	0.85	1474.19	**	**	**	**			
1.1	1.3	8619	0.95	1318.33	42.6	59.6	42.6	59.6			
1.3	1.6	7170	1.15	1105.64	49.4	61.2	49.4	61.2			
1.4	1.8	6486	1.25	1004.29	51.9	62.0	51.9	62.0			
1.6	2.0	5731	1.40	892.89	54.2	62.8	54.2	62.8			
1.7	2.0	5558	1.45	867.71	54.7	63.0	54.7	63.0			
1.9	2.3	4924	1.65	775.08	56.4	63.7	56.4	63.7			
2.0	2.4	4672	1.75	738.55	56.9	64.0	56.9	64.0			
2.2	2.6	4201	1.95	669.67	57.9	64.5	57.9	64.5			
2.3	2.7	4014	2.00	641.10	58.3	64.7	58.3	64.7			
2.6	3.2	3418	2.35	553.91	59.3	65.4	59.3	65.4			
2.7	3.2	3358	2.40	545.32	59.4	65.4	59.4	65.4			
3.1	3.7	2862	2.80	472.61	60.1	66.0	60.1	66.0			
3.2	3.8	2773	2.90	459.75	60.2	66.1	60.2	66.1			
0.96	1.2	10013	0.80	1004.29	**	**	**	**	FH104-11P-100L-06D	296	310
1.1	1.3	8848	0.95	892.89	41.3	59.3	41.3	59.3			
1.2	1.5	7649	1.05	775.08	47.4	60.7	47.4	60.7			
1.3	1.6	7273	1.10	738.55	49.0	61.1	49.0	61.1			
1.4	1.7	6555	1.25	669.67	51.6	61.9	51.6	61.9			
1.5	1.8	6262	1.30	641.10	52.6	62.2	52.6	62.2			
1.7	2.1	5366	1.50	553.91	55.3	63.2	55.3	63.2			
1.8	2.1	5272	1.55	545.32	55.5	63.3	55.5	63.3			
2.0	2.5	4522	1.80	472.61	57.3	64.1	57.3	64.1			
2.1	2.5	4390	1.85	459.75	57.5	64.3	57.5	64.3			
2.4	2.9	3859	2.10	408.33	58.6	64.9	58.6	64.9			
2.5	3.1	3557	2.25	378.74	59.1	65.2	59.1	65.2			
2.8	3.4	3205	2.50	344.81	59.6	65.6	59.6	65.6			
2.9	3.5	3037	2.65	328.77	59.9	65.8	59.9	65.8			
1.8	2.1	5404	0.85	823.17	**	**	**	**	FH094-11P-90S/L-04E	185	306
2.0	2.4	4810	0.95	735.68	25.8	38.6	25.8	38.6			
2.3	2.8	4033	1.15	621.95	30.7	39.7	30.7	39.7			
2.4	2.9	3896	1.20	602.09	31.4	39.8	31.4	39.8			
2.9	3.5	3267	1.40	509.01	34.1	40.7	34.1	40.7			
3.0	3.6	3127	1.45	488.23	34.7	40.9	34.7	40.9			
3.5	4.3	2611	1.75	412.76	36.3	41.5	36.3	41.5			
3.6	4.3	2586	1.75	408.71	36.4	41.6	36.4	41.6			
4.2	5.1	2154	2.10	345.53	37.5	42.1	37.5	42.1			
4.4	5.3	2057	2.20	331.24	37.7	42.3	37.7	42.3			
5.2	6.3	1707	2.65	280.04	38.4	42.7	38.4	42.7			



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** ... on request

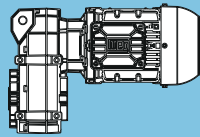
P _N = 1.1 kW										IE3				
50 Hz 1.1 kW	60 Hz 1.3 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page			
					Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
1.9	2.3	5054	0.90	509.01	23.8	38.3	23.8	38.3	FH094-11P-100L-06D	191	306			
2.0	2.4	4838	0.95	488.23	25.6	38.6	25.6	38.6						
2.3	2.8	4057	1.15	412.76	30.6	39.6	30.6	39.6						
2.8	3.4	3368	1.35	345.53	33.7	40.5	33.7	40.5						
2.9	3.5	3222	1.40	331.24	34.3	40.7	34.3	40.7						
3.4	4.2	2691	1.70	280.04	36.1	41.4	36.1	41.4						
5.0	6.1	2083	2.20	288.50	37.7	42.2	37.7	42.2	FH093-11P-90S/L-04E	172	304			
6.0	7.2	1761	2.60	243.90	38.3	42.7	38.3	42.7						
6.9	8.3	1524	3.00	211.14	38.7	43.0	38.7	43.0						
3.3	4.0	3157	1.45	288.50	34.6	40.8	34.6	40.8	FH093-11P-100L-06D	178	304			
3.9	4.8	2669	1.70	243.90	36.2	41.5	36.2	41.5						
4.5	5.5	2310	1.95	211.14	37.1	41.9	37.1	41.9						
5.1	6.2	2046	2.20	186.99	37.8	42.3	37.8	42.3						
5.9	7.2	1770	2.55	161.76	38.3	42.7	38.3	42.7						
6.7	8.2	1563	2.90	142.85	38.7	42.9	38.7	42.9						
7.0	8.5	1506	3.00	137.63	38.8	43.0	38.8	43.0						
2.4	2.9	3991	0.80	606.72	**	**	**	**				FH084-11P-90S/L-04E	130	302
2.5	3.0	3896	0.80	592.20	**	**	**	**						
2.8	3.4	3388	0.90	517.08	15.5	25.8	15.5	7.3						
2.9	3.5	3321	0.95	507.90	16.3	27.5	16.3	7.4						
3.0	3.7	3133	1.00	480.21	18.2	31.6	18.2	7.7						
3.5	4.2	2719	1.15	419.30	21.5	38.8	21.5	8.3						
3.6	4.4	2601	1.20	401.99	22.3	40.6	22.3	8.5						
4.1	5.0	2257	1.35	351.00	24.3	41.5	24.3	9.0						
4.5	5.4	2087	1.45	325.80	25.1	41.8	25.1	9.3						
5.1	6.2	1803	1.70	284.47	26.3	42.2	26.3	9.7						
2.7	3.3	3485	0.90	351.00	14.3	23.2	14.3	7.1	FH084-11P-100L-06D	136	302			
2.9	3.6	3228	0.95	325.80	17.2	29.4	17.2	7.5						
3.4	4.1	2802	1.10	284.47	20.9	37.5	20.9	8.2						
4.1	4.9	2588	1.20	358.52	22.4	40.8	22.4	8.5	FH083-11P-90S/L-04E	117	300			
5.1	6.2	2049	1.50	283.76	25.2	41.8	25.2	9.3						
5.9	7.1	1789	1.70	247.77	26.3	42.2	26.3	9.7						
6.6	8.0	1581	1.90	218.97	27.0	42.6	27.0	10.1						
7.9	9.5	1337	2.25	185.17	27.7	42.9	27.7	10.4						
8.1	9.8	1302	2.35	180.28	27.8	43.0	27.8	10.5						
9.1	11	1149	2.65	159.17	28.2	43.2	28.2	10.7						
10	12	1030	2.95	142.69	28.4	43.4	27.5	10.9						
2.7	3.2	3923	0.80	358.52	**	**	**	**				FH083-11P-100L-06D	123	300
3.4	4.1	3105	1.00	283.76	18.4	32.0	18.4	7.7						
3.9	4.7	2711	1.15	247.77	21.6	39.0	21.6	8.3						
4.4	5.3	2396	1.30	218.97	23.5	41.3	23.5	8.8						
5.2	6.3	2026	1.50	185.17	25.3	41.9	25.3	9.4						
5.3	6.5	1973	1.55	180.28	25.6	42.0	25.6	9.5						
6.0	7.3	1742	1.75	159.17	26.5	42.3	26.5	9.8						
6.7	8.2	1561	1.95	142.69	27.1	42.6	27.1	10.1						
6.9	8.4	1520	2.00	138.95	27.2	42.7	27.2	10.2						
7.7	9.4	1363	2.25	124.59	27.7	42.9	27.7	10.4						
8.1	9.8	1303	2.35	119.05	27.8	43.0	27.8	10.5						
8.7	11	1205	2.50	110.11	28.1	43.1	28.1	10.6						
9.5	11	1109	2.75	101.32	28.3	43.3	28.1	10.8						
10	13	1019	2.95	93.11	28.5	43.4	27.4	10.9						
6.1	7.4	1712	0.90	237.15	13.7	15.5	13.7	4.3	FH073-11P-90S/L-04E	70	298			
7.5	9.0	1405	1.10	194.58	16.2	16.1	16.2	4.9						
9.7	12	1088	1.40	150.69	18.1	16.8	18.1	5.5						
13	15	828	1.85	114.62	19.1	17.3	18.2	6.1						
15	19	682	2.20	94.52	19.6	17.6	17.0	6.4						
19	23	560	2.70	77.53	19.9	17.9	15.4	6.6						
6.4	7.7	1649	0.95	150.69	14.3	15.6	14.3	4.4	FH073-11P-100L-06D	76	298			
8.4	10	1254	1.20	114.62	17.2	16.4	17.2	5.2						
10	12	1034	1.50	94.52	18.3	16.9	18.3	5.6						
12	15	848	1.80	77.53	19.0	17.3	18.7	6.0						
15	18	721	2.10	65.88	19.4	17.5	17.1	6.3						
18	22	593	2.55	54.16	19.8	17.8	15.8	6.5						

P _N = 1.1 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
1.1 kW		1.3 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
11	14	940	0.90	130.15	6.9	10.8	6.9	2.3	FH063-11P-90S/L-04E	47	296			
12	15	862	1.00	119.35	8.0	12.4	8.0	2.5						
15	18	710	1.20	98.34	9.7	13.0	9.7	3.0						
16	20	651	1.30	90.17	10.2	13.1	10.2	3.2						
18	22	581	1.45	80.48	10.7	13.4	10.7	3.4						
20	24	533	1.55	73.80	11.0	13.5	11.0	3.6						
22	27	471	1.75	65.26	11.3	13.7	11.3	3.8						
24	29	432	1.90	59.84	11.5	13.8	11.5	3.9						
27	32	394	2.10	54.63	11.7	14.0	11.7	4.0						
29	35	362	2.30	50.10	11.8	14.1	11.4	4.1						
9.8	12	1076	0.80	98.34	**	**	**	**	FH063-11P-100L-06D	53	296			
11	13	987	0.85	90.17	**	**	**	**						
12	14	881	0.95	80.48	7.8	12.4	7.8	2.5						
13	16	808	1.05	73.80	8.7	12.6	8.7	2.7						
15	18	714	1.15	65.26	9.6	12.9	9.6	3.0						
16	19	655	1.30	59.84	10.1	13.1	10.1	3.2						
18	21	598	1.40	54.63	10.6	13.3	10.6	3.4						
19	23	548	1.50	50.10	10.9	13.5	10.9	3.5						
29	35	359	2.30	49.67	11.8	14.1	11.3	4.1						
32	39	329	2.50	45.55	11.9	14.2	10.9	4.2						
35	42	301	2.75	41.66	12.0	14.3	10.5	4.3						
38	46	276	3.00	38.20	12.1	14.3	10.1	4.4						
71	86	148	2.90	20.49	12.4	14.6	8.0	4.6						
19	23	544	1.55	49.67	10.9	13.5	10.9	3.5	FH062-11P-100L-06D	52	296			
21	26	498	1.65	45.55	11.2	13.6	11.2	3.7						
23	28	456	1.80	41.66	11.4	13.8	11.4	3.8						
25	30	418	2.00	38.20	11.6	13.9	11.6	3.9						
29	36	358	2.30	32.69	11.8	14.1	11.3	4.1						
32	39	328	2.50	29.98	11.9	14.2	10.9	4.2						
38	46	276	3.00	25.23	12.1	14.4	10.1	4.4						
47	57	224	1.90	20.49	12.2	14.3	9.5	4.3						
13	16	788	0.80	109.08	**	**	**	**				FH053-11P-90S/L-04E	31	294
15	18	720	0.85	99.66	**	**	**	**						
17	20	621	1.00	85.99	5.8	9.7	5.8	3.4						
18	21	593	1.05	82.13	6.2	10.2	6.2	3.5						
19	23	542	1.15	75.04	6.9	10.3	6.9	3.6						
24	29	435	1.40	60.26	8.0	10.7	8.0	4.0						
26	32	398	1.55	55.06	8.3	10.8	8.3	4.1						
20	25	516	1.00	71.46	7.2	10.4	7.2	3.7	FH052-11P-90S/L-04E	30	294			
22	27	471	1.00	65.29	7.7	10.5	7.7	3.8						
26	31	407	1.50	56.42	8.3	10.8	8.3	4.1						
28	34	372	1.65	51.55	8.5	10.8	8.5	4.1						
33	40	316	1.90	43.75	8.9	11.0	8.9	4.3						
36	44	289	2.10	39.97	9.0	11.1	9.0	4.4						
37	45	284	1.00	39.38	9.1	10.8	9.1	4.1						
41	49	259	2.35	35.81	9.2	11.2	9.2	4.5						
44	54	236	2.55	32.72	9.3	11.3	9.3	4.6						
47	57	224	1.65	31.09	9.3	11.0	9.3	4.3						
60	73	174	2.10	24.11	9.5	11.2	9.5	4.5						
74	89	142	2.55	19.73	9.6	11.4	9.6	4.7						
17	21	617	1.00	56.42	5.8	9.7	5.8	3.4				FH052-11P-100L-06D	36	294
19	23	564	1.10	51.55	6.6	10.3	6.6	3.6						
22	27	479	1.30	43.75	7.6	10.5	7.6	3.8						
24	29	437	1.40	39.97	8.0	10.6	8.0	3.9						
27	33	392	1.55	35.81	8.4	10.8	8.4	4.1						
29	36	358	1.70	32.72	8.6	10.9	8.6	4.2						
31	37	340	1.10	31.09	8.7	10.5	8.7	3.8						
35	42	302	2.00	27.56	9.0	11.1	9.0	4.4						
38	46	276	2.20	25.18	9.1	11.1	9.1	4.4						
40	48	264	1.40	24.11	9.2	10.9	9.2	4.2						
46	56	228	2.65	20.83	9.3	11.3	9.3	4.6						
49	59	216	1.70	19.73	9.4	11.1	9.4	4.4						
50	61	208	2.90	19.03	9.4	11.4	9.4	4.7						
63	77	166	2.20	15.19	9.5	11.3	9.5	4.6						
84	101	126	2.90	11.48	9.6	11.5	9.1	4.8						

F

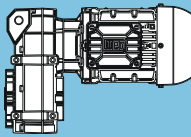
$P_N = 1.1 \text{ kW}$

IE3

50 Hz 1.1 kW n_{50} min ⁻¹	60 Hz 1.3 kW n_{60} min ⁻¹	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
20	25	514	0.80	71.24	**	**	**	**	FH043-11P-90S/L-04E	25	292
22	27	469	0.90	64.98	1.2	0.7	1.2	0.7			
28	34	377	1.10	52.27	4.3	7.3	4.3	2.6			
31	37	344	1.20	47.68	4.9	8.3	4.9	2.7			
23	28	447	0.90	61.98	2.4	3.2	2.4	2.3	FH042-11P-90S/L-04E	25	292
26	31	408	1.00	56.54	3.6	5.8	3.6	2.5			
30	36	353	1.15	48.94	4.7	8.1	4.7	2.6			
33	39	322	1.25	44.64	5.2	8.4	5.2	2.8			
38	46	274	1.50	37.95	5.8	8.5	5.8	2.9			
42	51	250	1.65	34.62	6.0	8.6	6.0	3.0			
43	52	243	1.00	33.69	6.0	8.3	6.0	2.7			
47	57	224	1.80	31.06	6.2	8.7	6.2	3.1			
51	62	205	2.00	28.33	6.4	8.8	6.4	3.2			
55	66	192	1.65	26.60	6.4	8.5	6.4	2.9			
61	74	173	2.35	23.91	6.6	8.9	6.6	3.3			
67	81	157	2.55	21.81	6.6	8.9	6.6	3.3			
71	85	149	2.10	20.63	6.7	8.7	6.7	3.1			
86	104	122	2.55	16.88	6.8	8.9	6.8	3.3			
22	26	488	0.85	44.64	**	**	**	**	FH042-11P-100L-06D	30	292
25	31	415	1.00	37.95	3.4	5.3	3.4	2.4			
28	34	379	1.10	34.62	4.3	7.3	4.3	2.6			
31	38	340	1.20	31.06	4.9	8.3	4.9	2.7			
34	41	310	1.30	28.33	5.3	8.4	5.3	2.8			
36	44	291	1.10	26.60	5.6	8.0	5.6	2.4			
40	49	262	1.55	23.91	5.9	8.6	5.9	3.0			
44	53	239	1.70	21.81	6.1	8.7	6.1	3.1			
47	56	226	1.40	20.63	6.2	8.4	6.2	2.8			
53	65	198	2.05	18.06	6.4	8.8	6.4	3.2			
57	69	185	1.70	16.88	6.5	8.6	6.5	3.0			
58	71	180	2.25	16.48	6.5	8.9	6.5	3.3			
65	79	162	2.50	14.78	6.6	8.9	6.6	3.3			
71	86	148	2.75	13.48	6.7	9.0	6.7	3.4			
74	90	142	2.20	12.99	6.7	8.8	6.7	3.2			
80	97	131	2.95	11.99	6.8	9.0	6.8	3.4			
98	119	107	2.90	9.82	6.9	9.0	6.9	3.4			
42	50	253	0.90	35.03	2.5	2.1	2.5	2.1	FH032-11P-90S/L-04E	23	290
46	55	229	1.00	31.76	3.2	2.6	3.2	2.6			
52	63	202	1.10	27.97	3.7	2.4	3.7	2.4			
57	69	183	1.25	25.36	4.0	2.8	4.0	2.8			
65	78	162	0.95	22.50	4.3	2.8	4.3	2.8			
69	83	153	1.45	21.14	4.4	2.7	4.4	2.7			
76	92	138	1.60	19.17	4.5	3.0	4.5	3.0			
81	98	129	1.20	17.88	4.6	3.0	4.6	3.0			
91	110	116	1.90	16.06	4.7	2.9	4.7	2.9			
100	121	105	2.10	14.57	4.8	3.2	4.8	3.2			
105	127	100	1.55	13.81	4.8	3.1	4.8	3.1			
116	141	90	2.45	12.50	4.9	3.1	4.9	3.1			
128	155	82	2.70	11.33	4.9	3.3	4.9	3.3			
132	160	80	1.90	11.03	5.0	3.2	5.0	3.2			
175	211	60	2.50	8.33	5.0	3.3	5.0	3.3			

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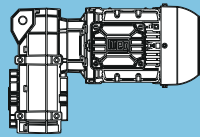
** ... on request

P _N = 1.1 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
38	46	278	0.80	25.36	**	**	**	**	FH032-11P-100L-06D	29	290	
45	55	231	1.00	21.14	3.1	2.2	3.1	2.2				
50	61	210	1.05	19.17	3.6	2.7	3.6	2.7				
54	65	196	0.80	17.88	**	**	**	**				
60	73	176	1.30	16.06	4.1	2.6	4.1	2.6				
66	80	159	1.40	14.57	4.3	2.9	4.3	2.9				
70	84	151	1.00	13.81	4.4	2.9	4.4	2.9				
77	93	137	1.65	12.50	4.5	2.8	4.5	2.8				
85	103	124	1.80	11.33	4.7	3.1	4.7	3.1				
87	106	121	1.25	11.03	4.7	3	4.7	3.0				
98	119	107	2.00	9.76	4.8	3	4.8	3.0				
108	132	97	2.10	8.85	4.9	3.2	4.9	3.2				
115	140	91	1.65	8.33	4.9	3.2	4.9	3.2				
152	184	69	2.10	6.33	5.0	3.3	5.0	3.3				
195	236	54	2.40	4.93	5.1	3.4	5.1	3.4				
249	303	42	2.65	3.85	4.9	3.4	4.9	3.4				
66	80	158	0.85	21.89	**	**	**	**	FH022-11P-90S/L-04E	21	288	
74	89	142	0.95	19.70	4.6	2.1	4.6	2.1				
77	93	136	1.00	18.88	4.7	1.9	4.7	1.9				
86	104	123	1.10	17.00	4.8	2.2	4.8	2.2				
88	107	119	1.10	16.48	4.8	2.0	4.8	2.0				
98	119	107	1.25	14.84	4.9	2.3	4.9	2.3				
119	144	88	1.00	12.19	5.0	2.4	5.0	2.4				
120	146	87	1.50	12.09	5.0	2.2	5.0	2.2				
134	162	79	1.70	10.89	4.9	2.4	4.9	2.4				
153	185	69	1.25	9.52	4.6	2.5	4.6	2.5				
205	248	51	1.65	7.11	4.1	2.5	4.1	2.5				
237	287	44	1.90	6.13	3.9	2.6	3.9	2.6				
272	329	39	2.20	5.35	3.7	2.6	3.7	2.6				
370	448	28	2.55	3.93	3.3	2.6	3.3	2.6				



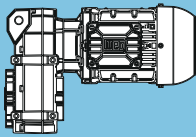
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** ... on request

P _N = 1.5 kW										IE3	
50 Hz 1.5 kW	60 Hz 1.8 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.53	0.65	23844	0.80	2711.35	**	**	**	**	FH155-11P-90S/L-04F	696	320
0.54	0.66	23408	0.80	2661.75	**	**	**	**			
0.64	0.77	19808	0.95	2269.72	69.9	113.7	69.9	113.7			
0.79	0.95	15890	1.15	1839.52	85.9	117.0	85.9	117.0			
0.63	0.76	20782	0.90	2318.30	64.7	112.3	64.7	112.3	FH154-11P-90S/L-04F	683	318
0.73	0.88	17790	1.05	1996.74	79.0	115.4	79.0	115.4			
0.79	0.96	16281	1.15	1834.90	84.6	116.6	84.6	116.6			
0.84	1.0	15293	1.20	1727.10	87.8	117.4	87.8	117.4			
0.91	1.1	14129	1.30	1602.16	91.3	118.4	91.3	118.4			
0.92	1.1	13937	1.30	1580.39	91.8	118.6	91.8	118.6			
1.0	1.2	12384	1.50	1415.96	95.7	119.8	95.7	119.8			
1.1	1.3	12069	1.50	1379.93	96.4	120.1	96.4	120.1			
1.2	1.4	10557	1.75	1219.56	99.5	121.3	99.5	121.3			
1.4	1.7	9037	2.00	1054.87	102.1	122.6	102.1	122.6			
1.6	2.0	7571	2.40	898.51	104.2	123.8	104.2	123.8			
1.9	2.3	6399	2.85	773.88	105.6	124.7	105.6	124.7			
0.81	0.99	16000	0.85	1781.14	**	**	**	**	FH124-11P-90S/L-04F	431	314
0.84	1.0	15564	0.85	1732.67	**	**	**	**			
0.93	1.1	13893	0.95	1552.98	67.3	84.1	67.3	84.1			
0.97	1.2	13336	1.00	1493.78	69.3	84.6	69.3	84.6			
1.1	1.3	11894	1.10	1337.70	73.9	86.0	73.9	86.0			
1.2	1.5	10338	1.30	1172.32	77.9	87.5	77.9	87.5			
1.3	1.5	10158	1.30	1151.94	78.3	87.7	78.3	87.7			
1.4	1.7	8940	1.50	1022.15	80.9	88.9	80.9	88.9			
1.5	1.8	8432	1.55	966.09	81.9	89.4	81.9	89.4			
1.6	1.9	7848	1.70	904.76	82.9	89.9	82.9	89.9			
1.8	2.2	6772	1.95	788.86	84.6	91.0	84.6	91.0			
1.9	2.3	6482	2.05	758.19	85.0	91.3	85.0	91.3			
2.1	2.6	5749	2.30	679.51	86.0	92.0	86.0	92.0			
2.2	2.7	5498	2.40	652.50	86.2	92.2	86.2	92.2			
2.3	2.8	5352	2.45	636.55	86.4	92.3	86.4	92.3			
2.5	3.0	4869	2.70	585.14	86.9	92.8	86.9	92.8			
2.6	3.1	4657	2.80	562.05	87.1	93.0	87.1	93.0			
1.3	1.5	10414	0.80	1156.94	**	**	**	**	FH104-11P-90S/L-04F	291	310
1.4	1.7	9003	0.90	1004.29	40.4	59.1	40.4	59.1			
1.6	2.0	7955	1.05	892.89	46.0	60.3	46.0	60.3			
1.7	2.0	7731	1.05	867.71	47.0	60.6	47.0	60.6			
1.9	2.3	6863	1.20	775.08	50.5	61.5	50.5	61.5			
2.0	2.4	6526	1.25	738.55	51.7	61.9	51.7	61.9			
2.2	2.6	5881	1.40	669.67	53.8	62.6	53.8	62.6			
2.3	2.7	5619	1.45	641.10	54.6	62.9	54.6	62.9			
2.6	3.2	4805	1.70	553.91	56.6	63.8	56.6	63.8			
2.7	3.2	4730	1.70	545.32	56.8	63.9	56.8	63.9			
3.1	3.7	4049	2.00	472.61	58.2	64.7	58.2	64.7			
3.2	3.8	3931	2.05	459.75	58.4	64.8	58.4	64.8			
3.6	4.3	3448	2.35	408.33	59.3	65.3	59.3	65.3			
3.8	4.6	3171	2.55	378.74	59.7	65.6	59.7	65.6			
4.2	5.1	2857	2.80	344.81	60.1	66	60.1	66.0			
4.4	5.3	2702	3.00	328.77	60.3	66.2	60.3	66.2			
2.3	2.8	5587	0.85	621.95	**	**	**	**	FH094-11P-90S/L-04F	186	306
2.4	2.9	5409	0.85	602.09	**	**	**	**			
2.8	3.4	4544	1.00	509.01	27.7	39.0	27.7	39.0			
3.0	3.6	4350	1.05	488.23	28.9	39.2	28.9	39.2			
3.5	4.3	3647	1.25	412.76	32.6	40.2	32.6	40.2			
4.2	5.1	3022	1.50	345.53	35.0	41.0	35.0	41.0			
4.4	5.3	2885	1.60	331.24	35.5	41.2	35.5	41.2			
5.2	6.3	2409	1.90	280.04	36.9	41.8	36.9	41.8			
5.0	6.1	2850	1.60	288.50	35.6	41.2	35.6	41.2			
5.9	7.2	2410	1.90	243.90	36.9	41.8	36.9	41.8			
6.9	8.3	2086	2.20	211.14	37.7	42.2	37.7	42.2			
7.8	9.4	1847	2.45	186.99	38.2	42.6	38.2	42.6			
9.0	11	1598	2.85	161.76	38.6	42.9	38.6	42.9			

Legend see page 187

** ... on request

P _N = 1.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.5 kW		1.8 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.5	4.3	3698	0.85	411.63	**	**	**	**	FH084-11P-90S/L-04F	132	302
3.6	4.4	3611	0.85	401.99	**	**	**	**			
4.1	5.0	3134	1.00	351.00	18.2	31.6	18.2	7.7			
4.5	5.4	2903	1.05	325.80	20.2	35.9	20.2	8.0			
5.1	6.2	2519	1.20	284.47	22.8	41.1	22.8	8.6			
4.0	4.9	3542	0.85	358.52	**	**	**	**	FH083-11P-90S/L-04F	119	300
5.1	6.2	2803	1.10	283.76	20.9	37.5	20.9	8.2			
5.9	7.1	2448	1.25	247.77	23.2	41.2	23.2	8.7			
6.6	8.0	2163	1.40	218.97	24.7	41.7	24.7	9.2			
7.8	9.5	1829	1.65	185.17	26.2	42.2	26.2	9.7			
8.0	9.7	1781	1.70	180.28	26.3	42.3	26.3	9.8			
9.1	11	1572	1.95	159.17	27.0	42.6	27.0	10.1			
10	13	1373	2.20	138.95	27.6	42.9	27.6	10.4			
12	14	1231	2.45	124.59	28.0	43.1	26.6	10.6			
13	16	1088	2.80	110.11	28.3	43.3	25.6	10.8			
14	17	1001	3.00	101.32	28.5	43.5	24.8	11.0			
7.5	9	1922	0.80	194.58	**	**	**	**	FH073-11P-90S/L-04F	71	298
9.6	12	1489	1.05	150.69	15.6	16.0	15.6	4.7			
13	15	1132	1.35	114.62	17.8	16.7	17.8	5.4			
15	19	934	1.65	94.52	18.7	17.1	17.8	5.8			
19	23	766	2.00	77.53	19.3	17.4	16.1	6.2			
22	27	651	2.35	65.88	19.6	17.7	15.1	6.4			
27	32	535	2.85	54.16	19.9	17.9	13.9	6.7			
15	18	972	0.85	98.34	**	**	**	**	FH063-11P-90S/L-04F	48	296
16	19	891	0.95	90.17	7.6	12.3	7.6	2.4			
18	22	795	1.05	80.48	8.8	12.7	8.8	2.7			
20	24	729	1.15	73.80	9.5	12.9	9.5	2.9			
22	27	645	1.30	65.26	10.2	13.2	10.2	3.2			
24	29	591	1.40	59.84	10.6	13.3	10.6	3.4			
27	32	540	1.55	54.63	10.9	13.5	10.9	3.6			
29	35	495	1.70	50.10	11.2	13.6	11.2	3.7			
29	35	491	1.70	49.67	11.2	13.7	11.2	3.7	FH062-11P-90S/L-04F	47	296
32	39	450	1.85	45.55	11.4	13.8	11.4	3.8			
35	42	412	2.00	41.66	11.6	13.9	11.0	4.0			
38	46	377	2.20	38.20	11.8	14.0	10.6	4.1			
44	54	323	2.55	32.69	11.9	14.2	9.9	4.3			
48	59	296	2.80	29.98	12.0	14.3	9.6	4.3			
71	86	202	2.10	20.49	12.3	14.4	8.3	4.4			
19	23	741	0.85	75.04	**	**	**	**	FH053-11P-90S/L-04F	32	294
24	29	595	1.05	60.26	6.2	10.2	6.2	3.5			
26	32	544	1.10	55.06	6.9	10.3	6.9	3.6			
26	31	557	1.10	56.42	6.7	10.3	6.7	3.6	FH052-11P-90S/L-04F	32	294
28	34	509	1.20	51.55	7.3	10.4	7.3	3.7			
33	40	432	1.40	43.75	8.1	10.7	8.1	4.0			
36	44	395	1.55	39.97	8.4	10.8	8.4	4.1			
40	49	354	1.70	35.81	8.7	10.9	8.7	4.2			
44	54	323	1.85	32.72	8.8	11.0	8.8	4.3			
47	56	307	1.20	31.09	8.9	10.7	8.9	4.0			
53	64	272	2.25	27.56	9.1	11.2	9.1	4.5			
58	70	249	2.40	25.18	9.2	11.2	9.2	4.5			
60	73	238	1.55	24.11	9.3	11.0	9.3	4.3			
70	84	206	2.95	20.83	9.4	11.4	9.4	4.7			
73	89	195	1.85	19.73	9.4	11.2	9.4	4.5			
95	116	150	2.40	15.19	9.6	11.4	8.9	4.7			
28	34	516	0.80	52.27	**	**	**	**			
30	37	471	0.85	47.68	**	**	**	**			

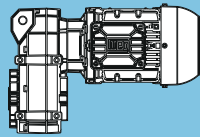
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** ... on request

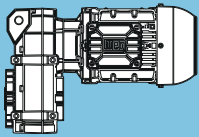
P_N = 1.5 kW

IE3

50 Hz 1.5 kW n ₅₀ min ⁻¹	60 Hz 1.8 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
30	36	483	0.85	48.94	**	**	**	**	FH042-11P-90S/L-04F	26	292
32	39	441	0.95	44.64	2.6	3.6	2.6	2.3			
38	46	375	1.10	37.95	4.3	7.3	4.3	2.6			
42	51	342	1.20	34.62	4.9	8.3	4.9	2.7			
47	57	307	1.35	31.06	5.4	8.4	5.4	2.8			
51	62	280	1.45	28.33	5.7	8.5	5.7	2.9			
55	66	263	1.20	26.60	5.9	8.2	5.9	2.6			
61	73	236	1.70	23.91	6.1	8.7	6.1	3.1			
66	80	215	1.90	21.81	6.3	8.7	6.3	3.1			
70	85	204	1.55	20.63	6.4	8.5	6.4	2.9			
80	97	178	2.25	18.06	6.5	8.9	6.5	3.3			
86	104	167	1.85	16.88	6.6	8.7	6.6	3.1			
88	106	163	2.50	16.48	6.6	8.9	6.6	3.3			
98	119	146	2.75	14.78	6.7	9.0	6.7	3.4			
112	135	128	2.45	12.99	6.8	8.9	6.8	3.3			
52	63	276	0.80	27.97	**	**	**	**	FH032-11P-90S/L-04F	25	290
57	69	251	0.90	25.36	2.6	2.5	2.6	2.5			
69	83	209	1.10	21.14	3.6	2.4	3.6	2.4			
76	92	189	1.20	19.17	3.9	2.8	3.9	2.8			
81	98	177	0.85	17.88	**	**	**	**			
90	109	159	1.40	16.06	4.3	2.7	4.3	2.7			
100	120	144	1.55	14.57	4.5	3.0	4.5	3.0			
105	127	136	1.10	13.81	4.5	3.0	4.5	3.0			
116	140	123	1.80	12.50	4.7	2.9	4.7	2.9			
128	155	112	2.00	11.33	4.7	3.2	4.7	3.2			
131	159	109	1.40	11.03	4.8	3.1	4.8	3.1			
149	180	96	2.20	9.76	4.9	3.1	4.9	3.1			
164	198	87	2.35	8.85	4.9	3.3	4.9	3.3			
174	211	82	1.85	8.33	4.9	3.2	4.9	3.2			
229	277	63	2.35	6.33	5.0	3.3	5.0	3.3			
294	356	49	2.65	4.93	4.7	3.4	4.7	3.4			
377	456	38	2.95	3.85	4.3	3.5	4.3	3.5			
85	103	168	0.80	17.00	**	**	**	**	FH022-11P-90S/L-04F	22	288
88	106	163	0.80	16.48	**	**	**	**			
98	118	147	0.90	14.84	4.6	2.1	4.6	2.1			
120	145	119	1.10	12.09	4.8	2.0	4.8	2.0			
133	161	108	1.25	10.89	4.9	2.3	4.9	2.3			
152	184	94	0.90	9.52	4.8	2.3	4.8	2.3			
204	247	70	1.20	7.11	4.3	2.4	4.3	2.4			
237	286	61	1.40	6.13	4.0	2.5	4.0	2.5			
271	328	53	1.60	5.35	3.8	2.5	3.8	2.5			
369	447	39	1.90	3.93	3.4	2.6	3.4	2.6			

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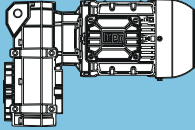
** ... on request

P _N = 2.2 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.81	0.98	23118	0.80	1773.82	**	**	**	**	FH155-11P-100L-04E	706	320
0.83	1.0	23039	0.80	1727.10	**	**	**	**	FH154-11P-100L-04E	693	318
0.90	1.1	21329	0.85	1602.16	**	**	**	**			
0.91	1.1	20996	0.90	1580.39	63.4	109.6	63.4	109.6			
1.0	1.2	18735	1.00	1415.96	75.0	114.6	75.0	114.6			
1.2	1.4	16037	1.15	1219.56	85.4	116.8	85.4	116.8			
1.4	1.7	13758	1.35	1054.87	92.3	118.7	92.3	118.7			
1.6	1.9	11622	1.55	898.51	97.4	120.5	97.4	120.5			
1.9	2.3	9887	1.85	773.88	100.7	121.9	100.7	121.9			
2.1	2.6	8446	2.15	669.37	103.0	123.1	103.0	123.1			
2.2	2.6	8349	2.20	663.03	103.2	123.1	103.2	123.1			
2.5	3.0	7117	2.55	573.49	104.8	124.2	104.8	124.2			
2.6	3.2	6834	2.65	553.01	105.1	124.4	105.1	124.4			
1.2	1.5	15607	0.85	1172.32	**	**	**	**	FH124-11P-100L-04E	441	314
1.3	1.6	14905	0.90	1121.89	63.4	83.1	63.4	83.1			
1.4	1.7	13524	1.00	1022.15	68.7	84.5	68.7	84.5			
1.5	1.8	12756	1.05	966.09	71.2	85.2	71.2	85.2			
1.6	1.9	11922	1.10	904.76	73.8	86.0	73.8	86.0			
1.8	2.2	10310	1.30	788.86	78.0	87.6	78.0	87.6			
1.9	2.3	9888	1.35	758.19	79.0	88.0	79.0	88.0			
2.1	2.6	8808	1.50	679.51	81.2	89.0	81.2	89.0			
2.2	2.7	8440	1.55	652.50	81.9	89.4	81.9	89.4			
2.3	2.7	8217	1.60	636.55	82.3	89.6	82.3	89.6			
2.5	3.0	7507	1.75	585.14	83.5	90.3	83.5	90.3			
2.6	3.1	7181	1.85	562.05	84.0	90.6	84.0	90.6			
3.0	3.6	6107	2.15	484.00	85.5	91.6	85.5	91.6			
3.1	3.7	5854	2.25	465.86	85.8	91.9	85.8	91.9			
3.2	3.9	5621	2.35	449.23	86.1	92.1	86.1	92.1			
3.5	4.2	5142	2.55	414.33	86.6	92.5	86.6	92.5			
3.7	4.5	4830	2.70	391.68	87.0	92.8	87.0	92.8			
4.0	4.9	4345	3.00	356.79	87.4	93.3	87.4	93.3			
1.9	2.3	10339	0.80	775.08	**	**	**	**	FH104-11P-100L-04E	301	310
2.1	2.6	8897	0.90	669.67	41.0	59.3	41.0	59.3			
2.2	2.7	8500	0.95	641.1	43.2	59.7	43.2	59.7			
2.3	2.8	8312	1.00	628.21	44.2	59.9	44.2	59.9			
2.6	3.2	7299	1.10	553.91	48.9	61.0	48.9	61.0			
3.0	3.7	6176	1.30	472.61	52.9	62.3	52.9	62.3			
3.1	3.8	5996	1.35	459.75	53.5	62.5	53.5	62.5			
3.2	3.9	5770	1.40	443.33	54.1	62.7	54.1	62.7			
3.5	4.3	5282	1.55	408.33	55.5	63.3	55.5	63.3			
3.6	4.4	5162	1.55	399.09	55.8	63.4	55.8	63.4			
3.7	4.5	4957	1.65	384.84	56.3	63.7	56.3	63.7			
3.8	4.6	4879	1.65	378.74	56.5	63.7	56.5	63.7			
4.2	5.1	4405	1.85	344.81	57.5	64.3	57.5	64.3			
4.3	5.2	4239	1.90	332.5	57.9	64.5	57.9	64.5			
4.4	5.3	4183	1.95	328.77	58.0	64.5	58.0	64.5			
5.1	6.1	3569	2.25	284.06	59.1	65.2	59.1	65.2			
3.5	4.2	5495	0.85	412.76	**	**	**	**	FH094-11P-100L-04E	196	306
4.2	5.1	4572	1.00	345.53	27.5	38.9	27.5	38.9			
4.3	5.3	4374	1.05	331.24	28.7	39.2	28.7	39.2			
4.5	5.5	4209	1.10	319.41	29.7	39.4	29.7	39.4			
5.1	6.2	3667	1.25	280.04	32.5	40.1	32.5	40.1			
5.3	6.5	3529	1.30	270.03	33.1	40.3	33.1	40.3			
5.0	6.0	4224	1.10	288.50	29.6	39.4	29.6	39.4	FH093-11P-100L-04E	183	304
5.9	7.2	3571	1.30	243.90	32.9	40.3	32.9	40.3			
6.8	8.3	3091	1.50	211.14	34.8	40.9	34.8	40.9			
7.7	9.3	2738	1.65	186.99	36.0	41.4	36.0	41.4			
8.9	11	2368	1.95	161.76	37.0	41.9	37.0	41.9			
9.2	11	2284	2.00	155.99	37.2	42.0	37.2	42.0			
10	12	2091	2.20	142.85	37.7	42.2	37.7	42.2			
12	14	1768	2.55	120.77	38.3	42.7	38.3	42.7			
14	17	1531	2.95	104.54	38.7	43.0	38.7	43.0	FH084-11P-100L-04E	142	302
5.0	6.1	3795	0.80	284.47	**	**	**	**			
5.2	6.4	3652	0.85	274.31	**	**	**	**			

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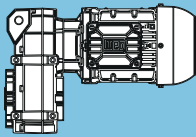
P_N = 2.2 kW

IE3

50 Hz 2.2 kW	60 Hz 2.6 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
5.8	7.0	3628	0.85	247.77	**	**	**	**	FH083-11P-100L-04E	129	300
6.6	8.0	3206	0.95	218.97	17.5	30.1	17.5	7.6			
7.7	9.4	2711	1.15	185.17	21.6	39.0	21.6	8.3			
8	9.7	2640	1.15	180.28	22.1	40.1	22.1	8.4			
9	11	2330	1.30	159.17	23.9	41.4	23.9	8.9			
10	12	2089	1.45	142.69	25.1	41.8	25.1	9.3			
12	14	1824	1.65	124.59	26.2	42.2	26.2	9.7			
13	15	1681	1.80	114.80	26.7	42.4	26.7	9.9			
14	17	1483	2.05	101.32	27.3	42.7	26.3	10.2			
15	19	1363	2.25	93.11	27.7	42.9	25.4	10.4			
17	21	1244	2.45	84.99	28	43.1	24.2	10.6			
18	22	1172	2.60	80.04	28.1	43.2	23.6	10.7			
20	24	1049	2.85	71.62	28.4	43.4	22.5	10.9			
21	25	1023	2.85	69.87	28.5	43.4	22.1	10.9			
13	15	1678	0.90	114.62	14.1	15.6	14.1	4.3	FH073-11P-100L-04E	81	298
15	18	1384	1.10	94.52	16.4	16.2	16.4	4.9			
19	23	1135	1.35	77.53	17.8	16.7	17.4	5.4			
22	26	965	1.60	65.88	18.6	17.0	16.2	5.8			
26	32	793	1.90	54.16	19.2	17.4	14.9	6.1			
27	33	765	2.00	52.23	19.3	17.4	14.6	6.2			
32	39	659	2.30	45.02	19.6	17.7	13.6	6.4	FH072-11P-100L-04E	80	298
37	44	576	2.65	39.31	19.8	17.8	12.8	6.6			
41	50	509	2.95	34.74	20.0	18.0	12.2	6.7			
22	27	955	0.90	65.26	6.6	10.1	6.6	2.2	FH063-11P-100L-04E	58	296
24	29	876	0.95	59.84	7.8	12.4	7.8	2.4			
26	32	800	1.05	54.63	8.8	12.7	8.8	2.7			
29	35	734	1.15	50.1	9.5	12.8	9.5	2.9			
29	35	727	1.15	49.67	9.5	12.9	9.5	2.9	FH062-11P-100L-04E	57	296
32	38	667	1.25	45.55	10.0	13.1	10.0	3.1			
34	42	610	1.35	41.66	10.5	13.3	10.5	3.3			
38	46	559	1.50	38.20	10.8	13.4	10.8	3.5			
44	53	479	1.75	32.69	11.3	13.7	10.6	3.8			
48	58	439	1.90	29.98	11.5	13.8	10.2	3.9			
57	69	369	2.25	25.23	11.8	14.1	9.4	4.1			
62	75	339	2.45	23.14	11.9	14.1	9.1	4.2			
69	84	306	2.70	20.87	12.0	14.3	8.6	4.3			
70	85	300	1.45	20.49	12.0	13.9	8.9	4.0			
75	91	280	2.95	19.14	12.1	14.3	8.3	4.4			
84	102	252	2.30	17.18	12.2	14.1	8.2	4.2			
106	129	198	2.90	13.49	12.3	14.4	7.4	4.4			
33	40	641	0.95	43.75	5.4	8.8	5.4	3.3	FH052-11P-100L-04E	42	294
36	44	585	1.05	39.97	6.3	10.2	6.3	3.5			
40	49	524	1.15	35.81	7.1	10.4	7.1	3.7			
44	53	479	1.25	32.72	7.6	10.5	7.6	3.8			
52	63	404	1.50	27.56	8.3	10.8	8.3	4.1			
57	69	369	1.65	25.18	8.6	10.9	8.6	4.2			
60	72	353	1.05	24.11	8.7	10.5	8.7	3.8			
69	84	305	2.00	20.83	8.9	11.1	8.9	4.4			
73	88	289	1.25	19.73	9.0	10.7	9.0	4.0			
75	92	279	2.15	19.03	9.1	11.1	9.1	4.4			
84	102	249	2.45	17.04	9.2	11.2	9.2	4.5			
92	112	228	2.65	15.57	9.3	11.3	9.3	4.6			
94	115	222	1.65	15.19	9.3	11.0	9.3	4.3			
104	126	202	3.00	13.82	9.4	11.4	8.9	4.7			
125	152	168	2.15	11.48	9.5	11.3	8.3	4.6			
153	186	137	2.65	9.39	9.6	11.4	7.7	4.7			

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** ... on request

P _N = 2.2 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
41	50	507	0.80	34.62	**	**	**	**	FH042-11P-100L-04E	36	292	
46	56	455	0.90	31.06	2.1	2.6	2.1	2.3				
51	62	415	1.00	28.33	3.4	5.3	3.4	2.4				
60	73	350	1.15	23.91	4.8	8.3	4.8	2.7				
66	80	319	1.30	21.81	5.2	8.4	5.2	2.8				
70	85	302	1.05	20.63	5.4	8.0	5.4	2.4				
79	97	264	1.55	18.06	5.8	8.6	5.8	3.0				
85	103	247	1.25	16.88	6.0	8.2	6.0	2.6				
87	106	241	1.70	16.48	6.1	8.6	6.1	3.0				
97	118	216	1.85	14.78	6.3	8.7	6.3	3.1				
106	129	197	2.05	13.48	6.4	8.8	6.4	3.2				
110	134	190	1.65	12.99	6.4	8.5	6.4	2.9				
120	146	176	2.20	11.99	6.5	8.9	6.5	3.3				
131	160	160	2.30	10.93	6.6	8.9	6.6	3.3				
143	174	147	2.40	10.03	6.7	9.0	6.5	3.4				
146	178	144	2.15	9.82	6.7	8.8	6.5	3.2				
157	191	134	2.45	9.15	6.7	9.0	6.3	3.4				
177	215	119	2.65	8.13	6.8	9.1	6.0	3.5				
179	217	118	2.40	8.03	6.8	8.9	6.0	3.3				
183	223	115	2.65	7.84	6.8	9.1	5.9	3.5				
193	235	109	2.70	7.42	6.8	9.1	5.7	3.5				
201	244	105	2.75	7.15	6.9	9.1	5.7	3.5				
220	268	95	2.60	6.52	6.9	9.0	5.5	3.4				
263	320	80	2.80	5.45	6.9	9.1	5.1	3.5				
75	91	281	0.80	19.17	**	**	**	**	FH032-11P-100L-04E	35	290	
89	109	235	0.95	16.06	3.0	2.2	3.0	2.2				
98	120	213	1.05	14.57	3.5	2.7	3.5	2.7				
115	140	183	1.25	12.5	4.0	2.5	4.0	2.5				
127	154	166	1.35	11.33	4.2	2.9	4.2	2.9				
130	158	161	0.95	11.03	4.3	2.8	4.3	2.8				
147	179	143	1.50	9.76	4.5	2.8	4.5	2.8				
162	197	130	1.60	8.85	4.6	3.1	4.6	3.1				
172	209	122	1.25	8.33	4.7	3.0	4.7	3.0				
227	276	93	1.60	6.33	4.9	3.2	4.9	3.2				
291	354	72	1.80	4.93	4.8	3.3	4.8	3.3				
373	453	56	2.00	3.85	4.4	3.4	4.4	3.4				

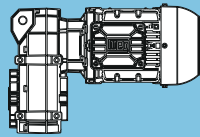
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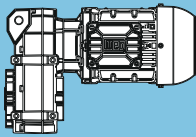
P_N = 3.0 kW

IE3

50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
3.0 kW		3.6 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.2	1.4	22062	0.85	1219.56	**	**	**	**	FH154-11P-L100L-04F	700	318
1.4	1.6	19005	0.95	1054.87	73.8	114.4	73.8	114.4			
1.6	1.9	16056	1.15	898.51	85.4	116.8	85.4	116.8			
1.9	2.2	13715	1.35	773.88	92.4	118.7	92.4	118.7			
2.2	2.6	11766	1.55	669.37	97.0	120.3	97.0	120.3			
2.3	2.7	11192	1.65	639.35	98.3	120.8	98.3	120.8			
2.5	3.0	9956	1.85	573.49	100.6	121.8	100.6	121.8			
2.6	3.1	9797	1.85	564.30	100.9	122.0	100.9	122.0			
3.0	3.6	8352	2.20	488.09	103.2	123.1	103.2	123.1			
3.1	3.8	7892	2.30	463.14	103.8	123.5	103.8	123.5			
3.5	4.2	6876	2.65	409.44	105.1	124.4	105.1	124.4			
3.6	4.4	6685	2.70	398.90	105.3	124.5	105.3	124.5			
1.6	1.9	16401	0.80	904.76	**	**	**	**	FH124-11P-L100L-04F	448	314
1.8	2.2	14213	0.95	788.86	66.2	83.8	66.2	83.8			
1.9	2.3	13632	1.00	758.19	68.3	84.4	68.3	84.4			
2.1	2.6	12167	1.10	679.51	73.1	85.8	73.1	85.8			
2.2	2.7	11660	1.15	652.5	74.5	86.3	74.5	86.3			
2.3	2.7	11375	1.15	636.55	75.3	86.5	75.3	86.5			
2.5	3.0	10413	1.25	585.14	77.7	87.5	77.7	87.5			
2.6	3.1	9961	1.35	562.05	78.8	87.9	78.8	87.9			
3.0	3.6	8507	1.55	484.00	81.8	89.3	81.8	89.3			
3.1	3.7	8172	1.60	465.86	82.4	89.6	82.4	89.6			
3.2	3.9	7848	1.70	449.23	82.9	89.9	82.9	89.9			
3.5	4.2	7193	1.85	414.33	84.0	90.6	84.0	90.6			
3.7	4.4	6772	1.95	391.68	84.6	91.0	84.6	91.0			
3.8	4.5	6621	2.00	383.78	84.8	91.1	84.8	91.1			
4.0	4.9	6118	2.15	356.79	85.5	91.6	85.5	91.6			
4.1	5.0	5987	2.20	349.88	85.7	91.7	85.7	91.7			
4.3	5.2	5749	2.30	337.39	86.0	92.0	86.0	92.0			
4.8	5.8	5070	2.60	301.29	86.7	92.6	86.7	92.6			
5.0	6.0	4869	2.70	290.53	86.9	92.8	86.9	92.8			
2.6	3.1	10041	0.80	553.91	**	**	**	**	FH104-11P-L100L-04F	308	310
3.0	3.7	8515	0.95	472.61	43.2	59.7	43.2	59.7			
3.1	3.7	8488	0.95	471.15	43.3	59.7	43.3	59.7			
3.2	3.9	7955	1.05	443.33	46.0	60.3	46.0	60.3			
3.5	4.3	7312	1.10	408.33	48.8	61.0	48.8	61.0			
3.6	4.4	7131	1.15	399.09	49.5	61.2	49.5	61.2			
3.7	4.5	6863	1.20	384.84	50.5	61.5	50.5	61.5			
3.8	4.6	6754	1.20	378.74	50.9	61.7	50.9	61.7			
4.2	5.0	6111	1.35	344.81	53.1	62.4	53.1	62.4			
4.3	5.2	5881	1.40	332.50	53.8	62.6	53.8	62.6			
4.4	5.3	5815	1.40	328.77	54.0	62.7	54.0	62.7			
5.1	6.1	4972	1.65	284.06	56.2	63.6	56.2	63.6			
4.5	5.4	5790	0.80	319.41	**	**	**	**	FH094-11P-L100L-04F	203	306
5.1	6.2	5056	0.90	280.04	23.8	38.3	23.8	38.3			
5.3	6.4	4865	0.95	270.03	25.4	38.6	25.4	38.6			
5.0	6.0	5740	0.80	288.50	**	**	**	**	FH093-11P-L100L-04F	190	304
5.9	7.1	4853	0.95	243.90	25.5	38.6	25.5	38.6			
6.8	8.2	4201	1.10	211.14	29.8	39.4	29.8	39.4			
7.7	9.3	3720	1.25	186.99	32.2	40.1	32.2	40.1			
8.9	11	3218	1.40	161.76	34.3	40.7	34.3	40.7			
9.2	11	3104	1.45	155.99	34.7	40.9	34.7	40.9			
10	12	2842	1.60	142.85	35.6	41.2	35.6	41.2			
12	14	2403	1.90	120.77	36.9	41.8	36.9	41.8			
14	17	2080	2.20	104.54	37.7	42.2	37.7	42.2			
16	19	1842	2.45	92.59	38.2	42.6	38.2	42.6			
18	22	1593	2.85	80.09	38.6	42.9	38.6	42.9			
19	23	1537	2.95	77.23	38.7	43.0	38.7	43.0			

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** ... on request

P _N = 3.0 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
3.0 kW		3.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.8	9.4	3684	0.85	185.17	**	**	**	**	FH083-11P-L100L-04F	135	300
8	9.7	3587	0.85	180.28	**	**	**	**			
9	11	3167	0.95	159.17	17.9	30.9	17.9	7.6			
10	12	2839	1.10	142.69	20.7	37.0	20.7	8.1			
12	14	2479	1.25	124.59	23.0	41.2	23.0	8.7			
13	15	2284	1.35	114.80	24.1	41.5	24.1	9.0			
14	17	2016	1.50	101.32	25.4	41.9	25.4	9.4			
15	19	1853	1.65	93.11	26.1	42.1	26.1	9.6			
17	20	1691	1.80	84.99	26.7	42.4	25.5	9.9			
18	22	1592	1.90	80.04	27.0	42.5	24.8	10.0			
20	24	1425	2.10	71.62	27.5	42.8	23.6	10.3			
21	25	1390	2.10	69.87	27.6	42.9	23.2	10.4			
24	29	1191	2.35	59.86	28.1	43.2	21.8	10.7			
25	30	1149	2.40	57.73	28.2	43.2	21.4	10.7			
28	34	1014	2.65	50.95	28.5	43.4	20.3	10.9			
34	41	850	2.95	42.74	28.8	43.7	18.8	11.2			
15	18	1881	0.80	94.52	**	**	**	**	FH073-11P-L100L-04F	88	298
19	22	1543	1.00	77.53	15.2	15.9	15.2	4.6			
22	26	1311	1.15	65.88	16.8	16.3	16.8	5.1			
27	32	1078	1.40	54.16	18.1	16.8	15.7	5.6			
28	33	1039	1.45	52.23	18.3	16.9	15.4	5.6			
32	39	896	1.70	45.02	18.9	17.2	14.4	5.9	FH072-11P-L100L-04F	87	298
37	44	782	1.95	39.31	19.3	17.4	13.5	6.2			
41	50	691	2.20	34.74	19.5	17.6	12.8	6.3			
49	59	585	2.60	29.38	19.8	17.8	11.9	6.6			
57	69	502	3.00	25.25	20.0	18.0	11.1	6.7			
69	84	412	2.30	20.72	20.1	17.8	10.4	6.5			
26	32	1087	0.80	54.63	**	**	**	**	FH063-11P-L100L-04F	65	296
29	35	997	0.85	50.10	**	**	**	**			
29	35	988	0.85	49.67	**	**	**	**	FH062-11P-L100L-04F	64	296
32	38	906	0.95	45.55	7.4	11.8	7.4	2.3			
35	42	829	1.00	41.66	8.4	12.6	8.4	2.6			
38	46	760	1.10	38.20	9.2	12.8	9.2	2.8			
44	53	650	1.30	32.69	10.2	13.1	10.2	3.2			
48	58	596	1.40	29.98	10.6	13.3	10.6	3.3			
57	69	502	1.65	25.23	11.2	13.6	10.0	3.7			
62	75	460	1.80	23.14	11.4	13.7	9.6	3.8			
69	83	415	2.00	20.87	11.6	13.9	9.1	4.0			
70	85	408	1.05	20.49	11.6	13.4	9.4	3.5			
75	91	381	2.20	19.14	11.7	14.0	8.8	4.1			
81	98	353	2.35	17.75	11.8	14.1	8.5	4.2			
84	101	342	1.70	17.18	11.9	13.7	8.6	3.8			
88	107	324	2.55	16.28	11.9	14.2	8.2	4.2			
94	113	306	2.70	15.38	12.0	14.3	7.9	4.3			
102	123	281	2.95	14.11	12.1	14.3	7.7	4.4			
107	129	268	2.15	13.49	12.1	14.1	7.7	4.1			
138	167	207	2.80	10.41	12.3	14.3	6.9	4.4			

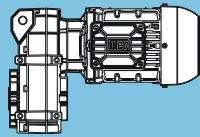


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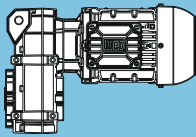
P_N = 3.0 kW

IE3

50 Hz 3.0 kW	60 Hz 3.6 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
36	44	795	0.80	39.97	**	**	**	**	FH052-11P-L100L-04F	48	294
40	49	712	0.85	35.81	**	**	**	**			
44	53	651	0.95	32.72	5.2	8.4	5.2	3.3			
52	63	548	1.10	27.56	6.8	10.3	6.8	3.6			
57	69	501	1.20	25.18	7.4	10.5	7.4	3.8			
60	72	480	0.80	24.11	**	**	**	**			
69	84	414	1.45	20.83	8.2	10.7	8.2	4.0			
73	88	393	0.95	19.73	8.4	10.3	8.4	3.6			
76	91	379	1.60	19.03	8.5	10.8	8.5	4.1			
85	102	339	1.80	17.04	8.7	11.0	8.7	4.3			
92	112	310	1.95	15.57	8.9	11.0	8.9	4.3			
95	115	302	1.20	15.19	9.0	10.7	9.0	4.0			
104	126	275	2.20	13.82	9.1	11.2	9.1	4.5			
114	138	251	2.40	12.63	9.2	11.2	8.9	4.5			
124	150	230	2.65	11.57	9.3	11.3	8.6	4.6			
125	152	228	1.60	11.48	9.3	11.0	8.7	4.3			
136	165	210	2.80	10.57	9.4	11.4	8.3	4.7			
153	185	187	1.95	9.39	9.5	11.2	7.9	4.5			
189	228	152	2.40	7.62	9.6	11.3	7.3	4.6			
226	273	127	2.85	6.38	9.4	11.5	6.8	4.8			
60	73	476	0.85	23.91	**	**	**	**	FH042-11P-L100L-04F	42	292
66	80	434	0.95	21.81	2.9	4.3	2.9	2.4			
70	84	410	0.80	20.63	**	**	**	**			
80	96	359	1.15	18.06	4.6	7.9	4.6	2.6			
85	103	336	0.95	16.88	5.0	7.8	5.0	2.2			
87	106	328	1.25	16.48	5.1	8.3	5.1	2.7			
97	118	294	1.40	14.78	5.5	8.5	5.5	2.9			
107	129	268	1.50	13.48	5.8	8.6	5.8	3.0			
111	134	258	1.20	12.99	5.9	8.2	5.9	2.6			
120	145	239	1.65	11.99	6.1	8.6	6.1	3.0			
132	159	217	1.70	10.93	6.3	8.7	6.3	3.1			
144	173	200	1.75	10.03	6.4	8.8	6.4	3.2			
147	177	195	1.60	9.82	6.4	8.5	6.4	2.9			
157	190	182	1.80	9.15	6.5	8.9	6.5	3.3			
177	214	162	1.95	8.13	6.6	8.9	6.2	3.3			
179	217	160	1.80	8.03	6.6	8.7	6.3	3.1			
184	222	156	1.95	7.84	6.6	8.9	6.1	3.3			
194	235	148	2.00	7.42	6.7	9.0	6.0	3.4			
201	243	142	2.05	7.15	6.7	9.0	5.9	3.4			
221	267	130	1.95	6.52	6.8	8.8	5.7	3.2			
264	319	108	2.05	5.45	6.8	9.0	5.3	3.4			
326	394	88	2.25	4.42	6.6	9.1	4.9	3.5			
338	408	85	2.30	4.26	6.6	9.1	4.8	3.5			
99	119	290	0.80	14.57	**	**	**	**	FH032-11P-L100L-04F	41	290
115	139	249	0.90	12.50	2.7	2.1	2.7	2.1			
127	154	225	1.00	11.33	3.2	2.6	3.2	2.6			
148	178	194	1.10	9.76	3.8	2.5	3.8	2.5			
163	197	176	1.15	8.85	4.1	2.9	4.1	2.9			
173	209	166	0.95	8.33	4.2	2.8	4.2	2.8			
227	275	126	1.20	6.33	4.6	3.0	4.6	3.0			
292	353	98	1.30	4.93	4.8	3.2	4.8	3.2			
374	452	77	1.45	3.85	4.5	3.3	4.5	3.3			

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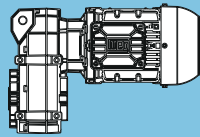
** ... on request

P _N = 4.0 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
4.0 kW		4.8 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
1.6	2.0	21523	0.85	898.51	**	**	**	**	FH154-11P-112M-04E	701	318			
1.9	2.3	18424	1.00	773.88	76.4	114.9	76.4	114.9						
2.0	2.4	17636	1.05	742.31	79.6	115.5	79.6	115.5						
2.2	2.6	15838	1.15	669.37	86.1	117.0	86.1	117.0						
2.3	2.7	15097	1.20	639.35	88.4	117.6	88.4	117.6						
2.5	3.1	13458	1.35	573.49	93.0	119.0	93.0	119.0						
2.6	3.1	13215	1.40	564.30	93.7	119.2	93.7	119.2						
3.0	3.6	11337	1.60	488.09	98.0	120.7	98.0	120.7						
3.1	3.7	10972	1.65	473.37	98.7	121.0	98.7	121.0						
3.5	4.3	9373	1.95	409.44	101.6	122.3	101.6	122.3						
3.6	4.4	9113	2.00	398.90	102.0	122.5	102.0	122.5						
4.2	5.1	7769	2.35	345.03	104.0	123.6	104.0	123.6						
2.1	2.6	16311	0.80	679.51	**	**	**	**				FH124-11P-112M-04E	449	314
2.2	2.7	15630	0.85	652.50	**	**	**	**						
2.3	2.8	15217	0.90	636.55	62.0	82.8	62.0	82.8						
2.5	3.0	13959	0.95	585.14	67.1	84.0	67.1	84.0						
2.6	3.1	13381	1.00	562.05	69.2	84.6	69.2	84.6						
3.0	3.6	11452	1.15	484.00	75.1	86.5	75.1	86.5						
3.1	3.8	11000	1.20	465.86	76.3	86.9	76.3	86.9						
3.2	3.9	10586	1.25	449.23	77.3	87.3	77.3	87.3						
3.5	4.2	9723	1.35	414.33	79.3	88.1	79.3	88.1						
3.6	4.3	9513	1.40	406.19	79.8	88.3	79.8	88.3						
3.7	4.5	9154	1.45	391.68	80.5	88.7	80.5	88.7						
3.8	4.6	8969	1.45	383.78	80.9	88.9	80.9	88.9						
4.1	4.9	8287	1.60	356.79	82.2	89.5	82.2	89.5						
4.3	5.2	7804	1.70	337.39	83.0	90.0	83.0	90.0						
4.8	5.8	6912	1.90	301.29	84.4	90.8	84.4	90.8						
5.0	6.0	6637	2.00	290.53	84.8	91.1	84.8	91.1						
5.8	7.1	5589	2.35	248.21	86.1	92.1	86.1	92.1						
6.6	8	5814	2.25	220.67	85.9	91.9	85.9	91.9						
7.5	9.1	5069	2.60	192.40	86.7	92.6	86.7	92.6						
7.8	9.5	4888	2.70	185.53	86.9	92.8	86.9	92.8						
8.7	11	4366	3.00	165.73	87.4	93.3	87.4	93.3						
3.3	4	10641	0.80	443.33	**	**	**	**	FH104-11P-112M-04E	309	310			
3.6	4.3	9781	0.85	408.33	**	**	**	**						
3.8	4.6	9200	0.90	384.84	39.2	58.9	39.2	58.9						
4.2	5.1	8209	1.00	344.81	44.7	60.0	44.7	60.0						
4.4	5.3	7900	1.05	332.50	46.2	60.4	46.2	60.4						
5.1	6.2	6707	1.20	284.06	51.1	61.7	51.1	61.7						
5.9	7.1	6496	1.25	246.57	51.8	61.9	51.8	61.9						
6.7	8.1	5737	1.40	217.78	54.2	62.8	54.2	62.8						
7.7	9.3	4980	1.65	189.04	56.2	63.6	56.2	63.6						
8.0	9.6	4802	1.70	182.29	56.6	63.8	56.6	63.8						
8.9	11	4303	1.90	163.33	57.7	64.4	57.7	64.4						
10	13	3682	2.20	139.78	58.9	65.1	58.9	65.1						
12	14	3229	2.50	122.58	59.6	65.6	59.6	65.6						
13	16	2852	2.85	108.27	60.1	66.0	60.1	66.0						
6.9	8.3	5562	0.85	211.14	**	**	**	**	FH093-11P-112M-04E	191	304			
7.8	9.4	4926	0.95	186.99	24.9	38.5	24.9	38.5						
9.0	11	4262	1.10	161.76	29.4	39.4	29.4	39.4						
9.3	11	4110	1.10	155.99	30.3	39.6	30.3	39.6						
10	12	3763	1.20	142.85	32.0	40.0	32.0	40.0						
11	13	3626	1.25	137.63	32.7	40.2	32.7	40.2						
12	15	3182	1.45	120.77	34.5	40.8	34.5	40.8						
14	17	2754	1.65	104.54	35.9	41.4	35.9	41.4						
16	19	2439	1.85	92.59	36.8	41.8	36.8	41.8						
18	22	2110	2.15	80.09	37.6	42.2	37.6	42.2						
19	23	2035	2.25	77.23	37.8	42.3	37.8	42.3						
21	26	1795	2.55	68.15	38.3	42.6	38.3	42.6						
25	30	1528	2.95	57.99	38.7	43.0	38.7	43.0						

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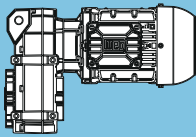
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** ... on request

P _N = 4.0 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
4.0 kW		4.8 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
10	12	3759	0.80	142.69	**	**	**	**	FH083-11P-112M-04E	136	300
12	14	3282	0.95	124.59	16.7	28.3	16.7	7.4			
13	15	3024	1.00	114.80	19.2	33.7	19.2	7.8			
14	17	2669	1.15	101.32	21.9	39.7	21.9	8.4			
16	19	2453	1.25	93.11	23.2	41.2	23.2	8.7			
17	21	2239	1.35	84.99	24.4	41.5	24.4	9.0			
18	22	2109	1.45	80.04	25.0	41.7	25.0	9.2			
20	25	1887	1.60	71.62	25.9	42.1	25.0	9.6			
21	25	1841	1.60	69.87	26.1	42.2	24.6	9.7			
24	29	1577	1.80	59.86	27.0	42.6	23.0	10.1			
25	30	1521	1.85	57.73	27.2	42.7	22.6	10.2			
28	34	1342	2.00	50.95	27.7	42.9	21.3	10.4			
34	41	1126	2.25	42.74	28.2	43.3	19.6	10.8			
40	49	949	2.55	36.02	28.6	43.5	18.2	11.0			
22	27	1736	0.90	65.88	13.5	15.5	13.5	4.2	FH073-11P-112M-04E	89	298
27	32	1427	1.10	54.16	16.1	16.1	16.1	4.8			
28	34	1376	1.10	52.23	16.4	16.2	16.4	4.9			
32	39	1186	1.30	45.02	17.6	16.6	15.4	5.3	FH072-11P-112M-04E	88	298
37	45	1036	1.45	39.31	18.3	16.9	14.3	5.6			
42	51	915	1.65	34.74	18.8	17.1	13.5	5.9			
49	60	774	1.95	29.38	19.3	17.4	12.5	6.2			
57	70	665	2.30	25.25	19.6	17.6	11.6	6.4			
66	80	581	2.60	22.05	19.8	17.8	10.9	6.6			
70	85	546	1.75	20.72	19.9	17.4	10.9	6.1			
80	97	477	2.35	18.09	20.0	17.6	10.2	6.3			
91	110	421	2.60	15.99	20.1	17.8	9.7	6.5			
38	46	1006	0.85	38.20	**	**	**	**	FH062-11P-112M-04E	65	296
44	54	861	1.00	32.69	8.0	12.5	8.0	2.5			
48	59	790	1.05	29.98	8.9	12.7	8.9	2.7			
57	70	665	1.25	25.23	10.1	13.1	10.1	3.2			
63	76	610	1.35	23.14	10.5	13.3	10.2	3.3			
69	84	550	1.50	20.87	10.9	13.5	9.7	3.5			
71	86	540	0.80	20.49	**	**	**	**			
76	92	504	1.65	19.14	11.2	13.6	9.3	3.6			
82	99	468	1.80	17.75	11.3	13.7	8.9	3.8			
84	102	453	1.30	17.18	11.4	13.2	9.2	3.3			
89	108	429	1.95	16.28	11.5	13.8	8.6	3.9			
94	114	405	2.05	15.38	11.6	13.9	8.4	4.0			
103	124	372	2.25	14.11	11.8	14.0	8.0	4.1			
107	130	355	1.65	13.49	11.8	13.7	8.2	3.7			
112	135	342	2.40	12.99	11.9	14.1	7.7	4.2			
116	140	330	2.50	12.53	11.9	14.2	7.6	4.2			
122	147	314	2.65	11.91	12.0	14.2	7.4	4.3			
126	153	303	2.75	11.49	12.0	14.3	7.3	4.3			
136	164	282	2.95	10.70	12.1	14.3	7.1	4.4			
139	169	274	2.10	10.41	12.1	14.0	7.2	4.1			
168	204	227	2.55	8.61	12.2	14.2	6.6	4.3			
198	240	193	3.00	7.32	12.3	14.4	6.2	4.4			

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** ... on request

P _N = 4.0 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
4.0 kW		4.8 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
53	64	726	0.85	27.56	**	**	**	**				
58	70	663	0.90	25.18	4.9	7.7	4.9	3.2				
70	84	549	1.10	20.83	6.8	10.3	6.8	3.6				
76	92	501	1.20	19.03	7.4	10.5	7.4	3.8				
85	103	449	1.35	17.04	7.9	10.6	7.9	3.9				
93	113	410	1.50	15.57	8.2	10.7	8.2	4.0				
95	116	400	0.90	15.19	8.3	10.3	8.3	3.6				
105	127	364	1.65	13.82	8.6	10.9	8.6	4.2				
115	139	333	1.80	12.63	8.8	11.0	8.8	4.3				
125	152	305	2.00	11.57	8.9	11.1	8.9	4.4				
126	153	302	1.20	11.48	9.0	10.7	9.0	4.0	FH052-11P-112M-04E	49	294	
137	166	278	2.10	10.57	9.1	11.1	8.6	4.4				
154	187	247	1.50	9.39	9.2	10.9	8.3	4.2				
155	187	247	2.30	9.38	9.2	11.2	8.2	4.5				
160	194	238	2.35	9.04	9.3	11.3	8.0	4.6				
169	205	226	2.45	8.57	9.3	11.3	7.9	4.6				
176	212	218	2.50	8.26	9.3	11.3	7.7	4.6				
190	230	201	1.80	7.62	9.4	11.1	7.5	4.4				
227	275	168	2.15	6.38	9.5	11.3	7.0	4.6				
280	339	136	2.65	5.17	8.8	11.4	6.4	4.7				
291	352	131	2.75	4.98	8.7	11.4	6.3	4.7				

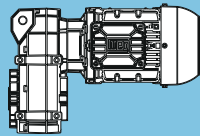
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** ... on request

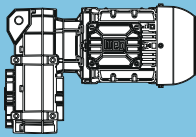
P_N = 5.5 kW

IE3

50 Hz 5.5 kW n ₅₀ min ⁻¹	60 Hz 6.6 kW n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
2.2	2.6	21821	0.85	669.37	**	**	**	**	FH154-11P-132S-04E	719	318
2.3	2.8	20800	0.90	639.35	64.6	112.1	64.6	112.1			
2.6	3.1	18581	1.00	573.49	75.7	114.8	75.7	114.8			
2.7	3.2	17771	1.05	549.60	79.1	115.4	79.1	115.4			
3.0	3.6	15717	1.15	488.09	86.5	117.1	86.5	117.1			
3.1	3.7	15212	1.20	473.37	88.1	117.5	88.1	117.5			
3.2	3.8	14852	1.25	463.14	89.2	117.8	89.2	117.8			
3.6	4.3	13050	1.40	409.44	94.1	119.3	94.1	119.3			
3.7	4.4	12687	1.45	398.90	95.0	119.6	95.0	119.6			
4.2	5.1	10861	1.70	345.03	98.9	121.1	98.9	121.1			
3.0	3.6	15778	0.85	484.00	**	**	**	**	FH124-11P-132S-04E	467	314
3.1	3.7	15585	0.85	478.08	**	**	**	**			
3.3	3.9	14615	0.90	449.23	64.6	83.4	64.6	83.4			
3.5	4.3	13424	1.00	414.33	69.0	84.6	69.0	84.6			
3.6	4.3	13339	1.00	411.69	69.3	84.6	69.3	84.6			
3.7	4.5	12664	1.05	391.68	71.5	85.3	71.5	85.3			
3.8	4.6	12409	1.05	383.78	72.3	85.5	72.3	85.5			
4.1	4.9	11489	1.15	356.79	75.0	86.4	75.0	86.4			
4.2	5.0	11243	1.20	349.88	75.7	86.7	75.7	86.7			
4.3	5.2	10842	1.20	337.39	76.7	87.1	76.7	87.1			
4.4	5.3	10731	1.25	334.62	77.0	87.2	77.0	87.2			
4.9	5.9	9603	1.40	301.29	79.6	88.2	79.6	88.2			
5.0	6.1	9241	1.45	290.53	80.3	88.6	80.3	88.6			
5.1	6.1	9167	1.45	288.23	80.5	88.7	80.5	88.7			
5.9	7.1	7814	1.70	248.21	83.0	90.0	83.0	90.0			
6.6	8.0	7912	1.65	220.67	82.8	89.9	82.8	89.9	FH123-11P-132S-04E	443	312
7.6	9.2	6898	1.90	192.4	84.4	90.9	84.4	90.9			
7.9	9.5	6652	2.00	185.53	84.8	91.1	84.8	91.1			
8.8	11	5942	2.20	165.73	85.7	91.8	85.7	91.8			
10	12	5117	2.55	142.72	86.7	92.6	86.7	92.6			
12	14	4470	2.95	124.67	87.3	93.2	87.3	93.2			
5.2	6.2	9241	0.90	284.06	38.9	58.9	38.9	58.9	FH104-11P-132S-04E	327	310
5.9	7.2	8840	0.95	246.57	41.3	59.3	41.3	59.3	FH103-11P-132S-04E	303	308
6.7	8.1	7808	1.05	217.78	46.7	60.5	46.7	60.5			
7.7	9.3	6778	1.20	189.04	50.9	61.6	50.9	61.6			
8.0	9.7	6536	1.25	182.29	51.7	61.9	51.7	61.9			
9.0	11	5856	1.40	163.33	53.9	62.7	53.9	62.7			
10	13	5012	1.60	139.78	56.1	63.6	56.1	63.6			
12	14	4395	1.85	122.58	57.5	64.3	57.5	64.3			
14	16	3882	2.10	108.27	58.5	64.8	58.5	64.8			
16	19	3369	2.40	93.98	59.4	65.4	59.4	65.4			
18	22	2911	2.75	81.20	60.0	65.9	60.0	65.9			
9.1	11	5800	0.80	161.76	**	**	**	**	FH093-11P-132S-04E	209	304
9.4	11	5593	0.85	155.99	**	**	**	**			
10	12	5122	0.90	142.85	23.3	38.2	23.3	38.2			
11	13	4934	0.95	137.63	24.8	38.5	24.8	38.5			
12	15	4330	1.05	120.77	29.0	39.3	29.0	39.3			
13	15	4199	1.10	117.13	29.8	39.4	29.8	39.4			
14	17	3748	1.25	104.54	32.1	40.0	32.1	40.0			
16	19	3320	1.40	92.59	33.9	40.6	33.9	40.6			
18	22	2871	1.60	80.09	35.5	41.2	35.5	41.2			
19	23	2769	1.65	77.23	35.9	41.3	35.9	41.3			
21	26	2443	1.85	68.15	36.8	41.8	36.8	41.8			
25	30	2079	2.20	57.99	37.7	42.2	37.7	42.2			
29	35	1794	2.55	50.03	38.3	42.6	38.3	42.6			

Legend see page 187

** ... on request

P _N = 5.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
5.5 kW		6.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
13	16	3948	0.80	110.11	**	**	**	**	FH083-11P-132S-04E	155	300
14	17	3633	0.85	101.32	**	**	**	**			
16	19	3338	0.90	93.11	16.1	27.1	16.1	7.4			
17	21	3047	1.00	84.99	19.0	33.3	19.0	7.8			
18	22	2870	1.05	80.04	20.4	36.4	20.4	8.1			
20	25	2568	1.15	71.62	22.5	41.0	22.5	8.5			
21	25	2505	1.20	69.87	22.9	41.1	22.9	8.6			
24	29	2146	1.30	59.86	24.8	41.7	24.7	9.2			
25	31	2070	1.35	57.73	25.2	41.8	24.2	9.3			
29	35	1827	1.45	50.95	26.2	42.2	22.6	9.7			
34	41	1532	1.65	42.74	27.2	42.6	20.8	10.1			
41	49	1291	1.85	36.02	27.9	43.0	19.1	10.5			
43	52	1214	2.30	33.87	28.0	43.1	18.7	10.6	FH082-11P-132S-04E	146	300
49	59	1076	2.80	30.00	28.3	43.3	17.6	10.8			
27	33	1942	0.80	54.16	**	**	**	**	FH073-11P-132S-04E	107	298
28	34	1873	0.85	52.23	**	**	**	**			
33	39	1614	0.95	45.02	14.6	15.7	14.6	4.5	FH072-11P-132S-04E	106	298
37	45	1409	1.10	39.31	16.2	16.1	15.6	4.9			
42	51	1246	1.25	34.74	17.2	16.5	14.6	5.2			
50	60	1053	1.45	29.38	18.2	16.9	13.4	5.6			
58	70	905	1.70	25.25	18.8	17.2	12.4	5.9			
66	80	791	1.90	22.05	19.2	17.4	11.6	6.1			
71	85	743	1.30	20.72	19.4	16.8	11.6	5.6			
78	93	677	2.25	18.89	19.6	17.6	10.7	6.4			
80	97	653	2.30	18.21	19.6	17.7	10.6	6.4			
81	98	649	1.75	18.09	19.6	17.1	10.9	5.8			
91	110	577	2.65	16.08	19.8	17.8	10.0	6.6			
92	110	573	1.95	15.99	19.8	17.3	10.2	6.1			
108	131	485	2.30	13.52	20.0	17.6	9.5	6.3			
126	152	417	2.65	11.62	20.1	17.8	8.8	6.5			
49	59	1075	0.80	29.98	**	**	**	**	FH062-11P-132S-04E	83	296
58	70	905	0.95	25.23	7.4	11.9	7.4	2.4			
63	76	830	1.00	23.14	8.4	12.5	8.4	2.6			
70	85	748	1.10	20.87	9.3	12.8	9.3	2.9			
77	92	686	1.20	19.14	9.9	13.0	9.9	3.1			
83	99	636	1.30	17.75	10.3	13.2	9.7	3.2			
85	103	616	0.95	17.18	10.4	12.5	10.1	2.6			
90	108	584	1.45	16.28	10.7	13.3	9.3	3.4			
95	115	551	1.50	15.38	10.9	13.5	9.0	3.5			
104	125	506	1.65	14.11	11.1	13.6	8.6	3.6			
109	131	484	1.20	13.49	11.3	13.1	8.8	3.2			
113	136	466	1.80	12.99	11.4	13.7	8.2	3.8			
117	141	449	1.85	12.53	11.4	13.8	8.1	3.8			
123	148	427	1.95	11.91	11.5	13.9	7.9	3.9			
128	154	412	2.00	11.49	11.6	13.9	7.8	4.0			
137	165	384	2.15	10.70	11.7	14.0	7.5	4.1			
141	170	373	1.55	10.41	11.8	13.6	7.7	3.6			
149	180	352	2.35	9.81	11.8	14.1	7.2	4.1			
170	205	309	1.85	8.61	12.0	13.9	7.0	3.9			
200	241	262	2.20	7.32	12.1	14.1	6.5	4.1			
231	278	228	2.55	6.35	12.2	14.2	6.1	4.3			
273	329	192	3.00	5.36	12.3	14.4	5.6	4.4			
162	195	324	1.75	9.04	8.8	11	8.5	4.3			
171	206	307	1.80	8.57	8.9	11.1	8.3	4.4			
177	214	296	1.85	8.26	9	11.1	8.1	4.4			
192	232	273	1.35	7.62	9.1	10.8	7.9	4.1			
230	277	229	1.60	6.38	9.3	11	7.3	4.3			
283	341	185	1.95	5.17	9.1	11.2	6.7	4.5			
294	354	179	2.05	4.98	8.9	11.2	6.5	4.5			



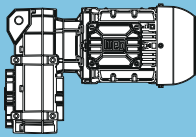
Legend see page 187

** ... on request

P _N = 5.5 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
5.5 kW	6.6 kW	M ₂ Nm	f _B	i	Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
70	85	747	0.85	20.83	**	**	**	**	FH052-11P-132S-04E	68	294
77	93	682	0.90	19.03	4.5	6.9	4.5	3.2			
86	104	611	1.00	17.04	5.9	9.9	5.9	3.4			
94	113	558	1.10	15.57	6.7	10.3	6.7	3.6			
106	128	495	1.25	13.82	7.5	10.5	7.5	3.8			
116	140	453	1.35	12.63	7.9	10.6	7.9	3.9			
127	153	415	1.45	11.57	8.2	10.7	8.2	4.0			
128	154	412	0.90	11.48	8.2	10.2	8.2	3.5			
139	167	379	1.55	10.57	8.5	10.8	8.5	4.1			
156	188	336	1.70	9.38	8.8	11.0	8.6	4.3			
156	188	337	1.10	9.39	8.8	10.5	8.7	3.8			
162	195	324	1.75	9.04	8.8	11.0	8.5	4.3			
171	206	307	1.80	8.57	8.9	11.1	8.3	4.4			
177	214	296	1.85	8.26	9.0	11.1	8.1	4.4			
192	232	273	1.35	7.62	9.1	10.8	7.9	4.1			
230	277	229	1.60	6.38	9.3	11.0	7.3	4.3			
283	341	185	1.95	5.17	9.1	11.2	6.7	4.5			
294	354	179	2.05	4.98	8.9	11.2	6.5	4.5			

Legend see page 187

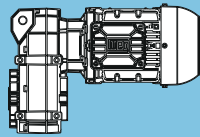
** ... on request

P _N = 7.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
7.5 kW		9.0 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.0	3.6	21698	0.85	488.09	**	**	**	**	FH154-11P-L132M-04F	733	318
3.1	3.7	21000	0.90	473.37	63.4	109.6	63.4	109.6			
3.2	3.8	20547	0.90	463.14	66.0	113.1	66.0	113.1			
3.6	4.3	18090	1.00	409.44	77.8	115.2	77.8	115.2			
3.7	4.4	17588	1.05	398.90	79.8	115.6	79.8	115.6			
4.2	5.1	15119	1.20	345.03	88.4	117.6	88.4	117.6			
3.8	4.6	17096	0.80	383.78	**	**	**	**	FH124-11P-L132M-04F	481	314
4.1	5.0	15861	0.85	356.79	**	**	**	**			
4.2	5.1	15554	0.85	349.88	**	**	**	**			
4.3	5.2	14968	0.90	337.39	63.1	83.1	63.1	83.1			
4.4	5.3	14845	0.90	334.62	63.6	83.2	63.6	83.2			
4.9	5.9	13312	1.00	301.29	69.4	84.7	69.4	84.7			
5.0	6.1	12810	1.05	290.53	71.1	85.2	71.1	85.2			
5.1	6.1	12708	1.05	288.23	71.4	85.3	71.4	85.3			
5.9	7.1	10877	1.20	248.21	76.6	87.0	76.6	87.0			
6.6	8.0	10789	1.25	220.67	76.8	87.1	76.8	87.1	FH123-11P-L132M-04F	457	312
7.6	9.2	9407	1.40	192.40	80.0	88.4	80.0	88.4			
7.9	9.5	9071	1.45	185.53	80.7	88.8	80.7	88.8			
8.8	11	8103	1.65	165.73	82.5	89.7	82.5	89.7			
10	12	6978	1.90	142.72	84.3	90.8	84.3	90.8			
12	14	6095	2.15	124.67	85.5	91.6	85.5	91.6			
14	17	5150	2.55	105.34	86.6	92.5	86.6	92.5			
16	20	4436	2.95	90.74	87.3	93.2	87.3	93.2			
6.7	8.1	10647	0.80	217.78	**	**	**	**	FH103-11P-L132M-04F	317	308
7.7	9.4	9242	0.90	189.04	38.9	58.9	38.9	58.9			
8.0	9.7	8912	0.90	182.29	40.9	59.3	40.9	59.3			
9.0	11	7985	1.05	163.33	45.8	60.3	45.8	60.3			
10	13	6834	1.20	139.78	50.6	61.6	50.6	61.6			
12	14	5993	1.35	122.58	53.5	62.5	53.5	62.5			
12	15	5902	1.40	120.72	53.7	62.6	53.7	62.6			
14	16	5293	1.55	108.27	55.4	63.3	55.4	63.3			
16	19	4595	1.75	93.98	57.1	64.1	57.1	64.1			
16	20	4431	1.85	90.63	57.5	64.2	57.5	64.2			
18	22	3970	2.05	81.20	58.4	64.7	58.4	64.7			
21	25	3397	2.40	69.49	59.3	65.4	59.3	65.4			
24	29	2934	2.75	60.02	60.0	65.9	60.0	65.9			
41	49	1757	2.50	35.93	61.3	67.2	61.3	67.2			
79	95	910	2.50	18.62	51.4	68	51.4	68.0			
12	15	5905	0.80	120.77	**	**	**	**	FH093-11P-L132M-04F	223	304
13	15	5727	0.80	117.13	**	**	**	**			
14	17	5111	0.90	104.54	23.4	38.2	23.4	38.2			
16	19	4527	1.00	92.59	27.8	39.0	27.8	39.0			
18	22	3916	1.15	80.09	31.3	39.8	31.3	39.8			
19	23	3776	1.20	77.23	32.0	40.0	32.0	40.0			
21	26	3332	1.40	68.15	33.9	40.6	33.9	40.6			
25	31	2835	1.60	57.99	35.7	41.2	35.7	41.2			
29	35	2446	1.85	50.03	36.8	41.8	36.8	41.8			
38	46	1890	2.30	38.65	38.1	42.5	38.1	42.5	FH092-11P-L132M-04F	209	304
43	52	1669	2.70	34.13	38.5	42.8	38.5	42.8			
51	62	1397	2.50	28.57	38.9	43.1	38.9	43.1			
77	93	929	2.30	19.01	39.5	43.6	39.5	43.6			
104	126	687	2.50	14.05	37.6	44.0	37.6	44.0			
18	22	3913	0.80	80.04	**	**	**	**	FH083-11P-L132M-04F	169	300
20	25	3502	0.85	71.62	**	**	**	**			
21	25	3416	0.85	69.87	**	**	**	**			
24	30	2927	0.95	59.86	20.0	35.5	20.0	35.5			
25	31	2822	1.00	57.73	20.8	37.2	20.8	37.2			
29	35	2491	1.10	50.95	23.0	41.2	23.0	41.2			
34	41	2090	1.20	42.74	25.1	41.8	25.1	41.8			
41	49	1761	1.40	36.02	26.4	42.3	26.4	42.3			

F

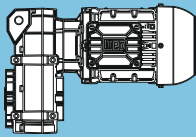
Legend see page 187

** ... on request

P _N = 7.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
7.5 kW		9.0 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
43	52	1656	1.70	33.87	26.8	42.4	20.0	9.9	FH082-11P-L132M-04F	160	300
49	59	1467	2.05	30.00	27.4	42.7	18.8	10.2			
56	68	1269	2.40	25.95	27.9	43.0	17.6	10.5			
66	80	1080	2.80	22.08	28.3	43.3	16.3	10.8			
103	125	693	2.55	14.18	29.0	43.8	13.6	11.3			
119	144	600	2.95	12.27	29.1	43.9	12.7	11.4			
37	45	1922	0.80	39.31	**	**	**	**	FH072-11P-L132M-04F	120	298
42	51	1698	0.90	34.74	13.9	15.5	13.9	4.3			
50	60	1436	1.05	29.38	16.0	16.1	14.6	4.8			
58	70	1234	1.25	25.25	17.3	16.5	13.5	5.2			
66	80	1078	1.40	22.05	18.1	16.8	12.6	5.6			
71	85	1013	0.95	20.72	18.4	16.0	12.7	4.8			
78	94	924	1.65	18.89	18.8	17.1	11.6	5.9			
80	97	890	1.70	18.21	18.9	17.2	11.4	5.9			
81	98	884	1.25	18.09	18.9	16.4	11.8	5.1			
91	110	786	1.95	16.08	19.2	17.4	10.7	6.1			
92	111	782	1.40	15.99	19.3	16.7	11.0	5.5			
108	131	661	1.70	13.52	19.6	17.1	10.2	5.8			
109	131	660	2.30	13.49	19.6	17.7	9.8	6.4			
126	152	568	1.95	11.62	19.8	17.3	9.4	6.1			
129	156	555	2.75	11.36	19.9	17.9	9.0	6.6			
144	175	496	2.25	10.14	20.0	17.5	8.8	6.3			
169	204	425	2.65	8.69	20.1	17.8	8.2	6.5			
175	211	410	2.50	8.38	20.1	17.8	8.1	6.5			
70	85	1020	0.85	20.87	**	**	**	**	FH062-11P-L132M-04F	97	296
77	92	936	0.90	19.14	6.9	10.7	6.9	2.2			
83	100	868	0.95	17.75	7.9	12.4	7.9	2.5			
90	109	796	1.05	16.28	8.8	12.6	8.8	2.7			
95	115	752	1.10	15.38	9.3	12.8	9.3	2.9			
104	125	690	1.20	14.11	9.9	13.0	9.4	3.0			
109	131	660	0.90	13.49	10.1	12.3	9.2	2.4			
113	136	635	1.30	12.99	10.3	13.2	9.0	3.2			
117	141	613	1.35	12.53	10.5	13.3	8.8	3.3			
123	149	582	1.45	11.91	10.7	13.3	8.6	3.4			
128	154	562	1.50	11.49	10.8	13.4	8.4	3.5			
137	165	523	1.60	10.70	11.0	13.6	8.1	3.6			
141	170	509	1.15	10.41	11.1	13.0	8.4	3.0			
149	180	480	1.75	9.81	11.3	13.7	7.8	3.7			
170	206	421	1.40	8.61	11.6	13.4	7.6	3.4			
200	242	358	1.60	7.32	11.8	13.7	7.0	3.7			
231	279	310	1.85	6.35	12.0	13.9	6.5	3.9			
273	330	262	2.20	5.36	12.1	14.1	6.0	4.1			
283	342	253	2.30	5.17	12.2	14.1	5.9	4.2			
332	401	216	2.65	4.41	12.2	14.3	5.5	4.3			
94	114	761	0.80	15.57	**	**	**	**	FH052-11P-L132M-04F	82	294
106	128	676	0.90	13.82	4.7	7.3	4.7	3.2			
116	140	617	1.00	12.63	5.8	9.7	5.8	3.4			
127	153	566	1.10	11.57	6.6	10.3	6.6	3.6			
139	167	517	1.15	10.57	7.2	10.4	7.2	3.7			
156	189	459	1.25	9.38	7.8	10.6	7.8	3.9			
162	196	442	1.30	9.04	8.0	10.6	8.0	3.9			
171	207	419	1.35	8.57	8.2	10.7	8.2	4.0			
177	214	404	1.35	8.26	8.3	10.8	8.3	4.1			
192	232	373	1.00	7.62	8.5	10.4	8.5	3.7			
230	277	312	1.20	6.38	8.9	10.6	7.8	3.9			
283	342	253	1.45	5.17	9.2	10.9	7.0	4.2			
294	355	243	1.50	4.98	9.2	10.9	6.9	4.2			

Legend see page 187

** ... on request

P _N = 9.2 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
9.2 kW		11 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.6	4.3	22404	0.85	409.44	**	**	**	**	FH154-11P-L132M-04G	738	318	
3.7	4.4	21827	0.85	398.90	**	**	**	**				
4.2	5.1	18763	1.00	345.03	74.9	114.6	74.9	114.6				
4.8	5.9	16520	0.80	301.29	**	**	**	**	FH124-11P-L132M-04G	486	314	
5.0	6.1	15897	0.85	290.53	**	**	**	**				
5.1	6.1	15771	0.85	288.23	**	**	**	**				
5.9	7.1	13498	1.00	248.21	68.8	84.5	68.8	84.5				
6.6	8.0	13279	1.00	220.67	69.5	84.7	69.5	84.7	FH123-11P-L132M-04G	462	312	
7.6	9.2	11578	1.15	192.40	74.7	86.3	74.7	86.3				
7.9	9.5	11165	1.20	185.53	75.9	86.7	75.9	86.7				
8.8	11	9973	1.35	165.73	78.8	87.9	78.8	87.9				
10	12	8589	1.55	142.72	81.6	89.2	81.6	89.2				
12	14	7502	1.75	124.67	83.5	90.3	83.5	90.3				
12	15	7271	1.80	120.82	83.9	90.5	83.9	90.5				
14	17	6113	2.00	101.58	85.5	91.6	85.5	91.6				
14	17	6339	2.10	105.34	85.2	91.4	85.2	91.4				
16	19	5461	2.40	90.74	86.3	92.2	86.3	92.2				
19	23	4702	2.80	78.14	87.1	93.0	87.1	93.0				
8.9	11	9829	0.85	163.33	**	**	**	**	FH103-11P-L132M-04G	322	308	
10	13	8412	1.00	139.78	43.7	59.8	43.7	59.8				
12	14	7377	1.10	122.58	48.5	61.0	48.5	61.0				
13	16	6515	1.25	108.27	51.8	61.9	51.8	61.9				
16	19	5656	1.45	93.98	54.5	62.9	54.5	62.9				
18	22	4886	1.65	81.20	56.4	63.7	56.4	63.7				
21	25	4182	1.95	69.49	58.0	64.5	58.0	64.5				
24	29	3612	2.25	60.02	59.0	65.1	59.0	65.1				
34	41	2572	2.50	42.74	60.5	66.3	60.5	66.3	FH102-11P-L132M-04G	296	308	
41	49	2162	2.00	35.93	60.9	66.8	60.9	66.8				
66	80	1332	2.50	22.14	55.1	67.5	55.1	67.5				
78	95	1121	2.00	18.62	52.1	67.8	52.1	67.8				
16	19	5572	0.85	92.59	**	**	**	**	FH093-11P-L132M-04G	228	304	
18	22	4820	0.95	80.09	25.7	38.6	25.7	38.6				
19	23	4648	1.00	77.23	27.0	38.8	27.0	38.8				
21	26	4101	1.10	68.15	30.3	39.6	30.3	39.6				
25	30	3490	1.30	57.99	33.2	40.4	33.2	40.4				
29	35	3011	1.50	50.03	35.1	41.0	35.1	41.0				
38	46	2326	1.90	38.65	37.1	41.9	37.1	41.9	FH092-11P-L132M-04G	214	304	
43	52	2054	2.20	34.13	37.7	42.3	37.7	42.3				
49	60	1783	2.55	29.63	38.3	42.6	38.3	42.6				
51	62	1719	2.00	28.57	38.4	42.7	38.4	42.7				
57	69	1541	2.95	25.60	38.7	43.0	38.7	43.0				
77	93	1144	1.90	19.01	39.3	43.3	39.3	43.3				
87	105	1010	2.65	16.79	39.4	43.5	39.4	43.5				
104	126	846	2.00	14.05	38.2	43.7	38.2	43.7				
24	29	3602	0.80	59.86	**	**	**	**	FH083-11P-L132M-04G	174	300	
25	31	3474	0.80	57.73	**	**	**	**				
29	35	3066	0.90	50.95	18.8	32.9	18.8	7.8				
34	41	2572	1.00	42.74	22.5	41.0	22.5	8.5				
41	49	2168	1.10	36.02	24.7	41.7	21.8	9.2				
43	52	2038	1.40	33.87	25.3	41.9	21.2	9.4	FH082-11P-L132M-04G	165	300	
49	59	1805	1.70	30.00	26.2	42.2	19.8	9.7				
56	68	1562	1.95	25.95	27.1	42.6	18.5	10.1				
66	80	1329	2.30	22.08	27.8	43.0	17.0	10.5				
78	94	1131	2.70	18.79	28.2	43.3	15.7	10.8				
103	124	853	2.10	14.18	28.8	43.5	14.1	11.0				
119	144	738	2.40	12.27	28.9	43.7	13.2	11.2				
140	169	628	2.85	10.44	29.1	43.9	12.3	11.4				

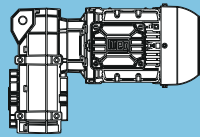
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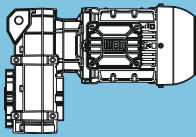
P_N = 9.2 kW

IE3

50 Hz 9.2 kW n ₅₀ min ⁻¹	60 Hz 11 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
50	60	1768	0.85	29.38	**	**	**	**	FH072-11P-L132M-04G	125	298
58	70	1519	1.00	25.25	15.4	15.9	13.3	4.7			
66	80	1327	1.15	22.05	16.8	16.3	13.3	5.0			
70	85	1247	0.80	20.72	**	**	**	**			
77	93	1137	1.35	18.89	17.8	16.7	12.3	5.4			
80	97	1096	1.40	18.21	18.0	16.8	12.1	5.5			
81	98	1089	1.05	18.09	18.1	15.8	12.4	4.5			
91	110	968	1.60	16.08	18.6	17.0	11.3	5.8			
108	131	814	1.40	13.52	19.2	16.6	10.7	5.4			
126	152	699	1.60	11.62	19.5	16.9	9.9	5.7			
129	155	684	2.20	11.36	19.6	17.6	9.5	6.4			
144	174	610	1.85	10.14	19.7	17.2	9.3	6.0			
168	203	523	2.15	8.69	19.9	17.5	8.6	6.2			
174	211	504	2.00	8.38	20.0	17.5	8.4	6.3			
197	239	445	2.55	7.40	20.1	17.7	7.9	6.4			
235	284	374	3.00	6.21	20.2	17.9	7.3	6.7			
82	99	1068	0.80	17.75	**	**	**	**	FH062-11P-L132M-04G	102	296
90	108	980	0.85	16.28	**	**	**	**			
95	115	926	0.90	15.38	7.1	11.2	7.1	2.3			
103	125	849	1.00	14.11	8.2	12.5	8.2	2.5			
112	136	782	1.05	12.99	9.0	12.7	9.0	2.8			
117	141	754	1.10	12.53	9.3	12.8	9.1	2.9			
123	148	717	1.15	11.91	9.6	12.9	9.0	3.0			
127	154	691	1.20	11.49	9.8	13.0	9.0	3.0			
136	165	644	1.30	10.70	10.2	13.2	8.7	3.2			
140	170	626	0.95	10.41	10.4	12.5	8.4	2.5			
149	180	590	1.40	9.81	10.6	13.3	8.3	3.4			
170	205	518	1.15	8.61	11.1	13.0	8.1	3.0			
199	241	441	1.30	7.32	11.5	13.3	7.5	3.3			
230	278	382	1.50	6.35	11.7	13.6	6.9	3.6			
272	329	323	1.80	5.36	12.0	13.8	6.3	3.9			
282	341	311	1.85	5.17	12.0	13.9	6.2	3.9			
331	400	265	2.20	4.41	12.1	14.1	5.7	4.1			
116	140	760	0.80	12.63	**	**	**	**	FH052-11P-L132M-04G	87	294
126	153	696	0.90	11.57	4.1	6.1	4.1	3.2			
138	167	636	0.95	10.57	5.5	9.0	5.5	3.3			
156	188	564	1.00	9.38	6.6	10.3	6.6	3.6			
162	195	544	1.05	9.04	6.9	10.3	6.9	3.6			
170	206	516	1.10	8.57	7.2	10.4	7.2	3.7			
177	214	497	1.10	8.26	7.4	10.5	7.4	3.8			
192	232	459	0.80	7.62	**	**	**	**			
229	277	384	0.95	6.38	8.4	10.3	8.2	3.6			
282	341	311	1.20	5.17	8.9	10.7	7.4	4.0			
293	354	300	1.25	4.98	9.0	10.7	7.2	4.0			

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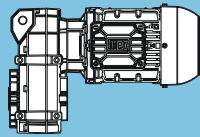
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P _N = 11 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
11 kW		13 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
4.3	5.1	22419	0.85	345.03	**	**	**	**	FH154-22P-160M-04E	800	318
4.5	5.4	21251	0.85	327.05	**	**	**	**			
5.2	6.3	18269	1.00	282.89	77	115	77	115			
5.7	6.8	18567	1.00	259.81	75.8	114.8	75.8	114.8	FH153-22P-160M-04E	754	316
6.6	7.9	15991	1.15	223.77	85.6	116.9	85.6	116.9			
7.6	9.2	13832	1.35	193.55	92.1	118.6	92.1	118.6			
8.6	10	12201	1.50	170.73	96.1	120.0	96.1	120.0			
10	12	10479	1.75	146.63	99.6	121.4	99.6	121.4			
12	14	8895	2.05	124.47	102.4	122.7	102.4	122.7			
14	16	7694	2.35	107.66	104.1	123.7	104.1	123.7			
15	18	7234	2.50	101.23	104.7	124.1	104.7	124.1			
5.9	7.2	16128	0.85	248.21	**	**	**	**	FH124-22P-160M-04E	548	314
6.7	8	15770	0.85	220.67	**	**	**	**	FH123-22P-160M-04E	524	312
7.6	9.2	13749	0.95	192.40	67.9	84.3	67.9	84.3			
8.9	11	11843	1.10	165.73	74.0	86.1	74.0	86.1			
10	12	10199	1.30	142.72	78.2	87.7	78.2	87.7			
12	14	8909	1.50	124.67	81.0	88.9	81.0	88.9			
14	16	7696	1.70	107.69	83.2	90.1	83.2	90.1			
16	20	6485	2.05	90.74	85.0	91.3	85.0	91.3			
17	20	6364	2.05	89.06	85.2	91.4	85.2	91.4			
19	23	5584	2.35	78.14	86.2	92.1	86.2	92.1			
20	24	5237	2.50	73.28	86.5	92.5	86.5	92.5			
22	26	4878	2.70	68.26	86.9	92.8	86.9	92.8			
37	44	2857	2.70	39.98	88.5	94.7	88.5	94.7	FH122-22P-160M-04E	483	312
77	93	1371	2.70	19.18	77.8	96.0	77.8	96.0			
11	13	9989	0.85	139.78	**	**	**	**	FH103-22P-160M-04E	384	308
12	15	8627	0.95	120.72	42.6	59.6	42.6	59.6			
14	16	7737	1.05	108.27	47.0	60.6	47.0	60.6			
16	19	6716	1.20	93.98	51.1	61.7	51.1	61.7			
18	21	5953	1.35	83.30	53.6	62.5	53.6	62.5			
21	26	4966	1.65	69.49	56.3	63.6	56.3	63.6			
22	26	4830	1.70	67.59	56.6	63.8	56.6	63.8			
24	30	4289	1.90	60.02	57.8	64.4	57.8	64.4			
29	35	3627	2.25	50.75	59.0	65.1	59.0	65.1			
35	43	2959	2.75	41.41	60.0	65.9	60.0	65.9			
34	42	3054	2.10	42.74	59.9	65.8	59.9	65.8	FH102-22P-160M-04E	358	308
39	48	2663	2.70	37.26	60.4	66.2	60.4	66.2			
66	80	1582	2.10	22.14	55.8	67.2	55.8	67.2			
76	92	1379	2.70	19.30	53.1	67.5	53.1	67.5			
18	22	5723	0.80	80.09	**	**	**	**	FH093-22P-160M-04E	290	304
21	26	4925	0.95	68.92	24.9	38.5	24.9	38.5			
22	26	4870	0.95	68.15	25.3	38.5	25.3	38.5			
25	31	4144	1.10	57.99	30.1	39.5	30.1	39.5			
27	33	3851	1.20	53.89	31.6	39.9	31.6	39.9			
29	35	3575	1.30	50.03	32.9	40.3	32.9	40.3			
35	42	2999	1.50	41.97	35.1	41.0	35.1	41.0			
43	52	2438	1.75	34.12	36.8	41.8	36.8	41.8			
55	67	1907	2.05	26.68	38.1	42.5	38.1	42.5			
43	52	2439	1.85	34.13	36.8	41.8	36.8	41.8	FH092-22P-160M-04E	276	304
50	60	2117	2.15	29.63	37.6	42.2	37.6	42.2			
57	69	1829	2.50	25.60	38.2	42.6	38.2	42.6			
67	81	1566	2.90	21.91	38.7	42.9	38.7	42.9			
88	106	1200	2.25	16.79	39.2	43.2	39.2	43.2			
101	122	1041	2.60	14.57	39.1	43.4	39.1	43.4			
117	141	900	3.00	12.59	37.1	43.7	37.1	43.7			
34	42	3054	0.85	42.74	**	**	**	**	FH083-22P-160M-04E	236	300
41	49	2574	0.95	36.02	22.5	41	22.5	41			
50	60	2110	1.10	29.53	25	41.7	20.7	42.5			

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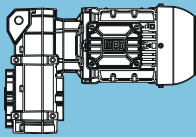
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** ... on request

P _N = 11 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
11 kW		13 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
49	59	2144	1.40	30.00	24.8	41.7	20.8	9.2	FH082-22P-160M-04E	227	300
57	68	1854	1.65	25.95	26.1	42.1	19.3	9.6			
67	80	1578	1.95	22.08	27.0	42.6	17.7	10.1			
78	94	1343	2.25	18.79	27.7	42.9	16.4	10.4			
91	110	1158	2.60	16.21	28.2	43.2	15.2	10.7			
104	125	1013	1.75	14.18	28.5	43.2	14.7	10.7			
120	145	877	2.05	12.27	28.7	43.5	13.7	11.0			
141	170	746	2.40	10.44	28.9	43.7	12.7	11.2			
166	200	635	2.80	8.88	29.1	43.9	11.7	11.4			
67	80	1576	1.00	22.05	15.0	15.8	12.1	4.5	FH072-22P-160M-04E	187	298
78	94	1350	1.15	18.89	16.6	16.2	12.2	5.0			
91	110	1149	1.35	16.08	17.8	16.7	11.9	5.4			
109	132	964	1.60	13.49	18.6	17.0	10.8	5.8			
129	156	812	1.85	11.36	19.2	17.3	9.9	6.1			
145	175	725	1.55	10.14	19.4	16.9	9.7	5.6			
158	190	666	2.30	9.32	19.6	17.6	8.9	6.4			
169	204	621	1.80	8.69	19.7	17.2	8.9	5.9			
199	240	529	2.15	7.40	19.9	17.4	8.2	6.2			
237	286	444	2.55	6.21	20.1	17.7	7.6	6.4			
281	339	374	3.00	5.23	19.2	17.9	7.0	6.7			
104	126	1008	0.85	14.11	**	**	**	**	FH062-22P-160M-04E	164	296
113	137	928	0.90	12.99	7.1	11.2	7.1	2.3			
123	149	851	1.00	11.91	8.2	12.5	8.2	2.5			
137	166	765	1.10	10.7	9.2	12.8	8.4	2.8			
150	181	701	1.20	9.81	9.8	13.0	8.3	3.0			
231	280	454	1.30	6.35	11.4	13.2	7.3	3.3			
274	331	383	1.50	5.36	11.7	13.6	6.6	3.6			
333	402	315	1.85	4.41	12.0	13.9	6.0	3.9			

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** ... on request

P _N = 15 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
15 kW		18 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
6.5	7.9	21881	0.85	223.77	**	**	**	**	FH153-22P-160L-04F	777	316
7.6	9.2	18926	1.00	193.55	74.2	114.5	74.2	114.5			
8.6	10	16694	1.10	170.73	83.2	116.3	83.2	116.3			
10	12	14338	1.30	146.63	90.7	118.2	90.7	118.2			
12	14	12171	1.50	124.47	96.2	120.0	96.2	120.0			
14	16	10527	1.75	107.66	99.6	121.4	99.6	121.4			
15	19	9286	1.95	94.97	101.7	122.4	101.7	122.4			
18	22	7975	2.30	81.56	103.7	123.5	103.7	123.5			
22	26	6635	2.75	67.86	105.4	124.6	105.4	124.6			
8.8	11	16205	0.85	165.73	**	**	**	**	FH123-22P-160L-04F	547	312
10	12	13955	0.95	142.72	67.1	84.1	67.1	84.1			
12	14	12190	1.10	124.67	73.0	85.8	73.0	85.8			
14	16	10530	1.25	107.69	77.5	87.4	77.5	87.4			
16	20	8873	1.50	90.74	81.1	88.9	81.1	88.9			
19	23	7641	1.75	78.14	83.3	90.1	83.3	90.1			
20	24	7165	1.85	73.28	84.0	90.6	84.0	90.6			
21	26	6675	1.95	68.26	84.8	91.1	84.8	91.1			
25	30	5765	2.25	58.96	85.9	91.9	85.9	91.9			
30	36	4768	2.60	48.76	87.0	92.9	87.0	92.9			
37	44	3923	2.95	40.12	87.8	93.7	87.8	93.7			
37	44	3909	1.95	39.98	87.8	93.7	87.8	93.7	FH122-22P-160L-04F	506	312
43	52	3367	3.00	34.43	88.2	94.3	88.2	94.3			
76	93	1875	1.95	19.18	79.2	95.4	79.2	95.4			
89	107	1615	3.00	16.52	75.2	95.7	75.2	95.7			
14	16	10587	0.80	108.27	**	**	**	**	FH103-22P-160L-04F	407	308
16	19	9190	0.90	93.98	39.2	58.9	39.2	58.9			
18	21	8145	1.00	83.30	45.1	60.1	45.1	60.1			
21	26	6795	1.20	69.49	50.8	61.6	50.8	61.6			
22	26	6609	1.25	67.59	51.5	61.8	51.5	61.8			
24	30	5869	1.40	60.02	53.8	62.6	53.8	62.6			
29	35	4962	1.65	50.75	56.3	63.6	56.3	63.6			
35	43	4049	2.00	41.41	58.2	64.7	58.2	64.7			
44	53	3285	2.40	33.60	59.5	65.5	59.5	65.5			
34	42	4179	1.55	42.74	58.0	64.5	58.0	64.5	FH102-22P-160L-04F	381	308
39	48	3643	1.95	37.26	58.9	65.1	58.9	65.1			
46	55	3139	2.55	32.10	59.7	65.7	59.7	65.7			
53	64	2703	3.00	27.64	60.3	66.2	60.3	66.2			
66	80	2165	1.55	22.14	57.2	66.5	57.2	66.5			
76	92	1887	1.95	19.30	54.4	66.8	54.4	66.8			
88	107	1626	3.00	16.63	51.6	67.2	51.6	67.2			
25	31	5670	0.80	57.99	**	**	**	**	FH093-22P-160L-04F	313	304
27	33	5269	0.90	53.89	21.9	36.8	21.9	36.8			
29	35	4892	0.95	50.03	25.2	38.5	25.2	38.5			
35	42	4104	1.10	41.97	30.3	39.6	30.3	39.6			
43	52	3336	1.30	34.12	33.9	40.6	33.9	40.6			
55	67	2609	1.50	26.68	36.3	41.5	36.3	41.5			
43	52	3337	1.35	34.13	33.9	40.6	33.9	40.6	FH092-22P-160L-04F	299	304
49	60	2897	1.60	29.63	35.5	41.2	35.5	41.2			
57	69	2503	1.80	25.60	36.6	41.7	36.6	41.7			
67	81	2142	2.15	21.91	37.5	42.2	37.5	42.2			
77	94	1850	2.45	18.92	38.2	42.5	38.2	42.5			
87	106	1642	1.65	16.79	38.5	42.5	38.5	42.5			
92	111	1565	2.90	16.00	38.7	42.9	38.7	42.9			
101	122	1425	1.90	14.57	38.9	42.9	38.9	42.9			
116	141	1231	2.20	12.59	38.3	43.2	38.3	43.2			
136	165	1054	2.55	10.78	36.1	43.4	36.1	43.4			
157	191	910	2.95	9.31	34.3	43.6	34.3	43.6			
50	60	2887	0.80	29.53	**	**	**	**	FH083-22P-160L-04F	259	300

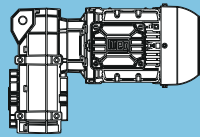
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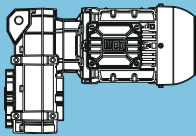
$P_N = 15 \text{ kW}$

IE3

50 Hz 15 kW n_{50} min ⁻¹	60 Hz 18 kW n_{60} min ⁻¹	M_2 Nm	f_b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F_{rN} kN	F_{aIN} kN	F_{rN} kN	F_{aIN} kN			
49	59	2933	1.05	30.00	19.9	35.3	19.9	8.0	FH082-22P-160L-04F	250	300
56	68	2537	1.20	25.95	22.7	41.1	21.4	8.6			
66	80	2159	1.40	22.08	24.7	41.7	19.5	9.2			
78	94	1837	1.65	18.79	26.1	42.2	17.9	9.7			
90	110	1585	1.90	16.21	27.0	42.6	16.5	10.1			
103	125	1387	1.30	14.18	27.6	42.6	16.0	10.1			
108	131	1330	2.30	13.6	27.8	43.0	15.1	10.5			
119	145	1200	1.50	12.27	28.1	42.9	14.8	10.4			
132	160	1081	2.80	11.06	28.3	43.3	13.6	10.8			
140	170	1021	1.75	10.44	28.5	43.2	13.6	10.7			
165	200	868	2.05	8.88	28.7	43.5	12.6	11.0			
191	232	749	2.40	7.66	28.9	43.7	11.7	11.2			
228	276	629	2.85	6.43	29.1	43.9	10.8	11.4			
78	94	1847	0.85	18.89	**	**	**	**	FH072-22P-160L-04F	210	298
91	110	1572	1.00	16.08	15.0	15.8	10.3	4.5			
109	132	1319	1.15	13.49	16.8	16.3	10.4	5.1			
129	156	1111	1.40	11.36	17.9	16.7	10.4	5.5			
144	175	992	1.15	10.14	18.5	16.1	9.8	4.8			
157	190	911	1.65	9.32	18.8	17.1	9.8	5.9			
169	204	850	1.35	8.69	19.0	16.5	9.7	5.3			
198	240	724	1.55	7.40	19.4	16.9	9.0	5.6			
236	286	607	1.85	6.21	19.7	17.2	8.2	6.0			
280	339	511	2.20	5.23	19.8	17.5	7.5	6.2			
341	414	419	2.60	4.29	18.4	17.8	6.8	6.5			
137	166	1046	0.80	10.7	**	**	**	**	FH062-22P-160L-04F	187	296
149	181	959	0.90	9.81	6.5	9.9	6.5	2.2			
231	280	621	0.95	6.35	10.4	12.5	6.5	2.6			
273	331	524	1.10	5.36	11.0	12.9	6.6	3.0			
332	402	431	1.35	4.41	11.5	13.3	6.5	3.4			

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** ... on request

P _N = 18.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
18.5 kW		22 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.6	9.2	23262	0.80	193.55	**	**	**	**	FH153-22P-180M-04E	791	316
8.6	10	20520	0.90	170.73	66.2	113.2	66.2	113.2			
10	12	17623	1.05	146.63	79.7	115.5	79.7	115.5			
12	14	14960	1.25	124.47	88.9	117.7	88.9	117.7			
14	16	12939	1.40	107.66	94.3	119.4	94.3	119.4			
15	18	12167	1.50	101.23	96.2	120.0	96.2	120.0			
17	21	10146	1.80	84.42	100.3	121.7	100.3	121.7			
18	22	9802	1.85	81.56	100.9	122.0	100.9	122.0			
20	24	8721	2.10	72.56	102.6	122.8	102.6	122.8			
22	26	8156	2.25	67.86	103.4	123.3	103.4	123.3			
26	32	6768	2.70	56.31	105.2	124.4	105.2	124.4			
10	12	17153	0.80	142.72	**	**	**	**	FH123-22P-180M-04E	561	312
12	14	14984	0.90	124.67	63.0	83.1	63.0	83.1			
14	16	12943	1.05	107.69	70.6	85.0	70.6	85.0			
16	20	10906	1.20	90.74	76.5	87.0	76.5	87.0			
17	20	10704	1.25	89.06	77.0	87.2	77.0	87.2			
19	23	9391	1.40	78.14	80.0	88.5	80.0	88.5			
20	24	8807	1.50	73.28	81.2	89.0	81.2	89.0			
22	26	8204	1.60	68.26	82.3	89.6	82.3	89.6			
24	29	7240	1.80	60.24	83.9	90.5	83.9	90.5			
25	30	7086	1.85	58.96	84.2	90.7	84.2	90.7			
29	35	6146	2.10	51.14	85.5	91.6	85.5	91.6			
30	36	5860	2.10	48.76	85.8	91.9	85.8	91.9			
37	44	4822	2.40	40.12	87.0	92.9	87.0	92.9			
45	54	3964	2.75	32.98	87.7	93.7	87.7	93.7			
37	44	4805	1.60	39.98	87.0	92.9	87.0	92.9	FH122-22P-180M-04E	520	312
43	52	4138	2.45	34.43	87.6	93.5	87.6	93.5			
77	93	2305	1.60	19.18	79.9	94.9	79.9	94.9			
89	107	1985	2.45	16.52	76.0	95.3	76.0	95.3			
18	21	10012	0.80	83.30	**	**	**	**	FH103-22P-180M-04E	421	308
21	26	8352	1.00	69.49	44.0	59.9	44.0	59.9			
22	26	8123	1.00	67.59	45.2	60.1	45.2	60.1			
24	30	7214	1.15	60.02	49.2	61.1	49.2	61.1			
27	33	6485	1.25	53.96	51.9	62.0	51.9	62.0			
29	35	6099	1.35	50.75	53.1	62.4	53.1	62.4			
35	43	4977	1.65	41.41	56.2	63.6	56.2	63.6			
44	53	4038	2.00	33.60	58.2	64.7	58.2	64.7			
55	66	3225	2.30	26.83	59.6	65.6	59.6	65.6			
39	48	4478	1.60	37.26	57.4	64.2	57.4	64.2	FH102-22P-180M-04E	395	308
46	55	3858	2.10	32.10	58.6	64.9	58.6	64.9			
53	64	3322	2.45	27.64	59.5	65.5	59.5	65.5			
61	74	2901	2.80	24.14	59.5	65.9	59.5	65.9			
76	92	2320	1.60	19.30	55.4	66.3	55.4	66.3			
88	107	1999	2.45	16.63	52.5	66.7	52.5	66.7			
50	60	3561	1.30	29.63	32.9	40.3	32.9	40.3	FH092-22P-180M-04E	313	304
57	69	3077	1.50	25.60	34.8	40.9	34.8	40.9			
67	81	2633	1.75	21.91	36.3	41.5	36.3	41.5			
78	94	2274	2.00	18.92	37.2	42.0	37.2	42.0			
92	111	1923	2.35	16.00	38.0	42.5	38.0	42.5			
101	122	1751	1.55	14.57	38.3	42.4	38.3	42.4			
113	136	1570	2.90	13.06	38.7	42.9	38.7	42.9			
117	141	1513	1.80	12.59	38.8	42.7	38.8	42.7			
136	165	1296	2.10	10.78	37.0	43.1	37.0	43.1			
158	191	1119	2.40	9.31	34.9	43.3	34.9	43.3			
187	226	946	2.85	7.87	32.8	43.6	32.8	43.6			

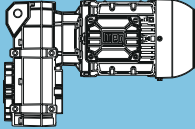
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** ... on request

P_N = 18.5 kW

IE3

50 Hz 18.5 kW	60 Hz 22 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
57	68	3119	1.00	25.95	18.3	31.8	18.3	7.7	FH082-22P-180M-04E 264 300		
67	80	2654	1.15	22.08	22.0	39.9	19.3	8.4			
78	94	2258	1.35	18.79	24.3	41.5	19.1	9.0			
91	110	1948	1.55	16.21	25.7	42.0	17.6	9.5			
108	131	1635	1.85	13.60	26.8	42.5	16.0	10.0			
120	145	1475	1.20	12.27	27.3	42.4	15.7	9.9			
133	160	1329	2.30	11.06	27.8	43.0	14.3	10.5			
141	170	1255	1.45	10.44	27.9	42.8	14.4	10.3			
166	200	1067	1.70	8.88	28.4	43.1	13.2	10.6			
170	205	1040	2.90	8.65	28.4	43.4	12.6	10.9			
192	232	921	1.95	7.66	28.6	43.4	12.3	10.9			
229	276	773	2.30	6.43	28.9	43.6	11.2	11.1			
281	339	629	2.85	5.23	27.8	43.9	10.2	11.4			

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P _N = 22 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
22 kW		26 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
10	12	20957	0.90	146.63	63.7	110.2	63.7	110.2	FH153-22P-180L-04F	812	316
12	14	17790	1.05	124.47	79.0	115.4	79.0	115.4			
14	16	15387	1.20	107.66	87.5	117.4	87.5	117.4			
15	18	14468	1.25	101.23	90.3	118.1	90.3	118.1			
17	21	12066	1.50	84.42	96.4	120.1	96.4	120.1			
18	22	11657	1.55	81.56	97.3	120.4	97.3	120.4			
20	24	10371	1.75	72.56	99.8	121.5	99.8	121.5			
22	26	9699	1.90	67.86	101.0	122.0	101.0	122.0			
26	32	8048	2.25	56.31	103.6	123.4	103.6	123.4			
31	38	6712	2.70	46.96	105.3	124.5	105.3	124.5			
40	49	5222	3.00	36.54	106.8	125.7	106.8	125.7	FH152-22P-180L-04F	774	316
85	102	2480	3.00	17.35	108.5	127.7	108.5	127.7			
14	16	15392	0.85	107.69	**	**	**	**	FH123-22P-180L-04F	582	312
16	20	12969	1.05	90.74	70.6	85.0	70.6	85.0			
17	20	12729	1.05	89.06	71.3	85.2	71.3	85.2			
19	23	11168	1.20	78.14	75.9	86.7	75.9	86.7			
20	24	10474	1.25	73.28	77.6	87.4	77.6	87.4			
22	26	9756	1.35	68.26	79.3	88.1	79.3	88.1			
24	29	8610	1.55	60.24	81.6	89.2	81.6	89.2			
25	30	8427	1.55	58.96	81.9	89.4	81.9	89.4			
29	35	7309	1.75	51.14	83.8	90.5	83.8	90.5			
30	36	6969	1.80	48.76	84.3	90.8	84.3	90.8			
37	44	5734	2.05	40.12	86.0	92.0	86.0	92.0	FH122-22P-180L-04F	541	312
45	54	4714	2.35	32.98	87.1	93.0	87.1	93.0			
53	63	4002	2.60	28.00	87.7	93.6	87.7	93.6			
37	44	5714	1.35	39.98	86.0	92.0	86.0	92.0			
43	52	4921	2.05	34.43	86.9	92.8	86.9	92.8			
49	60	4256	2.95	29.78	87.5	93.4	87.5	93.4			
77	93	2741	1.35	19.18	80.9	94.4	80.9	94.4	FH103-22P-180L-04F	442	308
89	107	2361	2.05	16.52	76.9	94.9	76.9	94.9			
103	124	2042	2.95	14.29	73.1	95.2	73.1	95.2			
21	26	9932	0.85	69.49	**	**	**	**	FH102-22P-180L-04F	416	308
22	26	9660	0.85	67.59	**	**	**	**			
24	30	8578	0.95	60.02	42.8	59.6	42.8	59.6			
27	33	7712	1.05	53.96	47.1	60.6	47.1	60.6			
29	35	7253	1.15	50.75	49.0	61.1	49.0	61.1			
35	43	5919	1.40	41.41	53.7	62.6	53.7	62.6			
44	53	4802	1.65	33.60	56.6	63.8	56.6	63.8	FH092-22P-180L-04F	334	304
55	66	3835	1.95	26.83	58.6	64.9	58.6	64.9			
39	48	5325	1.35	37.26	55.4	63.2	55.4	63.2			
46	55	4588	1.75	32.10	57.1	64.1	57.1	64.1			
53	64	3950	2.05	27.64	58.4	64.8	58.4	64.8			
61	74	3450	2.35	24.14	59.3	65.3	59.3	65.3			
70	85	2981	2.70	20.86	57.5	65.8	57.5	65.8	FH092-22P-180L-04F	334	304
76	92	2758	1.35	19.30	56.5	65.7	56.5	65.7			
88	107	2377	2.05	16.63	53.4	66.2	53.4	66.2			
103	124	2047	2.65	14.32	50.4	66.6	50.4	66.6			
50	60	4235	1.10	29.63	29.6	39.4	29.6	39.4			
57	69	3659	1.25	25.60	32.5	40.2	32.5	40.2			
67	81	3131	1.45	21.91	34.6	40.9	34.6	40.9			
78	94	2704	1.70	18.92	36.1	41.4	36.1	41.4			
92	111	2287	2.00	16.00	37.2	42.0	37.2	42.0			
101	122	2082	1.30	14.57	37.7	41.9	37.7	41.9			
113	136	1867	2.45	13.06	38.1	42.5	38.1	42.5			
117	141	1799	1.50	12.59	38.3	42.3	38.3	42.3			
136	165	1541	1.75	10.78	37.8	42.7	37.8	42.7			
139	168	1514	3.00	10.59	36.9	43.0	36.9	43.0			
158	191	1331	2.05	9.31	35.6	43.0	35.6	43.0			
187	226	1125	2.40	7.87	33.4	43.3	33.4	43.3			
229	276	918	2.95	6.42	31.0	43.6	31.0	43.6			



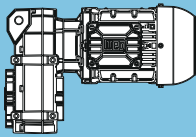
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** ... on request

P _N = 22 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
22 kW	26 kW	M ₂ Nm	f _B	i	Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
57	68	3709	0.85	25.95	**	**	**	**	FH082-22P-180L-04F	285	300
67	80	3156	1.00	22.08	18.0	31.1	17.6	7.6			
78	94	2686	1.15	18.79	21.7	39.3	17.7	8.4			
91	110	2317	1.30	16.21	23.9	41.4	17.7	8.9			
108	131	1944	1.55	13.6	25.7	42.0	16.9	9.5			
120	145	1754	1.05	12.27	26.4	41.9	16.5	9.4			
133	160	1581	1.90	11.06	27.0	42.6	15.1	10.1			
141	170	1492	1.20	10.44	27.3	42.4	15.2	9.9			
166	200	1269	1.40	8.88	27.9	42.8	13.9	10.3			
170	205	1236	2.45	8.65	28.0	43.1	13.2	10.6			
192	232	1095	1.65	7.66	28.3	43.1	12.9	10.6			
229	276	919	1.95	6.43	28.6	43.4	11.8	10.9			
281	339	747	2.40	5.23	28.2	43.7	10.6	11.2			
359	434	585	2.70	4.09	25.8	44.0	9.4	11.5			

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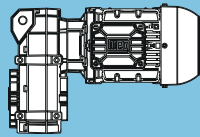
** ... on request

P _N = 30 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
30 kW		36 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
12	15	23617	0.80	122.00	**	**	**	**	FH153-22P-200L-04E	870	316
14	17	20841	0.90	107.66	64.4	111.7	64.4	111.7			
15	18	19596	0.95	101.23	71.0	113.9	71.0	113.9			
16	19	18384	1.00	94.97	76.5	114.9	76.5	114.9			
18	21	16342	1.15	84.42	84.4	116.6	84.4	116.6			
20	25	14046	1.30	72.56	91.5	118.5	91.5	118.5			
22	26	13136	1.40	67.86	93.9	119.2	93.9	119.2			
24	28	12155	1.50	62.79	96.2	120.0	96.2	120.0			
26	32	10901	1.70	56.31	98.8	121.1	98.8	121.1			
32	38	9091	2.00	46.96	102.0	122.5	102.0	122.5			
37	44	7813	2.35	40.36	103.9	123.6	103.9	123.6			
42	51	6762	2.70	34.93	105.2	124.5	105.2	124.5			
41	49	7073	2.20	36.54	104.9	124.2	104.9	124.2	FH152-22P-200L-04E	832	316
85	103	3359	2.20	17.35	108.1	126.9	108.1	126.9			
17	20	17240	0.80	89.06	**	**	**	**	FH123-22P-200L-04E	640	312
19	23	15126	0.90	78.14	62.4	82.9	62.4	82.9			
20	24	14186	0.95	73.28	66.3	83.8	66.3	83.8			
22	26	13214	1.00	68.26	69.7	84.8	69.7	84.8			
25	30	11661	1.15	60.24	74.5	86.3	74.5	86.3			
29	35	9900	1.30	51.14	78.9	88.0	78.9	88.0			
30	37	9439	1.30	48.76	79.9	88.4	79.9	88.4			
34	41	8450	1.45	43.65	81.9	89.4	81.9	89.4			
37	44	7766	1.50	40.12	83.1	90.0	83.1	90.0			
45	54	6384	1.75	32.98	85.2	91.3	85.2	91.3			
53	64	5420	1.95	28.00	86.3	92.3	86.3	92.3			
62	74	4627	2.15	23.90	87.2	93.0	87.2	93.0			
50	60	5765	2.20	29.78	85.9	91.9	85.9	91.9	FH122-22P-200L-04E	599	312
56	68	5085	2.60	26.27	86.7	92.6	86.7	92.6			
66	79	4367	3.00	22.56	86.8	93.3	86.8	93.3			
104	125	2766	2.20	14.29	74.5	94.4	74.5	94.4			
117	141	2441	3.00	12.61	71.4	94.8	71.4	94.8			
27	33	10446	0.80	53.96	**	**	**	**	FH103-22P-200L-04E	500	308
29	35	9824	0.85	50.75	**	**	**	**			
36	43	8016	1.00	41.41	45.7	60.2	45.7	60.2			
44	53	6504	1.25	33.60	51.8	61.9	51.8	61.9			
55	66	5194	1.45	26.83	55.7	63.4	55.7	63.4			
54	64	5351	1.50	27.64	55.3	63.2	55.3	63.2	FH102-22P-200L-04E	474	308
61	74	4673	1.75	24.14	56.9	64.0	56.9	64.0			
71	85	4038	2.00	20.86	58.2	64.7	58.2	64.7			
86	103	3339	2.40	17.25	55.3	65.5	55.3	65.5			
103	124	2772	1.95	14.32	52.2	65.7	52.2	65.7			
104	125	2747	2.95	14.19	51.3	66.1	51.3	66.1			
118	142	2422	2.25	12.51	49.5	66.2	49.5	66.2			
137	165	2091	2.60	10.80	46.8	66.6	46.8	66.6			
68	81	4241	1.10	21.91	29.5	39.4	29.5	39.4	FH092-22P-200L-04E	392	304
78	94	3663	1.25	18.92	32.5	40.1	32.5	40.1			
93	111	3097	1.50	16.00	34.8	40.9	34.8	40.9			
113	136	2528	1.80	13.06	36.6	41.7	36.6	41.7			
137	165	2087	1.30	10.78	37.7	41.9	37.7	41.9			
140	168	2050	2.20	10.59	37.7	42.3	37.7	42.3			
159	191	1802	1.50	9.31	37.2	42.3	37.2	42.3			
175	210	1638	2.45	8.46	35.1	42.8	35.1	42.8			
188	226	1523	1.80	7.87	34.7	42.7	34.7	42.7			
231	277	1243	2.20	6.42	32.0	43.1	32.0	43.1			
284	342	1009	2.60	5.21	29.5	43.5	29.5	43.5			
356	428	805	2.85	4.16	27.1	43.8	27.1	43.8			

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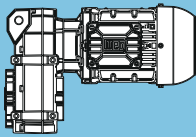
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** ... on request

P _N = 37 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
37 kW		44 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
16	19	22674	0.80	94.97	**	**	**	**	**	FH153-22P-200L-04F	897	316
18	21	20155	0.90	84.42	68.1	113.5	68.1	113.5				
20	25	17324	1.05	72.56	80.8	115.8	80.8	115.8				
22	26	16202	1.15	67.86	84.9	116.7	84.9	116.7				
24	28	14991	1.25	62.79	88.8	117.7	88.8	117.7				
26	32	13444	1.35	56.31	93.1	119.0	93.1	119.0				
32	38	11212	1.65	46.96	98.2	120.8	98.2	120.8				
37	44	9636	1.90	40.36	101.1	122.1	101.1	122.1				
42	51	8340	2.20	34.93	103.2	123.2	103.2	123.2				
41	49	8724	1.80	36.54	102.6	122.8	102.6	122.8	FH152-22P-200L-04F			
53	64	6649	2.75	27.85	105.4	124.5	105.4	124.5				
85	103	4142	1.80	17.35	107.6	126.1	107.6	126.1				
22	26	16297	0.80	68.26	**	**	**	**	FH123-22P-200L-04F	667	312	
25	30	14382	0.95	60.24	65.5	83.6	65.5	83.6				
29	35	12210	1.05	51.14	72.9	85.7	72.9	85.7				
30	37	11641	1.05	48.76	74.6	86.3	74.6	86.3				
34	41	10421	1.20	43.65	77.7	87.5	77.7	87.5				
37	44	9579	1.25	40.12	79.6	88.3	79.6	88.3				
45	54	7874	1.40	32.98	82.9	89.9	82.9	89.9				
53	64	6685	1.55	28.00	84.7	91.1	84.7	91.1				
62	75	5706	1.75	23.90	86.0	92.0	86.0	92.0				
50	60	7110	1.80	29.78	84.1	90.6	84.1	90.6				FH122-22P-200L-04F
56	68	6272	2.10	26.27	85.3	91.5	85.3	91.5				
66	79	5386	2.40	22.56	86.4	92.3	86.4	92.3				
79	95	4481	2.80	18.77	82.9	93.2	82.9	93.2				
104	125	3412	1.80	14.29	76.0	93.7	76.0	93.7				
117	141	3011	2.45	12.61	72.7	94.1	72.7	94.1				
137	165	2586	2.80	10.83	68.7	94.6	68.7	94.6				
54	64	6599	1.25	27.64	51.5	61.8	51.5	61.8	FH102-22P-200L-04F	501	308	
61	74	5763	1.40	24.14	54.2	62.8	54.2	62.8				
71	85	4980	1.65	20.86	56.2	63.6	56.2	63.6				
86	103	4118	1.95	17.25	57.0	64.6	57.0	64.6				
103	124	3419	1.60	14.32	53.8	64.9	53.8	64.9				
104	126	3388	2.40	14.19	52.7	65.4	52.7	65.4				
118	142	2987	1.85	12.51	50.9	65.5	50.9	65.5				
127	153	2786	2.85	11.67	48.8	66.1	48.8	66.1				
137	165	2579	2.15	10.80	48.0	66.0	48.0	66.0				
149	180	2366	3.25	9.91	45.8	66.5	45.8	66.5				
166	199	2134	2.55	8.94	44.6	66.5	44.6	66.5				
175	211	2017	3.65	8.45	43.2	66.9	43.2	66.9				
201	242	1755	3.10	7.35	41.4	67.0	41.4	67.0				
245	295	1442	3.80	6.04	38.5	67.4	38.5	67.4				
288	347	1225	4.45	5.13	36.3	67.6	36.3	67.6				
338	407	1046	5.20	4.38	34.3	67.3	34.3	67.3				

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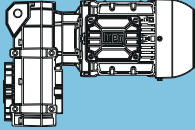
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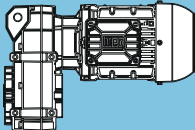
P _N = 45 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
45 kW		55 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
18	22	23683	0.80	81.56	**	**	**	**	FH153-22P-225S/M-04F	1034	316	
20	25	21069	0.90	72.56	63.0	108.7	63.0	108.7				
22	26	19705	0.95	67.86	70.4	113.8	70.4	113.8				
24	28	18232	1.00	62.79	77.2	115.0	77.2	115.0				
26	32	16351	1.15	56.31	84.4	116.6	84.4	116.6				
32	38	13636	1.35	46.96	92.6	118.8	92.6	118.8				
37	44	11719	1.55	40.36	97.1	120.4	97.1	120.4				
42	51	10143	1.80	34.93	100.3	121.7	100.3	121.7				
41	49	10610	1.50	36.54	99.4	121.3	99.4	121.3	FH152-22P-225S/M-04F	996	316	
53	64	8087	2.25	27.85	103.5	123.4	103.5	123.4				
63	76	6789	2.70	23.38	105.2	124.4	105.2	124.4				
85	103	5038	1.50	17.35	106.9	125.3	106.9	125.3				
112	135	3839	2.60	13.22	107.8	126.4	107.8	126.4				
25	30	17120	0.80	58.96	**	**	**	**	FH123-22P-225S/M-04F	804	312	
29	35	14850	0.85	51.14	**	**	**	**				
30	37	14159	0.90	48.76	66.4	83.9	66.4	83.9				
34	41	12675	0.95	43.65	71.5	85.3	71.5	85.3				
37	44	11650	1.00	40.12	74.6	86.3	74.6	86.3				
45	54	9576	1.15	32.98	79.6	88.3	79.6	88.3				
53	64	8130	1.30	28.00	82.5	89.7	82.5	89.7				
62	75	6940	1.45	23.90	84.4	90.8	84.4	90.8				
50	60	8647	1.50	29.78	81.5	89.2	81.5	89.2	FH122-22P-225S/M-04F	763	312	
56	68	7628	1.75	26.27	83.3	90.1	83.3	90.1				
66	79	6551	2.00	22.56	84.9	91.2	84.9	91.2				
79	95	5450	2.30	18.77	84.8	92.2	84.8	92.2				
95	114	4524	2.65	15.58	79.0	93.1	79.0	93.1				
104	125	4149	1.50	14.29	77.7	92.9	77.7	92.9				
117	141	3662	2.00	12.61	74.2	93.4	74.2	93.4				
137	165	3145	2.30	10.83	70.0	94.0	70.0	94.0				
54	64	8026	1.00	27.64	45.6	60.2	45.6	60.2	FH102-22P-225S/M-04F	638	308	
61	74	7010	1.15	24.14	50.0	61.4	50.0	61.4				
71	85	6057	1.35	20.86	53.3	62.4	53.3	62.4				
86	103	5009	1.60	17.25	56.2	63.6	56.2	63.6				
103	124	4158	1.30	14.32	55.6	64.0	55.6	64.0				
104	126	4120	1.95	14.19	54.3	64.6	54.3	64.6				
118	142	3633	1.50	12.51	52.5	64.7	52.5	64.7				
127	153	3389	2.35	11.67	50.1	65.4	50.1	65.4				
137	165	3136	1.75	10.80	49.4	65.3	49.4	65.3				
149	180	2878	2.65	9.91	47.0	66.0	47.0	66.0				
166	199	2596	2.10	8.94	45.7	66.0	45.7	66.0				
175	211	2454	3.00	8.45	44.1	66.4	44.1	66.4				
201	242	2134	2.55	7.35	42.4	66.5	42.4	66.5				
245	295	1754	3.10	6.04	39.3	67.0	39.3	67.0				
288	347	1490	3.65	5.13	37.0	67.3	37.0	67.3				
338	407	1272	4.30	4.38	34.9	67.6	34.9	67.6				



Legend see page 187

** ... on request

P_N = 55 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
55 kW	66 kW			Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
24	28	22284	0.85	62.79	**	**	**	**	FH153-22P-225S/M-04G	1082	316
26	32	19984	0.95	56.31	69.0	113.6	69.0	113.6			
32	38	16666	1.10	46.96	83.3	116.3	83.3	116.3			
37	44	14324	1.30	40.36	90.7	118.2	90.7	118.2			
42	51	12397	1.50	34.93	95.6	119.8	95.6	119.8			
53	64	9884	1.85	27.85	100.7	121.9	100.7	121.9	FH152-22P-225S/M-04G	1044	316
63	76	8298	2.20	23.38	103.2	123.2	103.2	123.2			
77	93	6828	2.65	19.24	105.1	124.4	105.1	124.4			
112	135	4692	2.10	13.22	107.2	125.6	107.2	125.6			
133	161	3939	2.85	11.10	106.4	126.3	106.4	126.3			
34	41	15491	0.80	43.65	**	**	**	**	FH123-22P-225S/M-04G	852	312
37	44	14239	0.85	40.12	**	**	**	**			
45	54	11705	0.95	32.98	74.4	86.2	74.4	86.2			
53	64	9937	1.05	28.00	78.8	87.9	78.8	87.9			
62	75	8482	1.20	23.90	81.8	89.3	81.8	89.3			
56	68	9323	1.40	26.27	80.2	88.5	80.2	88.5	FH122-22P-225S/M-04G	811	312
66	79	8007	1.65	22.56	82.7	89.8	82.7	89.8			
79	95	6661	1.90	18.77	84.8	91.1	84.8	91.1			
95	115	5529	2.15	15.58	81.0	92.2	81.0	92.2			
114	137	4610	2.50	12.99	75.4	93.1	75.4	93.1			
117	142	4475	1.65	12.61	76.1	92.5	76.1	92.5			
132	160	3964	2.80	11.17	71.3	93.7	71.3	93.7			
137	165	3844	1.90	10.83	71.6	93.2	71.6	93.2			
153	185	3428	3.10	9.66	67.5	94.2	67.5	94.2			
164	198	3198	2.60	9.01	66.8	93.9	66.8	93.9			
198	239	2651	3.10	7.47	62.3	94.5	62.3	94.5			
238	287	2211	3.70	6.23	58.2	95.0	58.2	95.0			
276	333	1902	4.30	5.36	55.2	95.4	55.2	95.4			
319	385	1647	4.65	4.64	52.5	95.7	52.5	95.7			
61	74	8567	0.95	24.14	42.9	59.6	42.9	59.6			
71	86	7403	1.10	20.86	48.4	60.9	48.4	60.9			
86	103	6122	1.35	17.25	53.1	62.4	53.1	62.4			
104	126	5036	1.60	14.19	56.1	63.6	56.1	63.6			
118	143	4440	1.25	12.51	54.5	63.7	54.5	63.7			
127	153	4142	1.95	11.67	51.8	64.6	51.8	64.6			
137	165	3833	1.45	10.8	51.1	64.4	51.1	64.4			
149	180	3517	2.20	9.91	48.4	65.3	48.4	65.3			
166	200	3173	1.75	8.94	47.1	65.2	47.1	65.2			
175	211	2999	2.50	8.45	45.3	65.8	45.3	65.8			
201	243	2609	2.10	7.35	43.5	65.9	43.5	65.9			
245	296	2144	2.55	6.04	40.3	66.5	40.3	66.5			
288	348	1821	3.00	5.13	37.8	66.9	37.8	66.9			

P_N = 75 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
75 kW	90 kW			Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
32	38	22726	0.80	46.96	**	**	**	**	FH153-22P-250S/M-04F	1186	316
37	44	19532	0.95	40.36	71.3	114.0	71.3	114.0			
42	51	16904	1.10	34.93	82.4	116.1	82.4	116.1			
53	64	13478	1.35	27.85	93.0	118.9	93.0	118.9	FH152-22P-250S/M-04F	1148	316
63	76	11315	1.60	23.38	98.0	120.7	98.0	120.7			
77	93	9311	1.95	19.24	101.7	122.4	101.7	122.4			
90	109	7922	2.30	16.37	103.8	123.5	103.8	123.5			
105	126	6843	2.65	14.14	105.1	124.4	105.1	124.4			
112	135	6398	1.55	13.22	105.6	124.0	105.6	124.0			
133	160	5372	2.10	11.10	106.6	125.0	106.6	125.0			
162	195	4423	2.50	9.14	101.7	125.9	101.7	125.9			
190	229	3760	2.95	7.77	96.0	126.5	96.0	126.5			

Selection tables - Gear units

Structure of the selection tables

Type	$i_{ges.}$	M_{2max}	n_2	i_{exakt}	n_{1max}	IEC motor frame size 7												
						63	71	80	90	100	112	132	160	180	200	225	250	-
						IEC adapter 8												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
						NEMA adapter 9												
						N56	N143/145		N182	N184	N213/ 215	N254/ 256	N284/ 286	N324/ 326	N364	-	-	
F022																		
2 stages	10																	
$n_1 = 1400 \text{ min}^{-1}$	11																	
Maximum torque 130 Nm	12																	

Type	$i_{ges.}$	SERVO adapter											Input unit													
		n_{1max}	Adapter size 14										n_{1max}	Input shaft [mm] 16												
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				

- 1** Type of gear unit
- 2** Total ratio
- 3** Permissible output torque at S1 operation ($f_b = 1.0$)
- 4** Output speed (gear unit) at $n_1 = 1400 \text{ min}^{-1}$
- 5** Exact mathematical ratio
- 6** Maximum permissible input speed gear unit. valid for direct mounting and IEC / NEMA adapter
Max. perm. input speed IEC / NEMA adapter: I63 - I132 / N56 - N213 = 3000 min^{-1} , I160 - I280 / N254 - N364 = 2500 min^{-1}
Max. perm. motor speed (Direct mounting): motor frame size 63 - 180 = 3000 min^{-1} , 200 - 250 = 2500 min^{-1} .
Higher motor speed on request
- 7** Possible motor frame sizes (Direct mounting)
- 8** Possible IEC adapter sizes
- 9** Possible NEMA adapter sizes
- 10** Number of gear stages
- 11** Motor speed
- 12** Maximum torque
- 13** Maximum input speed - SERVO adapter
- 14** Possible SERVO adapter sizes
- 15** Maximum input speed - direct mounting, IEC / NEMA adapter and input unit
Higher input speeds on request
- 16** Possible input shafts of the input unit

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	1100	-	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	-	-	-	-	-	-	-	-	
F022	97.85	130	14	1957/20	6000												
	88.09	130	16	969/11	6000												
	76.22	130	18	3811/50	6000												
	68.62	130	20	3774/55	6000												
	61.80	130	23	309/5	6000												
	55.64	130	25	612/11	6000												
	48.69	130	29	2678/55	6000												
	43.83	130	32	5304/121	6000												
	37.52	130	37	5253/140	6000												
	33.78	130	41	2601/77	6000												
	31.79	53	44	1653/52	6000												
	29.32	130	48	3811/130	6000												
	26.39	130	53	3774/143	6000												
	24.76	84	57	3219/130	6000												
	21.89	130	64	1751/80	6000												
	20.08	84	70	261/13	6000												
	19.70	130	71	867/44	6000												
	18.88	130	74	1133/60	6000												
	17.00	130	82	17/1	6000												
	16.48	130	85	412/25	6000												
	15.82	84	89	174/11	6000												
	14.84	130	94	816/55	6000												
	12.19	84	115	4437/364	6000												
	12.09	130	116	2781/230	6000												
	10.89	130	129	2754/253	6000												
	9.52	84	147	3219/338	6000												
	7.11	84	197	1479/208	6000												
	6.13	84	228	319/52	6000												
	5.35	84	261	348/65	6000												
	3.93	72	356	2349/598	6000												
F032	70.17	220	20	7719/110	6000												
	63.63	220	22	1909/30	6000												
	57.07	220	25	2511/44	6000												
	51.75	220	27	207/4	6000												
	45.35	220	31	5487/121	6000												
	41.12	220	34	1357/33	6000												
	35.03	220	40	2697/77	6000												
	31.76	220	44	667/21	6000												
	27.97	220	50	3999/143	6000												
	27.67	119	51	83/3	6000												
	25.36	220	55	989/39	6000												
	22.50	147	62	45/2	6000												
	21.14	220	66	465/22	6000												
	19.17	220	73	115/6	6000												
	17.88	150	78	590/33	6000												
	16.06	220	87	1767/110	6000												
	14.57	220	96	437/30	6000												
	13.81	150	101	290/21	6000												
	12.50	220	112	3162/253	6000												
	11.33	220	124	34/3	6000												
	11.03	150	127	430/39	6000												
	9.76	212	144	1395/143	6000												
	8.85	202	158	115/13	6000												
	8.33	150	168	25/3	6000												
6.33	145	221	19/3	6000													
4.93	127	284	340/69	6000													
3.85	111	364	50/13	6000													

Legend see page 253

Type	i _{ges.}	SERVO adapter										Input unit													
		n _{1max} [min ⁻¹]	Adapter size										n _{1max} [min ⁻¹]	Input shaft [mm]											
			S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		19x40	24x50	28x60	38x80	42x110	48x110	55x110					
F022	97.85	5000													-										
	88.09	5000													-										
	76.22	5000													3000										
	68.62	5000													3000										
	61.80	5000													3000										
	55.64	5000													3000										
	48.69	5000													3000										
	43.83	5000													3000										
	37.52	5000													3000										
	33.78	5000													3000										
	31.79	5000													-										
	29.32	5000													3000										
	26.39	5000													3000										
	24.76	5000													3000										
	21.89	5000													3000										
	20.08	5000													3000										
	19.70	5000													3000										
	18.88	4700													3000										
	17.00	4700													3000										
	16.48	4200													3000										
	15.82	5000													3000										
	14.84	4200													3000										
	12.19	5000													3000										
	12.09	3700													3000										
	10.89	3700													3000										
	9.52	5000													3000										
	7.11	5000													3000										
	6.13	4700													3000										
	5.35	4200													3000										
	3.93	3700													3000										
F032	70.17	5000													3000										
	63.63	5000													3000										
	57.07	5000													3000										
	51.75	5000													3000										
	45.35	5000													3000										
	41.12	5000													3000										
	35.03	5000													3000										
	31.76	5000													3000										
	27.97	5000													3000										
	27.67	5000													3000										
	25.36	5000													3000										
	22.50	5000													3000										
	21.14	5000													3000										
	19.17	5000													3000										
	17.88	5000													3000										
	16.06	4600													3000										
	14.57	4600													3000										
	13.81	5000													3000										
	12.50	4000													3000										
	11.33	4000													3000										
	11.03	5000													3000										
	9.76	3500													3000										
	8.85	3500													3000										
	8.33	5000													3000										
	6.33	4600													3000										
	4.93	4000													3000										
	3.85	3500													3000										

Legend see page 253

Type	$i_{ges.}$	M_{2max}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						I63	I71	I80	I90	I100	-	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	-	-	-	-	-	-	-	-	
F042	75.79	322	18	1819/24	6000												
	69.14	293	20	4494/65	6000												
	61.98	400	23	2975/48	6000												
	56.54	396	25	735/13	6000												
	48.94	400	29	1615/33	6000												
	44.64	400	31	6384/143	6000												
	41.20	175	34	8239/200	6000												
	37.95	400	37	2125/56	6000												
	34.62	400	40	450/13	6000												
	33.69	236	42	539/16	6000												
	31.06	400	45	1615/52	6000												
	28.33	400	49	4788/169	6000												
	26.60	308	53	133/5	6000												
	23.91	400	59	765/32	6000												
	21.81	400	64	567/26	6000												
	20.63	308	68	165/8	6000												
	18.06	400	78	289/16	6000												
	16.88	308	83	4389/260	6000												
	16.48	400	85	1071/65	6000												
	14.78	400	95	340/23	6000												
	13.48	400	104	4032/299	6000												
	12.99	308	108	2079/160	6000												
	11.99	384	117	935/78	6000												
	10.93	361	128	1848/169	6000												
	10.03	348	140	1445/144	5600												
	9.82	308	143	3927/400	6000												
	9.15	327	153	119/13	5600												
	8.13	310	172	2635/324	5000												
	8.03	280	174	924/115	6000												
	7.84	304	179	2635/336	4800												
	7.42	291	189	868/117	5000												
	7.15	285	196	93/13	4800												
6.52	247	215	847/130	6000													
5.45	222	257	1309/240	5600													
4.42	196	317	2387/540	5000													
4.26	192	328	341/80	4800													
F043	422.98	400	3.3	17765/42	6000												
	385.85	400	3.6	5016/13	6000												
	329.48	400	4.2	6919/21	6000												
	300.55	400	4.7	19536/65	6000												
	267.14	400	5.2	1870/7	6000												
	243.69	400	5.7	3168/13	6000												
	210.48	400	6.7	4420/21	6000												
	192.00	400	7.3	192/1	6000												
	162.19	400	8.6	15895/98	6000												
	147.96	400	9.5	13464/91	6000												
	126.72	400	11	34595/273	6000												
	115.60	400	12	19536/169	6000												
	94.61	400	15	15895/168	6000												
	86.31	400	16	1122/13	6000												
	81.63	400	17	10285/126	6000												
	74.46	400	19	968/13	6000												
	71.24	400	20	1496/21	6000												
	64.98	400	22	4224/65	6000												
52.27	400	27	8415/161	6000													
47.68	400	29	14256/299	6000													

Legend see page 253

Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F042	75.79	5000												3000											
	69.14	5000												3000											
	61.98	5000												3000											
	56.54	5000												3000											
	48.94	5000												3000											
	44.64	5000												3000											
	41.20	5000												3000											
	37.95	5000												3000											
	34.62	5000												3000											
	33.69	5000												3000											
	31.06	5000												3000											
	28.33	5000												3000											
	26.60	5000												3000											
	23.91	5000												3000											
	21.81	5000												3000											
	20.63	5000												3000											
	18.06	4900												3000											
	16.88	5000												3000											
	16.48	4900												3000											
	14.78	4300												3000											
	13.48	4300												3000											
	12.99	5000												3000											
	11.99	3800												3000											
	10.93	3800												3000											
	10.03	3400												3000											
	9.82	4900												3000											
	9.15	3400												3000											
	8.13	3000												3000											
	8.03	4300												3000											
	7.84	2900												-											
	7.42	3000												3000											
	7.15	2900												0											
	6.52	3800												3000											
	5.45	3400												3000											
	4.42	3000												3000											
	4.26	2900												-											
F043	422.98	5000												-											
	385.85	5000												-											
	329.48	5000												3000											
	300.55	5000												3000											
	267.14	5000												3000											
	243.69	5000												3000											
	210.48	5000												3000											
	192.00	5000												3000											
	162.19	5000												3000											
	147.96	5000												3000											
	126.72	5000												3000											
	115.60	5000												3000											
	94.61	5000												3000											
	86.31	5000												3000											
	81.63	5000												3000											
	74.46	5000												3000											
	71.24	4900												3000											
	64.98	4900												3000											
	52.27	4300												3000											
	47.68	4300												3000											

Legend see page 253

Type	$i_{ges.}$	M_{2max}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F052	87.38	371	16	5243/60	6000													
	79.84	339	18	10379/130	6000													
	71.46	501	20	1715/24	6000													
	65.29	457	21	3395/52	6000													
	56.42	600	25	1862/33	6000													
	51.55	597	27	7372/143	6000													
	48.15	204	29	963/20	6000													
	43.75	600	32	175/4	6000													
	39.97	597	35	7275/182	6000													
	39.38	276	36	315/8	6000													
	35.81	600	39	931/26	6000													
	32.72	597	43	5529/169	6000													
	31.09	360	45	342/11	6000													
	27.56	600	51	441/16	6000													
	25.18	597	56	2619/104	6000													
	24.11	360	58	675/28	6000													
	20.83	600	67	833/40	6000													
	19.73	360	71	513/26	6000													
	19.03	597	74	4947/260	6000													
	17.04	600	82	392/23	6000													
	Maximum torque 600 Nm	15.57	597	90	4656/299	6000												
		15.19	360	92	243/16	6000												
		13.82	600	101	539/39	6000												
		12.63	597	111	2134/169	6000												
		11.57	600	121	833/72	5600												
		11.48	360	122	459/40	6000												
		10.57	584	132	1649/156	5600												
		9.39	360	149	216/23	6000												
		9.38	564	149	1519/162	5000												
		9.04	558	155	217/24	4800												
		8.57	549	163	3007/351	5000												
		8.26	543	169	3007/364	4800												
7.62		360	184	99/13	6000													
6.38		360	220	51/8	5600													
5.17		360	271	31/6	5000													
4.98		360	281	279/56	4800													
F053	487.67	600	2.9	1463/3	6000													
	445.56	597	3.1	40546/91	6000													
	379.87	600	3.7	5698/15	6000													
	347.07	597	4.0	157916/455	6000													
	308.00	600	4.5	308/1	6000													
	281.41	597	5.0	25608/91	6000													
	242.67	600	5.8	728/3	6000													
	221.71	597	6.3	1552/7	6000													
	187.00	600	7.5	187/1	6000													
	170.85	597	8.2	108834/637	6000													
	146.10	600	9.6	5698/39	6000													
	133.49	597	10	157916/1183	6000													
	109.08	600	13	1309/12	6000													
	99.66	597	14	18139/182	6000													
	94.11	600	15	847/9	6000													
	85.99	597	16	23474/273	6000													
	82.13	600	17	1232/15	6000													
	75.04	597	19	34144/455	6000													
60.26	600	23	1386/23	6000														
55.06	597	25	115236/2093	6000														

Legend see page 253

Type	i _{ges.}	SERVO adapter										Input unit														
		n _{1max}	Adapter size										n _{1max}	Input shaft [mm]												
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189		S190	[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				
F052	87.38	5000													3000											
	79.84	5000													3000											
	71.46	5000													3000											
	65.29	5000													3000											
	56.42	5000													3000											
	51.55	5000													3000											
	48.15	5000													3000											
	43.75	5000													3000											
	39.97	5000													3000											
	39.38	5000													3000											
	35.81	5000													3000											
	32.72	5000													3000											
	31.09	5000													3000											
	27.56	5000													3000											
	25.18	5000													3000											
	24.11	5000													3000											
	20.83	5000													3000											
	19.73	5000													3000											
	19.03	5000													3000											
	17.04	4600													3000											
	15.57	4600													3000											
	15.19	5000													3000											
	13.82	4100													3000											
	12.63	4100													3000											
	11.57	3700													3000											
	11.48	5000													3000											
	10.57	3700													3000											
	9.39	4600													3000											
	9.38	3300													3000											
	9.04	3200													3000											
	8.57	3300													3000											
	8.26	3200													3000											
	7.62	4100													3000											
	6.38	3700													3000											
	5.17	3300													3000											
	4.98	3200													3000											
F053	487.67	5000													-											
	445.56	5000													-											
	379.87	5000													3000											
	347.07	5000													3000											
	308.00	5000													3000											
	281.41	5000													3000											
	242.67	5000													3000											
	221.71	5000													3000											
	187.00	5000													3000											
	170.85	5000													3000											
	146.10	5000													3000											
	133.49	5000													3000											
	109.08	5000													3000											
	99.66	5000													3000											
	94.11	5000													3000											
	85.99	5000													3000											
	82.13	5000													3000											
	75.04	5000													3000											
	60.26	4600													3000											
	55.06	4600													3000											

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	-	-	-	-	-	
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F062	49.67	820	28	4520/91	6000													
	45.55	820	31	8927/196	6000													
	41.66	820	34	7040/169	6000													
	38.20	820	37	3476/91	6000													
	32.69	820	43	425/13	6000													
	29.98	820	47	6715/224	6000													
	25.23	820	55	328/13	6000													
	23.14	820	61	3239/140	6000													
	20.87	820	67	480/23	6000													
	20.49	422	68	3729/182	6000													
	19.14	820	73	3081/161	6000													
	17.75	820	79	3000/169	6000													
	17.18	571	81	2904/169	6000													
	16.28	820	86	5925/364	6000													
	15.38	820	91	200/13	5600													
	14.11	820	99	395/28	5600													
	13.49	571	104	2805/208	6000													
	12.99	820	108	1520/117	5000													
	12.53	820	112	1140/91	4800													
	11.91	820	118	1501/126	5000													
	11.49	820	122	4503/392	4800													
	10.70	820	131	3200/299	4400													
	10.41	571	135	1353/130	6000													
	9.81	820	143	1580/161	4400													
	8.61	571	163	198/23	6000													
	7.32	571	191	2475/338	6000													
	6.35	571	221	165/26	5600													
5.36	571	261	209/39	5000														
5.17	571	271	1881/364	4800														
4.41	571	317	1320/299	4400														
F063	412.64	820	3.4	80464/195	6000													
	378.37	820	3.7	397291/1050	6000													
	337.44	820	4.1	13160/39	6000													
	309.42	820	4.5	3713/12	6000													
	266.44	820	5.3	114304/429	6000													
	244.32	820	5.7	282188/1155	6000													
	206.59	820	6.8	18800/91	6000													
	189.44	820	7.4	18565/98	6000													
	169.09	820	8.3	28576/169	6000													
	155.05	820	9.0	70547/455	6000													
	130.15	820	11	1692/13	6000													
	119.35	820	12	33417/280	6000													
	98.34	820	14	6392/65	6000													
	90.17	820	16	63121/700	6000													
	80.48	820	17	24064/299	6000													
	73.80	820	19	59408/805	6000													
	65.26	820	21	33088/507	6000													
	59.84	820	23	81686/1365	6000													
54.63	820	26	6392/117	5600														
50.10	820	28	63121/1260	5600														

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit																
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]														
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110							
F062	49.67	5000														2500													
	45.55	5000														2500													
	41.66	5000														2500													
	38.20	5000														2500													
	32.69	5000														2500													
	29.98	5000														2500													
	25.23	5000														2500													
	23.14	5000														2500													
	20.87	4900														2500													
	20.49	5000														2500													
	19.14	4900														2500													
	17.75	4300														2500													
	17.18	5000														2500													
	16.28	4300														2500													
	15.38	3900														2500													
	14.11	3900														2500													
	13.49	5000														2500													
	12.99	3500														2500													
	12.53	3300														2500													
	11.91	3500														2500													
	11.49	3300														2500													
	10.70	3000														2500													
	10.41	5000														2500													
	9.81	3000														2500													
	8.61	4900														2500													
	7.32	4300														2500													
	6.35	3900														2500													
	5.36	3500														2500													
	5.17	3300														2500													
	4.41	3000														2500													
F063	412.64	5000														3000													
	378.37	5000														3000													
	337.44	5000														3000													
	309.42	5000														3000													
	266.44	5000														3000													
	244.32	5000														3000													
	206.59	5000														2500													
	189.44	5000														2500													
	169.09	5000														2500													
	155.05	5000														2500													
	130.15	5000														2500													
	119.35	5000														2500													
	98.34	5000														2500													
	90.17	5000														2500													
	80.48	4900														2500													
	73.80	4900														2500													
	65.26	4300														2500													
	59.84	4300														2500													
	54.63	3900														2500													
	50.10	3900														2500													



Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	-	-	-	-	-	
						IEC adapter													
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-			
F072	2 stages	Maximum torque 1500 Nm	45.02	1500	31	5763/128	6000												
			39.31	1500	36	629/16	6000												
			34.74	1500	40	5559/160	6000												
			29.38	1500	48	2703/92	6000												
			25.25	1500	55	5253/208	6000												
			22.05	1500	64	1411/64	5600												
			20.72	939	68	1243/60	6000												
			18.89	1500	74	170/9	5000												
			18.21	1500	77	255/14	4800												
			18.09	1103	77	814/45	6000												
			16.08	1500	87	1479/92	4400												
			15.99	1094	88	1199/75	6000												
			13.52	1103	104	4664/345	6000												
			13.49	1500	104	2805/208	3900												
			11.62	1085	120	2266/195	6000												
			11.36	1500	123	2091/184	3500												
			10.14	1115	138	913/90	5600												
			9.32	1500	150	969/104	3100												
			8.69	1115	161	704/81	5000												
			8.38	1006	167	176/21	4800												
7.40	1115	189	2552/345	4400															
6.21	1115	226	242/39	3900															
5.23	1115	268	1804/345	3500															
4.29	1081	327	836/195	3100															
F073	3 stages	Maximum torque 1500 Nm	385.37	1500	3.6	61659/160	6000												
			305.42	1500	4.6	26877/88	6000												
			237.15	1500	5.9	4743/20	6000												
			194.58	1500	7.2	12648/65	6000												
			150.69	1500	9.3	96441/640	6000												
			114.62	1500	12	45849/400	6000												
	94.52		1500	15	17391/184	6000													
	77.53		1500	18	80631/1040	6000													
	65.88		1500	21	527/8	5600													
	54.16		1500	26	19499/360	5000													
	52.23		1500	27	58497/1120	4800													

Legend see page 253

Type	$i_{ges.}$	SERVO adapter											Input unit									
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
F072	45.02	5000												2500								
	39.31	5000												2500								
	34.74	5000												2500								
	29.38	5000												2500								
	25.25	4800												2500								
	22.05	4300												2500								
	20.72	5000												2500								
	18.89	3800												2500								
	18.21	3700												2500								
	18.09	5000												2500								
	16.08	3400												2500								
	15.99	5000												2500								
	13.52	5000												2500								
	13.49	3000												2500								
	11.62	4800												2500								
	11.36	2700												2500								
	10.14	4300												2500								
	9.32	-												2400								
	8.69	3800												2500								
	8.38	3700												2500								
	7.40	3400												2500								
	6.21	3000												2500								
	5.23	2700												2500								
	4.29	-												2400								
F073	385.37	5000												3000								
	305.42	5000												3000								
	237.15	5000												2500								
	194.58	5000												2500								
	150.69	5000												2500								
	114.62	5000												2500								
	94.52	5000												2500								
	77.53	4800												2500								
	65.88	4300												2500								
	54.16	3800												2500								
	52.23	3700												2500								

F

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
F082	33.87	2785	41	6165/182	6000													
2 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 3000 Nm	30.00	3000	47	30/1	5600													
	25.95	3000	54	545/21	5000													
	22.08	3000	63	3555/161	4400													
	18.79	3000	75	1710/91	3900													
	16.21	3000	86	2610/161	3500													
	16.01	1647	87	10823/676	6000													
	14.18	1762	99	553/39	5600													
	13.60	3000	103	2475/182	3100													
	12.27	1762	114	8611/702	5000													
	11.06	3000	127	387/35	2700													
	10.44	1762	134	6241/598	4400													
	8.88	1762	158	1501/169	3900													
	8.65	3000	162	1755/203	2300													
	7.66	1762	183	2291/299	3500													
	6.43	1762	218	4345/676	3100													
	5.23	1762	268	3397/650	2700													
4.09	1564	343	237/58	2300														
F083	358.52	3000	3.9	32625/91	6000													
3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 3000 Nm	283.76	3000	4.9	127125/448	6000													
	247.77	3000	5.7	13875/56	6000													
	218.97	3000	6.4	24525/112	6000													
	185.17	3000	7.6	59625/322	6000													
	180.28	3000	7.8	114840/637	6000													
	159.17	3000	8.8	115875/728	6000													
	142.69	3000	9.8	55935/392	6000													
	138.95	3000	10	31125/224	5600													
	124.59	3000	11	6105/49	6000													
	119.05	3000	12	2500/21	5000													
	114.80	3000	12	5625/49	4800													
	110.11	3000	13	10791/98	6000													
	101.32	3000	14	32625/322	4400													
	93.11	3000	15	104940/1127	6000													
	84.99	3000	16	61875/728	3900													
	80.04	3000	17	50985/637	6000													
	71.62	2947	20	46125/644	3500													
	69.87	2903	20	13695/196	5600													
	59.86	2771	23	8800/147	5000													
	58.72	2777	24	21375/364	3100													
57.73	2741	24	19800/343	4800														
50.95	2640	27	57420/1127	4400														
42.74	2505	33	27225/637	3900														
36.02	2379	39	40590/1127	3500														
29.53	2242	47	18810/637	3100														

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F082	33.87	5000													2500										
	30.00	4500													2500										
	25.95	4000													2500										
	22.08	3600													2500										
	18.79	3100													2500										
	16.21	2800													2500										
	16.01	5000													2500										
	14.18	4500													2500										
	13.60	-													2500										
	12.27	4000													2500										
	11.06	-													2200										
	10.44	3600													2500										
	8.88	3100													2500										
	8.65	-													1900										
	7.66	2800													2500										
	6.43	-													2500										
	5.23	-													2200										
	4.09	-													1900										
F083	358.52	5000													2500										
	283.76	5000													2500										
	247.77	5000													2500										
	218.97	5000													2500										
	185.17	5000													2500										
	180.28	5000													2500										
	159.17	5000													2500										
	142.69	5000													2500										
	138.95	4500													2500										
	124.59	5000													2500										
	119.05	4000													2500										
	114.80	3900													2500										
	110.11	5000													2500										
	101.32	3600													2500										
	93.11	5000													2500										
	84.99	3100													2500										
	80.04	5000													2500										
	71.62	2800													2500										
	69.87	4500													2500										
	59.86	4000													2500										
	58.72	-													2500										
	57.73	3900													2500										
	50.95	3600													2500										
	42.74	3100													2500										
	36.02	2800													2500										
	29.53	-													2500										

F

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F084	3836.13	3000	0.36	698175/182	6000													
	3137.02	3000	0.45	163125/52	6000													
	3036.24	3000	0.46	2720475/896	6000													
	2651.12	3000	0.53	296925/112	6000													
	2482.91	3000	0.56	635625/256	6000													
	2477.02	3000	0.57	2479500/1001	6000													
	2167.97	3000	0.65	69375/32	6000													
	1960.53	3000	0.71	2415375/1232	6000													
	1920.62	3000	0.73	2446875/1274	6000													
	1711.85	3000	0.82	263625/154	6000													
	1571.96	3000	0.89	1859625/1183	6000													
	1520.15	3000	0.92	9534375/6272	6000													
	1327.33	3000	1.1	1040625/784	6000													
	1244.18	3000	1.1	7246125/5824	6000													
	1209.99	3000	1.2	880875/728	6000													
	1086.37	3000	1.3	790875/728	6000													
	957.69	3000	1.5	3432375/3584	6000													
	914.22	3000	1.5	332775/364	6000													
	836.22	3000	1.7	374625/448	6000													
	748.21	3000	1.9	1566000/2093	6000													
	723.59	3000	1.9	1296675/1792	6000													
	631.81	3000	2.2	141525/224	6000													
	606.72	3000	2.3	717750/1183	6000													
	592.20	3000	2.4	381375/644	6000													
	517.08	3000	2.7	83250/161	6000													
	507.90	3000	2.8	184875/364	5600													
	480.21	3000	2.9	1398375/2912	6000													
	419.30	3000	3.3	152625/364	6000													
	411.63	3000	3.4	112375/273	5000													
	401.99	3000	3.5	720375/1792	5600													
	396.93	3000	3.5	1011375/2548	4800													
	351.00	3000	4.0	78625/224	5600													
	325.80	3000	4.3	437875/1344	5000													
314.16	3000	4.5	3940875/12544	4800														
284.47	3000	4.9	143375/504	5000														
274.31	3000	5.1	430125/1568	4800														

Legend see page 253

Type	$i_{ges.}$	SERVO adapter											Input unit																											
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]																									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110																		
F084	3836.13	5000													3000																									
	3137.02	5000														3000																								
	3036.24	5000														3000																								
	2651.12	5000														3000																								
	2482.91	5000														3000																								
	2477.02	5000														3000																								
	2167.97	5000														3000																								
	1960.53	5000														3000																								
	1920.62	5000														3000																								
	1711.85	5000														3000																								
	1571.96	5000														3000																								
	1520.15	5000														3000																								
	1327.33	5000														3000																								
	1244.18	5000														3000																								
	1209.99	5000														3000																								
	1086.37	5000														3000																								
	957.69	5000														3000																								
	914.22	5000														3000																								
	836.22	5000														3000																								
	748.21	5000														3000																								
	723.59	5000														3000																								
	631.81	5000														3000																								
	606.72	5000														3000																								
	592.20	5000														3000																								
	517.08	5000														3000																								
	507.90	4500														3000																								
	480.21	5000														3000																								
	419.30	5000														3000																								
	411.63	4000														3000																								
	401.99	4500														3000																								
	396.93	3900														3000																								
	351.00	4500														3000																								
	325.80	4000														3000																								
	314.16	3900														3000																								
	284.47	4000														3000																								
	274.31	3900														3000																								

F

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
F092	38.65	4326	36	2512/65	6000													
	34.13	4500	41	512/15	5600													
	29.63	4500	47	800/27	5000													
	28.57	3430	49	200/7	4800													
	25.60	4500	55	128/5	4400													
	21.91	4500	64	1424/65	3900													
	19.01	2128	74	13345/702	6000													
	18.92	4500	74	2176/115	3500													
	16.79	2676	83	1360/81	5600													
	16.00	4500	88	16/1	3100													
	14.57	2676	96	10625/729	5000													
	14.05	1687	100	10625/756	4800													
	13.06	4500	107	1632/125	2700													
	12.59	2676	111	340/27	4400													
	10.78	2676	130	7565/702	3900													
	10.59	4500	132	1536/145	2300													
	9.31	2676	150	5780/621	3500													
	8.46	4006	166	296/35	2100													
	7.87	2676	178	425/54	3100													
	6.42	2676	218	289/45	2700													
5.21	2577	269	1360/261	2300														
4.16	2284	337	3145/756	2100														
F093	288.50	4500	4.9	165888/575	6000													
	243.90	4500	5.7	129024/529	6000													
	211.14	4500	6.6	315648/1495	6000													
	186.99	4500	7.5	21504/115	5600													
	161.76	4500	8.7	55808/345	5000													
	155.99	4500	9.0	125568/805	4800													
	142.85	4500	9.8	17856/125	6000													
	137.63	4500	10	364032/2645	4400													
	120.77	4500	12	13888/115	6000													
	117.13	4500	12	175104/1495	3900													
	104.54	4500	13	33976/325	6000													
	101.04	4500	14	267264/2645	3500													
	92.59	4500	15	6944/75	5600													
	84.76	4500	17	25344/299	3100													
	80.09	4500	17	54064/675	5000													
	77.23	4500	18	13516/175	4800													
	68.92	4500	20	198144/2875	2700													
	68.15	4500	21	39184/575	4400													
	57.99	4500	24	18848/325	3900													
	53.89	4500	26	179712/3335	2300													
50.03	4500	28	28768/575	3500														
41.97	4458	33	2728/65	3100														
34.12	4189	41	21328/625	2700														
26.68	3891	52	19344/725	2300														

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F092	38.65	5000													2500										
	34.13	4800													2500										
	29.63	4200													2500										
	28.57	4100													2500										
	25.60	3700													2500										
	21.91	3300													2500										
	19.01	5000													2500										
	18.92	3000													2500										
	16.79	4800													2500										
	16.00	-													2500										
	14.57	4200													2500										
	14.05	4100													2500										
	13.06	-													2300										
	12.59	3700													2500										
	10.78	3300													2500										
	10.59	-													2000										
	9.31	3000													2500										
	8.46	-													1800										
	7.87	-													2500										
	6.42	-													2300										
	5.21	-													2000										
	4.16	-													1800										
F093	288.50	5000													2500										
	243.90	5000													2500										
	211.14	5000													2500										
	186.99	4800													2500										
	161.76	4200													2500										
	155.99	4100													2500										
	142.85	5000													2500										
	137.63	3700													2500										
	120.77	5000													2500										
	117.13	3300													2500										
	104.54	5000													2500										
	101.04	3000													2500										
	92.59	4800													2500										
	84.76	-													2500										
	80.09	4200													2500										
	77.23	4100													2500										
	68.92	-													2300										
	68.15	3700													2500										
	57.99	3300													2500										
	53.89	-													2000										
	50.03	3000													2500										
	41.97	-													2500										
	34.12	-													2300										
	26.68	-													2000										



Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F094	3086.96	4500	0.45	8875008/2875	6000													
4 stages	2609.75	4500	0.54	6902784/2645	6000													
	2524.38	4500	0.55	290304/115	6000													
	2134.14	4500	0.66	1128960/529	6000													
	1993.28	4500	0.70	12607488/6325	6000													
	1685.14	4500	0.83	9805824/5819	6000													
	1545.54	4500	0.91	248832/161	6000													
	1306.62	4500	1.1	691200/529	6000													
	1264.97	4500	1.1	9455616/7475	6000													
	1069.42	4500	1.3	7354368/6877	6000													
	973.69	4500	1.4	559872/575	6000													
	823.17	4500	1.7	435456/529	6000													
	735.68	4500	1.9	2115072/2875	6000													
	621.95	4500	2.3	1645056/2645	6000													
	Maximum torque 4500 Nm	602.09	4500	2.3	7962624/13225	6000												
		509.01	4500	2.8	6193152/12167	6000												
		488.23	4500	2.9	3649536/7475	6000												
412.76		4500	3.4	2838528/6877	6000													
408.71		4500	3.4	235008/575	5600													
345.53		4500	4.1	182784/529	5600													
331.24		4500	4.2	190464/575	5000													
319.41		4500	4.4	1285632/4025	4800													
280.04		4500	5.0	444416/1587	5000													
270.03		4500	5.2	142848/529	4800													

F

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit															
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]													
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110						
F094	3086.96	5000													3000													
	2609.75	5000													3000													
	2524.38	5000													3000													
	2134.14	5000													3000													
	1993.28	5000													3000													
	1685.14	5000													3000													
	1545.54	5000													3000													
	1306.62	5000													3000													
	1264.97	5000													3000													
	1069.42	5000													3000													
	973.69	5000													3000													
	823.17	5000													3000													
	735.68	5000													3000													
	621.95	5000													3000													
	602.09	5000													3000													
	509.01	5000													3000													
	488.23	5000													3000													
	412.76	5000													3000													
	408.71	4800													3000													
	345.53	4800													3000													
	331.24	4200													3000													
	319.41	4100													3000													
	280.04	4200													3000													
	270.03	4100													3000													



Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	-	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
F102	42.74	6409	33	7693/180	5600														
	37.26	7082	38	15092/405	5000														
	35.93	4312	39	539/15	4800														
	32.10	8000	44	11074/345	4400														
	27.64	8000	51	1078/39	3900														
	24.14	8000	58	1666/69	3500														
	22.14	3320	63	1727/78	5600														
	20.86	8000	67	4067/195	3100														
	19.30	3669	73	6776/351	5000														
	18.62	2234	75	242/13	4800														
	17.25	8000	81	2156/125	2700														
	16.63	4820	84	4972/299	4400														
	14.32	5348	98	2420/169	3900														
	14.19	8000	99	2058/145	2300														
	12.51	5415	112	3740/299	3500														
	11.67	7875	120	35/3	2100														
	10.80	5415	130	1826/169	3100														
	9.91	7609	141	4606/465	1900														
	8.94	5415	157	2904/325	2700														
	8.45	7361	166	2156/255	1700														
7.35	5415	190	2772/377	2300															
6.04	5415	232	550/91	2100															
5.13	5415	273	2068/403	1900															
4.38	5415	320	968/221	1700															
F103	246.57	8000	5.7	38465/156	6000														
	217.78	8000	6.4	1960/9	5600														
	189.04	8000	7.4	30625/162	5000														
	182.29	8000	7.7	4375/24	4800														
	163.33	8000	8.6	490/3	4400														
	139.78	8000	10	21805/156	3900														
	122.58	8000	11	31871/260	6000														
	120.72	8000	12	8330/69	3500														
	108.27	8000	13	1624/15	5600														
	102.08	8000	14	1225/12	3100														
	93.98	8000	15	5075/54	5000														
	90.63	8000	15	725/8	4800														
	83.30	8000	17	833/10	2700														
	81.20	8000	17	406/5	4400														
	69.49	8000	20	18067/260	3900														
	67.59	8000	21	1960/29	2300														
	60.02	8000	23	6902/115	3500														
	53.96	8000	26	1295/24	2100														
	50.75	8000	28	203/4	3100														
	41.41	8000	34	10353/250	2700														
33.60	7876	42	168/5	2300															
26.83	7361	52	1073/40	2100															

Legend see page 253

Type	$i_{ges.}$	SERVO adapter											Input unit											
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
F102	42.74	5000												2500										
	37.26	4500												2500										
	35.93	4400												2500										
	32.10	4000												2500										
	27.64	3500												2500										
	24.14	3200												1800										
	22.14	5000												2500										
	20.86	-												1800										
	19.30	4500												2500										
	18.62	4400												2500										
	17.25	-												1800										
	16.63	4000												2500										
	14.32	3500												2500										
	14.19	-												1800										
	12.51	3200												1800										
	11.67	-												1800										
	10.80	-												1800										
	9.91	-												1700										
	8.94	-												1800										
	8.45	-												1500										
	7.35	-												1800										
	6.04	-												1800										
	5.13	-												1700										
	4.38	-												1500										
F103	246.57	5000												2500										
	217.78	5000												2500										
	189.04	4500												2500										
	182.29	4400												2500										
	163.33	4000												2500										
	139.78	3500												2500										
	122.58	5000												2500										
	120.72	3200												1800										
	108.27	5000												2500										
	102.08	-												1800										
	93.98	4500												2500										
	90.63	4400												2500										
	83.30	-												1800										
	81.20	4000												2500										
	69.49	3500												2500										
	67.59	-												1800										
	60.02	3200												1800										
	53.96	-												1800										
	50.75	-												1800										
	41.41	-												1800										
	33.60	-												1800										
	26.83	-												1800										

F

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
F104	2276.77	8000	0.61	225400/99	6000													
	1976.36	8000	0.71	3521875/1782	6000													
	1757.78	8000	0.80	15820/9	6000													
	1707.58	8000	0.82	56350/33	6000													
	1525.85	8000	0.92	494375/324	6000													
	1474.19	8000	0.95	172480/117	6000													
	1318.33	8000	1.1	3955/3	6000													
	1279.68	8000	1.1	1347500/1053	6000													
	1156.94	8000	1.2	20825/18	6000													
	1105.64	8000	1.3	43120/39	6000													
	1004.29	8000	1.4	2603125/2592	6000													
	892.89	8000	1.6	8036/9	6000													
	867.71	8000	1.6	20825/24	6000													
	775.08	8000	1.8	251125/324	6000													
	738.55	8000	1.9	50960/69	6000													
	669.67	8000	2.1	2009/3	6000													
	641.10	8000	2.2	398125/621	6000													
	628.21	8000	2.2	24500/39	6000													
	553.91	8000	2.5	12740/23	6000													
	545.32	8000	2.6	765625/1404	6000													
	544.44	8000	2.6	4900/9	5600													
	472.61	8000	3.0	153125/324	5600													
	471.15	8000	3.0	6125/13	6000													
	459.75	8000	3.0	37240/81	5000													
	443.33	8000	3.2	1330/3	4800													
	408.33	8000	3.4	1225/3	5600													
	399.09	8000	3.5	581875/1458	5000													
	384.84	8000	3.6	83125/216	4800													
	378.74	8000	3.7	78400/207	4400													
	344.81	8000	4.1	9310/27	5000													
	332.50	8000	4.2	665/2	4800													
	328.77	8000	4.3	612500/1863	4400													
	284.06	8000	4.9	19600/69	4400													

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit									
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
F104	2276.77	5000												3000								
	1976.36	5000												3000								
	1757.78	5000												2500								
	1707.58	5000												3000								
	1525.85	5000												2500								
	1474.19	5000												2500								
	1318.33	5000												2500								
	1279.68	5000												2500								
	1156.94	5000												2500								
	1105.64	5000												2500								
	1004.29	5000												2500								
	892.89	5000												2500								
	867.71	5000												2500								
	775.08	5000												2500								
	738.55	5000												2500								
	669.67	5000												2500								
	641.10	5000												2500								
	628.21	5000												2500								
	553.91	5000												2500								
	545.32	5000												2500								
	544.44	5000												2500								
	472.61	5000												2500								
	471.15	5000												2500								
	459.75	4500												2500								
	443.33	4400												2500								
	408.33	5000												2500								
	399.09	4500												2500								
	384.84	4400												2500								
	378.74	4000												2500								
	344.81	4500												2500								
	332.50	4400												2500								
	328.77	4000												2500								
	284.06	4000												2500								

F

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	l250	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
F122	39.98	7597	35	16192/405	5000														
	34.43	9985	41	792/23	4400														
	29.78	12543	47	1936/65	3900														
	26.27	13000	53	9064/345	3500														
	22.56	12916	62	880/39	3100														
	19.18	3645	73	13984/729	5000														
	18.77	12365	75	1408/75	2700														
	16.52	4791	85	380/23	4400														
	15.58	11830	90	6776/435	2300														
	14.29	6018	98	1672/117	3900														
	12.99	11332	108	1364/105	2100														
	12.61	7319	111	7828/621	3500														
	11.17	10933	125	5192/465	1900														
	10.83	7209	129	3800/351	3100														
	9.66	10565	145	2464/255	1700														
	9.01	8163	155	1216/135	2700														
	7.47	8093	187	5852/783	2300														
	6.23	8163	225	1178/189	2100														
5.36	8163	261	4484/837	1900															
4.64	7647	302	2128/459	1700															
F123	220.67	13000	6.3	39721/180	5600														
	192.40	13000	7.3	77924/405	5000														
	185.53	13000	7.5	2783/15	4800														
	165.73	13000	8.4	2486/15	4400														
	142.72	13000	9.8	5566/39	3900														
	124.67	13000	11	374/3	3500														
	120.82	13000	12	29359/243	5600														
	107.69	13000	13	20999/195	3100														
	105.34	13000	13	230384/2187	5000														
	101.58	12190	14	8228/81	4800														
	90.74	13000	15	169048/1863	4400														
	89.06	13000	16	11132/125	2700														
	78.14	13000	18	82280/1053	3900														
	73.28	13000	19	10626/145	2300														
	68.26	13000	21	127160/1863	3500														
	60.24	13000	23	1265/21	2100														
	58.96	12929	24	62084/1053	3100														
	51.14	12609	27	23782/465	1900														
48.76	12213	29	32912/675	2700															
43.65	12024	32	11132/255	1700															
40.12	11519	35	10472/261	2300															
32.98	10861	42	18700/567	2100															
28.00	10341	50	70312/2511	1900															
23.90	9861	59	1936/81	1700															

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F122	39.98	4800													2500										
	34.43	4200													2500										
	29.78	3700													2500										
	26.27	3400													1800										
	22.56	-													1800										
	19.18	4800													2500										
	18.77	-													1800										
	16.52	4200													2500										
	15.58	-													1800										
	14.29	3700													2500										
	12.99	-													1800										
	12.61	3400													1800										
	11.17	-													1800										
	10.83	-													1800										
	9.66	-													1600										
	9.01	-													1800										
	7.47	-													1800										
	6.23	-													1800										
	5.36	-													1800										
	4.64	-													1600										
F123	220.67	5000													2500										
	192.40	4800													2500										
	185.53	4600													2500										
	165.73	4200													2500										
	142.72	3700													2500										
	124.67	3400													1800										
	120.82	5000													2500										
	107.69	-													1800										
	105.34	4800													2500										
	101.58	4600													2500										
	90.74	4200													2500										
	89.06	-													1800										
	78.14	3700													2500										
	73.28	-													1800										
	68.26	3400													1800										
	60.24	-													1800										
	58.96	-													1800										
	51.14	-													1800										
	48.76	-													1800										
	43.65	-													1600										
	40.12	-													1800										
	32.98	-													1800										
	28.00	-													1800										
	23.90	-													1600										

F

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
F124	2307.03	13000	0.61	83053/36	6000													
	2011.51	13000	0.70	162932/81	6000													
	1781.14	13000	0.79	4488473/2520	6000													
	1732.67	13000	0.81	5198/3	6000													
	1552.98	13000	0.90	628958/405	6000													
	1493.78	13000	0.94	873862/585	6000													
	1492.05	13000	0.94	58190/39	6000													
	1337.70	13000	1.0	140459/105	6000													
	1302.43	13000	1.1	6857312/5265	6000													
	1172.32	13000	1.2	675257/576	6000													
	1151.94	13000	1.2	314479/273	6000													
	1121.89	13000	1.2	218768/195	6000													
	1022.15	13000	1.4	331177/324	6000													
	966.09	13000	1.4	489808/507	6000													
	904.76	13000	1.5	1628561/1800	6000													
	880.46	13000	1.6	21131/24	6000													
	788.86	13000	1.8	1597442/2025	6000													
	758.19	13000	1.8	236555/312	6000													
	748.37	13000	1.9	22451/30	6000													
	679.51	13000	2.1	50963/75	6000													
	652.50	13000	2.1	88088/135	6000													
	636.55	13000	2.2	198605/312	6000													
	585.14	13000	2.4	114103/195	6000													
	562.05	13000	2.5	64636/115	6000													
	555.01	13000	2.5	194810/351	6000													
	551.68	13000	2.5	39721/72	5600													
	484.00	13000	2.9	484/1	6000													
	481.01	13000	2.9	38962/81	5600													
	478.08	13000	2.9	6215/13	6000													
	465.86	13000	3.0	754699/1620	5000													
	449.23	13000	3.1	754699/1680	4800													
	414.33	13000	3.4	1243/3	5600													
	411.69	13000	3.4	69575/169	6000													
	406.19	13000	3.4	1480556/3645	5000													
	391.68	13000	3.6	52877/135	4800													
	383.78	13000	3.6	3454/9	4400													
	356.79	13000	3.9	13915/39	5600													
	349.88	13000	4.0	47234/135	5000													
	337.39	13000	4.1	23617/70	4800													
	334.62	13000	4.2	27104/81	4400													
301.29	13000	4.6	105754/351	5000														
290.53	13000	4.8	52877/182	4800														
288.23	13000	4.9	19888/69	4400														
248.21	13000	5.6	9680/39	4400														

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit									
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]							
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110
F124	2307.03	5000												3000								
	2011.51	5000												3000								
	1781.14	5000												2500								
	1732.67	5000												3000								
	1552.98	5000												2500								
	1493.78	5000												2500								
	1492.05	5000												3000								
	1337.70	5000												2500								
	1302.43	5000												2500								
	1172.32	5000												2500								
	1151.94	5000												2500								
	1121.89	5000												2500								
	1022.15	5000												2500								
	966.09	5000												2500								
	904.76	5000												2500								
	880.46	5000												2500								
	788.86	5000												2500								
	758.19	5000												2500								
	748.37	5000												2500								
	679.51	5000												2500								
	652.50	5000												2500								
	636.55	5000												2500								
	585.14	5000												2500								
	562.05	5000												2500								
	555.01	5000												2500								
	551.68	5000												2500								
	484.00	5000												2500								
	481.01	5000												2500								
	478.08	5000												2500								
	465.86	4800												2500								
	449.23	4600												2500								
	414.33	5000												2500								
	411.69	5000												2500								
	406.19	4800												2500								
	391.68	4600												2500								
	383.78	4200												2500								
	356.79	5000												2500								
	349.88	4800												2500								
	337.39	4600												2500								
	334.62	4200												2500								
	301.29	4800												2500								
	290.53	4600												2500								
	288.23	4200												2500								
	248.21	4200												2500								



Legend see page 253

Type	$i_{ges.}$	M_{2max}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	l225	l250	l280
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
F152	36.54	15418	38	1023/28	3900													
2 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 18000 Nm	27.85	18000	50	10137/364	3100													
	23.38	18000	60	4092/175	2700													
	19.24	18000	73	558/29	2300													
	17.35	7320	81	451/26	3900													
	16.37	18000	86	6417/392	2100													
	14.14	18000	99	99/7	1900													
	13.22	9805	106	4469/338	3100													
	12.31	18000	114	837/68	1700													
	11.10	11038	126	3608/325	2700													
	9.14	10975	153	3444/377	2300													
	7.77	11038	180	2829/364	2100													
	6.71	11038	208	2706/403	1900													
	5.84	11038	240	2583/442	1700													
	F153	259.81	18000	5.4	5456/21	5000												
3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 18000 Nm	223.77	18000	6.3	828630/3703	4400													
	193.55	18000	7.2	405108/2093	3900													
	170.73	18000	8.2	632214/3703	3500													
	146.63	18000	9.5	306900/2093	3100													
	144.52	18000	9.7	118358/819	5000													
	124.47	18000	11	1042065/8372	4400													
	122.00	18000	11	98208/805	2700													
	107.66	18000	13	254727/2366	3900													
	101.23	18000	14	67518/667	2300													
	94.97	18000	15	795057/8372	3500													
	84.42	18000	17	95139/1127	2100													
	81.56	18000	17	192975/2366	3100													
	72.56	18000	19	11682/161	1900													
	67.86	18000	21	30876/455	2700													
62.79	18000	22	24552/391	1700														
56.31	18000	25	84909/1508	2300														
46.96	18000	30	239289/5096	2100														
40.36	18000	35	14691/364	1900														
34.93	18000	40	7719/221	1700														

Legend see page 253

Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F152	36.54	-													2500										
	27.85	-													1800										
	23.38	-													1800										
	19.24	-													1800										
	17.35	-													2500										
	16.37	-													1800										
	14.14	-													1800										
	13.22	-													1800										
	12.31	-													1700										
	11.10	-													1800										
	9.14	-													1800										
	7.77	-													1800										
	6.71	-													1800										
	5.84	-													1700										
F153	259.81	-													2500										
	223.77	-													2500										
	193.55	-													2500										
	170.73	-													1800										
	146.63	-													1800										
	144.52	-													2500										
	124.47	-													2500										
	122.00	-													1800										
	107.66	-													2500										
	101.23	-													1800										
	94.97	-													1800										
	84.42	-													1800										
	81.56	-													1800										
	72.56	-													1800										
	67.86	-													1800										
	62.79	-													1700										
	56.31	-													1800										
	46.96	-													1800										
	40.36	-													1800										
	34.93	-													1700										

F

Legend see page 253

Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	-	-	-		
F154	2318.30	18000	0.60	632896/273	6000													
	1996.74	18000	0.70	96121080/48139	6000													
	1834.90	18000	0.76	38533/21	6000													
	1727.10	18000	0.81	46992528/27209	6000													
	1602.16	18000	0.87	100936/63	6000													
	1580.39	18000	0.89	46817595/29624	6000													
	1415.96	18000	0.99	148676/105	6000													
	1379.93	18000	1.0	5109885/3703	6000													
	1366.97	18000	1.0	11444301/8372	6000													
	1219.56	18000	1.1	9032067/7406	6000													
	1197.38	18000	1.2	578336/483	6000													
	1193.58	18000	1.2	2498166/2093	6000													
	1054.87	18000	1.3	11039193/10465	6000													
	1031.30	18000	1.4	87834780/85169	6000													
	1029.25	18000	1.4	280984/273	6000													
	898.51	18000	1.6	56606/63	5600													
4 stages	892.03	18000	1.6	42941448/48139	6000													
	886.48	18000	1.6	42674445/48139	6000													
	773.88	18000	1.8	11462715/14812	5600													
$n_1=1400\text{ min}^{-1}$	769.81	18000	1.8	436480/567	5000													
	766.77	18000	1.8	20863062/27209	6000													
	742.31	18000	1.9	109120/147	4800													
Maximum torque 18000 Nm	669.37	18000	2.1	2801997/4186	5600													
	663.03	18000	2.1	2455200/3703	5000													
	655.17	18000	2.1	316448/483	4400													
	639.35	18000	2.2	16572600/25921	4800													
	573.49	18000	2.4	1200320/2093	5000													
	564.30	18000	2.5	48060540/85169	4400													
	553.01	18000	2.5	8102160/14651	4800													
	549.60	18000	2.5	150040/273	3900													
	488.09	18000	2.9	23496264/48139	4400													
	473.37	18000	3.0	22787325/48139	3900													
	463.14	18000	3.0	223696/483	3500													
	409.44	18000	3.4	11140470/27209	3900													
	398.90	18000	3.5	33973830/85169	3500													
	379.72	18000	3.7	103664/273	3100													
	345.03	18000	4.1	16609428/48139	3500													
	327.05	18000	4.3	15743970/48139	3100													
	282.89	18000	4.9	7697052/27209	3100													

Legend see page 253

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F154	2318.30	5000													2500										
	1996.74	5000													2500										
	1834.90	5000													2500										
	1727.10	5000													2500										
	1602.16	5000													2500										
	1580.39	5000													2500										
	1415.96	5000													2500										
	1379.93	5000													2500										
	1366.97	5000													2500										
	1219.56	5000													2500										
	1197.38	5000													2500										
	1193.58	5000													2500										
	1054.87	5000													2500										
	1031.30	5000													2500										
	1029.25	5000													2500										
	898.51	5000													2500										
	892.03	5000													2500										
	886.48	5000													2500										
	773.88	5000													2500										
	769.81	4900													2500										
	766.77	5000													2500										
	742.31	4700													2500										
	669.37	5000													2500										
	663.03	4900													2500										
	655.17	4300													2500										
	639.35	4700													2500										
	573.49	4900													2500										
	564.30	4300													2500										
	553.01	4700													2500										
	549.60	3800													2500										
	488.09	4300													2500										
	473.37	3800													2500										
	463.14	3500													2500										
	409.44	3800													2500										
	398.90	3500													2500										
	379.72	-													2500										
	345.03	3500													2500										
	327.05	-													2500										
	282.89	-													2500										

F

Legend see page 253

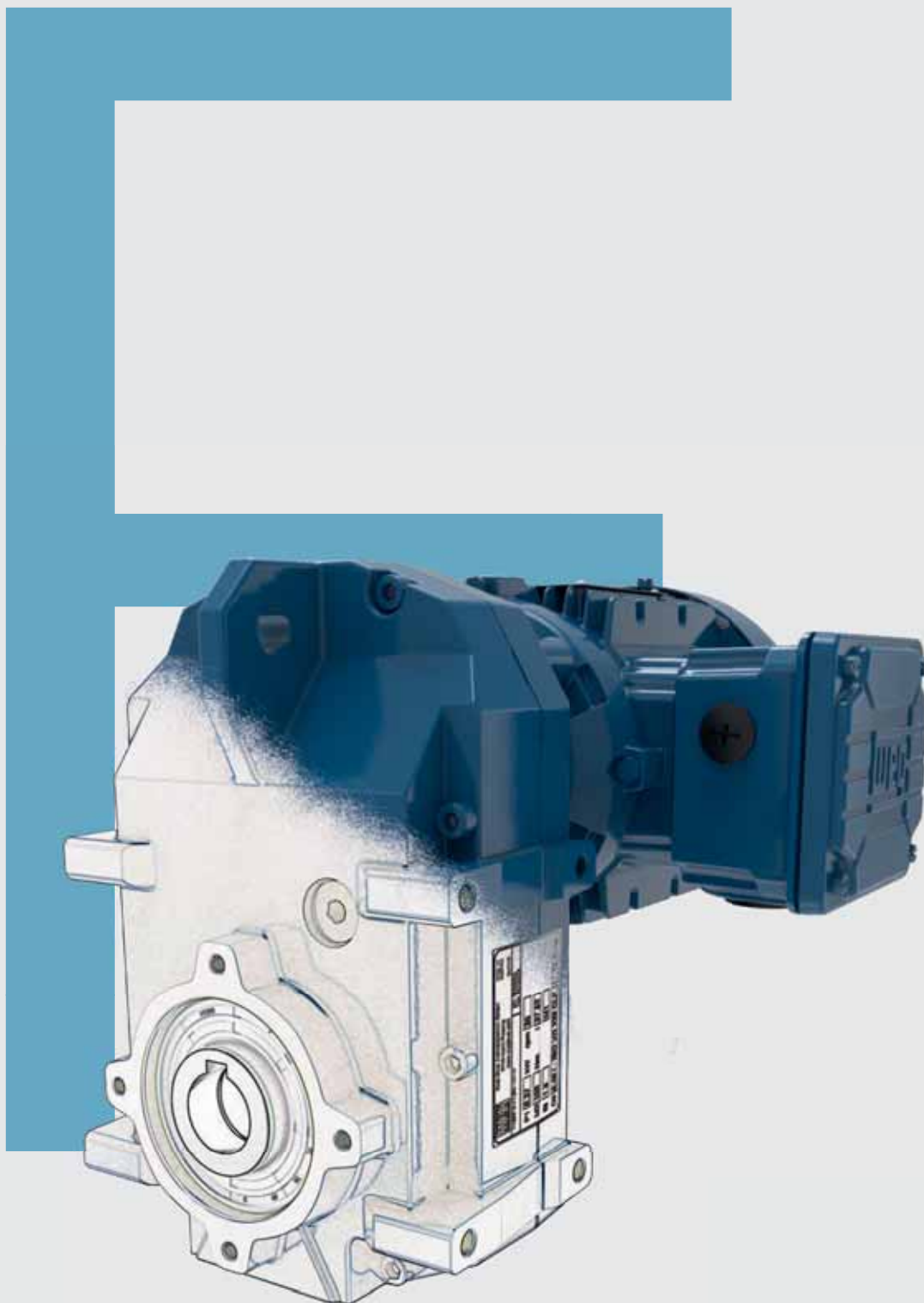
Type	$i_{ges.}$	M_{zmax}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
F155	24805.81	18000	0.06	33859936/1365	6000													
	20285.13	18000	0.07	791120/39	6000													
	17143.10	18000	0.08	5400076/315	6000													
	16017.35	18000	0.09	4372736/273	6000													
	14018.89	18000	0.10	126170/9	6000													
	12419.47	18000	0.11	7911200/637	6000													
	11069.46	18000	0.13	697376/63	6000													
	10164.86	18000	0.14	12025024/1183	6000													
	8582.99	18000	0.16	1261700/147	6000													
	7824.26	18000	0.18	712008/91	6000													
	7024.85	18000	0.20	1917784/273	6000													
5 stages	5911.67	18000	0.24	2689808/455	6000													
$n_1=1400 \text{ min}^{-1}$	5407.29	18000	0.26	37851/7	6000													
	4838.19	18000	0.29	10126336/2093	6000													
Maximum torque 18000 Nm	4085.50	18000	0.34	428978/105	6000													
	3923.28	18000	0.36	13923712/3549	6000													
	3343.64	18000	0.42	1614976/483	6000													
	3284.26	18000	0.43	2689808/819	5600													
	2711.35	18000	0.52	2220592/819	6000													
	2661.75	18000	0.53	19619776/7371	5000													
	2566.69	18000	0.55	4904944/1911	4800													
	2269.72	18000	0.62	428978/189	5600													
	1839.52	18000	0.76	3129016/1701	5000													
	1773.82	18000	0.79	782254/441	4800													

Legend see page 253

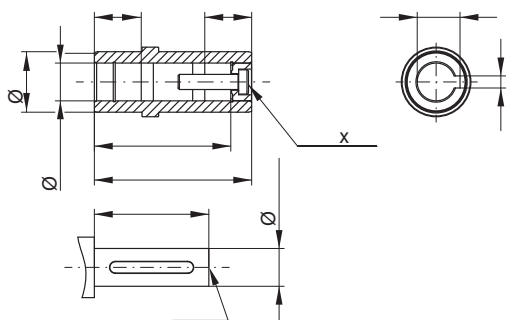
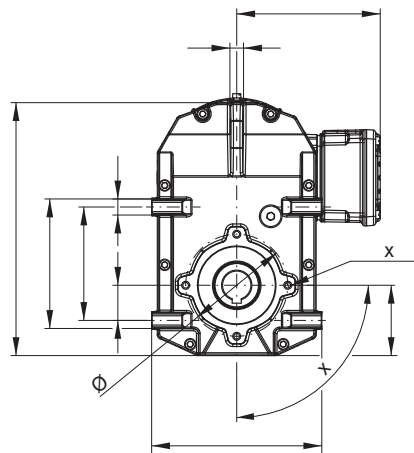
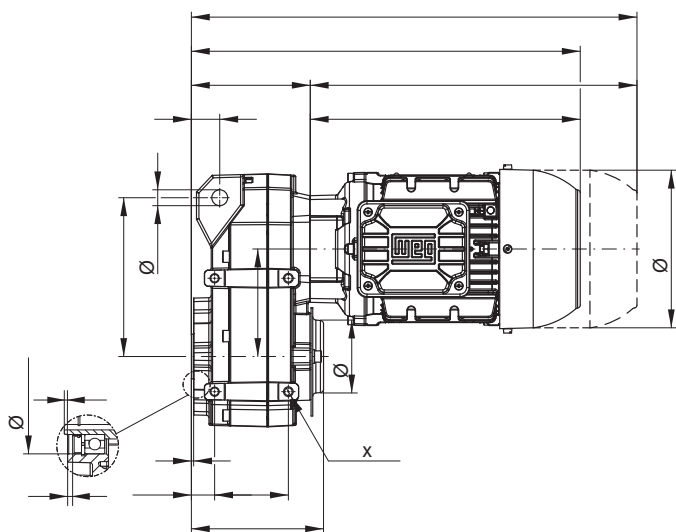
Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
F155	24805.81	5000													3000										
	20285.13	5000													3000										
	17143.10	5000													3000										
	16017.35	5000													3000										
	14018.89	5000													3000										
	12419.47	5000													3000										
	11069.46	5000													3000										
	10164.86	5000													3000										
	8582.99	5000													3000										
	7824.26	5000													3000										
	7024.85	5000													3000										
	5911.67	5000													3000										
	5407.29	5000													3000										
	4838.19	5000													3000										
	4085.50	5000													3000										
	3923.28	5000													3000										
	3343.64	5000													3000										
	3284.26	5000													3000										
	2711.35	5000													3000										
	2661.75	4900													3000										
	2566.69	4700													3000										
	2269.72	5000													3000										
	1839.52	4900													3000										
	1773.82	4700													3000										

Legend see page 253

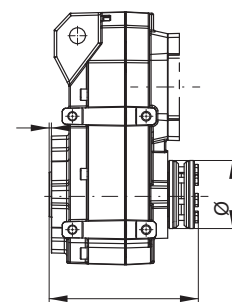
Dimension sheets Geared Motors



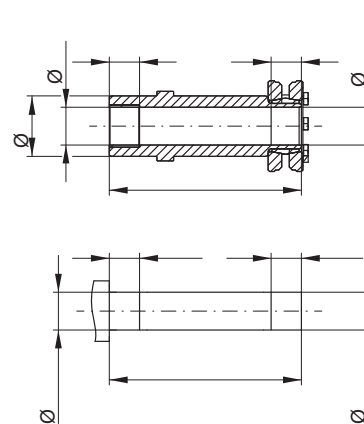
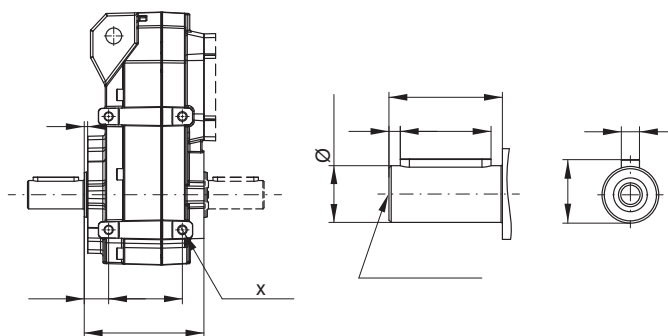
FH02 - Hollow shaft



FD02 - Shrink disc *



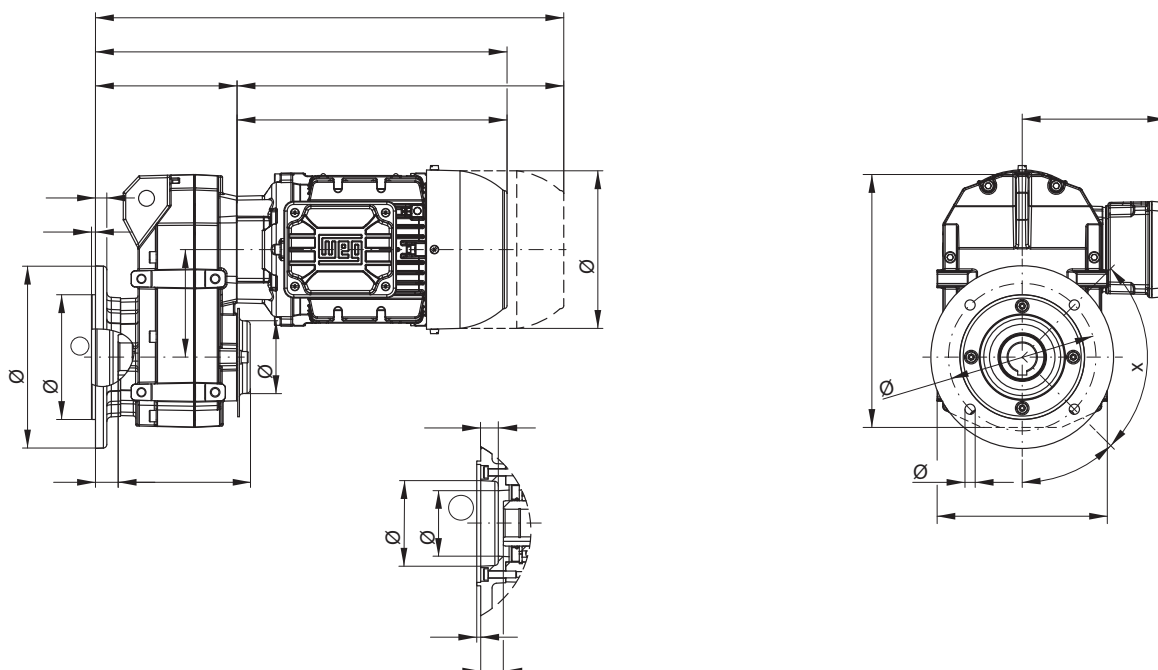
FS02 - Output shaft FB02 - Output shaft on both sides



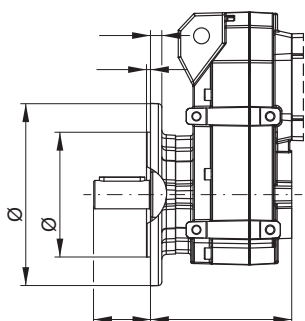
Motor fr.	63	71	80	L80	90S/L
Dimension					
AC	126	141	159	159	178
AD	128	136	145	145	155
k	309	343	351	375	393
kB	353	392	409	433	466
LB	204	238	246	270	288
LB1	248	287	304	328	361

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

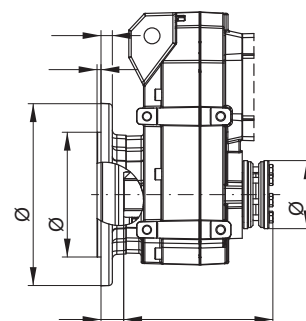
FO02 - B5 flange execution with hollow shaft



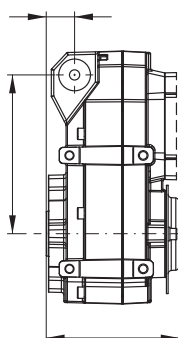
FF02 - B5 flange execution with output shaft



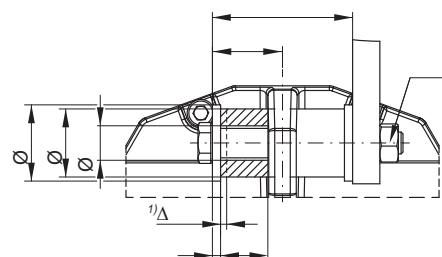
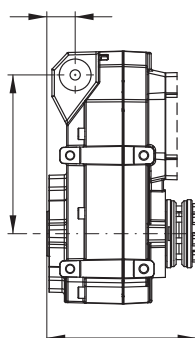
FP02 - B5 flange execution with hollow shaft and shrink disc *



FT02 - Hollow shaft with rubber buffer



FU02 - Hollow shaft with shrink disc * and rubber buffer

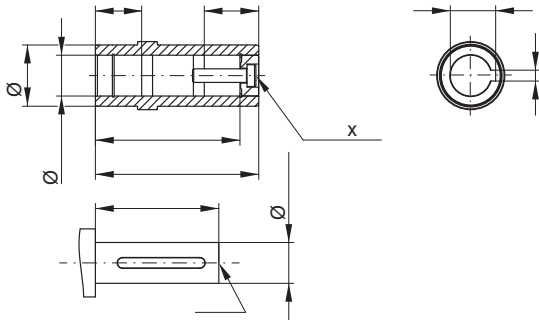
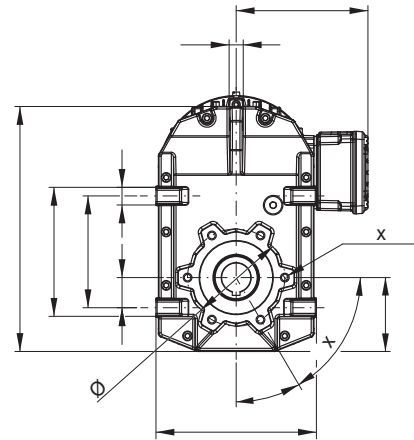
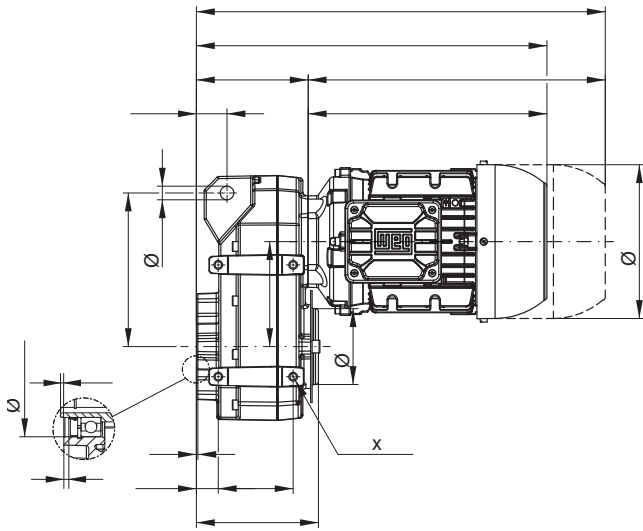


Dimensions in mm.

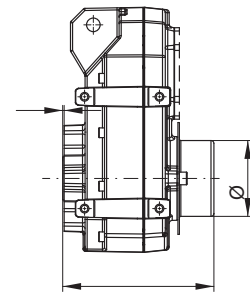
* Shrink disc only in combination with motor frame sizes 63 und 71
Protection cap for shrink disc never possible

1) ΔL = recommended preload

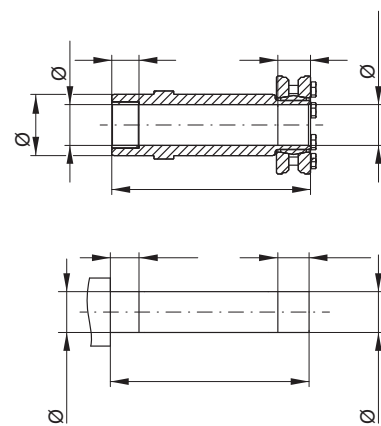
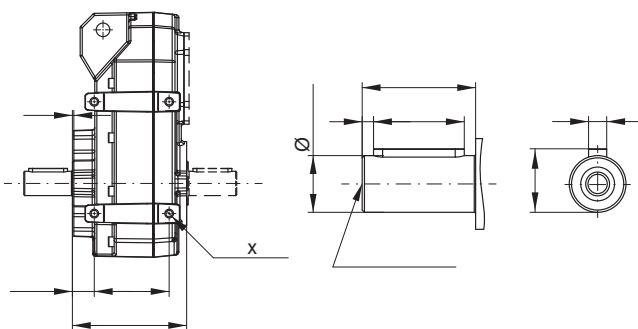
FH03 - Hollow shaft



FD03 - Shrink disc *



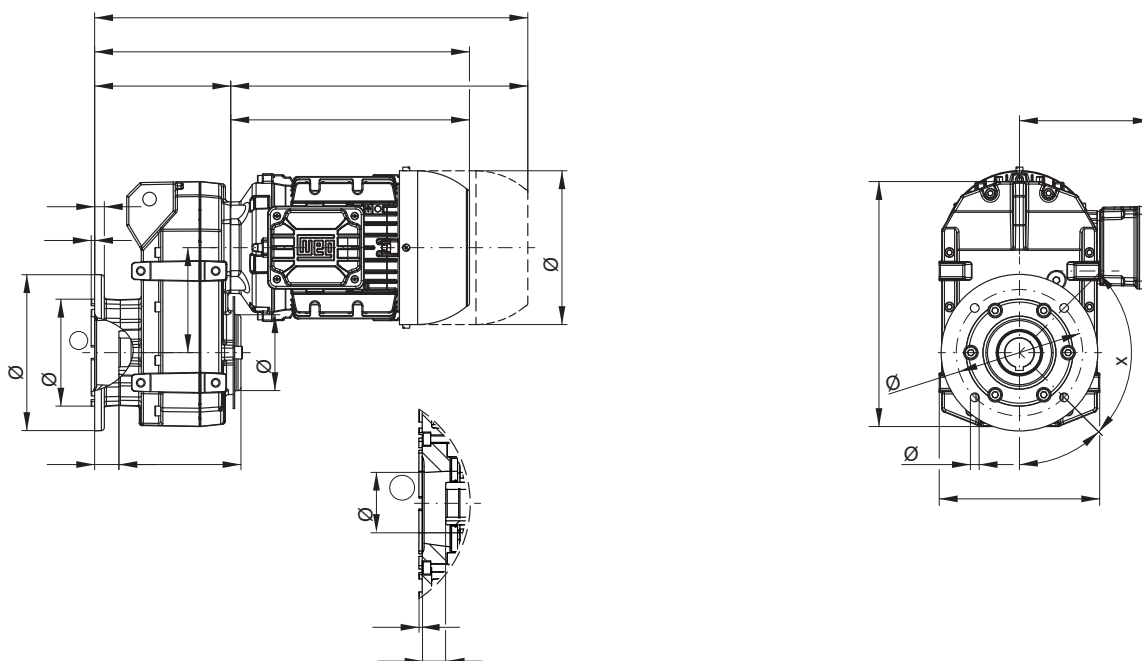
FS03 - Output shaft FB03 - Output shaft on both sides



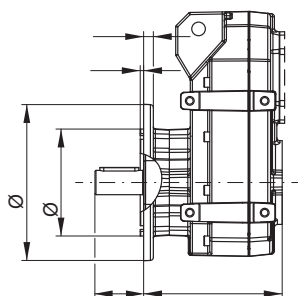
Motor fr.	63	71	80	L80	90S/L	100L	L100L
Dimension							
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	319	353	361	385	403	453	491
kB	363	402	419	443	476	537	575
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motorabmessungen ab Seite 496. Längenbeschreibungen LB und LB1 siehe Seite 500.

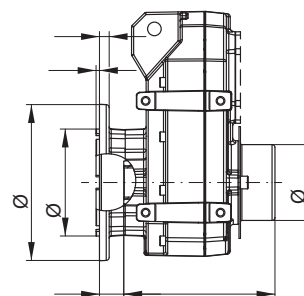
FO03 - B5 flange execution with hollow shaft



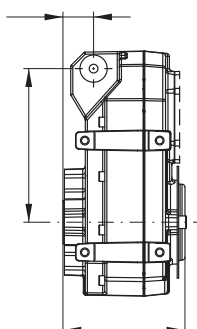
FF03 - B5 flange execution with output shaft



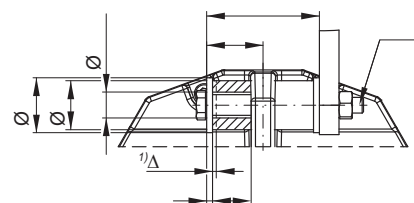
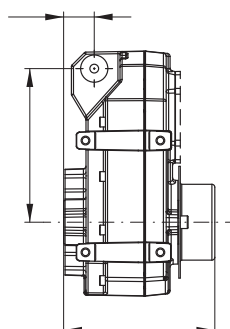
FP03 - B5 flange execution with hollow shaft and shrink disc *



FT03 - Hollow shaft with rubber buffer



FU03 - Hollow shaft with shrink disc * and rubber buffer

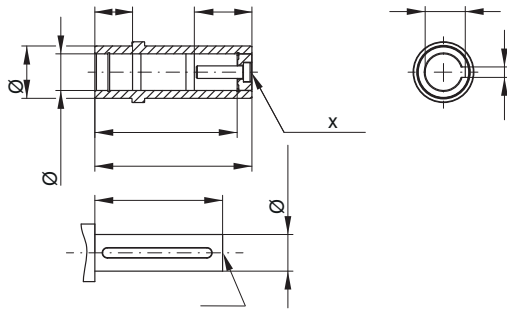
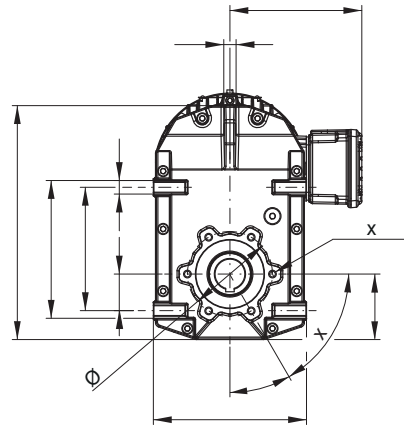
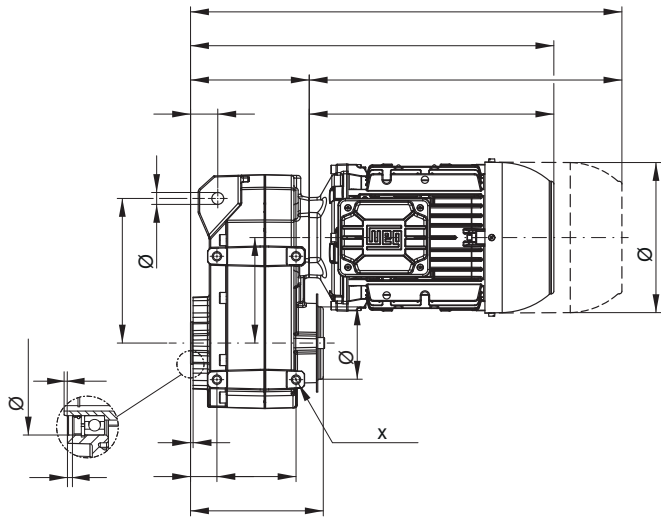


Dimensions in mm.

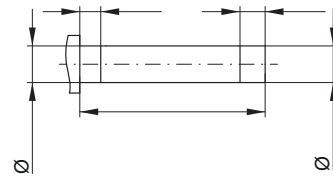
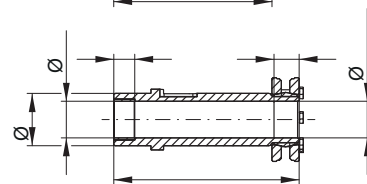
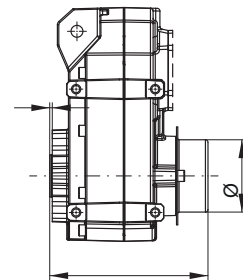
* Shrink disc only in combination with motor frame sizes 63 und 71

1) ΔL = recommended preload

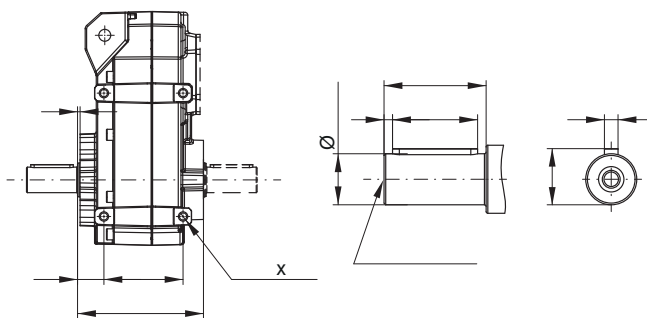
FH04 - Hollow shaft



FD04 - Shrink disc *



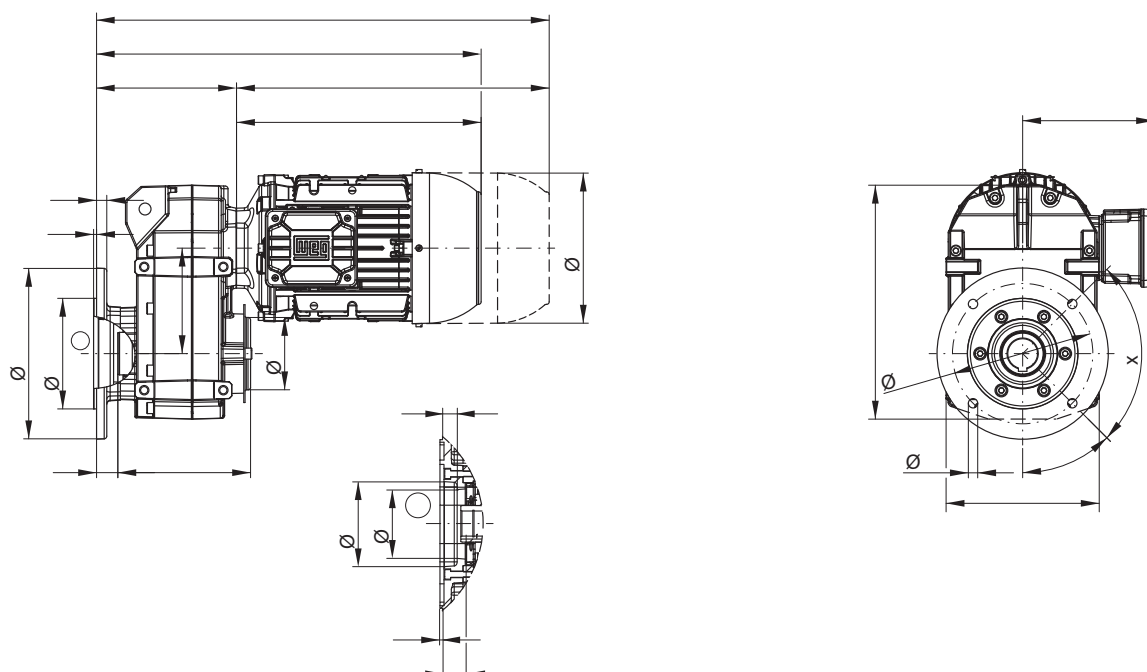
FS04 - Output shaft FB04 - Output shaft on both sides



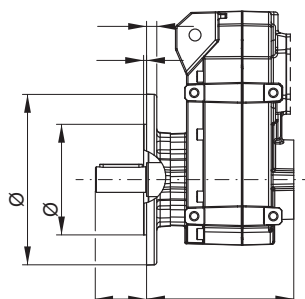
Motor fr.	63	71	80	L80	90S/L	100L	L100L
Dimension							
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	344	378	386	410	428	478	516
kB	388	427	444	468	501	562	600
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

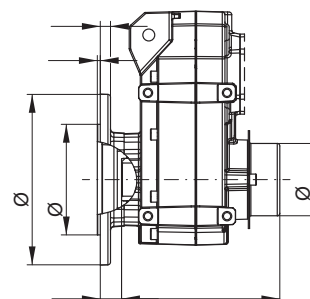
FO04 - B5 flange execution with hollow shaft



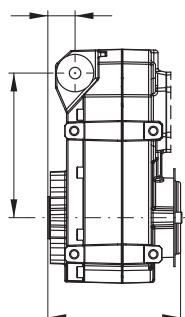
FF04 - B5 flange execution with output shaft



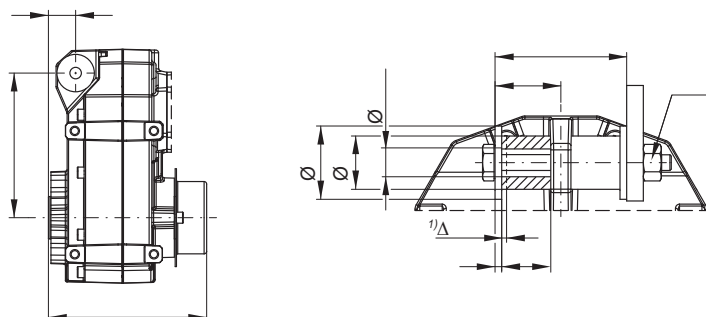
FP04 - B5 flange execution with hollow shaft and shrink disc *



FT04 - Hollow shaft with rubber buffer



FU04 - Hollow shaft with shrink disc * and rubber buffer

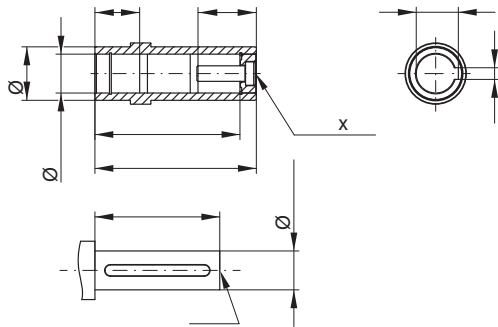
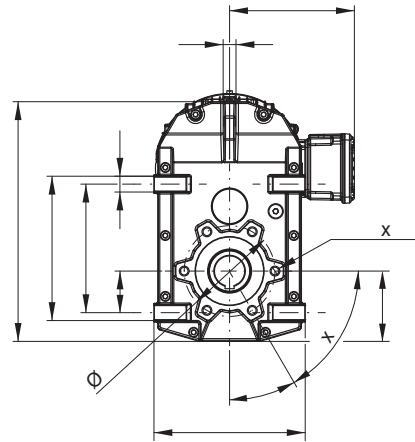
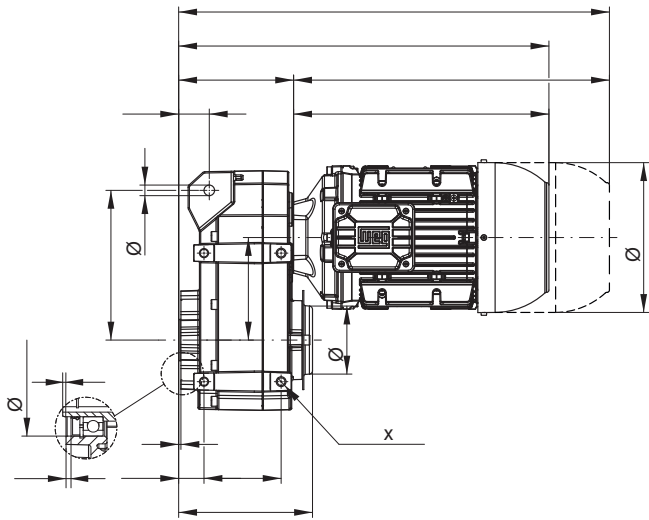


Dimensions in mm.

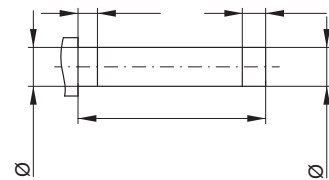
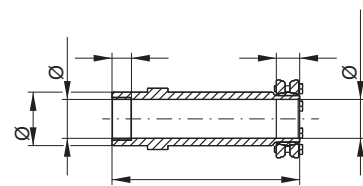
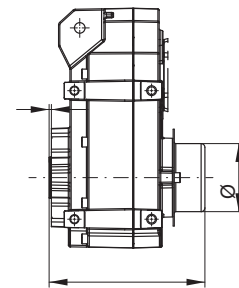
* Shrink disc only in combination with motor frame sizes 63, 71 and 80

1) ΔL = recommended preload

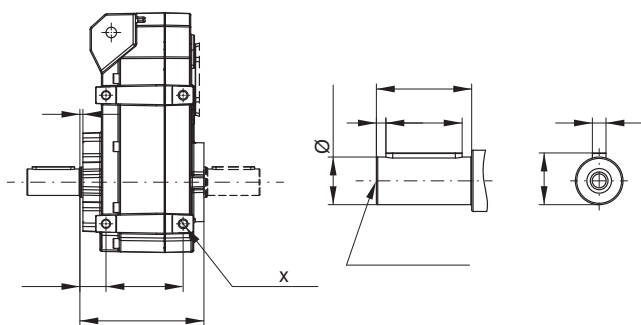
FH05 - Hollow shaft



FD05 - Shrink disc *



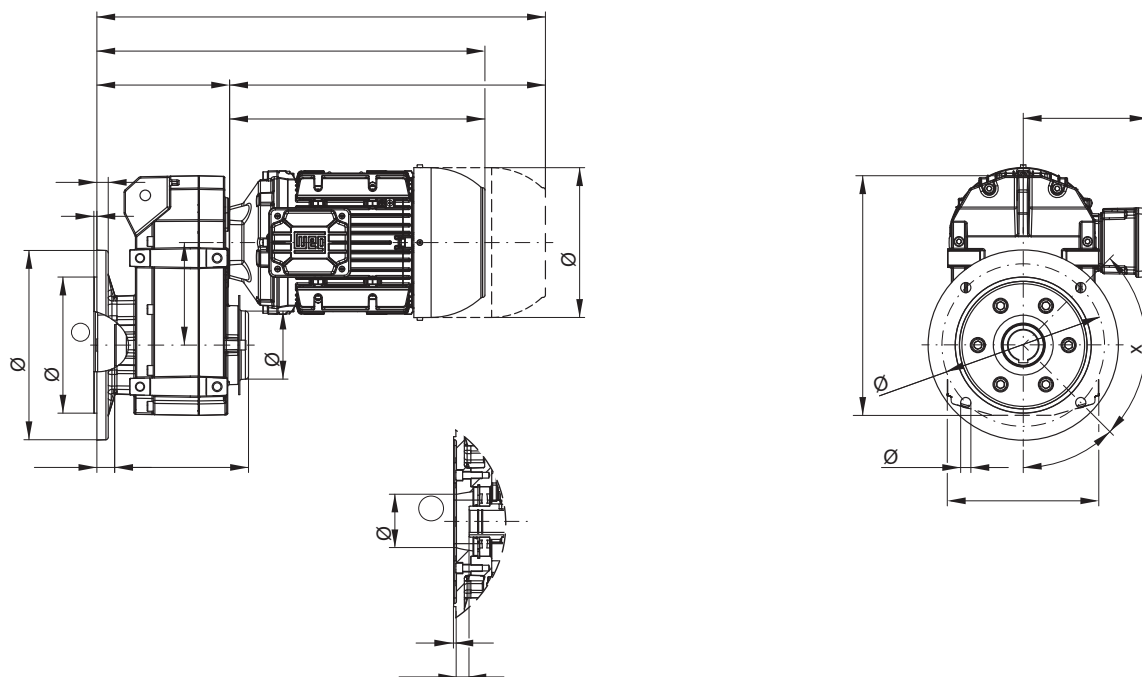
FS05 - Output shaft FB05 - Output shaft on both sides



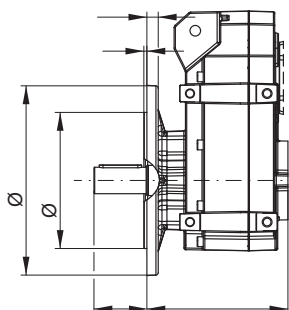
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	356	390	398	422	440	490	528	500	565	603
kB	400	439	456	480	513	574	612	587	683	721
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

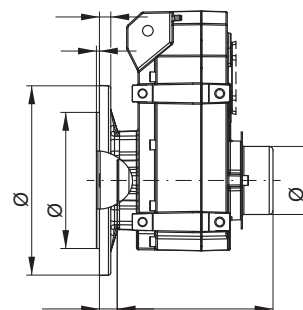
FO05 - B5 flange execution with hollow shaft



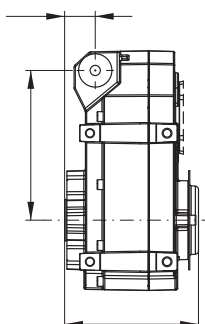
FF05 - B5 flange execution with output shaft



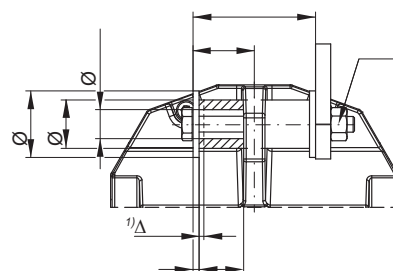
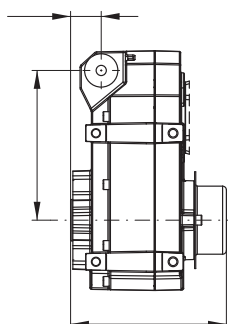
FP05 - B5 flange execution with hollow shaft and shrink disc *



FT05 - Hollow shaft with rubber buffer



FU05 - Hollow shaft with shrink disc * and rubber buffer

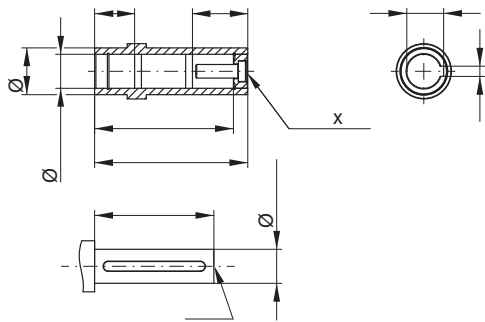
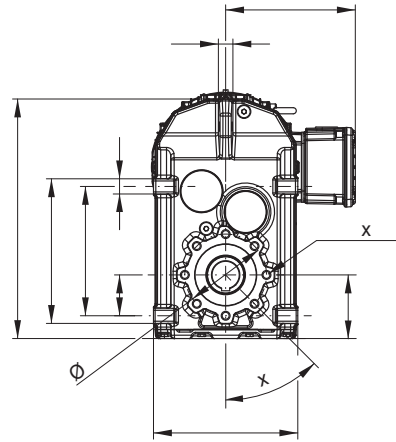
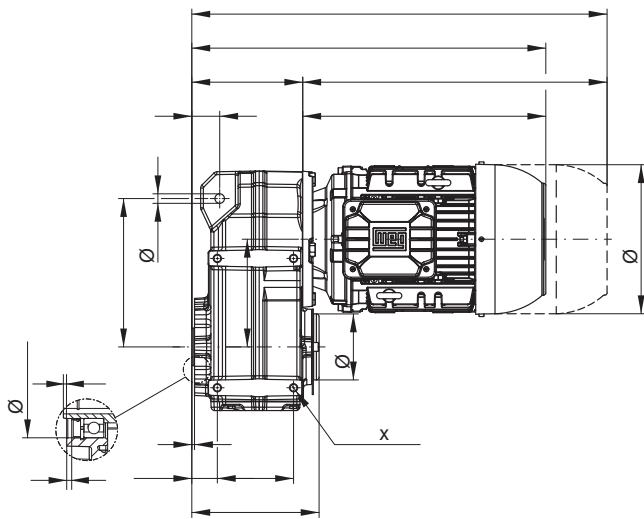


Dimensions in mm.

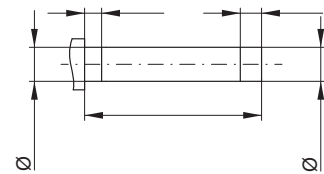
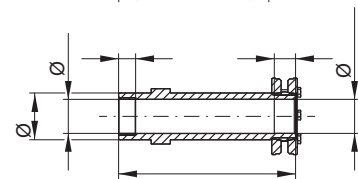
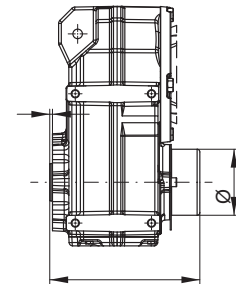
* Shrink disc only in combination with motor frame sizes 63, 71, 80 and 90

1) ΔL = recommended preload

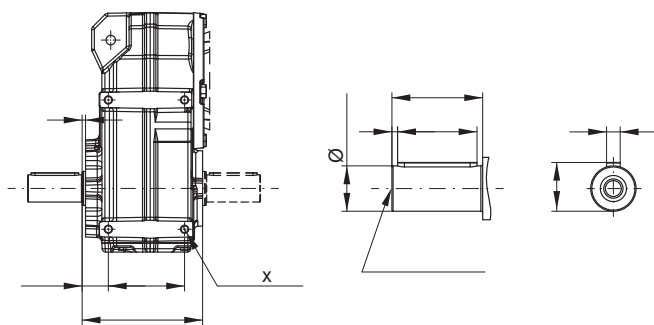
FH06 - Hollow shaft



FD06 - Shrink disc *



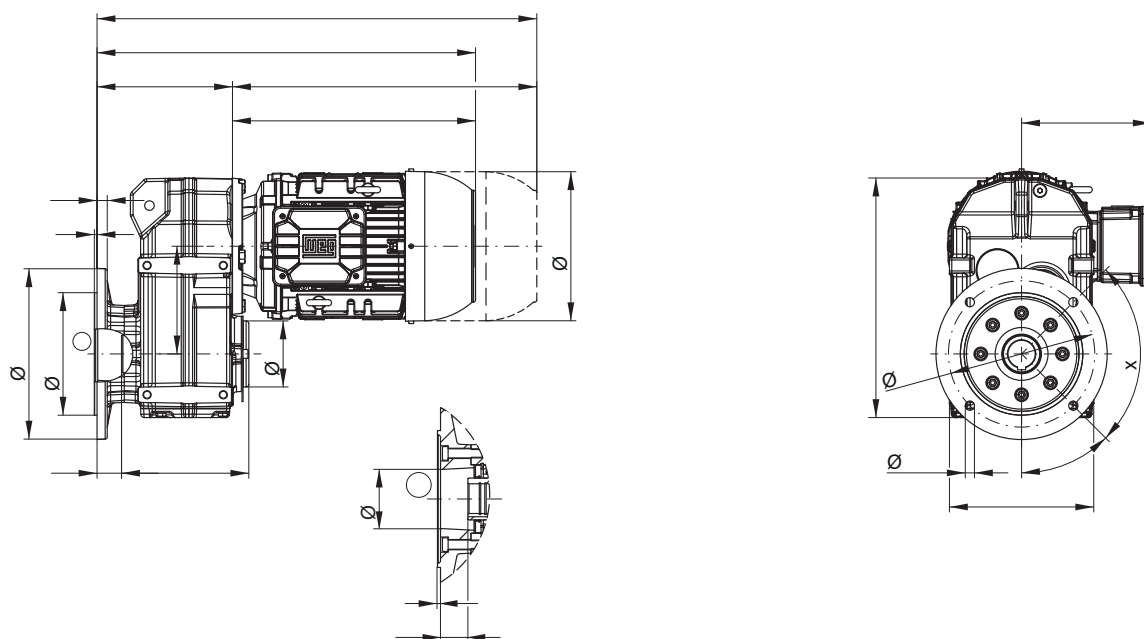
FS06 - Output shaft FB06 - Output shaft on both sides



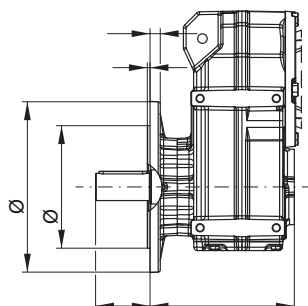
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	367	401	409	433	451	501	539	511	576	614	708	752
kB	411	450	467	491	524	585	623	598	694	732	832	876
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496; Gear unit size F06 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 500.

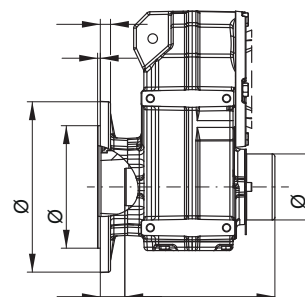
FO06 - B5 flange execution with hollow shaft



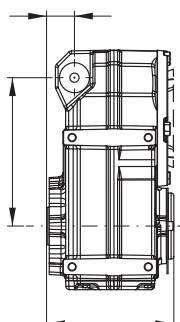
FF06 - B5 flange execution with output shaft



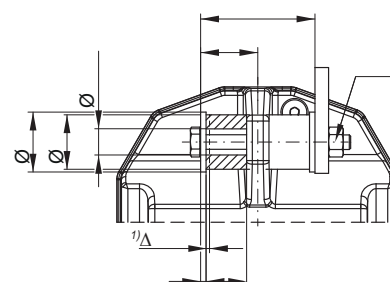
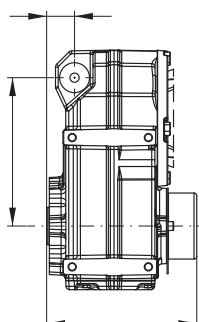
FP06 - B5 flange execution with hollow shaft and shrink disc *



FT06 - Hollow shaft with rubber buffer



FU06 - Hollow shaft with shrink disc * and rubber buffer

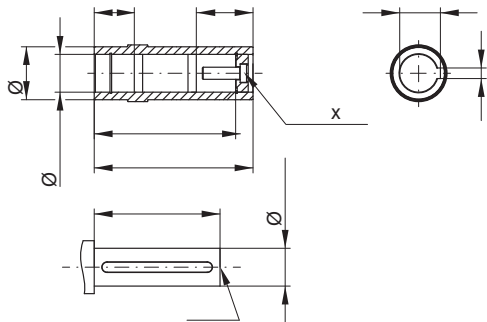
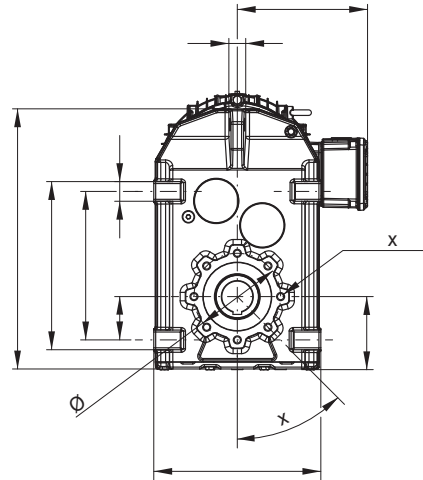
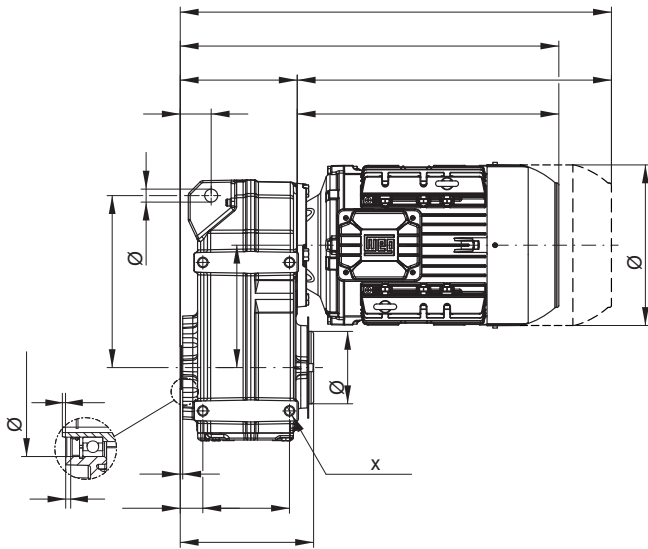


Dimensions in mm.

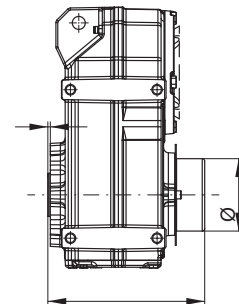
* Shrink disc only in combination with motor frame sizes 63, 71, 80, 90, 100 and 112

1) ΔL = recommended preload

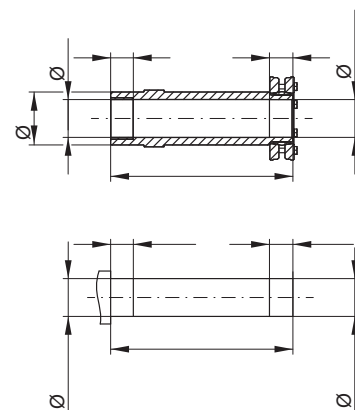
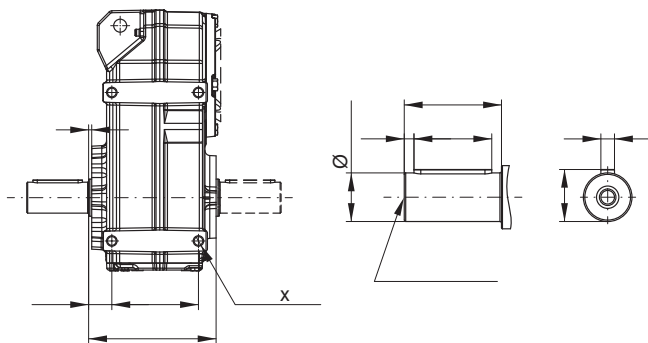
FH07 - Hollow shaft



FD07 - Shrink disc *



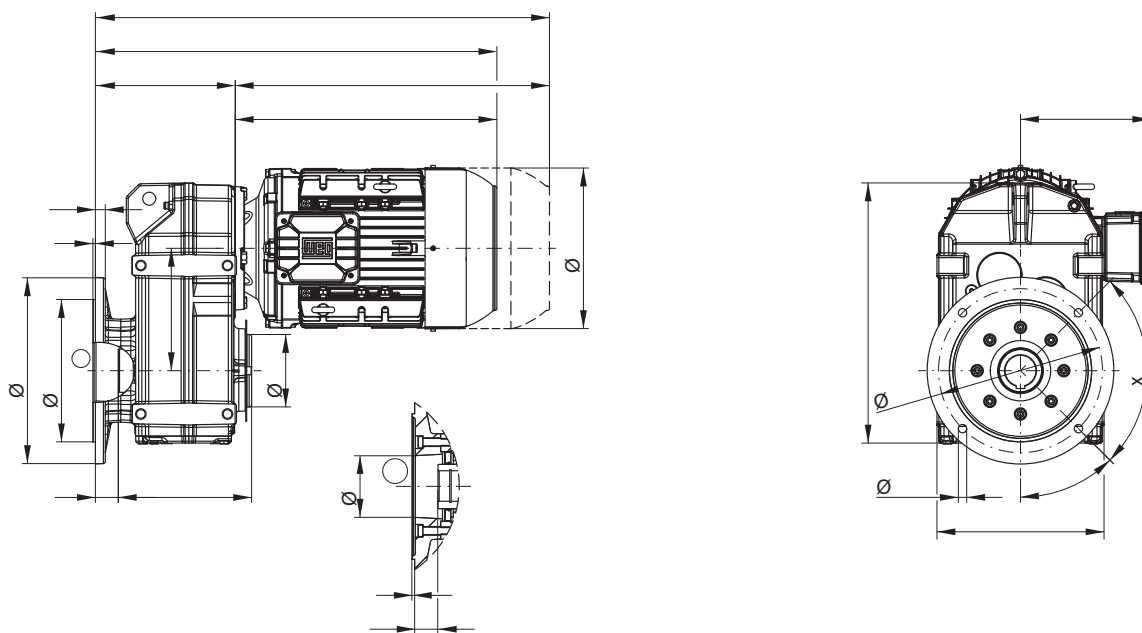
FS07 - Output shaft FB07 - Output shaft on both sides



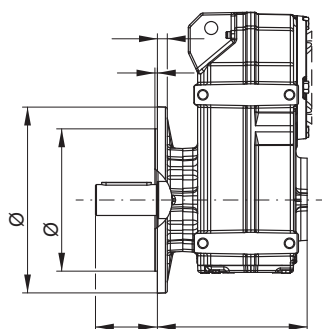
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	393	427	435	459	477	527	565	537	602	640	734	778
kB	437	476	493	517	550	611	649	624	720	758	858	902
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496; Gear unit size F07 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 500.

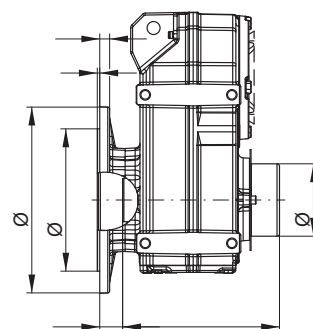
FO07 - B5 flange execution with hollow shaft



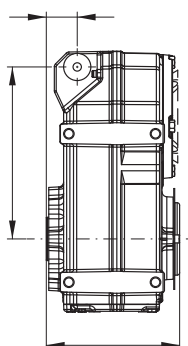
FF07 - B5 flange execution with output shaft



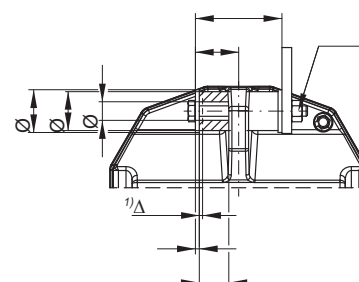
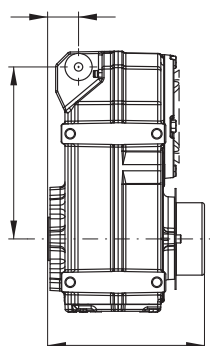
FP07 - B5 flange execution with hollow shaft and shrink disc *



FT07 - Hollow shaft with rubber buffer



FU07 - Hollow shaft with shrink disc * and rubber buffer

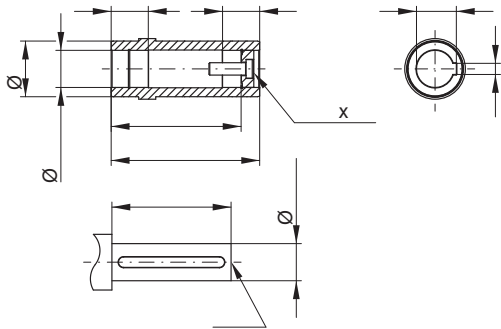
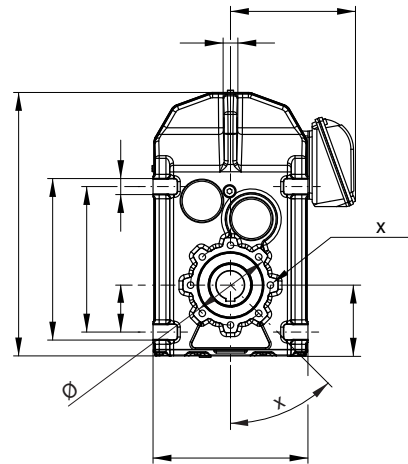
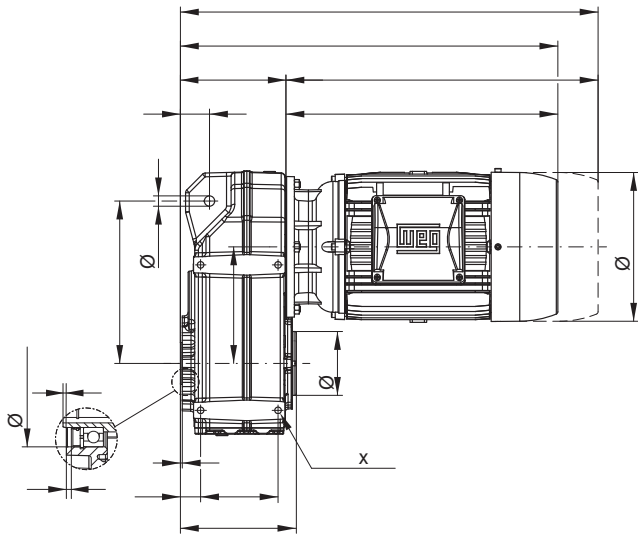


Dimensions in mm.

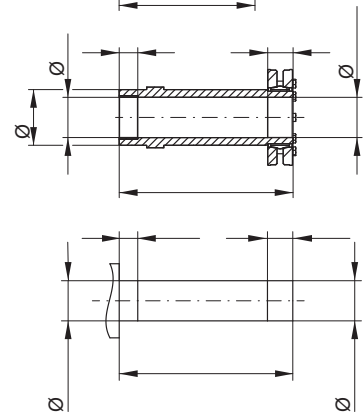
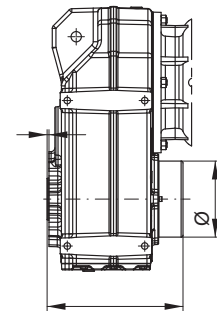
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

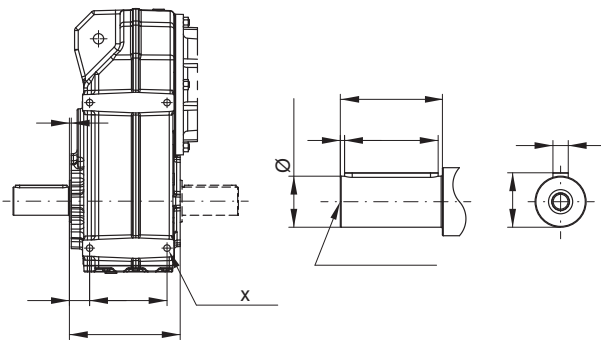
FH082 / FH083 - Hollow shaft



FD082 / FD083 - Shrink disc *



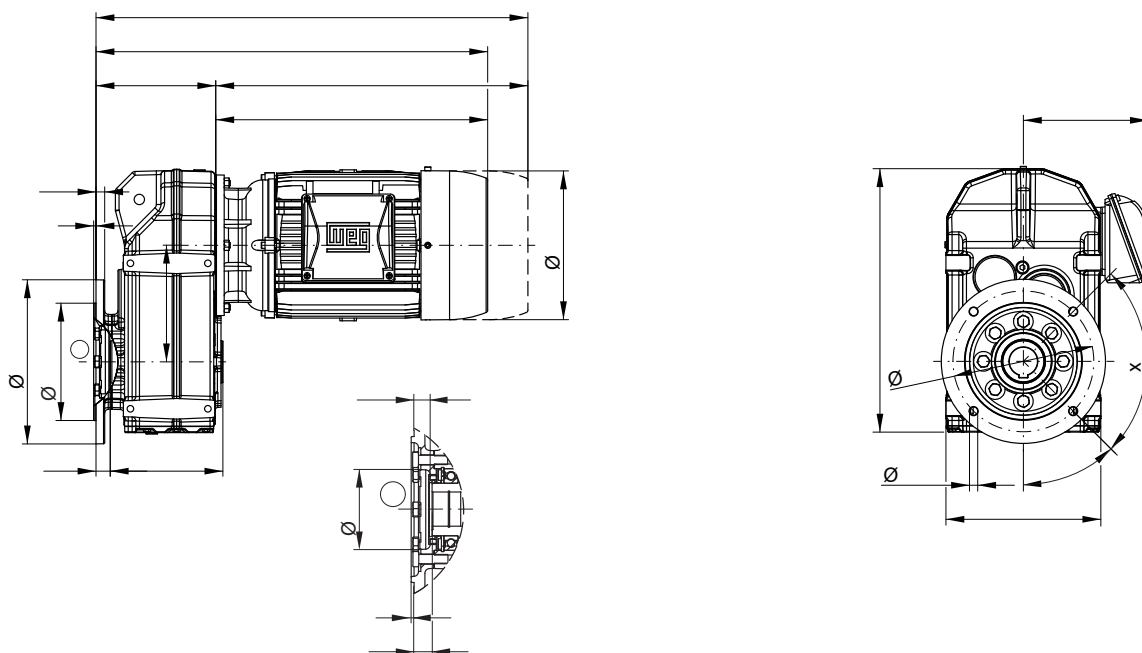
FS082 / FS083 - Output shaft FB082 / FB083 - Output shaft on both sides



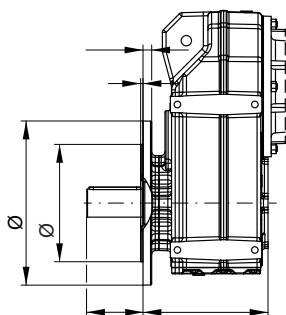
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281
k	429	463	471	495	513	563	601	573	638	676	760	804	828	866
kB	473	512	529	553	586	647	685	660	756	794	884	928	946	984
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759

Motor dimension sheets see page 496; Gear unit size F08 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 500.

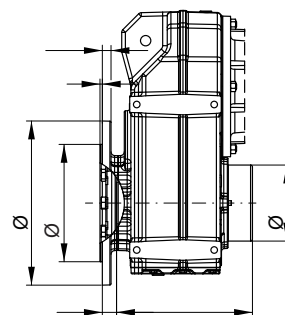
FO082 / FO083 - B5 flange execution with hollow shaft



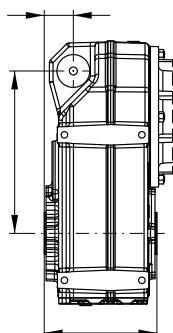
FF082 / FO083 - B5 flange execution with output shaft



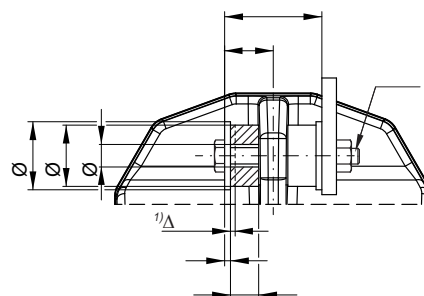
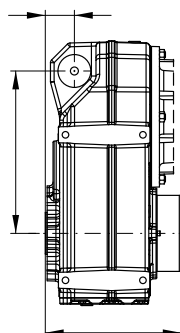
FP082 / FP083 - B5 flange execution with hollow shaft and shrink disc *



FT082 / FT083 - Hollow shaft with rubber buffer



FU082 / FU083 - Hollow shaft with shrink disc * and rubber buffer

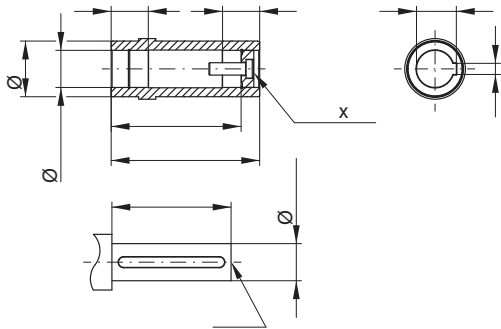
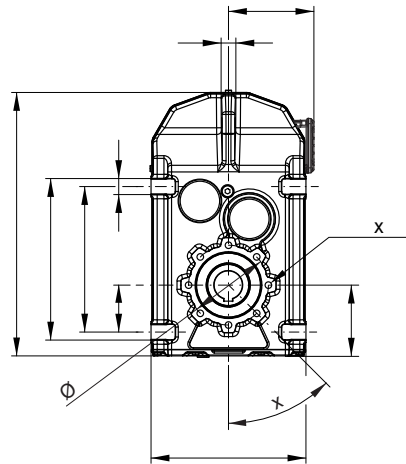
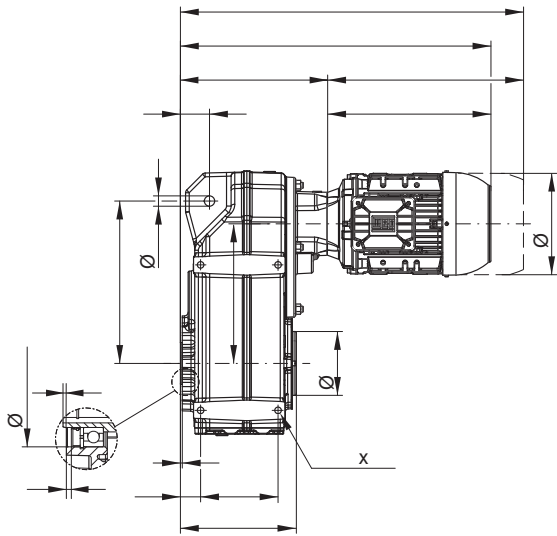


Dimensions in mm.

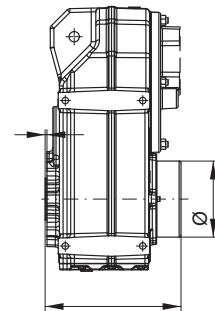
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

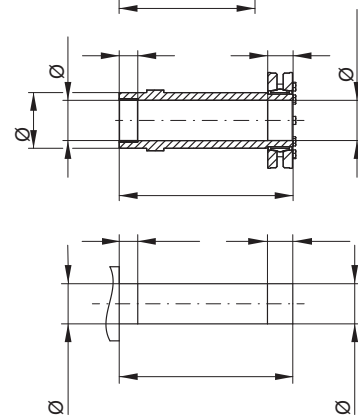
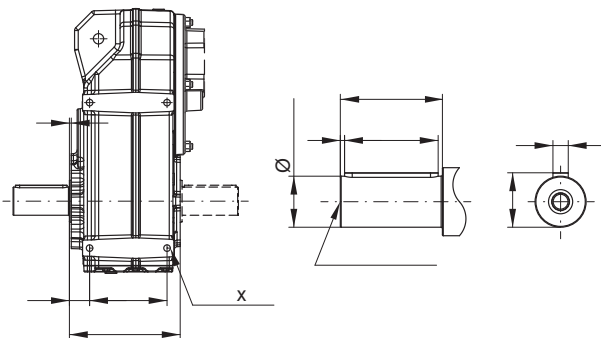
FH084 - Hollow shaft



FD084 - Shrink disc *



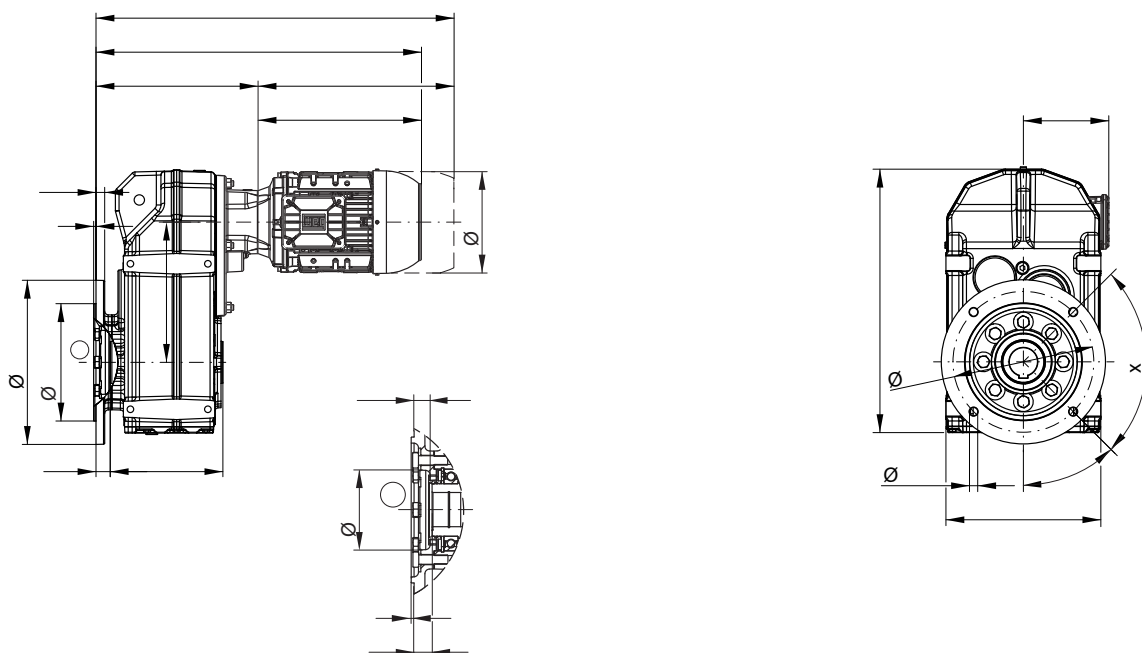
FS084 - Output shaft FB084 - Output shaft on both sides



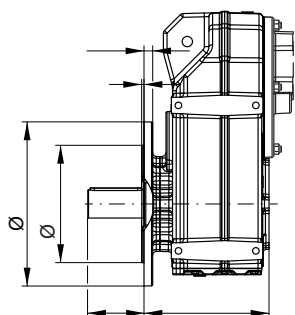
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	514	548	556	580	598	648	686	658	723	761
kB	558	597	614	638	671	732	770	745	841	879
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496; Gear unit size F12 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

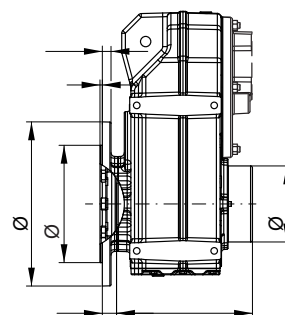
FO084 - B5 flange execution with hollow shaft



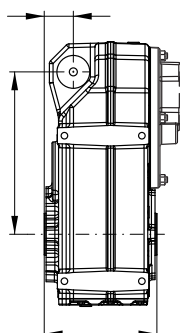
FF084 - B5 flange execution with output shaft



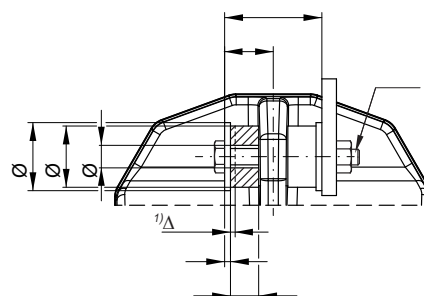
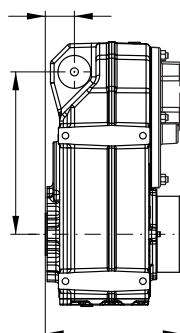
FP084 - B5 flange execution with hollow shaft and shrink disc *



FT084 - Hollow shaft with rubber buffer



FU084 - Hollow shaft with shrink disc * and rubber buffer

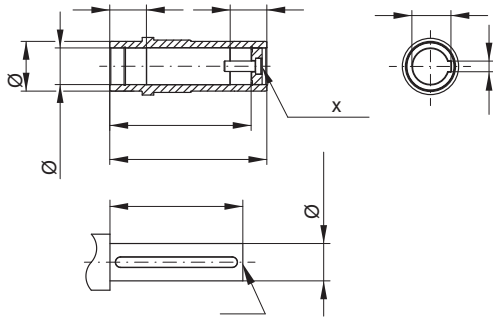
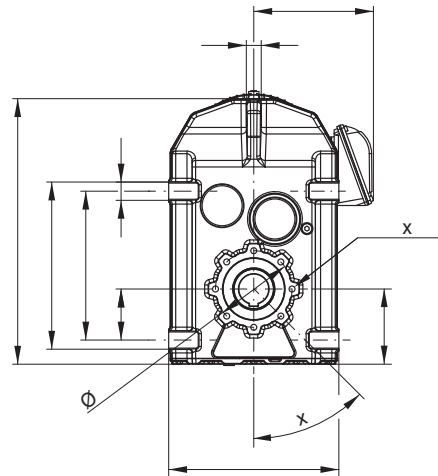
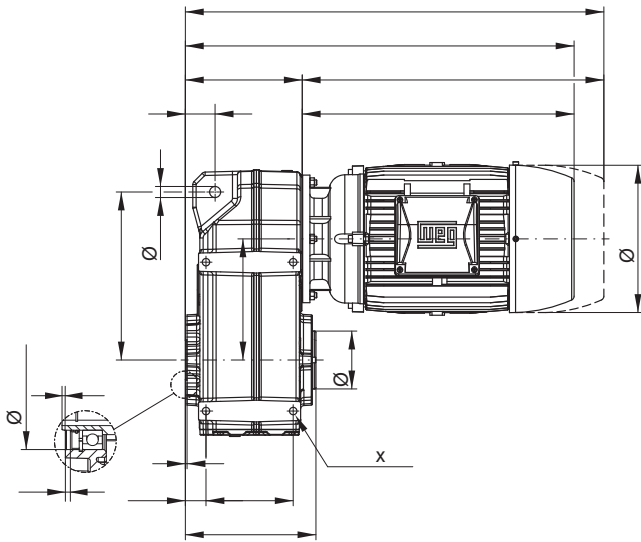


Dimensions in mm.

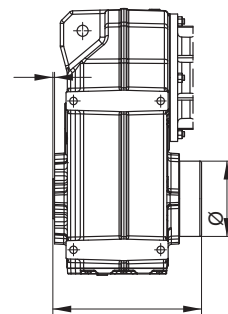
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

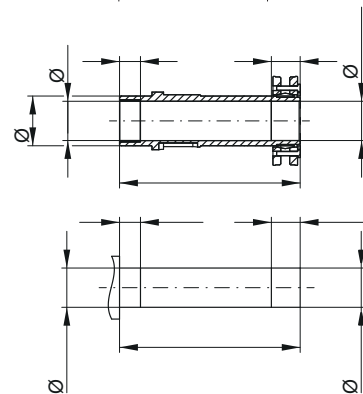
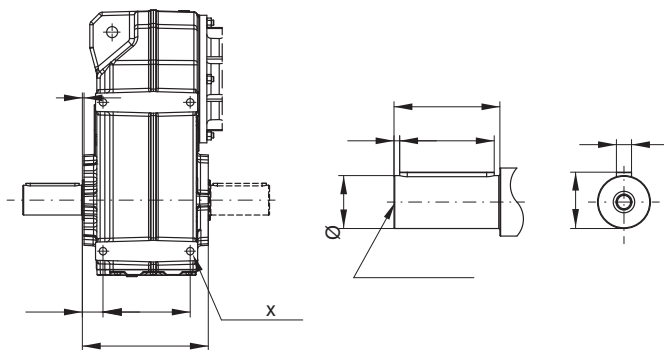
FH092 / FH093 - Hollow shaft



FD092 / FD093 - Shrink disc *



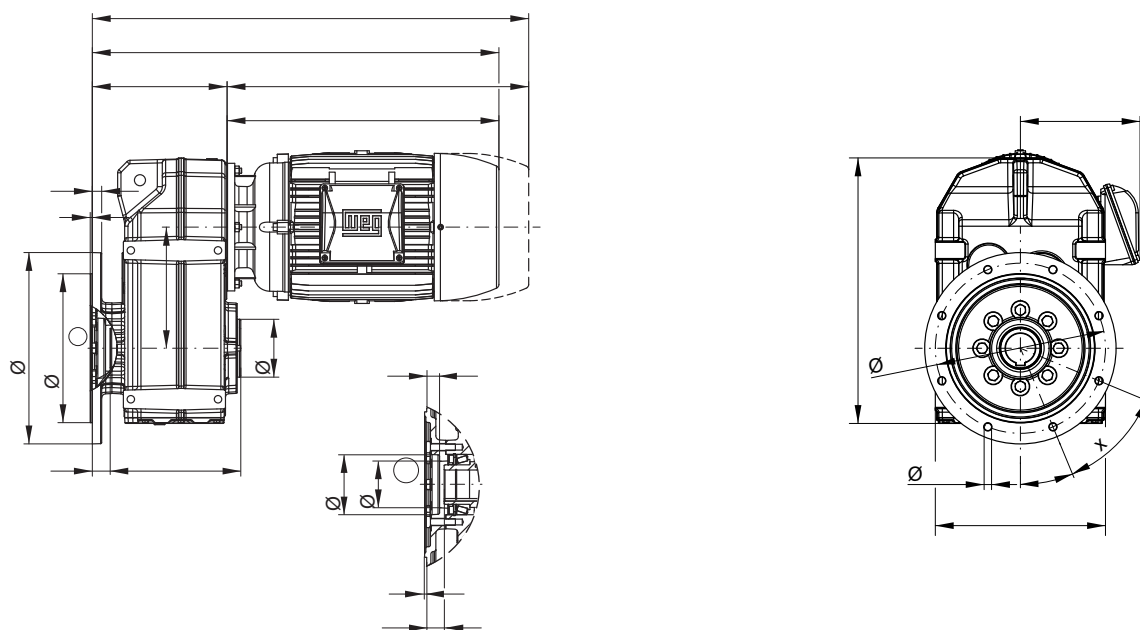
FS092 / FS093 - Output shaft FB092 / FB093 - Output shaft on both sides



Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
Dimension															
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	479	513	521	545	563	613	651	623	688	726	810	854	878	916	1008
kB	523	562	579	603	636	697	735	710	806	844	934	978	996	1034	1134
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

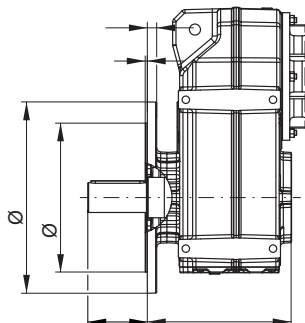
Motor dimension sheets see page 496; Gear unit size F09 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 500.

FO092 / FO093 - B5 flange execution with hollow shaft

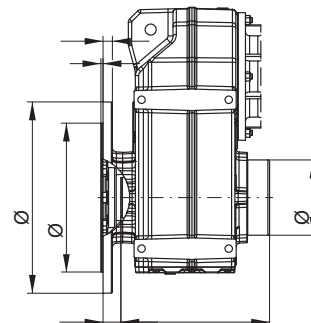


F

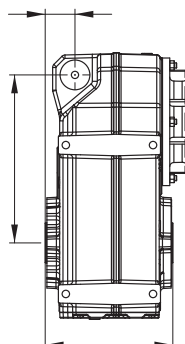
FF092 / FF093 - B5 flange execution with output shaft



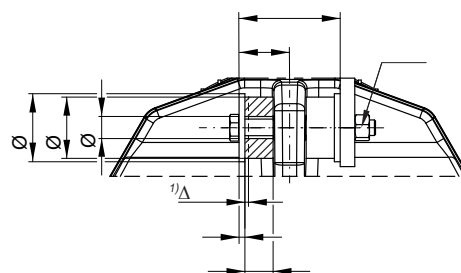
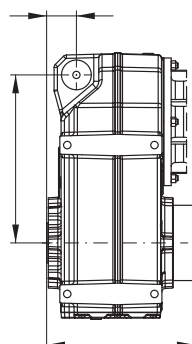
FP092 / FP093 - B5 flange execution with hollow shaft and shrink disc *



FT092 / FT093 - Hollow shaft with rubber buffer



FU092 / FU093 - Hollow shaft with shrink disc * and rubber buffer

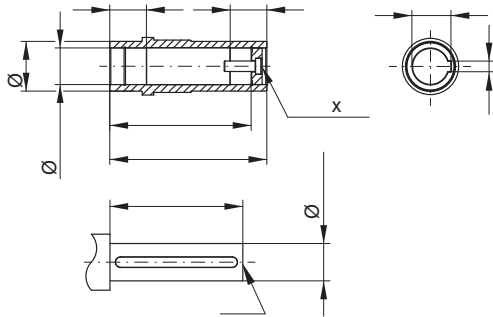
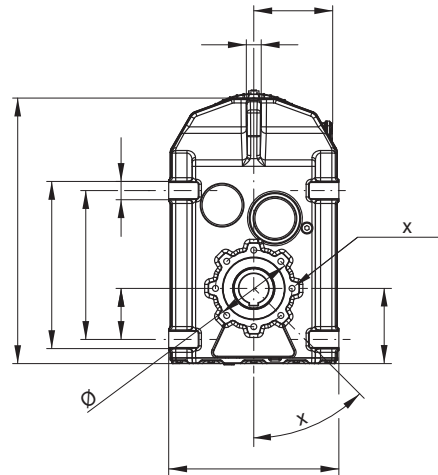
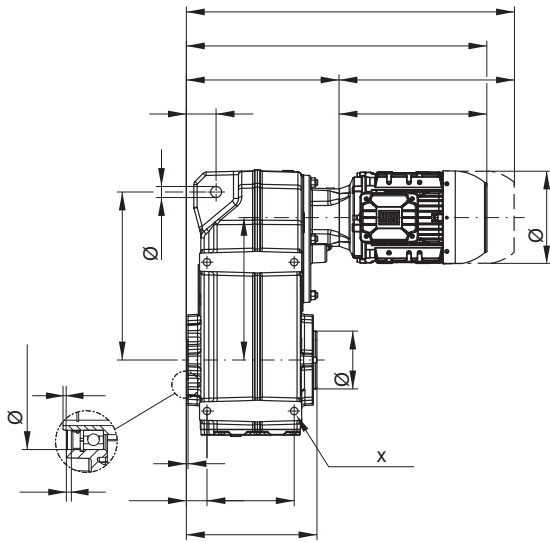


Dimensions in mm.

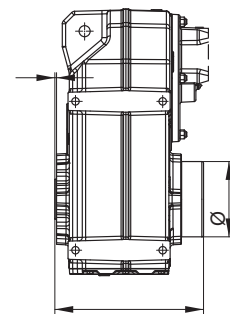
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

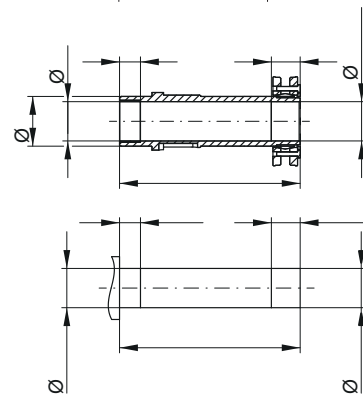
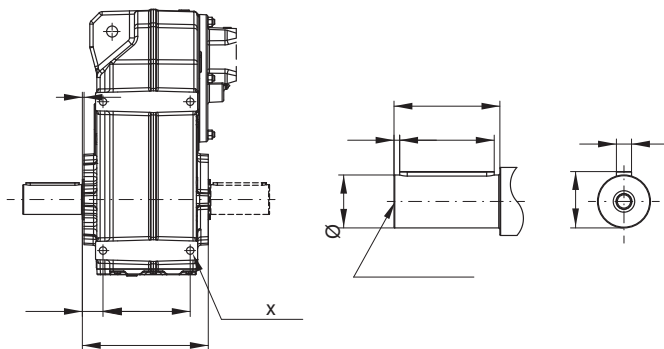
FH094 - Hollow shaft



FD094 - Shrink disc *



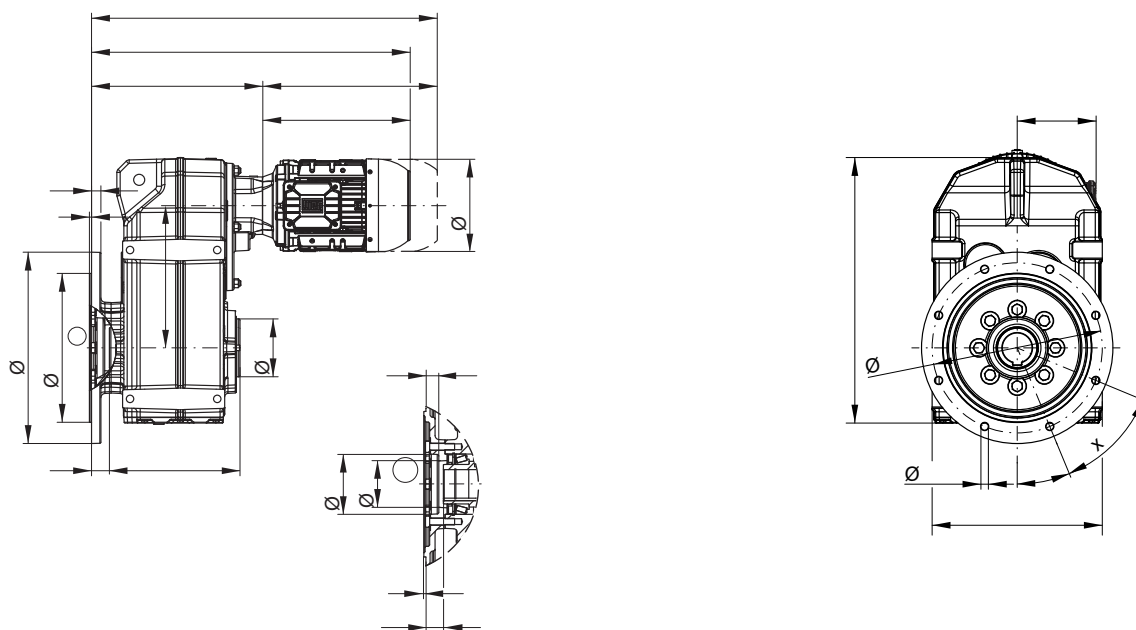
FS094 - Output shaft FB094 - Output shaft on both sides



Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	564	598	606	630	648	698	736	708	773	811
kB	608	647	664	688	721	782	820	795	891	929
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

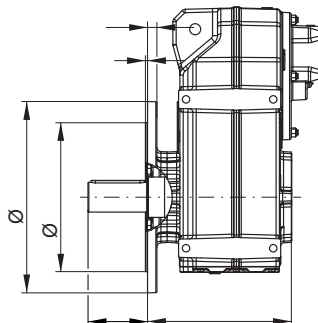
Motor dimension sheets see page 496; Gear unit size F12 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

FO094 - B5 flange execution with hollow shaft

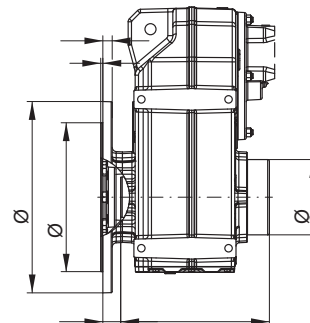


F

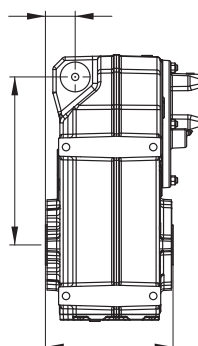
FF094 - B5 flange execution with output shaft



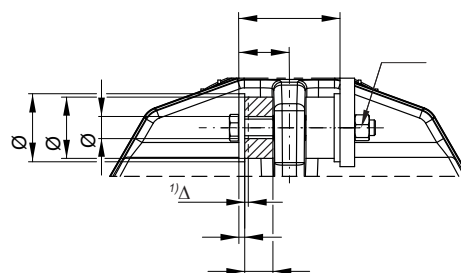
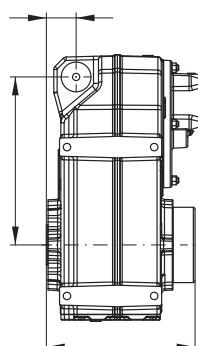
FP094 - B5 flange execution with hollow shaft and shrink disc *



FT094 - Ausführung mit Hohlwelle und Gummipuffer



FU094 - Hollow shaft with shrink disc * and rubber buffer

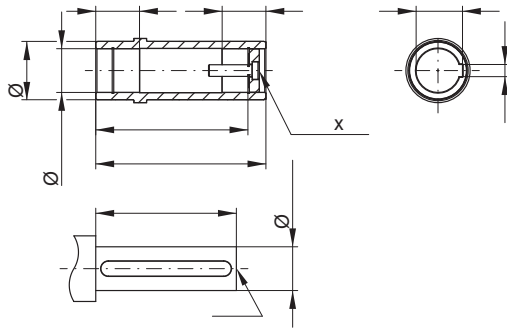
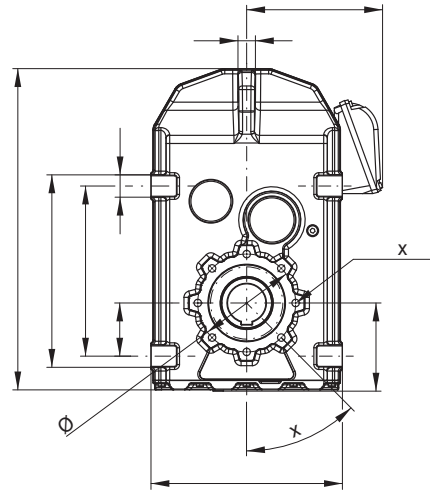
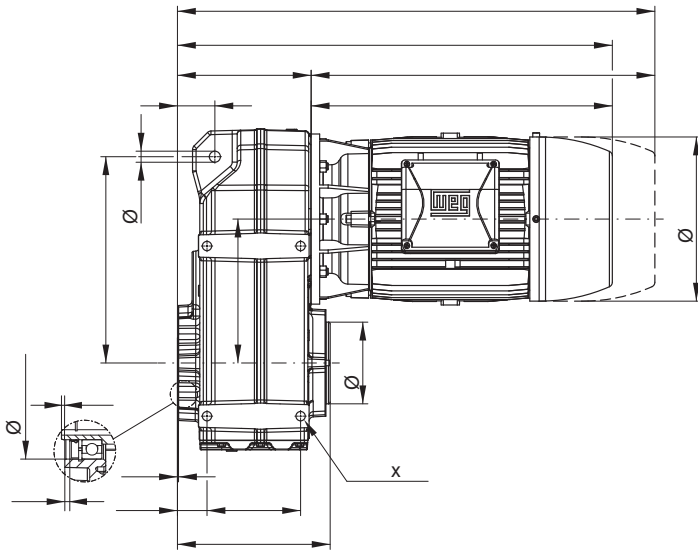


Dimensions in mm.

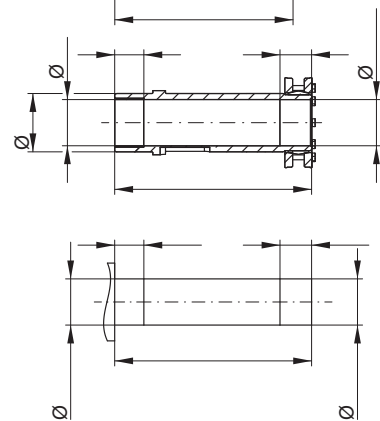
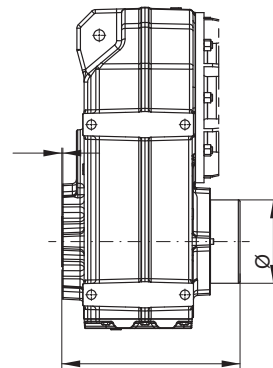
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

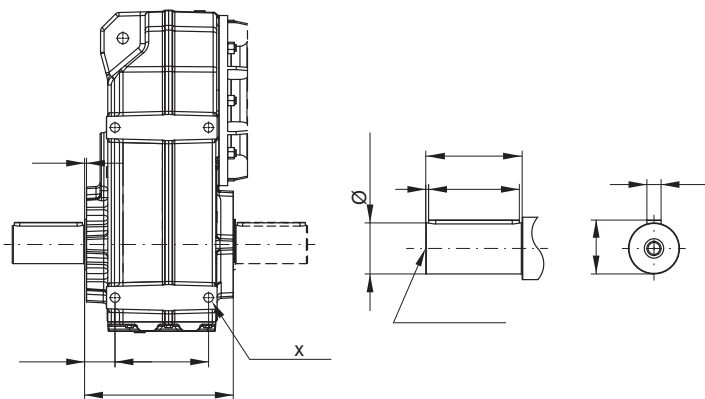
FH102 / FH103 - Hollow shaft



FD102 / FD103 - Shrink disc *



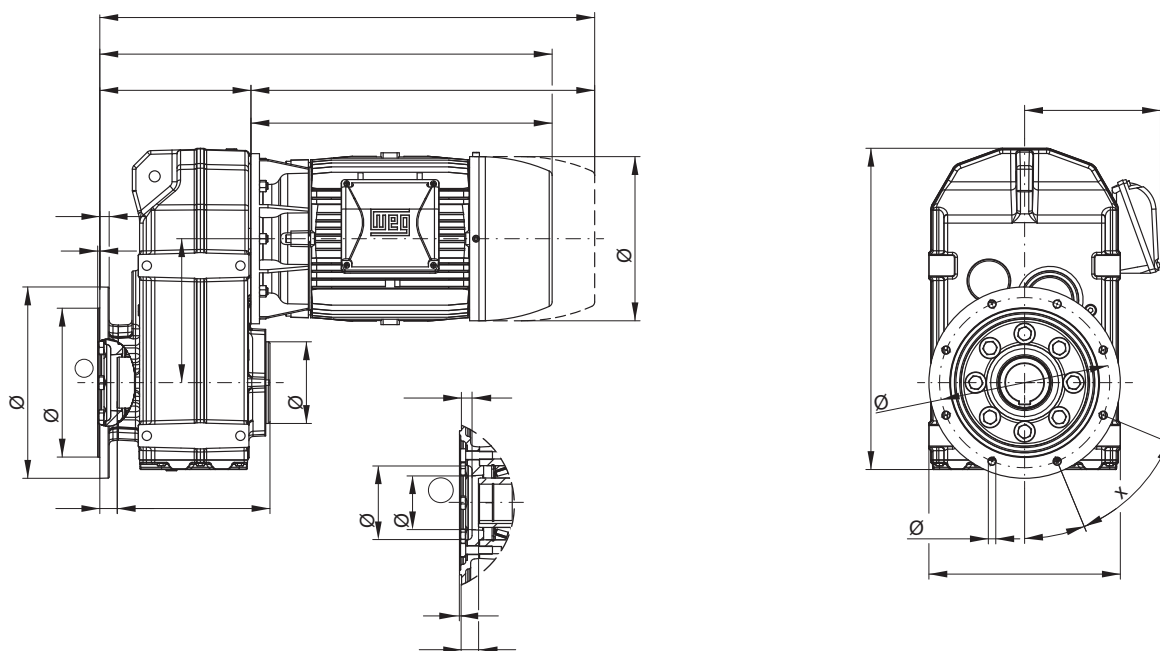
FS102 / FS103 - Output shaft FB102 / FB103 - Output shaft on both sides



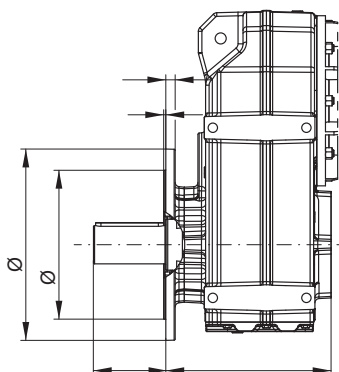
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	663	728	766	837	881	905	943	1035	1143
kB	-	-	-	-	-	-	-	750	846	884	961	1005	1023	1061	1161	1261
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 496; Gear unit size F10 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

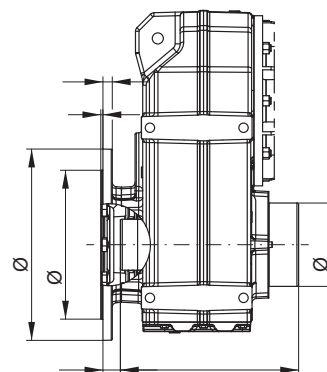
FO102 / FO103 - B5 flange execution with hollow shaft



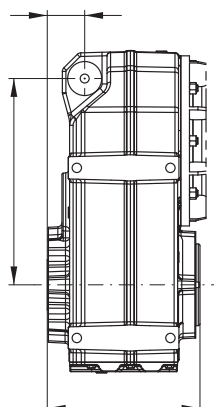
FF102 / FF103 - B5 flange execution with output shaft



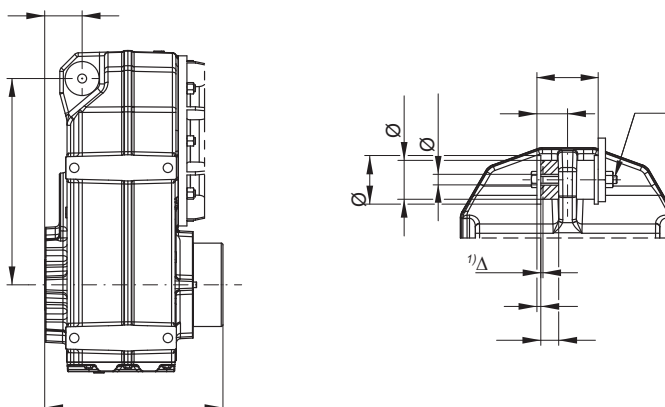
FP102 / FP103 - B5 flange execution with hollow shaft and shrink disc *



FT102 / FT103 - Hollow shaft with rubber buffer



FU102 / FU103 - Hollow shaft with shrink disc * and rubber buffer

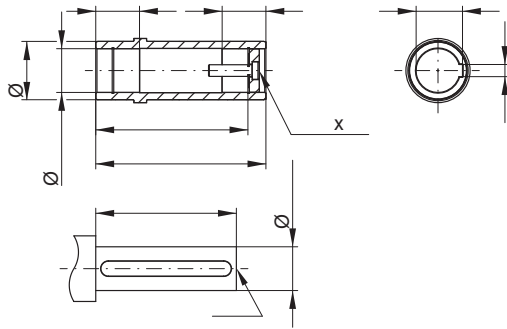
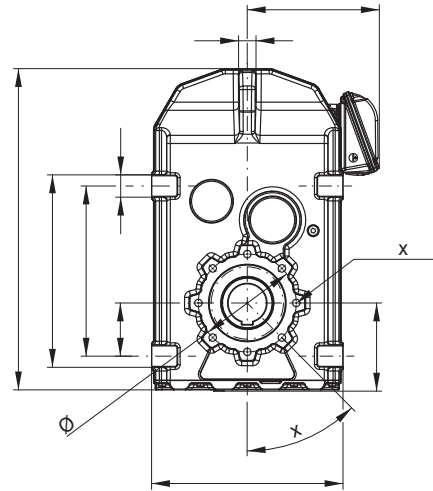
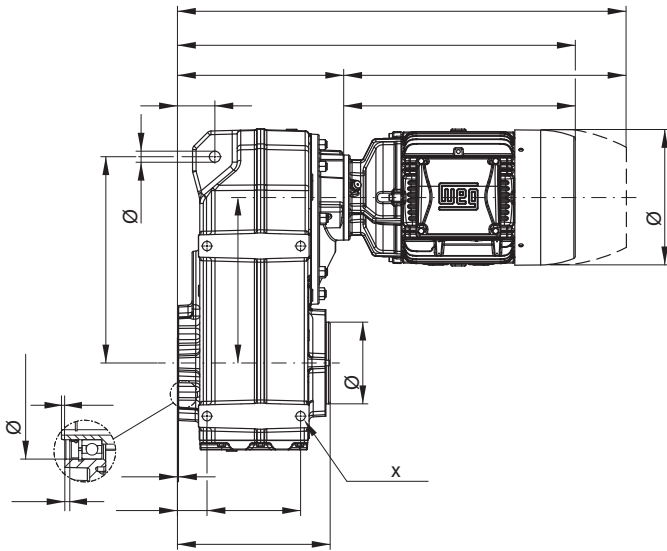


Dimensions in mm.

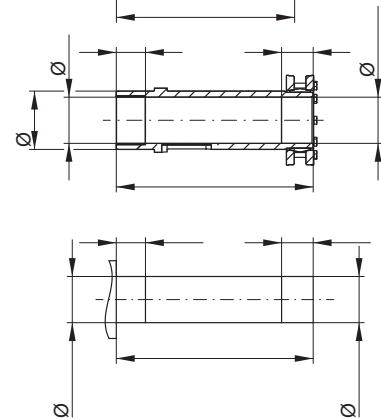
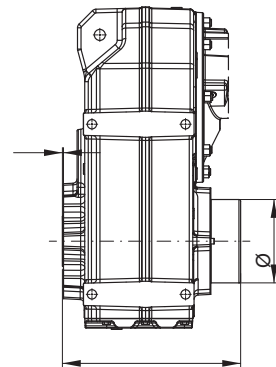
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

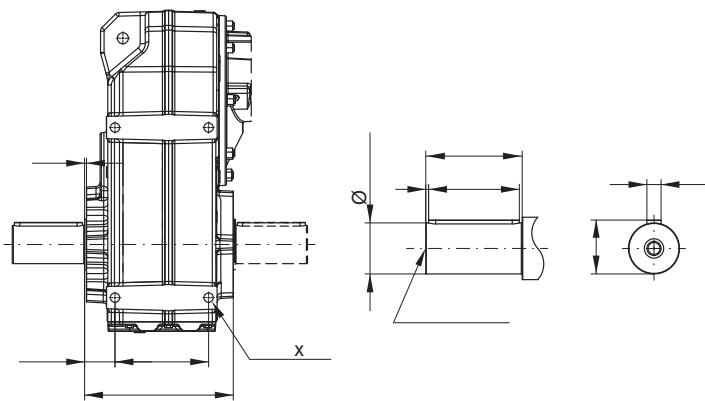
FH104 - Hollow shaft



FD104 - Shrink disc *



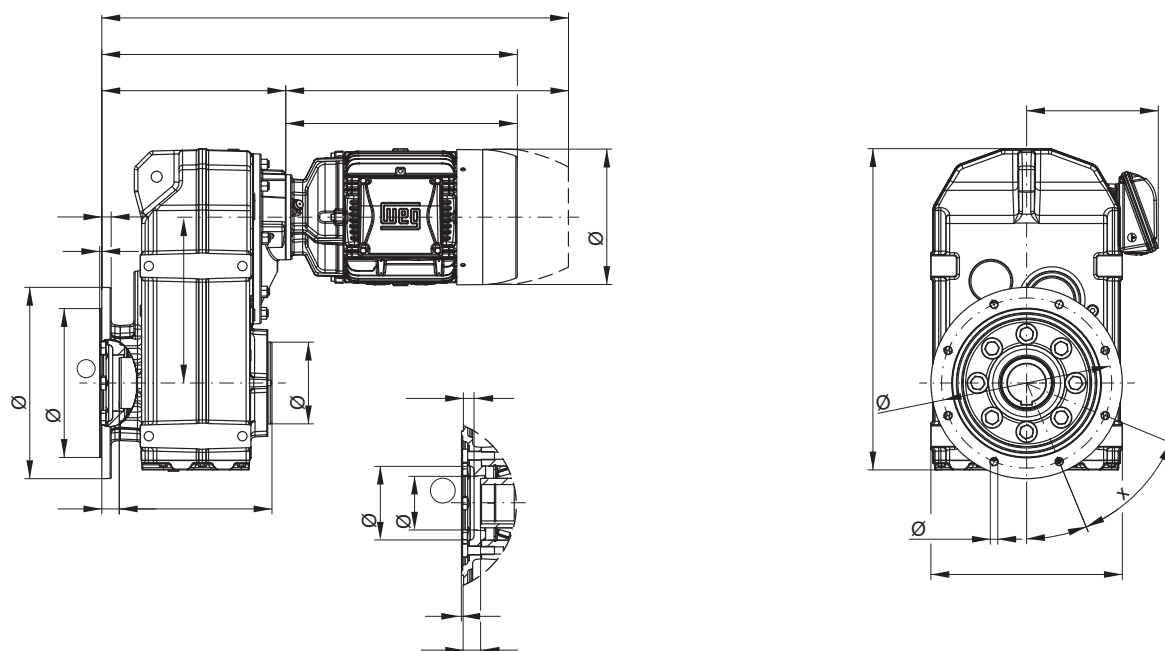
FS104 - Output shaft FB104 - Output shaft on both sides



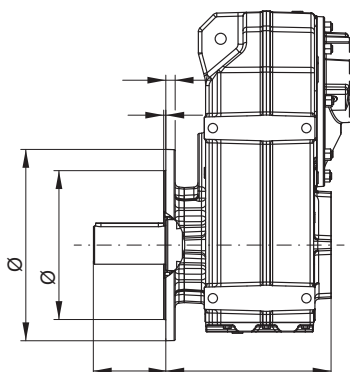
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	595	629	637	661	679	729	767	739	804	842	936	980
kB	639	678	695	719	752	813	851	826	922	960	1060	1104
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496; Gear unit size F12 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

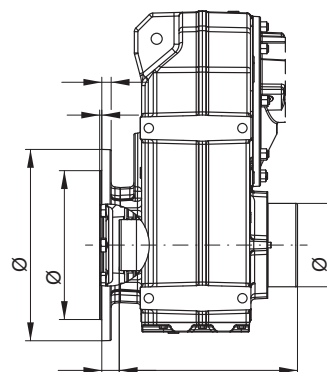
FO104 - B5 flange execution with hollow shaft



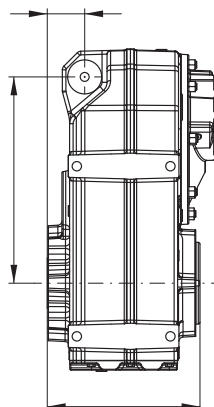
FF104 - B5 flange execution with output shaft



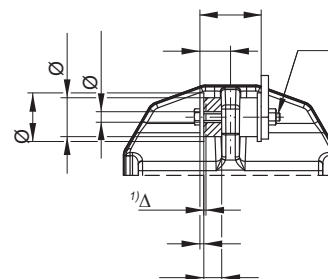
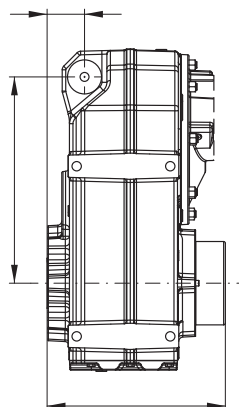
FP104 - B5 flange execution with hollow shaft and shrink disc *



FT104 - Hollow shaft with rubber buffer



FU104 - Hollow shaft with shrink disc * and rubber buffer

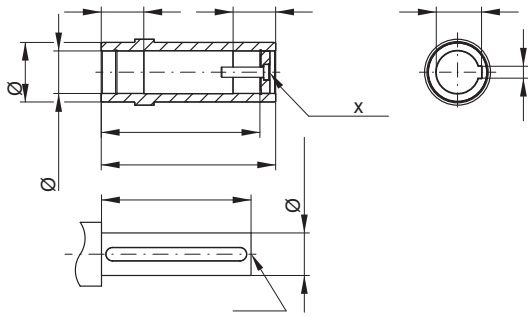
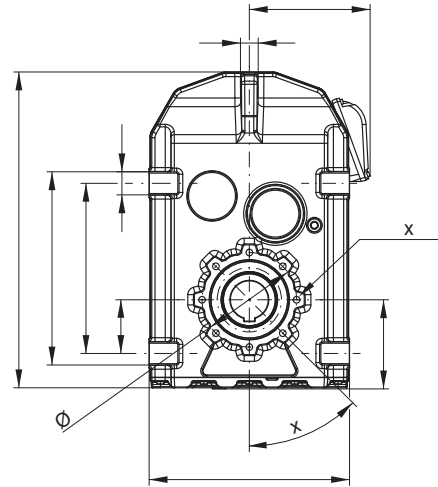
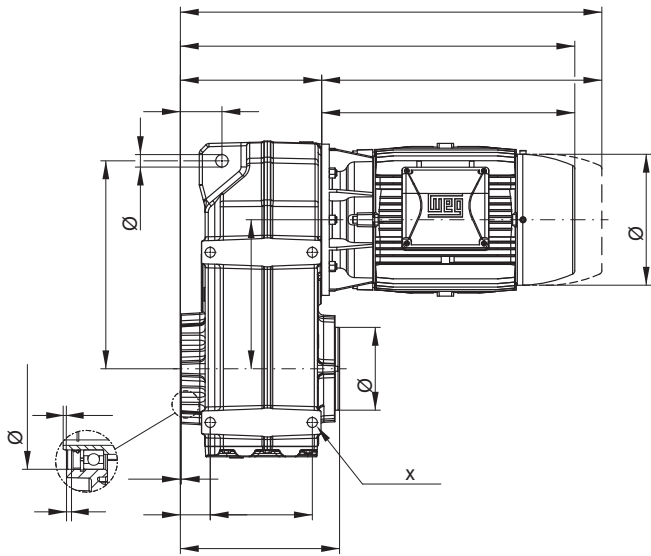


Dimensions in mm.

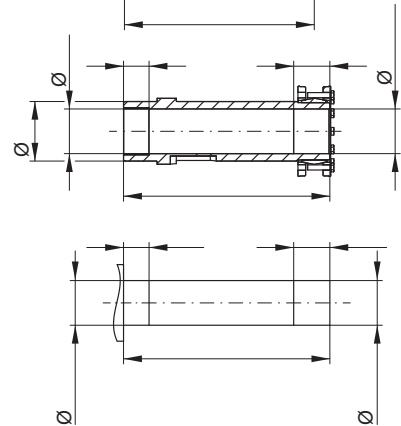
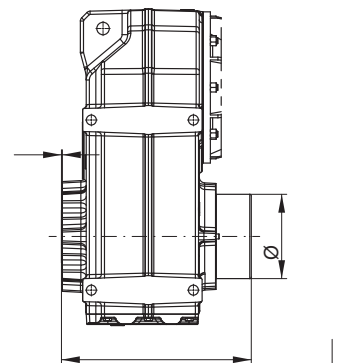
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

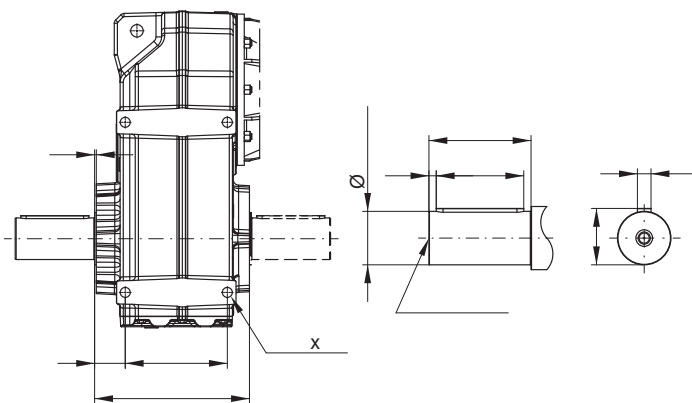
FH122 / FH123 - Hollow shaft



FD122 / FD123 - Shrink disc *



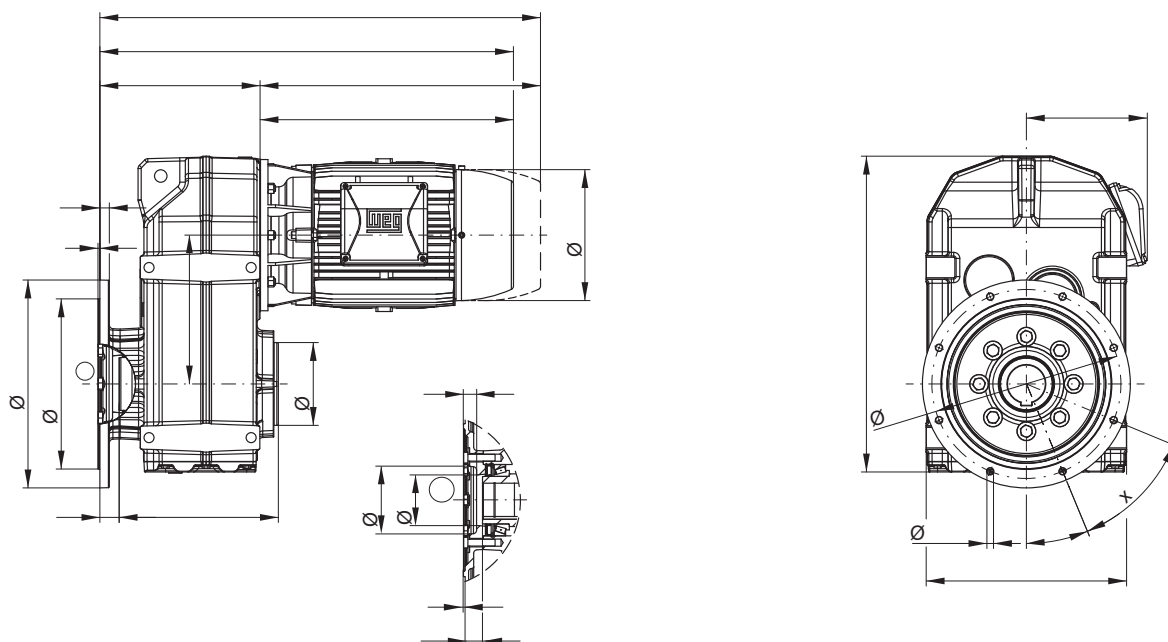
FS122 / FS123 - Output shaft FB122 / FB123 - Output shaft on both sides



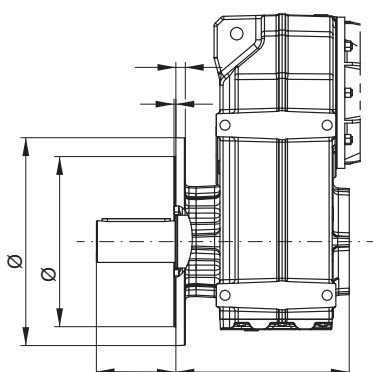
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	722	787	825	896	940	964	1002	1094	1202
kB	-	-	-	-	-	-	-	809	905	943	1020	1064	1082	1120	1220	1320
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 496; Gear unit size F12 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

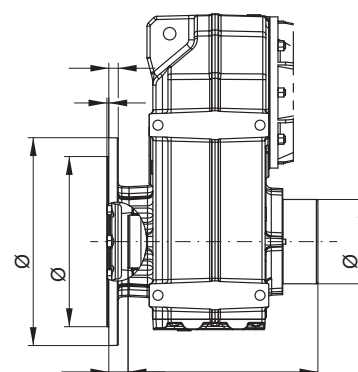
FO122 / FO123 - B5 flange execution with hollow shaft



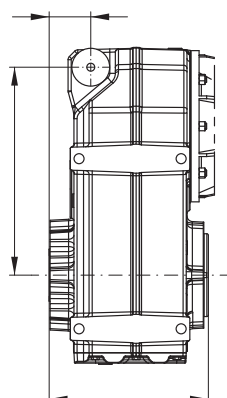
FF122 / FF123 - B5 flange execution with output shaft



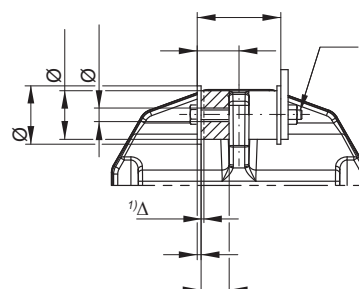
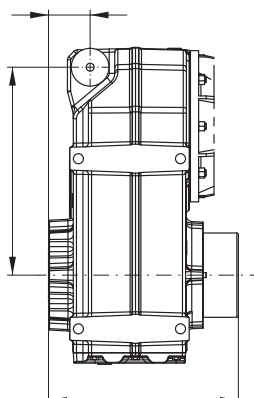
FP122 / FP123 - B5 flange execution with hollow shaft and shrink disc *



FT122 / FT123 - Hollow shaft with rubber buffer



FU122 / FU123 - Hollow shaft with shrink disc * and rubber buffer

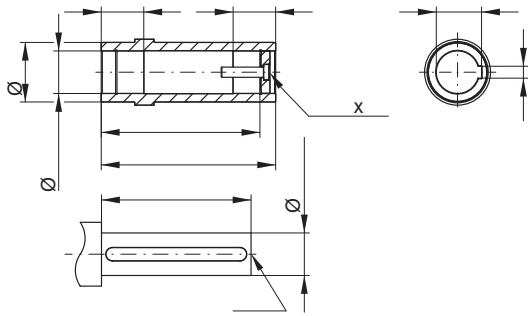
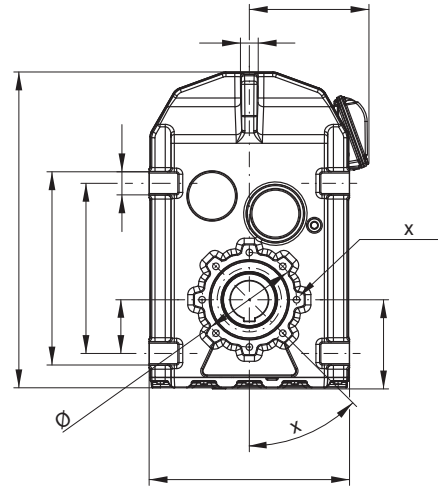
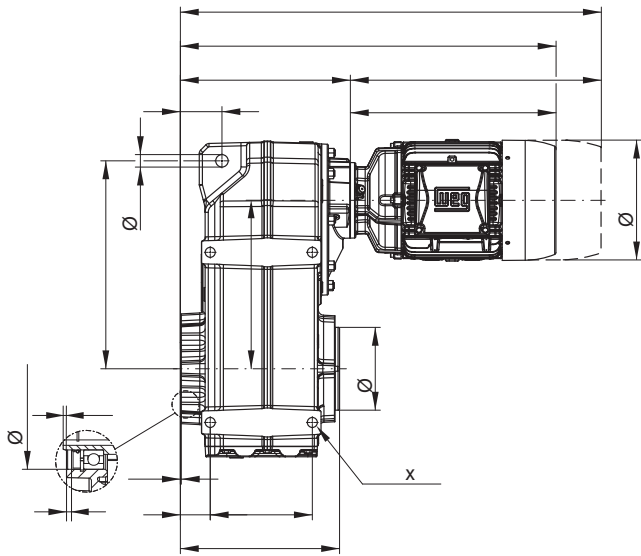


Dimensions in mm.

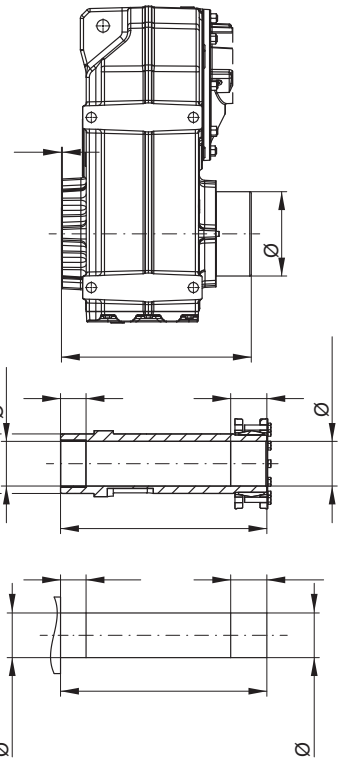
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

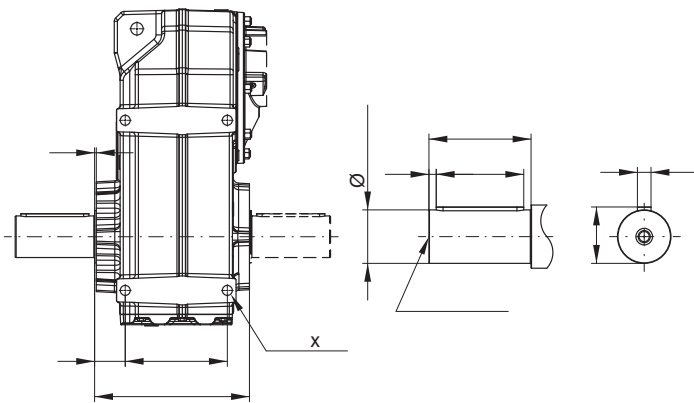
FH124 - Hollow shaft



FD124 - Shrink disc *



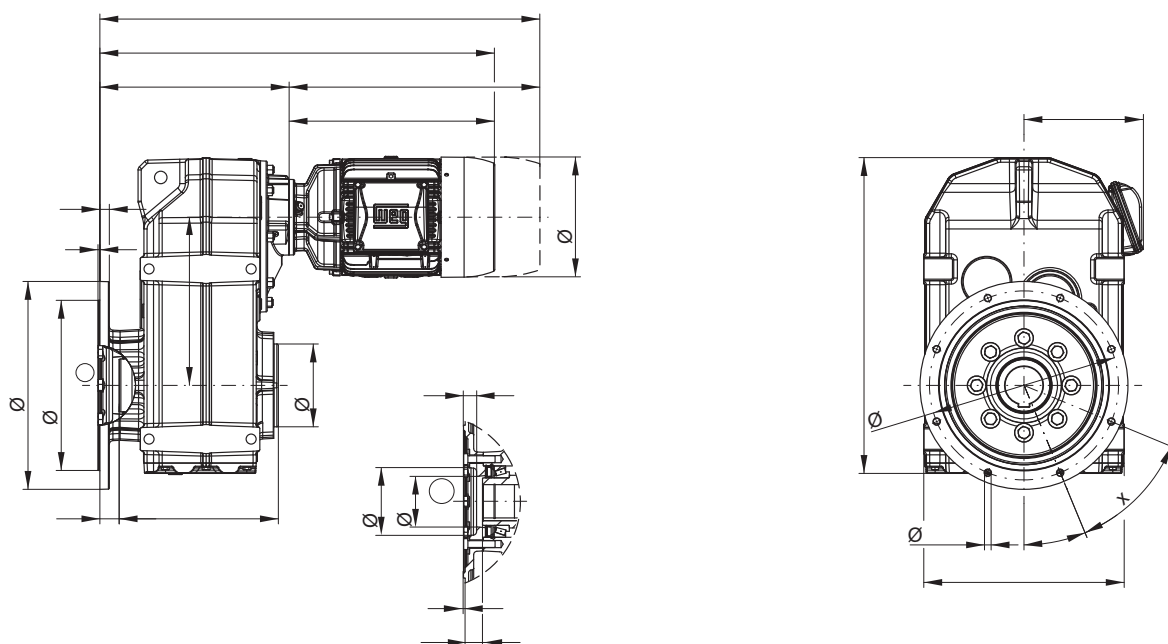
FS124 - Output shaft FB124 - Output shaft on both sides



Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension												
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	654	688	696	720	738	788	826	798	863	901	995	1039
kB	698	737	754	778	811	872	910	885	981	1019	1119	1163
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

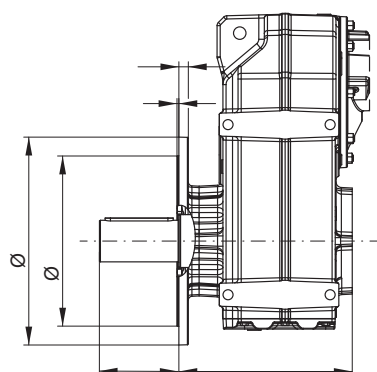
Motor dimension sheets see page 496; Gear unit size F12 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

FO124 - B5 flange execution with hollow shaft

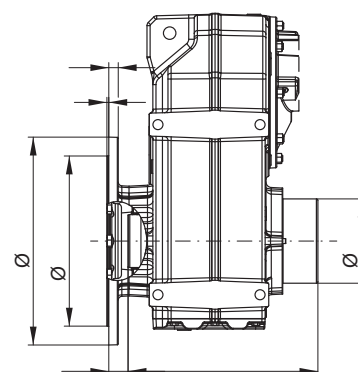


F

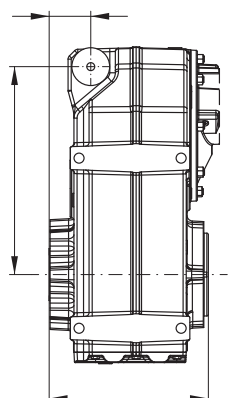
FF124 - B5 flange execution with output shaft



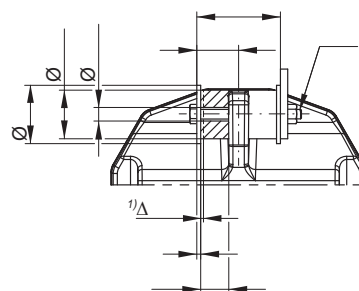
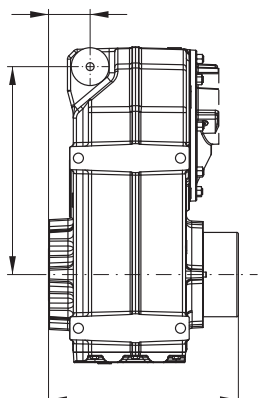
FP124 - B5 flange execution with hollow shaft and shrink disc *



FT124 - Hollow shaft with rubber buffer



FU124 - Hollow shaft with shrink disc * and rubber buffer

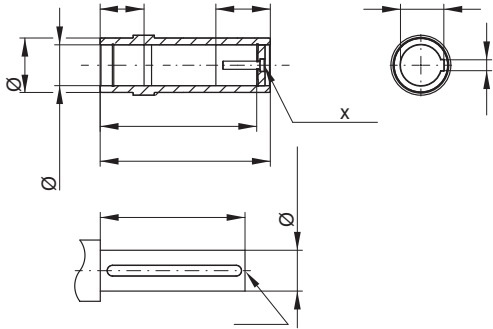
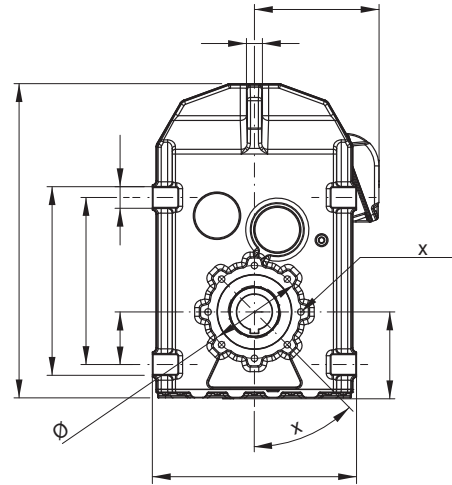
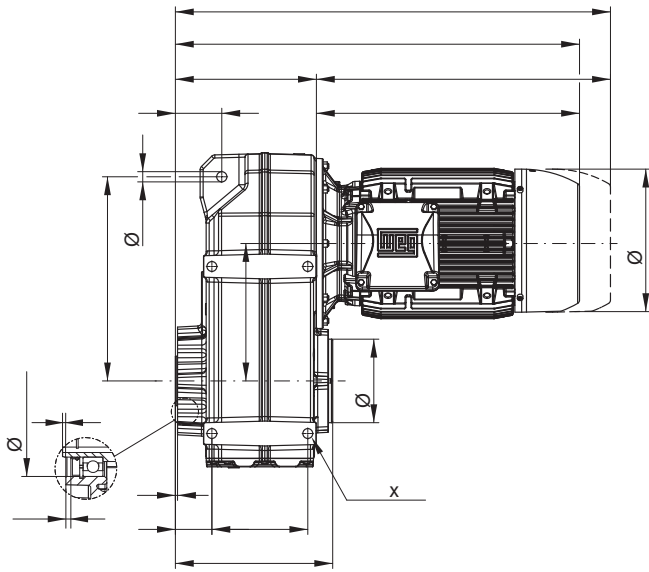


Dimensions in mm.

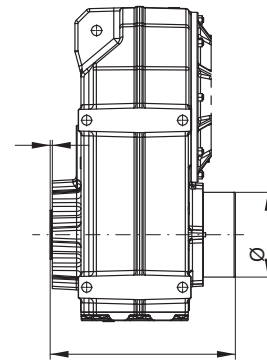
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

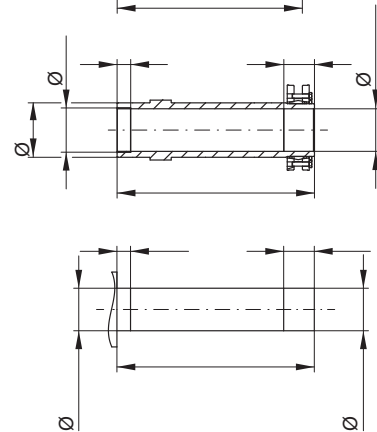
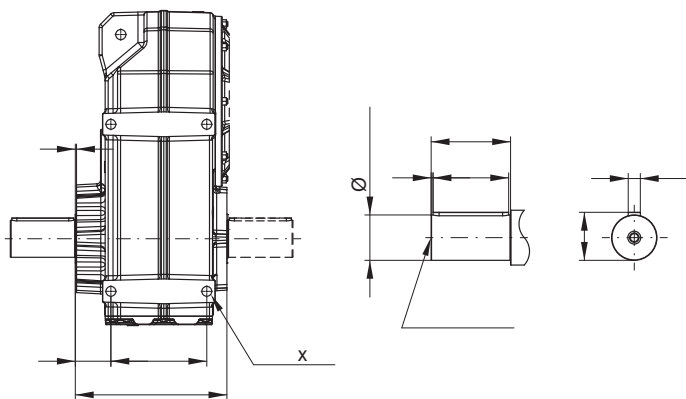
FH152 / FH153 - Hollow shaft



FD152 / FD153 - Shrink disc *



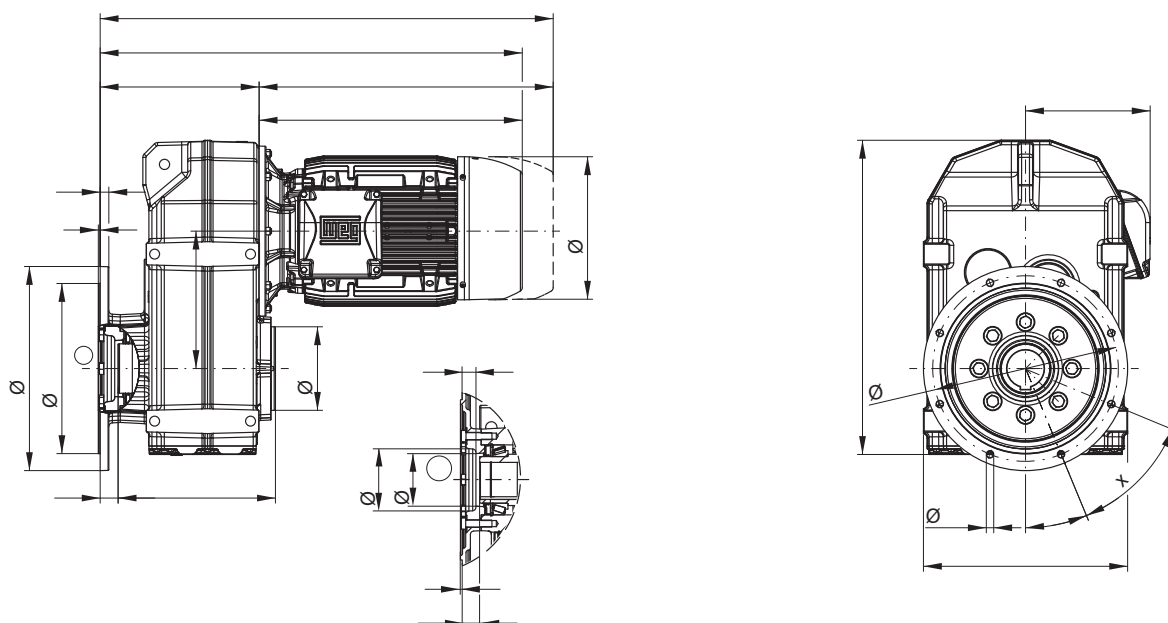
FS152 / FS153 - Output shaft FB152 / FB153 - Output shaft on both sides



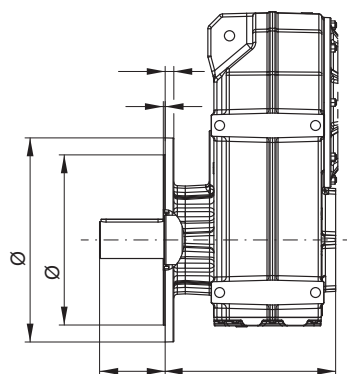
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	250S/M
Dimension																	
AC	-	-	-	-	-	-	-	-	-	-	329	329	347	347	386	453	482
AD	-	-	-	-	-	-	-	-	-	-	266	266	281	281	317	385	403
k	-	-	-	-	-	-	-	-	-	-	962	1006	1030	1068	1160	1268	1307
kB	-	-	-	-	-	-	-	-	-	-	1086	1130	1148	1186	1286	1386	1425
LB	-	-	-	-	-	-	-	-	-	-	506	550	574	612	704	812	851
LB1	-	-	-	-	-	-	-	-	-	-	630	674	692	730	830	930	969

Motor dimension sheets see page 496; Gear unit size F15 corresponds to motor flange FR-550. Description of motor lengths LB and LB1 see page 500.

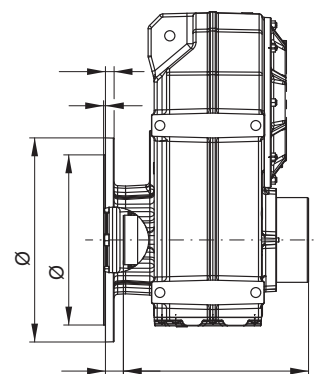
FO152 / FO153 - B5 flange execution with hollow shaft



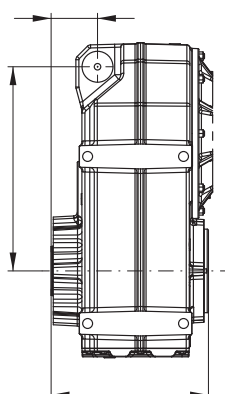
FF152 / FF153 - B5 flange execution with output shaft



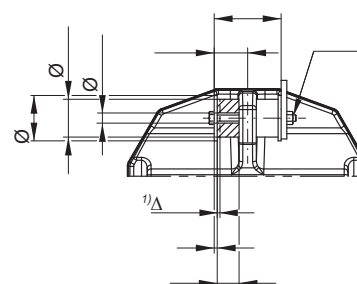
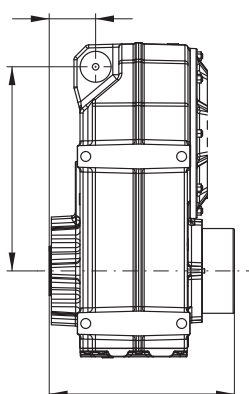
FP152 / FP153 - B5 flange execution with hollow shaft and shrink disc *



FT152 / FT153 - Hollow shaft with rubber buffer



FU152 / FU153 - Hollow shaft with shrink disc * and rubber buffer

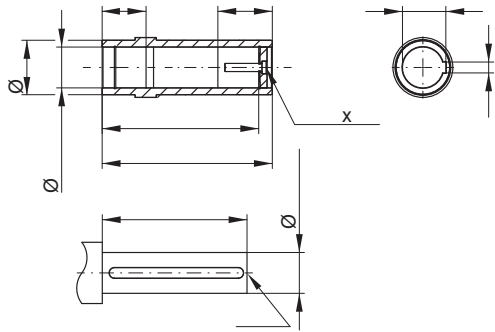
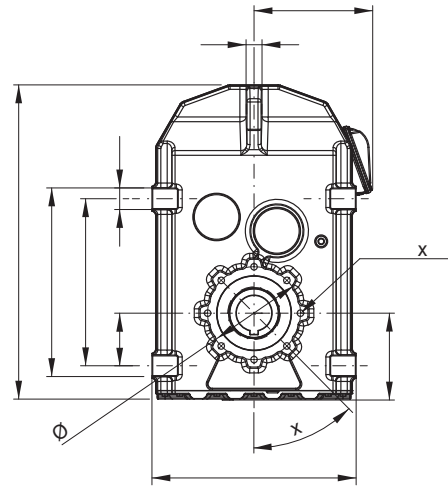
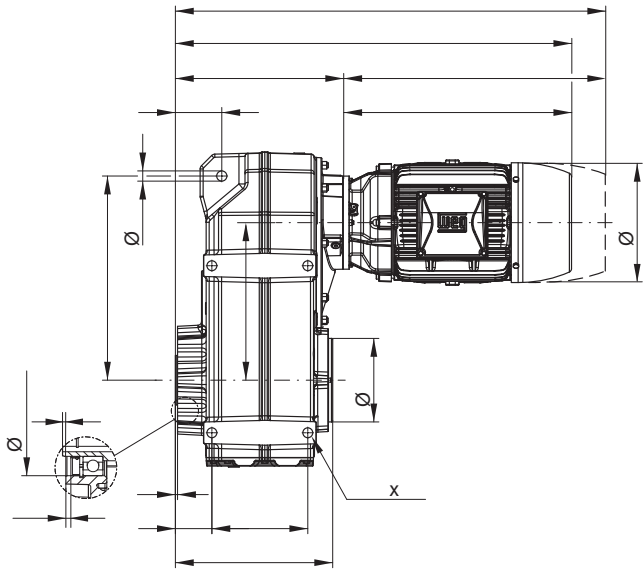


Dimensions in mm.

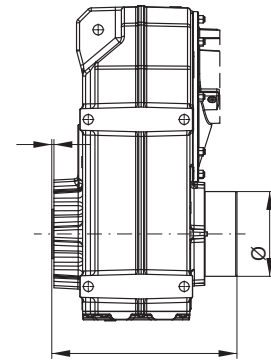
* Shrink disc and protection cap possible with all mountable motors.

1) ΔL = recommended preload

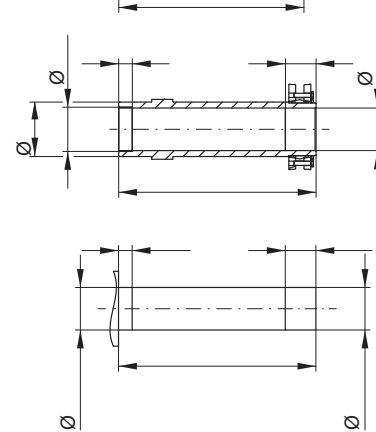
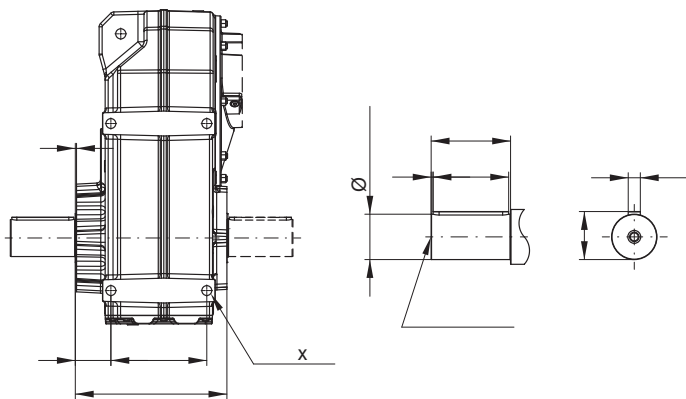
FH154 - Hollow shaft



FD154 - Shrink disc *



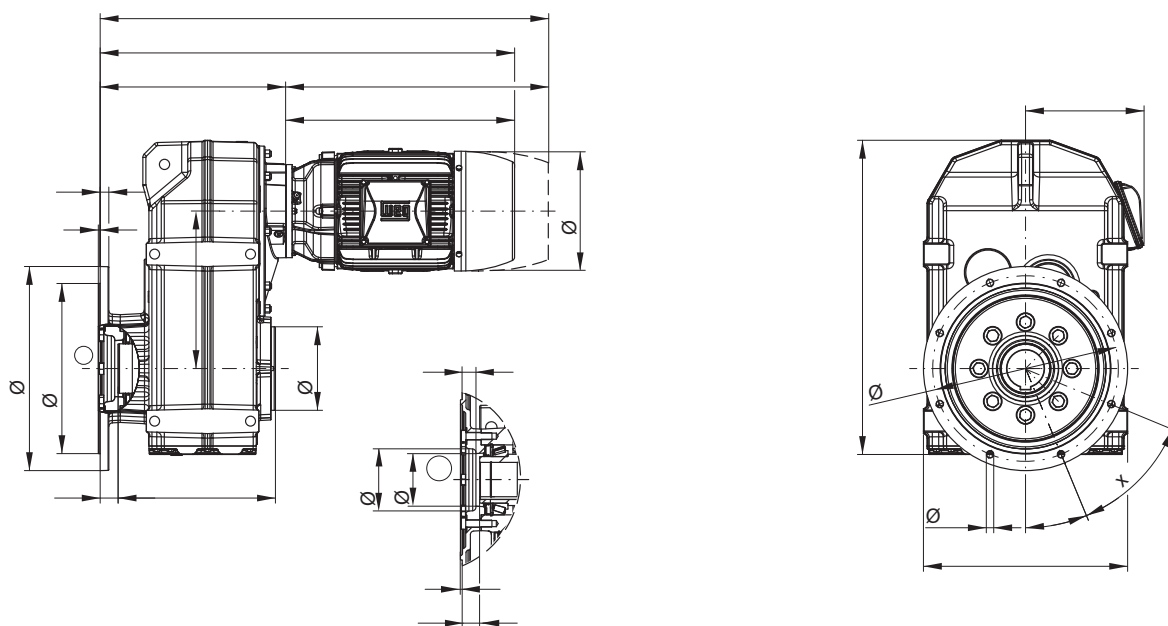
FS154 - Output shaft FB154 - Output shaft on both sides



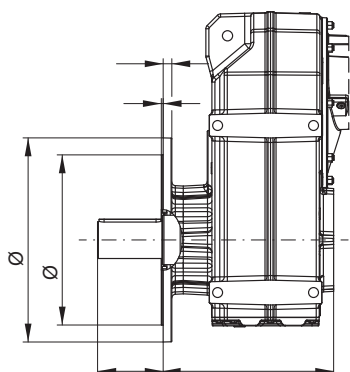
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
Dimension															
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	745	779	787	811	829	879	917	889	954	992	1076	1120	1144	1182	1274
kB	789	828	845	869	902	963	1001	976	1072	1110	1200	1244	1262	1300	1400
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 496; Gear unit size F15 corresponds to motor flange FR-550. Description of motor lengths LB and LB1 see page 500.

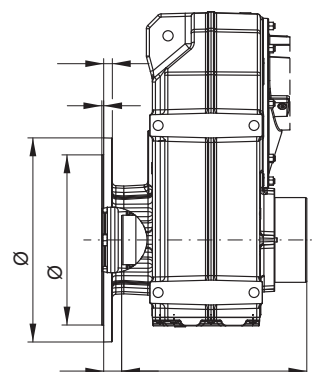
FO154 - B5 flange execution with hollow shaft



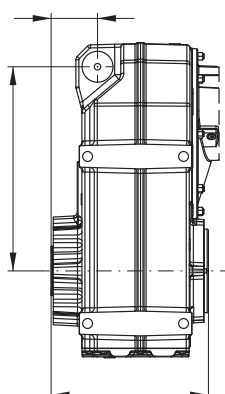
FF154 - B5 flange execution with output shaft



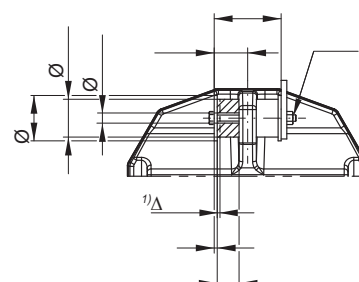
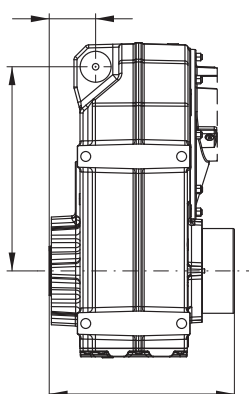
FP154 - B5 flange execution with hollow shaft and shrink disc *



FT154 - Hollow shaft with rubber buffer



FU154 - Hollow shaft with shrink disc * and rubber buffer

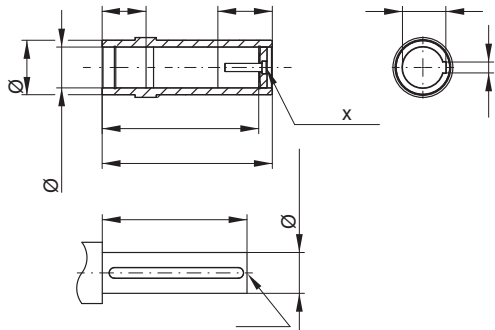
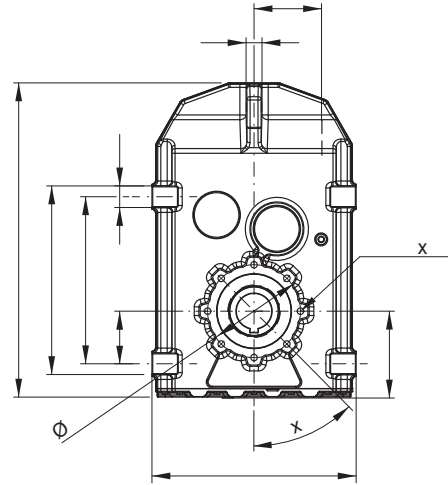
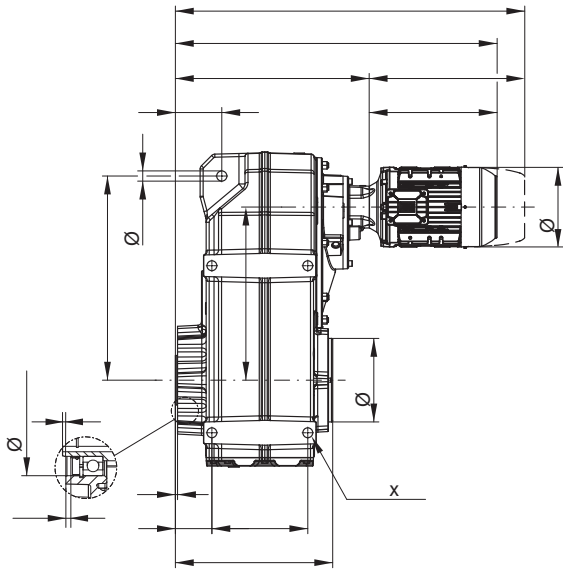


Dimensions in mm.

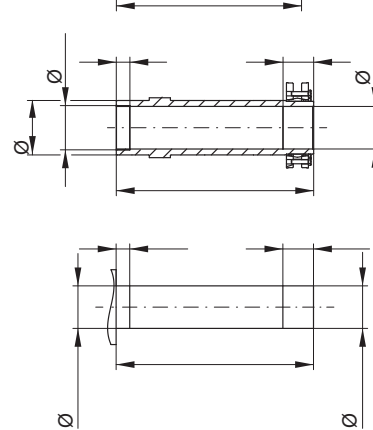
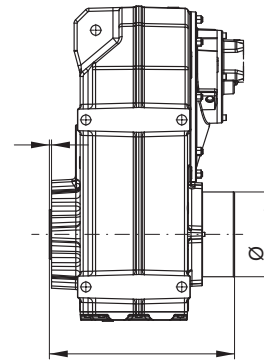
* Shrink disc and protection cap possible with all mountable motors.

¹⁾ ΔL = recommended preload

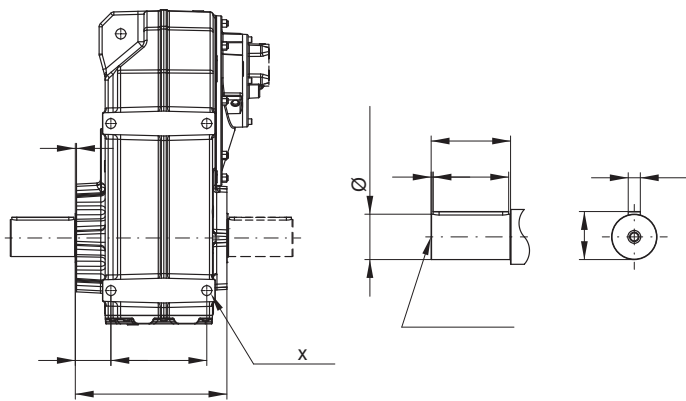
FH155 - Hollow shaft



FD155 - Shrink disc *



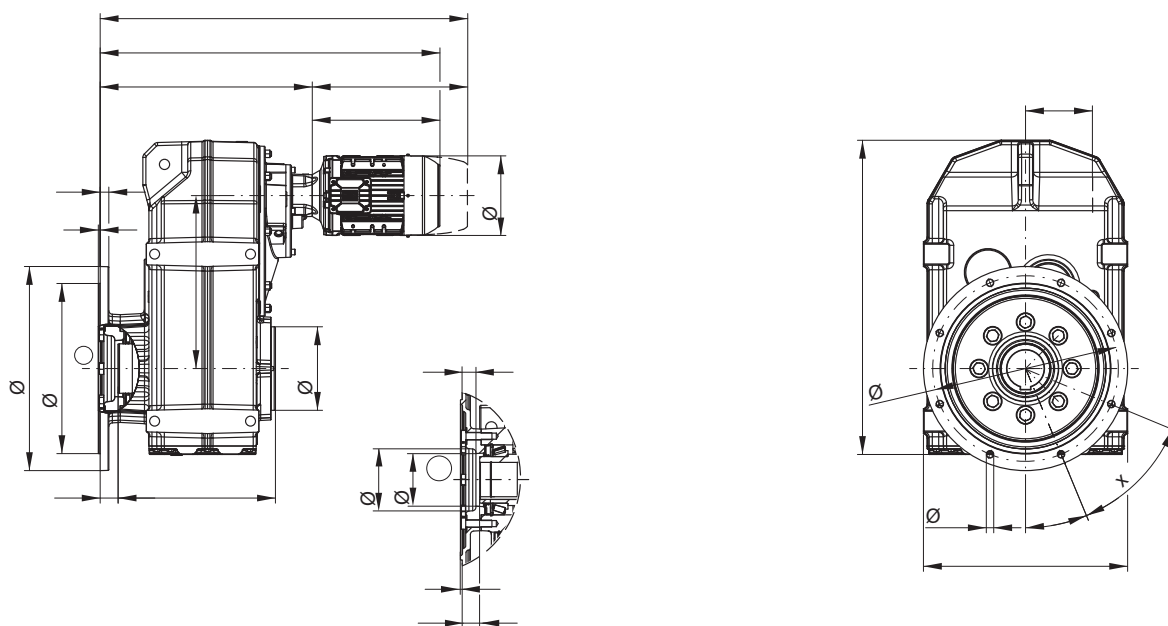
FS155 - Output shaft FB155 - Output shaft on both sides



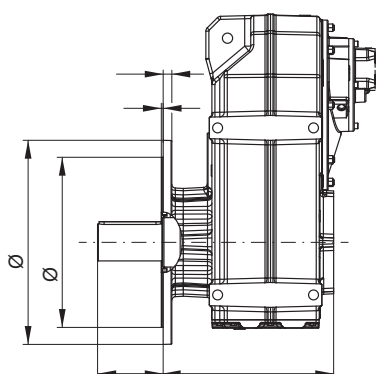
Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
Dimension										
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	832	866	874	898	916	966	1004	976	1041	1079
kB	876	915	932	956	989	1050	1088	1063	1159	1197
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496; Gear unit size F15 corresponds to motor flange FR-550. Description of motor lengths LB and LB1 see page 500.

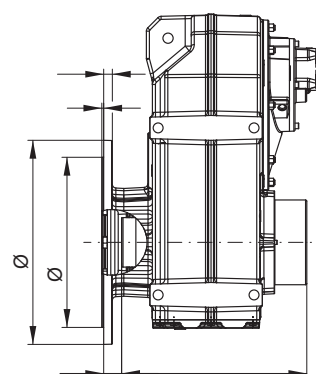
FO155 - B5 flange execution with hollow shaft



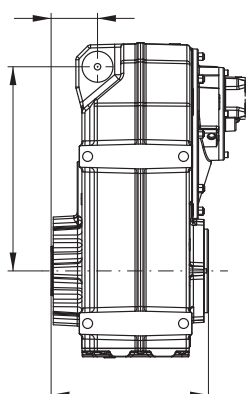
FF155 - B5 flange execution with output shaft



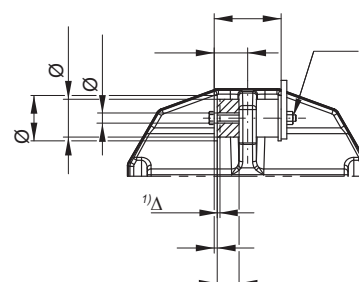
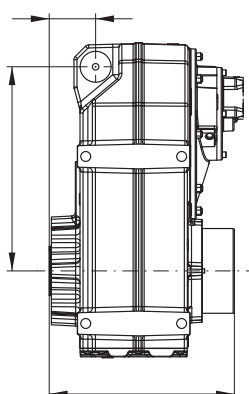
FP155 - B5 flange execution with hollow shaft and shrink disc *



FT155 - Hollow shaft with rubber buffer



FU155 - Hollow shaft with shrink disc * and rubber buffer



Dimensions in mm.

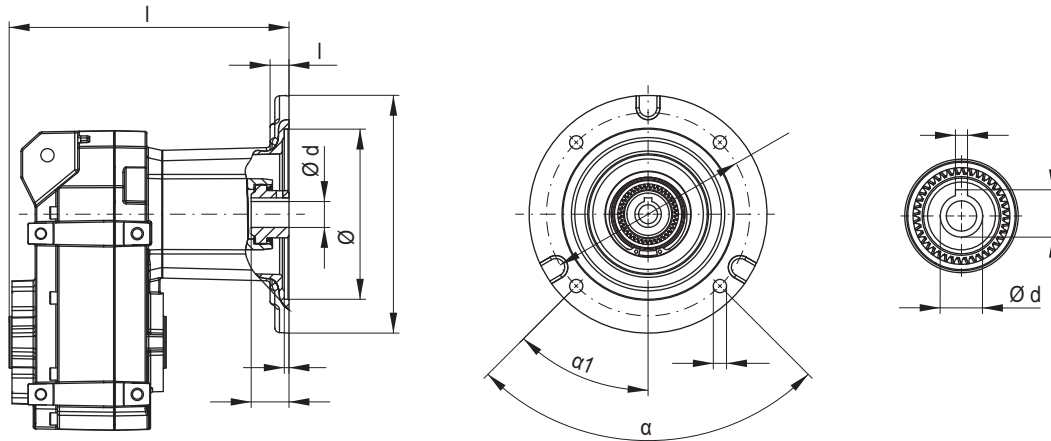
* Shrink disc and protection cap possible with all mountable motors.

¹⁾ ΔL = recommended preload

Dimension sheets Input types



IEC Adapter I63 to I280



F

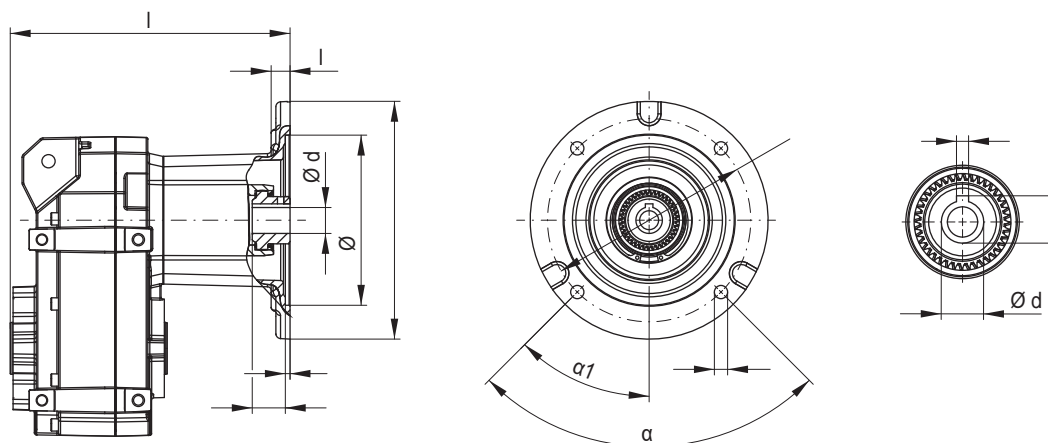
Type	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
p	154	154	200	200	250	250	300	350	350	400	450	550	550
n	95	110	130	130	180	180	230	250	250	300	350	450	450
la	22.5	10	13	13	15	20	15	35	35	20	20	20	20
m	115	130	165	165	215	215	265	300	300	350	400	500	500
t	4.5	4.5	4.5	4.5	5	5	5	5	5	5.5	5	5	5
s	M8x16	M8x10	11	11	13.5	13.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5
α	90	90	90	90	90	90	90	90	90	90	45	45	45
α ₁	35	45	45	45	45	45	45	45	45	45	45	45	45
d	11	14	19	24	28	28	38	42	48	55	60	65	75
f	4	5	6	8	8	8	10	12	14	16	18	18	20
ga	12.8	16.3	21.8	27.3	31.3	31.3	41.3	45.3	51.8	59.3	64.4	69.4	79.9
E ¹⁾	25	32	43	47.5	63	100	85.5	111.5	111.5	114.5	140	146	146

¹⁾ Maximum motor shaft length for motors with key

Gear unit size	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
	l												
F02	137	137	165	165	-	-	-	-	-	-	-	-	-
F03	147	147	175	175	206	-	-	-	-	-	-	-	-
F04	171.5	171.5	199.5	199.5	230.5	-	-	-	-	-	-	-	-
F05	184	184	212	212	243	296	307	-	-	-	-	-	-
F06	195.5	195.5	223.5	223.5	254.5	307.5	318.5	404.5	-	-	-	-	-
F07	221.5	221.5	249.5	249.5	280.5	333.5	344.5	430.5	-	-	-	-	-
F08	248.5	248.5	276.5	276.5	307.5	360.5	371.5	456	456	-	-	-	-
F09	298.5	298.5	326.5	326.5	357.5	410.5	421.5	506	506	534.5	-	-	-
F10	-	-	-	-	-	440	451	533	533	561.5	591.5	-	-
F12	-	-	-	-	-	499.5	510.5	592.5	592.5	621	651	740	740
F15	-	-	-	-	-	-	-	659	659	687.5	717.5	806.5	806.5

Dimensions in mm.

NEMA Adapter N56 to N364



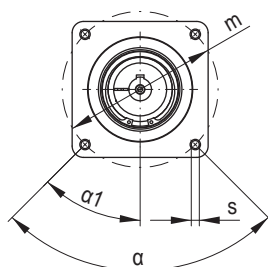
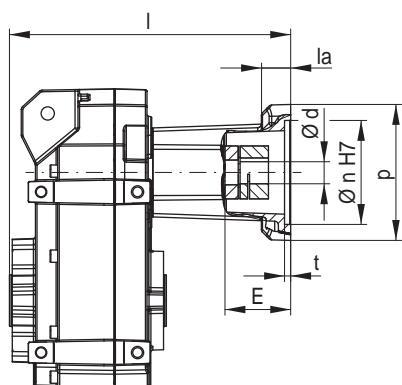
F

Typ	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
p	170	170	250	250	300	225	280	350	400
n	114.3	114.3	215.9	215.9	215.9	215.9	266.7	317.5	317.5
la	13	13	10	16.8	10	30	35	15	15
m	149.225	149.225	184.15	184.15	184.15	184.15	228.6	279.4	279.4
t	4.5	4.5	5	3.2	5	5	3	5	5
s	11	11	14	14	14	14	14	16	16
α	90	90	90	90	90	90	90	90	90
α ₁	45	45	45	45	45	45	45	45	45
d	15.875	22.225	28.575	28.575	34.925	41.275	47.625	53.975	60.325
f	4.775	4.775	6.350	6.350	7.950	9.525	12.700	12.700	15.875
ga	18.008	24.486	31.521	31.521	38.557	45.618	53.238	59.690	67.335
E ¹⁾	55	55	67.5	96.8	80.5	105.5	111.5	109.5	109.5

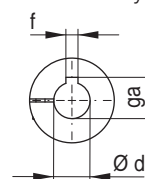
¹⁾ Maximum motor shaft length for motors with key

Gear unit size	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
	l								
F02	165	165	-	-	-	-	-	-	-
F03	175	175	206	-	-	-	-	-	-
F04	199.5	199.5	230.5	-	-	-	-	-	-
F05	212	212	243	296	307	-	-	-	-
F06	223.5	223.5	254.5	307.5	318.5	404.5	-	-	-
F07	249.5	249.5	280.5	333.5	344.5	430.5	-	-	-
F08	276.5	276.5	307.5	360.5	371.5	456	459	-	-
F09	326.5	326.5	357.5	410.5	421.5	506	509	556.5	-
F10	-	-	-	440	451	533	536	583.5	599
F12	-	-	-	499.5	510.5	592.5	595.5	643	658.5
F15	-	-	-	-	-	659	662	725	725

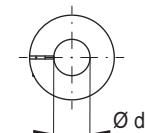
SERVO Adapter S92 to S190



Shaft with key



Smooth shaft



Typ	S92	S105	S114	S115	S130				S141	S142	S180	S189	S190						
p	101	144	144	144	144				144	144	197	197	197						
n	80	95	95	110	110				110	130	114,3	130	180						
la	17,5	31	31	31	31				31	31	35	32	38						
m	100	115	130	130	145				165	165	200	215	215						
t	6,5	6,5	6,5	6,5	6,5				6,5	6,5	6,5	6,5	6,5						
s	M6x12		M8x16	M8x16	M8x16				M8x16	M8x16	13,5	15	15						
α	90°		90°	90°	90°				90°	90°	90°	90°	90°						
α ₁	45°		45°	45°	45°				45°	45°	45°	45°	45°						
d ¹⁾	14	16	19	19	19	24	19	22	24	28	24	24	32	35	32	38	38		
f	5	5	6	6	6	8	6	6	8	8	8	8	10	10	10	10	10		
ga	16,3	18,3	21,8	21,8	21,8	27,3	21,8	24,8	27,3	31,3	27,3	27,3	35,3	38,3	35,3	41,3	41,3		
E ²⁾	46	46	34	67	67	54	67	54	76	63	63	63	54	63	63	66	74	60	87
E ³⁾	46	46	46	67	67	67	67	67	76	76	76	63	67	76	63	87	74	60	87

¹⁾ Other shaft diameters on request

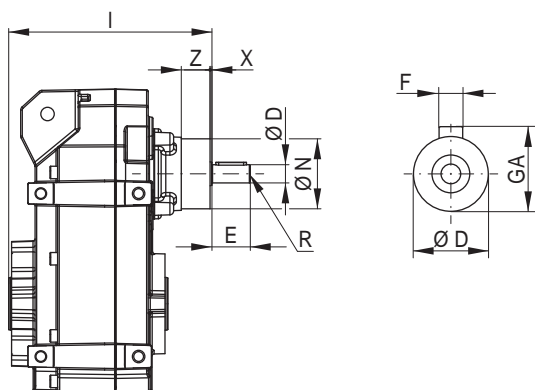
²⁾ Maximum motor shaft length for motors with key

³⁾ Maximum motor shaft length for motors with smooth shaft

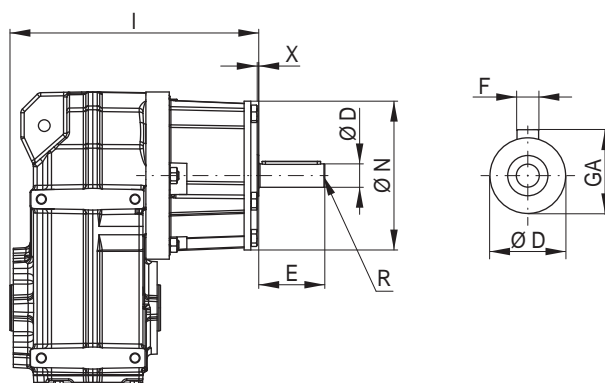
Gear unit size	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190
	l									
F02	202.5	250.5	250.5	250.5	250.5	250.5	250.5	-	-	-
F03	212.5	260.5	260.5	260.5	260.5	260.5	260.5	-	-	-
F04	237	285	285	285	285	285	285	-	-	-
F05	249.5	297.5	297.5	297.5	297.5	297.5	297.5	368	362	389
F06	261	309	309	309	309	309	309	379.5	373.5	400.5
F07	287	335	335	335	335	335	335	405.5	399.5	426.5
F08	314	362	362	362	362	362	362	432.5	426.5	453.5
F09	364	412	412	412	412	412	412	482.5	476.5	503.5
F10	-	-	-	-	-	-	-	512	506	533
F12	-	-	-	-	-	-	-	571.5	565.5	592.5
F15	-	-	-	-	-	-	-	-	-	-

Dimensions in mm.

Input Unit U2, U3



Input Unit U5, U6, U7



F

Type	Input shaft [mm]						
	19x40	24x50	28x60	38x80	42x110	48x110	55x110
	U2	U3	U5			U6	U7
D	19	24	28	38	42	48	55
F	6	8	8	10	12	14	16
GA	21.5	27	31	41	45	51.5	59
E	40	50	60	80	110	110	110
N	73	101	178			235	290
X	2	2.5	1.9			6.5	4
Z	3	35	-			-	-
R	M6	M10	M10	M12	M16	M16	M20

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	< Ø 55 mm	k6
	≥ Ø 55 mm	m6

Gear unit size	Input shaft [mm]				
	19x40	24x50	28x60 38x80 42x110	48x110	55x110
	U2	U3	U5	U6	U7
	I				
F02	165	-	-	-	-
F03	175	-	-	-	-
F04	199.5	-	-	-	-
F05	212	244	-	-	-
F06	223.5	255.5	298	-	-
F07	249.5	281.5	324	-	-
F08	276.5	308.5	349.5	371.5	-
F09	326.5	358.5	399.5	421.5	-
F10	-	388	426.5	448.5	517.5
F12	-	447.5	486	508	577
F15	-	-	552.5	574.5	643.5



Helical bevel gear units and
Helical bevel geared motors K

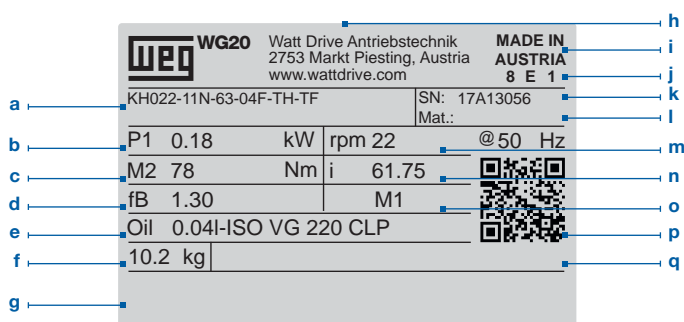


Technical data

Size	K02	K03	K04	K05	K06	K07	K08	K09	K10	K12	K15
Power [kW]	0.12 - 1.5	0.12 - 3	0.12 - 4	0.12 - 9.2	0.18 - 9.2	0.12 - 15	0.12 - 22	0.12 - 37	0.12 - 55	0.12 - 55	0.12 - 75
Torque [Nm]	110	200	400	600	820	1550	3000	4500	8000	13000	18000
Ratio	3.82 68.88	4.17 217.88	4.87 277.79	4.27 245.7	4.94 198	7.91 256.14	7.45 2205.52	6.94 1810.95	6.64 1301.54	6.60 1579.81	8.61 14005.40
Number of stages	2	3	3	3	3	3	3 / 4	3 / 4	3 / 4	3 / 4	3 / 4 / 5
Housing material	aluminium					cast iron					
Solid shaft	Type	with key acc. to DIN 6885.1 and threaded bore acc. to DIN 332 sheet 2									
	Tolerance	< Ø 55: k6 / ≥ Ø 55: m6									
	Material	standard: C45E (1.1191) / stainless steel on request									
Hollow shaft	Type	with key acc. to DIN 6885.1									
	Tolerance	H7									
	Material	standard: C45E (1.1191) / stainless steel on request									
Flanges	Tolerance	centring ≤ 250: j6 / > 250: h6 acc. to DIN EN 50347									
	Material	cast iron									
Gear wheels	Type	honed - designed and produced according to DIN 3990/3991 - Q7									
	Material	16MnCr5 (1.7131) case hardened – minimum 58HRC									
Shaft seals	Type	type AS acc. to DIN 3760									
	Material	standard NBR / special FKM									
Bearing	standard / reinforced										
Lubricants	Type	standard CLP 220 / special CLP HC 220									
	Quantity	depending on mounting position									
Axle height	acc. to DIN 747: ≤ 50: -0.4; > 50 bis ≤ 250: -0.5; > 250: -1 for foot-mounted gear motors, the motor may extend below the mounting surface										

General information

1. Nameplate



a	Type code	j	Production date
b	Motor power	k	Serial number
c	Output torque	l	Material number
d	Service factor	m	Output speed and Frequency
e	Type and quantity of lubricant	n	Total gear ratio
f	Weight	o	Mounting position
g	Space for ATEX code (if applicable)	p	QR-Code linked online to additional information
h	Manufacturer address	q	Space for additional information
i	Country of origin		

2. Type code

KH073-EX-11P-90S/L-04F ...



KH073-EX-I112-HT



1	Type:	K = Helical bevel gear unit																				
2	Design:	B = Output shaft on both sides D = Hollow shaft with shrink disc F = B5 flange type with output shaft H = Hollow shaft O = B5 flange type with hollow shaft P = B5 flange type with hollow shaft and shrink disc S = Output shaft T = Hollow shaft with torque arm U = Hollow shaft with shrink disc and torque arm																				
3	Size:	02	03	04	05	06	07	08	09	10	12	15										
4	Number of stages:	2 = 2 gear stages		3 = 3 gear stages		4 = 4 gear stages		5 = 5 gear stages														
5	ATEX execution:	when operated in explosive atmospheres, see page 15																				
6	Motor type:	14P = Integral motor aluminium IE3 11P = Integral motor aluminium IE3 22P = Integral motor cast iron IE3																				
7	Motor frame size:	63	71	80	L80	90S/L	100L	L100L	112M	132S	132M	L132M	160M	160L	180M	180L	200L	225S/M	250S/M			
8	Number of poles:	04 = 4 poles				06 = 6 poles																
9	Power indicator:	D	E	F	G																	
10	Motor modules:	see from page 501																				
11	Adapters, Input unit:	IEC adapter		I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280						
		NEMA adapter		N56	N143	N182	N184	N213					N254	N284	N324	N364						
		SERVO adapter		S92	S105	S114	S115	S130					S141	S142	S180	S189	S190					
		Input unit		U2	U3	U5	U6	U7														
	Direct mounting (IEC):	IEC63	IEC71	IEC80	IEC90	IEC100	IEC112	IEC132	IEC160	IEC180	IEC200	IEC225	IEC250									
12	High/Low temperature execution:	HT		LT																		

Type code Motor see page 477

3. Range

Size	K02	K03	K04	K05	K06	K07	K08	K09	K10	K12	K15
Housing material	Aluminium				Cast iron						

4. Design

	B	Output shaft on both sides		P	B5 flange type with hollow shaft and shrink disc
	D	Hollow shaft with shrink disc		S	Output shaft
	F	B5 flange type with output shaft		T	Hollow shaft with torque arm
	H	Hollow shaft		U	Hollow shaft with shrink disc and torque arm
	O	B5 flange type with hollow shaft			

5. Venting the gear unit

The helical bevel gear unit sizes K02 to K05 are neither equipped with a venting nor an oil drain screw. They are supplied with lifetime-lubrication.

By default, the helical bevel gear units from K06 are equipped with venting screws with a safety strap for transportation (see illustration). The rubber strap (a) of the venting screw must be removed entirely before the initial startup. The venting screw is placed accordingly to the mounting position (see chapter Mounting positions, page 335)



6. Overhung and axial loads

The overhung loads (F_{rN}) indicated in the respective selection tables apply to gear units with the force acting on the shaft center ($x=l/2$). The permissible overhung loads listed are based on the least favourable loading direction and calculated for standard shafts and standard bearings. Other load directions and action can be calculated with equations Q1 to Q3. If transmission elements are placed on the output shaft, an appropriate factor (f_z) has to be taken into consideration when determining the overhung load.

Gear wheels	Sprockets		V-belts	Flat belts
$f_z=1.1$ ($z \leq 17$)	$f_z=1.2$ ($z \leq 13$)	$f_z=1.1$ ($z > 13$)	$f_z=1.8$	$f_z=2.5$

Use the following equations Q1 and Q2 to calculate the permissible radial loads on the output shaft. Q3 is to calculate the real existing shaft loads for your application. The results are to be compared by using the equation Q4.

Q1 $F_{zL} = F_{rN} \cdot a_1$

Q2 $F_{zW} = F_W \cdot a_2$

Q3 $F_{Qvorh} = \frac{2 \cdot M_2}{d_0} \cdot f_z$

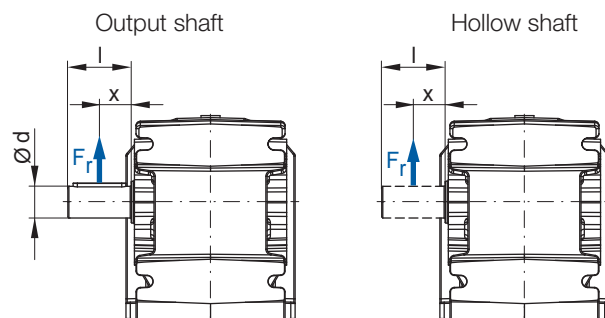
Q4 $F_{Qvorh} \leq F_{zL}$
 $F_{Qvorh} \leq F_{zW}$

Variable	Unit	Description
a1		Load action factor - output shaft bearing from Table 1
a2		Load action factor - output shaft from Table 1
d0	[m]	Effective diameter of the transmission element
M2	[Nm]	Geared motor output torque (from selection tables) or required calculated output torque
FzL	[N]	Permissible overhung load for output shaft bearings
FzW	[N]	Permissible overhung load for output shaft
FrN	[N]	Permissible overhung load from selection tables
Fw	[N]	Permissible overhung load - Output shaft $x=l/2$ from Table 2
FQvorh	[N]	Existing overhung load at gear shaft
fz		Factor for transmission element
Mmax	[Nm]	Highest possible output torque for coupling operation (Table 2)

Always use both equations Q1 and Q2 for your calculations.

x/l						
0	0.25	0.5	0.75	1	1.5	2
a1 → Equation Q1						
1.39	1.18	1.00	0.85	0.73	0.52	0.38
a2 → Equation Q2						
2.00	2.00	1.00	0.55	0.38	0.23	0.17

Table 1: Load action factors a1, a2



Intermediate values can be interpolated linearly. Combined load ($F_r \neq 0$; $F_a = 0$) on request.

Output shaft [mm]		Mmax at Fr = 0	Output torque M2 [Nm]													
			110	200	400	600	820	1550	3000	4500	8000	13000	18000			
Ø d	l		Fw [kN] at x/l = 0.5 → Equation Q2													
20	40	160	2.6													
25	50	300	5.6	4.8												
30	60	500	7.5	7.1	5.0											
35	70	800		11.0	10.0	8.3										
40	80	1170			13.0	12.0	10.7									
50	100	2250			24.0	24.0	23.0	20.0								
60	120	3740					31.0	30.0	23.0							
70	140	5850						44.0	41.0	36.0						
90	170	11700							72.0	70.0	61.0					
110	210	20800								106.0	103.0	93.0				
120	210	26700									129.0	121.0	109.0			

Table 2: Permissible overhung load - output shaft $x = l/2$

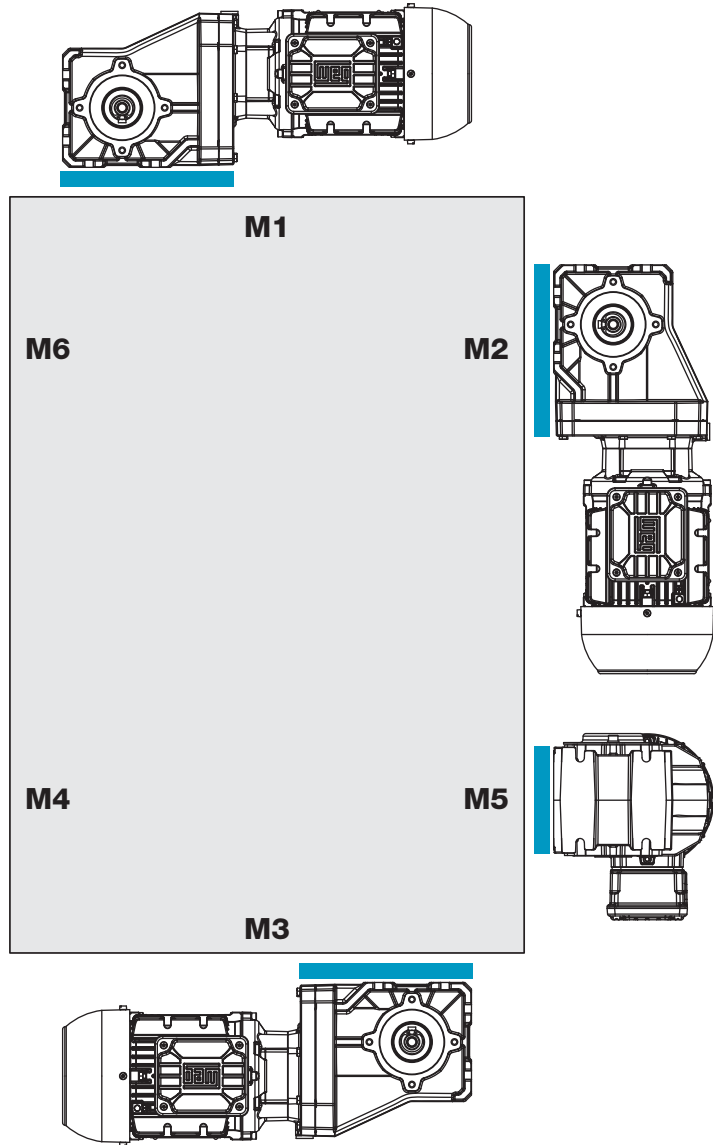
The axial loads (F_{aN}) for the respective execution (output shaft or hollow shaft), given in the following selection tables, are valid at radial force $F_{rN} = 0$. If there are axial loads or radial and axial components acting on the drive which are extraordinarily high, we recommend to contact the manufacturer.

7. Mounting positions, Position of the terminal box and Cable entry
Mounting positions - Sizes K02 to K05

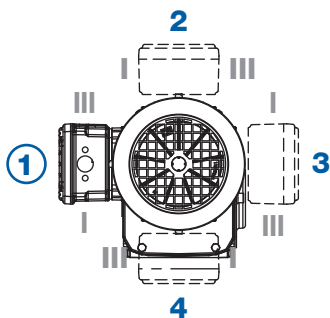
Gear units K02 to K05 are not ventilated and supplied with lifetime lubrication

■ Reference area

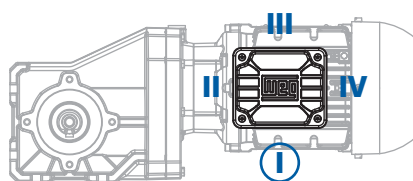
K



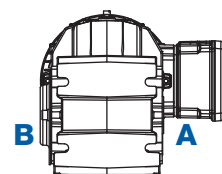
Position of the terminal box
 Standard: Position 1



Cable entry
 Standard: Position I



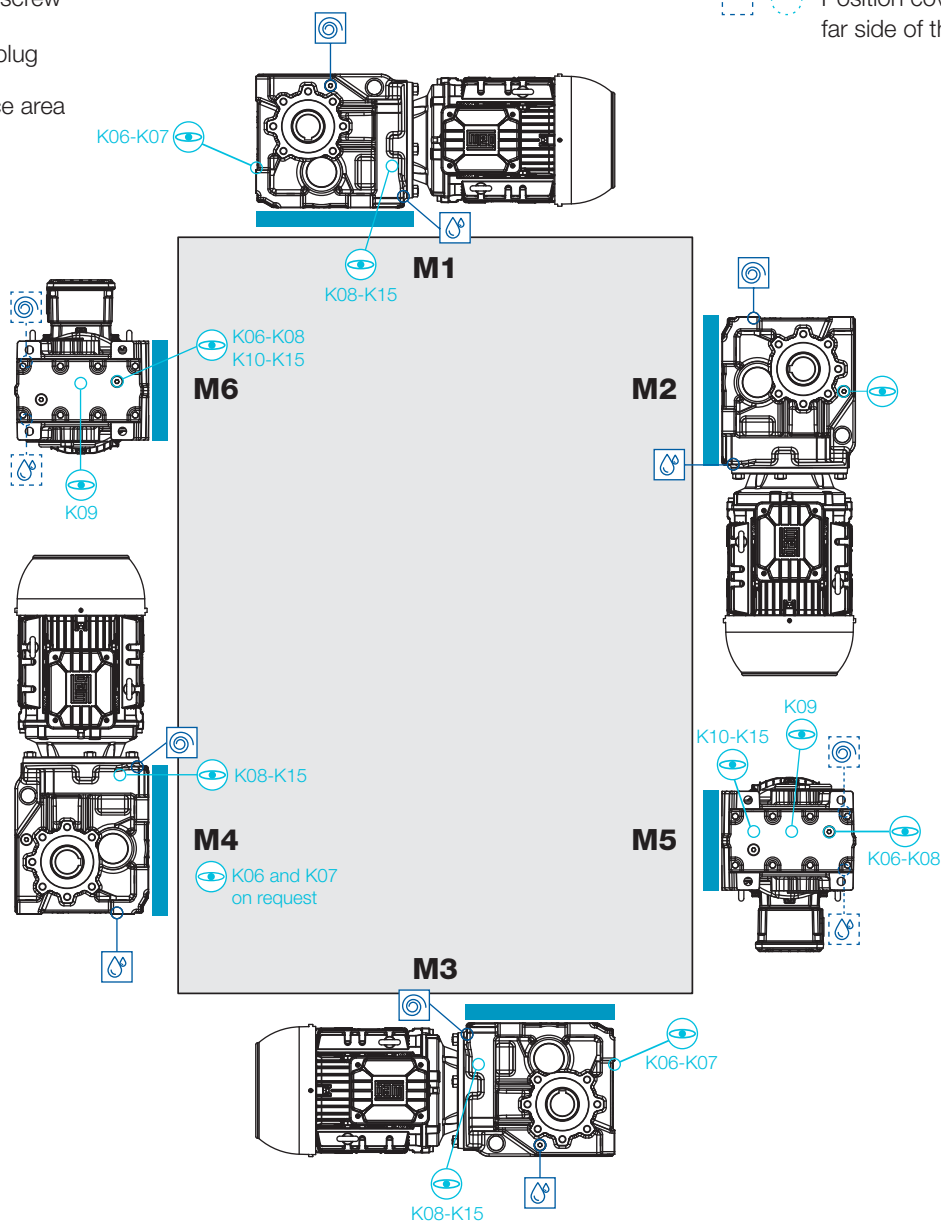
Side indication



Mounting positions - Sizes K06 to K15

- Venting screw
- Oil drain screw
- Oil level plug
- Reference area

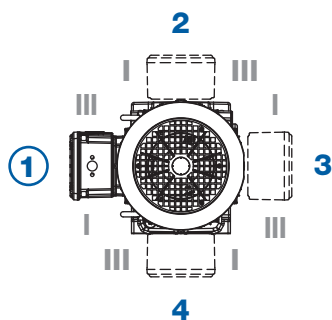
- Position visible on this side
- Position covered or on the far side of the gear unit



K

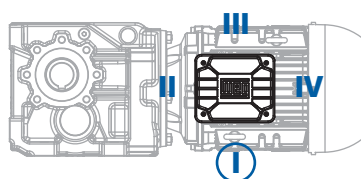
Position of the terminal box

Standard: Position 1

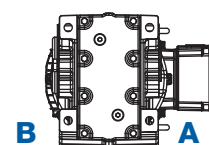


Cable entry

Standard: Position I



Side indication



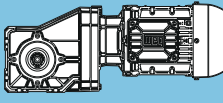
Selection tables - Geared motors

The technical data of the geared motors shown in the selection tables apply to an ambient temperature of +20 °C.

The selection tables are calculated with following motor data:

Power (IEC frame size)	Motor series (IE class)
up to 0.55 kW (63 - 80)	14P (IE3) - aluminium
0.75 - 9.2 kW (80 - 132)	11P (IE3) - aluminium
11 - 75 kW (160 - 250)	22P (IE3) - cast iron

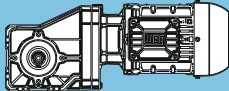
Structure of the selection tables

1										2			
P _N = 0.12 kW										IE3			
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page	
0.12 kW		0.14 kW				Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN					
3	4	5	6	7	8	9	10	11	12	13	14		

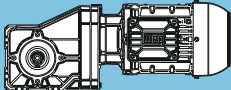
- 1 Rated power of the motor
- 2 Given values are based on the respective efficiency class
- 3 Output speed at 50 Hz
- 4 Output speed at 60 Hz
- 5 Output torque
- 6 Service factor
- 7 Total ratio
- 8 Permissible radial load - Execution with output shaft at midpoint of the shaft (standard bearing) at axial load=0
- 9 Permissible axial load - Execution with output shaft (standard bearing) at axial load=0
- 10 Permissible radial load - Execution with hollow shaft at midpoint of x=l/2 (standard bearing) at axial load=0
- 11 Permissible axial load - Execution with hollow shaft (standard bearing) at axial load=0
- 12 Geared motor type
- 13 Weight
- 14 Page reference for dimension sheet

*) Increased rated power at 60 Hz can only be reached together with increased voltage within the wide range (for details see page 485).

Increased rated power
1.2 x P _N

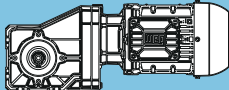
P _N = 0.12 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.12 kW		0.14 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.07	0.08	15132	1.20	14005.40	88.3	118.5	88.3	118.5	KH155-14P-63-06F	677	464
0.08	0.10	12185	1.50	11453.02	96.1	120.7	96.1	120.7			
0.10	0.13	9400	1.95	9043.42	101.5	122.8	101.5	122.8			
0.12	0.14	8100	2.25	7915.09	103.5	123.8	103.5	123.8			
0.13	0.16	7065	2.55	7012.05	104.9	124.6	104.9	124.6			
0.15	0.18	6167	2.95	6249.84	105.9	125.3	105.9	125.3			
0.10	0.12	9609	1.90	14005.40	101.2	122.7	101.2	122.7	KH155-14P-63-04E	677	464
0.12	0.15	7677	2.35	11453.02	104.1	124.1	104.1	124.1			
0.15	0.18	6321	2.85	9679.02	105.7	125.2	105.7	125.2			
0.51	0.63	1918	2.35	1810.95	38.0	42.6	38.0	42.6	KH094-14P-63-06F	158	450
0.60	0.74	1588	2.85	1531.00	38.6	43.0	38.6	43.0			
0.62	0.77	1529	2.95	1480.92	38.7	43.1	38.7	43.1			
0.42	0.52	2444	1.25	2205.52	23.2	41.4	23.2	8.9	KH084-14P-63-06F	108	446
0.51	0.63	1974	1.55	1803.58	25.6	42.1	25.6	9.6			
0.53	0.65	1907	1.60	1745.64	25.8	42.2	25.8	9.7			
0.61	0.75	1648	1.85	1524.22	26.8	42.6	26.8	10.1			
0.65	0.8	1530	2.00	1424.12	27.2	42.7	27.2	10.2			
0.65	0.8	1534	2.00	1427.51	27.2	42.7	27.2	10.2			
0.74	0.91	1323	2.30	1246.44	27.8	43.0	27.8	10.5			
0.82	1.0	1184	2.55	1127.18	28.1	43.3	28.1	10.8			
0.84	1.0	1157	2.60	1104.23	28.2	43.3	28.2	10.8			
0.94	1.2	1014	3.00	984.20	28.5	43.5	28.5	11.0			
0.64	0.78	1563	1.95	2205.52	27.1	42.7	27.1	10.2	KH084-14P-63-04E	108	446
0.78	0.95	1255	2.40	1803.58	27.9	43.1	27.9	10.6			
0.80	0.99	1209	2.50	1745.64	28.1	43.2	28.1	10.7			
0.92	1.1	1038	2.90	1524.22	28.4	43.5	28.4	11.0			
3.8	4.6	304	2.00	245.70	8.9	11.1	8.9	4.4	KH053-14P-63-06F	21	438
4.8	5.9	241	2.50	194.73	9.3	11.3	9.3	4.6			
5.7	7	200	3.00	245.70	9.4	11.4	9.4	4.7	KH053-14P-63-04E	21	438
3.3	4.1	344	1.20	277.79	4.9	8.1	4.9	2.5	KH043-14P-63-06F	18	436
4.1	5.0	281	1.45	227.16	5.7	8.4	5.7	2.8			
5.2	6.4	222	1.80	179.37	6.2	8.6	6.2	3.0			
6.7	8.2	172	2.35	139.08	6.6	8.8	6.6	3.2			
8.1	10	141	2.85	113.83	6.7	8.9	6.7	3.3			
5.1	6.2	227	1.80	277.79	6.2	8.6	6.2	3.0	KH043-14P-63-04E	17	436
6.2	7.6	185	2.20	227.16	6.5	8.8	6.5	3.2			
7.8	9.6	146	2.75	179.37	6.7	8.9	6.7	3.3			
5.2	6.4	220	0.95	177.19	3.4	2.4	3.4	2.4	KH033-14P-63-06F	14	434
6.6	8.1	174	1.15	140.80	4.1	2.7	4.1	2.7			
8.5	10	135	1.50	108.75	4.6	2.9	4.6	2.9			
11	13	108	1.90	86.83	4.8	3.0	4.8	3.0			
13	16	89	2.25	71.93	4.9	3.1	4.9	3.1			
14	17	81	2.50	65.63	4.9	3.2	4.9	3.2			
16	19	72	2.80	58.50	5.0	3.2	5.0	3.2			
6.4	7.9	178	1.15	217.88	4.1	2.6	4.1	2.6	KH033-14P-63-04E	14	434
7.9	9.7	145	1.40	177.19	4.5	2.8	4.5	2.8			
10	12	115	1.75	140.80	4.7	3.0	4.7	3.0			
13	16	89	2.30	108.75	4.9	3.1	4.9	3.1			
16	20	71	2.85	86.83	5.0	3.3	5.0	3.3			
13	17	85	1.30	68.88	5.1	2.8	5.1	2.8	KH022-14P-63-06F	12	432
15	18	77	1.35	61.75	5.1	2.8	5.1	2.8			
17	21	66	1.70	53.65	5.2	2.8	5.2	2.8			
19	24	60	1.85	48.10	5.2	2.8	5.2	2.8			
21	26	54	2.05	43.50	5.2	2.8	5.2	2.8			
24	29	48	2.30	39.00	5.2	2.8	5.2	2.8			
27	33	42	2.60	34.27	5.3	2.8	5.3	2.8			
30	37	38	1.35	30.88	5.3	2.8	5.3	2.8			
38	47	30	2.75	24.05	5.3	2.8	5.3	2.8			

Legend see page 337

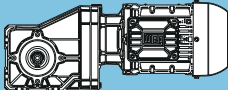
P _N = 0.12 kW										IE3		
50 Hz 0.12 kW		60 Hz 0.14 kW		f _B	i	at 50 Hz					m kg	Dimension sheet see page
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	Output shaft			Hollow shaft						
			F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
20	25	56	2.00	68.88	5.2	2.8	5.2	2.8	KH022-14P-63-04E	12	432	
23	28	50	2.05	61.75	5.2	2.8	5.2	2.8				
26	32	44	2.55	53.65	5.2	2.8	5.2	2.8				
29	36	39	2.85	48.10	5.3	2.8	5.3	2.8				
32	40	35	3.15	43.50	5.3	2.8	5.3	2.8				
36	44	32	3.50	39.00	5.3	2.8	5.3	2.8				
41	50	28	3.95	34.27	5.3	2.8	5.3	2.8				
45	56	25	2.05	30.88	5.3	2.8	5.3	2.8				
46	56	25	4.40	30.73	5.3	2.8	5.3	2.8				
53	65	22	5.15	26.41	5.3	2.8	5.3	2.8				
58	72	20	4.15	24.05	5.3	2.8	5.3	2.8				
59	73	19	5.70	23.68	5.3	2.8	5.3	2.8				
68	83	17	6.15	20.63	5.3	2.8	5.3	2.8				
72	88	16	5.10	19.50	5.3	2.8	5.3	2.8				
76	93	15	6.80	18.50	5.3	2.8	5.3	2.8				
91	112	13	6.50	15.36	5.3	2.8	5.3	2.8				
102	125	11	8.30	13.81	5.3	2.8	5.3	2.8				
119	145	10	8.40	11.84	5.1	2.8	5.1	2.8				
121	148	9	9.00	11.60	5.0	2.8	5.0	2.8				
135	165	8	10.05	10.40	4.8	2.8	4.8	2.8				
152	186	8	10.75	9.25	4.7	2.8	4.7	2.8				
165	202	7	11.10	8.51	4.5	2.8	4.5	2.8				
184	225	6	12.40	7.63	4.4	2.8	4.4	2.8				
203	249	6	13.15	6.91	4.2	2.8	4.2	2.8				
270	331	4	15.35	5.20	3.8	2.8	3.8	2.8				
368	450	3	18.30	3.82	3.5	2.8	3.5	2.8				



Legend see page 337

P _N = 0.18 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.18 kW		0.22 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.06	0.08	23812	0.80	14005.40	**	**	**	**	KH155-14P-71-06E	680	464
0.08	0.10	19324	0.95	11453.02	72.3	115.3	72.3	115.3			
0.09	0.11	16164	1.15	9679.02	85.0	117.7	85.0	117.7			
0.10	0.12	15064	1.20	9043.42	88.5	118.5	88.5	118.5			
0.11	0.14	13049	1.40	7915.09	94.1	120.0	94.1	120.0			
0.13	0.16	11442	1.60	7012.05	97.7	121.3	97.7	121.3			
0.14	0.18	10093	1.80	6249.84	100.4	122.3	100.4	122.3			
0.16	0.19	9173	2.00	5739.09	101.9	123.0	101.9	123.0			
0.19	0.23	7586	2.40	4845.97	104.2	124.2	104.2	124.2			
0.20	0.25	6826	2.65	4417.59	105.1	124.8	105.1	124.8			
0.23	0.28	6018	3.00	3966.24	106.0	125.4	106.0	125.4			
0.10	0.12	15214	1.20	14005.40	88.1	118.4	88.1	118.4	KH155-14P-63-04F	677	464
0.12	0.15	12251	1.50	11453.02	96.0	120.7	96.0	120.7			
0.14	0.18	10194	1.80	9679.02	100.2	122.2	100.2	122.2			
0.15	0.19	9476	1.90	9043.42	101.4	122.8	101.4	122.8			
0.17	0.21	8144	2.25	7915.09	103.5	123.8	103.5	123.8			
0.20	0.24	7103	2.55	7012.05	104.8	124.6	104.8	124.6			
0.22	0.27	6217	2.90	6249.84	105.8	125.3	105.8	125.3			
0.50	0.61	3062	1.50	1810.95	34.9	41.1	34.9	41.1	KH094-14P-71-06E	161	450
0.59	0.73	2557	1.80	1531.00	36.5	41.7	36.5	41.7			
0.61	0.75	2468	1.85	1480.92	36.7	41.9	36.7	41.9			
0.72	0.89	2057	2.20	1251.99	37.7	42.4	37.7	42.4			
0.77	0.95	1905	2.40	1169.35	38.1	42.6	38.1	42.6			
0.91	1.1	1580	2.85	988.58	38.6	43.0	38.6	43.0			
0.76	0.94	1928	2.35	1810.95	38.0	42.5	38.0	42.5	KH094-14P-63-04F	158	450
0.90	1.1	1596	2.85	1531.00	38.6	43.0	38.6	43.0			
0.93	1.1	1538	2.95	1480.92	38.7	43.0	38.7	43.0			
0.41	0.50	3838	0.80	2205.52	**	**	**	**	KH084-14P-71-06E	111	446
0.50	0.62	3113	1.00	1803.58	18.4	32.2	18.4	7.9			
0.52	0.64	3013	1.00	1745.64	19.3	34.1	19.3	8.0			
0.59	0.73	2615	1.15	1524.22	22.2	40.5	22.2	8.6			
0.63	0.78	2439	1.25	1427.51	23.3	41.4	23.3	8.9			
0.72	0.89	2112	1.45	1246.44	25.0	41.9	25.0	9.4			
0.80	0.98	1898	1.60	1127.18	25.9	42.2	25.9	9.7			
0.82	1.0	1856	1.65	1104.23	26.1	42.3	26.1	9.8			
0.91	1.1	1640	1.85	984.20	26.8	42.6	26.8	10.1			
1.0	1.2	1494	2.05	903.77	27.3	42.8	27.3	10.3			
1.2	1.5	1241	2.45	763.13	28.0	43.2	28.0	10.7			
1.3	1.6	1156	2.60	715.32	28.2	43.3	28.2	10.8			
0.63	0.77	2457	1.25	2205.52	23.2	41.4	23.2	8.9	KH084-14P-63-04F	108	446
0.77	0.94	1985	1.55	1803.58	25.5	42.1	25.5	9.6			
0.79	0.97	1917	1.60	1745.64	25.8	42.2	25.8	9.7			
0.91	1.1	1657	1.85	1524.22	26.8	42.6	26.8	10.1			
0.97	1.2	1545	1.95	1427.51	27.1	42.7	27.1	10.2			
1.1	1.4	1330	2.30	1246.44	27.8	43.0	27.8	10.5			
1.2	1.5	1190	2.55	1127.18	28.1	43.2	28.1	10.7			
1.4	1.7	1022	2.95	984.20	28.5	43.5	28.5	11.0			
4.5	5.6	378	2.20	198.00	11.7	14.1	11.7	4.1	KH063-14P-71-06E	37	440
5.7	7.1	300	2.75	156.92	12.0	14.3	12.0	4.4			
3.7	4.5	469	1.30	245.70	7.7	10.6	7.7	3.9	KH053-14P-71-06E	23	438
4.6	5.7	372	1.65	194.73	8.5	10.9	8.5	4.2			
6.0	7.3	289	2.10	151.20	9.0	11.1	9.0	4.4			
7.3	8.9	237	2.55	124.06	9.3	11.3	9.3	4.6			
5.6	6.9	306	2.00	245.70	8.9	11.1	8.9	4.4	KH053-14P-63-04F	21	438
7.1	8.7	243	2.50	194.73	9.2	11.3	9.2	4.6			
3.2	4.0	531	0.80	277.79	**	**	**	**	KH043-14P-71-06E	20	436
4.0	4.9	434	0.95	227.16	2.9	4.1	2.9	2.2			
5.0	6.2	343	1.20	179.37	4.9	8.1	4.9	2.5			
6.5	8.0	266	1.55	139.08	5.8	8.4	5.8	2.8			
7.9	9.8	217	1.85	113.83	6.3	8.6	6.3	3.0			
10	12	170	2.25	89.17	6.6	8.8	6.6	3.2			
12	15	139	2.90	72.92	6.7	8.9	6.7	3.3			
19	24	90	2.25	47.07	6.9	9.0	6.9	3.4			

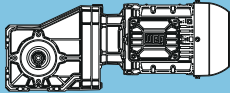
K

$P_N = 0.18 \text{ kW}$										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.18 kW		0.22 kW			Output shaft		Hollow shaft				
n_{50} min ⁻¹	n_{60} min ⁻¹	M_2 Nm	f_b		F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
5.0	6.1	346	1.20	277.79	4.8	8.1	4.8	2.5	KH043-14P-63-04F	17	436
6.1	7.5	283	1.45	227.16	5.7	8.4	5.7	2.8			
7.7	9.5	223	1.80	179.37	6.2	8.6	6.2	3.0			
9.9	12	173	2.35	139.08	6.6	8.8	6.6	3.2			
12	15	142	2.85	113.83	6.7	8.9	6.7	3.3			
8.3	10	208	1.00	108.75	3.6	2.5	3.6	2.5	KH033-14P-71-06E	16	434
10	13	166	1.25	86.83	4.2	2.7	4.2	2.7			
13	15	137	1.50	71.93	4.5	2.9	4.5	2.9			
14	17	125	1.60	65.63	4.6	2.9	4.6	2.9			
15	19	112	1.80	58.50	4.8	3.0	4.8	3.0			
18	22	95	2.10	49.88	4.9	3.1	4.9	3.1			
19	24	89	2.30	46.48	4.9	3.1	4.9	3.1			
23	29	74	2.70	38.80	5.0	3.2	5.0	3.2			
25	31	69	2.95	35.90	5.0	3.3	5.0	3.3			
30	37	57	2.30	29.97	5.0	3.2	5.0	3.2			
7.8	9.6	221	0.95	177.19	3.3	2.4	3.3	2.4	KH033-14P-63-04F	14	434
9.8	12	175	1.15	140.80	4.1	2.7	4.1	2.7			
13	16	135	1.50	108.75	4.6	2.9	4.6	2.9			
16	20	108	1.85	86.83	4.8	3.0	4.8	3.0			
19	24	90	2.25	71.93	4.9	3.1	4.9	3.1			
21	26	82	2.45	65.63	4.9	3.2	4.9	3.2			
24	29	73	2.75	58.50	5.0	3.2	5.0	3.2			
13	16	132	0.85	68.88	4.8	2.8	4.8	2.8	KH022-14P-71-06E	14	432
15	18	118	0.90	61.75	4.9	2.8	4.9	2.8			
17	21	102	1.10	53.65	5.0	2.8	5.0	2.8			
19	23	92	1.20	48.10	5.0	2.8	5.0	2.8			
21	26	83	1.35	43.50	5.1	2.8	5.1	2.8			
23	28	74	1.50	39.00	5.1	2.8	5.1	2.8			
26	32	65	1.70	34.27	5.2	2.8	5.2	2.8			
29	36	59	1.90	30.73	5.2	2.8	5.2	2.8			
34	42	50	2.20	26.41	5.2	2.8	5.2	2.8			
37	46	46	1.80	24.05	5.2	2.8	5.2	2.8			
38	47	45	2.45	23.68	5.2	2.8	5.2	2.8			
44	54	39	2.65	20.63	5.3	2.8	5.3	2.8			
46	57	37	2.20	19.50	5.3	2.8	5.3	2.8			
49	60	35	2.90	18.50	5.3	2.8	5.3	2.8			
59	72	29	2.80	15.36	5.3	2.8	5.3	2.8			
20	25	86	1.30	68.88	5.1	2.8	5.1	2.8	KH022-14P-63-04F	12	432
22	28	77	1.35	61.75	5.1	2.8	5.1	2.8			
26	32	67	1.65	53.65	5.2	2.8	5.2	2.8			
29	35	60	1.85	48.10	5.2	2.8	5.2	2.8			
32	39	54	2.05	43.50	5.2	2.8	5.2	2.8			
35	44	49	2.30	39.00	5.2	2.8	5.2	2.8			
40	50	43	2.60	34.27	5.3	2.8	5.3	2.8			
45	55	38	2.90	30.73	5.3	2.8	5.3	2.8			
52	64	33	3.35	26.41	5.3	2.8	5.3	2.8			
57	71	30	2.75	24.05	5.3	2.8	5.3	2.8			
58	72	29	3.75	23.68	5.3	2.8	5.3	2.8			
67	82	26	4.05	20.63	5.3	2.8	5.3	2.8			
71	87	24	3.35	19.50	5.3	2.8	5.3	2.8			
75	92	23	4.45	18.50	5.3	2.8	5.3	2.8			
90	110	19	4.85	15.41	5.3	2.8	5.3	2.8			
100	123	17	5.45	13.81	5.3	2.8	5.3	2.8			
117	144	15	5.50	11.84	5.1	2.8	5.1	2.8			
119	147	14	5.90	11.60	5.1	2.8	5.1	2.8			
133	163	13	6.60	10.40	4.9	2.8	4.9	2.8			
149	184	12	7.05	9.25	4.7	2.8	4.7	2.8			
162	200	11	7.30	8.51	4.6	2.8	4.6	2.8			
181	223	10	8.15	7.63	4.4	2.8	4.4	2.8			
200	246	9	8.60	6.91	4.3	2.8	4.3	2.8			
265	327	6	10.05	5.20	3.9	2.8	3.9	2.8			
361	445	5	12.00	3.82	3.5	2.8	3.5	2.8			

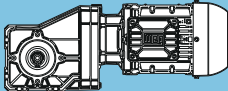
Legend see page 337

P_N = 0.25 kW

IE3

50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
0.25 kW		0.33 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
0.10	0.12	21485	0.85	9679.02	60.5	104.6	60.5	104.6	KH155-14P-80-06D	680	464			
0.11	0.13	20023	0.90	9043.42	68.8	114.7	68.8	114.7						
0.12	0.15	17390	1.05	7915.09	80.6	116.7	80.6	116.7						
0.14	0.17	15288	1.20	7012.05	87.9	118.3	87.9	118.3						
0.15	0.19	13521	1.35	6249.84	92.9	119.7	92.9	119.7						
0.17	0.21	12321	1.50	5739.09	95.8	120.6	95.8	120.6						
0.20	0.24	10244	1.80	4845.97	100.1	122.2	100.1	122.2						
0.22	0.27	9266	1.95	4417.59	101.8	122.9	101.8	122.9						
0.24	0.30	8212	2.20	3966.24	103.4	123.7	103.4	123.7						
0.29	0.36	6733	2.70	3337.74	105.3	124.9	105.3	124.9						
0.31	0.39	6063	3.00	3052.96	106.0	125.4	106.0	125.4						
0.10	0.12	21514	0.85	14005.40	60.3	104.2	60.3	104.2	KH155-14P-71-04E	678	464			
0.12	0.15	17414	1.05	11453.02	80.5	116.7	80.5	116.7						
0.14	0.18	14566	1.25	9679.02	90.0	118.9	90.0	118.9						
0.15	0.19	13540	1.35	9043.42	92.8	119.7	92.8	119.7						
0.17	0.21	11729	1.55	7915.09	97.1	121.1	97.1	121.1						
0.20	0.24	10258	1.80	7012.05	100.1	122.2	100.1	122.2						
0.22	0.27	9048	2.00	6249.84	102.1	123.1	102.1	123.1						
0.24	0.30	8223	2.20	5739.09	103.4	123.7	103.4	123.7						
0.28	0.35	6765	2.70	4845.97	105.2	124.8	105.2	124.8						
0.31	0.38	6071	3.00	4417.59	106.0	125.4	106.0	125.4						
0.73	0.91	2712	2.95	1301.54	60.3	66.1	60.3	66.1				KH104-14P-80-06D	290	454
0.53	0.65	4066	1.15	1810.95	30.5	39.8	30.5	39.8	KH094-14P-80-06D	161	450			
0.62	0.77	3409	1.35	1531.00	33.6	40.7	33.6	40.7						
0.64	0.80	3291	1.40	1480.92	34.0	40.8	34.0	40.8						
0.76	0.95	2754	1.65	1251.99	35.9	41.5	35.9	41.5						
0.82	1.0	2556	1.80	1169.35	36.5	41.7	36.5	41.7						
0.97	1.2	2130	2.15	988.58	37.6	42.3	37.6	42.3						
1.1	1.3	1937	2.35	906.69	38.0	42.5	38.0	42.5						
1.2	1.5	1607	2.80	766.52	38.6	43.0	38.6	43.0						
1.3	1.6	1546	2.95	742.09	38.7	43.0	38.7	43.0						
0.76	0.94	2757	1.65	1810.95	35.9	41.5	35.9	41.5				KH094-14P-71-04E	159	450
0.90	1.1	2297	2.00	1531.00	37.2	42.1	37.2	42.1						
0.93	1.1	2217	2.05	1480.92	37.4	42.2	37.4	42.2						
1.1	1.4	1844	2.45	1251.99	38.2	42.7	38.2	42.7						
1.2	1.5	1708	2.65	1169.35	38.4	42.8	38.4	42.8						
0.55	0.68	3976	0.80	1745.64	**	**	**	**	KH084-14P-80-06D	111	446			
0.63	0.78	3458	0.90	1524.22	14.6	24.1	14.6	24.1						
0.67	0.83	3232	0.95	1427.51	17.2	29.6	17.2	29.6						
0.77	0.95	2804	1.10	1246.44	20.9	37.7	20.9	37.7						
0.85	1.1	2526	1.20	1127.18	22.8	41.3	22.8	41.3						
0.86	1.1	2469	1.25	1104.23	23.1	41.4	23.1	41.4						
0.97	1.2	2187	1.40	984.20	24.6	41.8	24.6	41.8						
1.1	1.3	2000	1.50	903.77	25.5	42.0	25.5	42.0						
1.3	1.6	1668	1.80	763.13	26.7	42.5	26.7	42.5						
1.4	1.7	1508	2.00	695.67	27.2	42.8	27.2	42.8						
1.5	1.9	1340	2.25	624.59	27.7	43.0	27.7	43.0						
1.7	2.2	1164	2.60	550.61	28.2	43.3	28.2	43.3						
1.8	2.3	1104	2.75	525.61	28.3	43.4	28.3	43.4						
0.63	0.77	3462	0.90	2205.52	14.6	24.1	14.6	24.1				KH084-14P-71-04E	109	446
0.77	0.94	2808	1.10	1803.58	20.9	37.7	20.9	37.7						
0.79	0.97	2712	1.15	1745.64	21.6	39.2	21.6	39.2						
0.91	1.1	2354	1.30	1524.22	23.8	41.5	23.8	41.5						
0.97	1.2	2190	1.40	1424.12	24.6	41.8	24.6	41.8						
0.97	1.2	2195	1.40	1427.51	24.6	41.8	24.6	41.8						
1.1	1.4	1901	1.60	1246.44	25.9	42.2	25.9	42.2						
1.2	1.5	1705	1.80	1127.18	26.6	42.5	26.6	42.5						
1.4	1.7	1474	2.05	984.20	27.4	42.8	27.4	42.8						
1.5	1.9	1342	2.25	903.77	27.7	43.0	27.7	43.0						
1.6	1.9	1292	2.35	873.98	27.8	43.1	27.8	43.1						
1.8	2.2	1112	2.70	763.13	28.3	43.4	28.3	43.4						
1.9	2.4	1032	2.95	715.32	28.4	43.5	28.4	43.5						
2.0	2.4	1001	3.00	695.67	28.5	43.5	28.5	43.5						

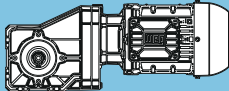
K

P _N = 0.25 kW										IE3			
50 Hz		60 Hz		M ₂	f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.33 kW					Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	F _{rN} kN	F _{aN} kN				F _{rN} kN	F _{aN} kN					
3.7	4.6	640	2.45	256.14	19.7	17.7	19.7	6.4	KH073-14P-80-06D	57	442		
4.8	6.0	495	1.70	198.00	11.2	13.7	11.2	3.7	KH063-14P-80-06D	37	440		
6.1	7.6	392	2.10	156.92	11.7	14.0	11.7	4.1					
7.8	9.7	305	2.70	121.85	12.0	14.3	12.0	4.3					
12	15	204	2.85	81.53	12.3	14.6	12.3	4.7					
22	27	111	2.85	44.35	12.4	14.8	11.4	4.8					
7	8.6	343	2.40	198.00	11.9	14.2	11.9	4.2	KH063-14P-71-04E	35	440		
3.9	4.8	614	1.00	245.70	5.9	9.9	5.9	3.4	KH053-14P-80-06D	24	438		
4.9	6.1	487	1.25	194.73	7.5	10.5	7.5	3.8					
6.3	7.8	378	1.60	151.20	8.5	10.9	8.5	4.2					
7.7	9.6	310	1.95	124.06	8.9	11.1	8.9	4.4					
9.9	12	240	2.50	96.08	9.3	11.3	9.3	4.6					
12	15	201	2.85	80.46	9.4	11.4	9.4	4.7					
25	31	96	2.80	38.32	9.7	11.6	9.7	4.9					
5.6	6.9	425	1.45	245.70	8.1	10.7	8.1	4.0	KH053-14P-71-04E	22	438		
7.1	8.7	337	1.80	194.73	8.8	11.0	8.8	4.3					
9.1	11	262	2.30	151.20	9.2	11.2	9.2	4.5					
11	14	215	2.80	124.06	9.4	11.4	9.4	4.7					
5.3	6.6	448	0.90	179.37	2.4	3.0	2.4	2.1	KH043-14P-80-06D	21	436		
6.9	8.5	348	1.20	139.08	4.8	8.1	4.8	2.5					
8.4	10	285	1.45	113.83	5.6	8.4	5.6	2.8					
11	13	223	1.70	89.17	6.2	8.6	6.2	3.0					
13	16	182	2.20	72.92	6.5	8.8	6.5	3.2					
14	18	166	2.45	66.20	6.6	8.8	6.6	3.2					
17	21	144	2.80	57.58	6.7	8.9	6.7	3.3					
18	22	135	3.00	54.18	6.7	9.0	6.7	3.4					
20	25	118	1.70	47.07	6.8	8.9	6.8	3.3					
25	31	96	2.85	38.49	6.9	9.0	6.9	3.4					
5.0	6.1	481	0.85	277.79	**	**	**	**				KH043-14P-71-04E	18
6.1	7.5	393	1.05	227.16	4.0	6.4	4.0	2.3					
7.7	9.5	310	1.30	179.37	5.3	8.3	5.3	2.7					
9.9	12	241	1.70	139.08	6.1	8.5	6.1	2.9					
12	15	197	2.05	113.83	6.4	8.7	6.4	3.1					
15	19	154	2.50	89.17	6.7	8.9	6.7	3.3					
16	19	152	2.65	87.62	6.7	8.9	6.7	3.3					
29	36	81	2.50	47.07	6.9	9.1	6.9	3.5					
11	14	217	0.95	86.83	3.4	2.4	3.4	2.4	KH033-14P-80-06D	17	434		
13	16	180	1.15	71.93	4.0	2.6	4.0	2.6					
15	18	164	1.25	65.63	4.2	2.7	4.2	2.7					
16	20	146	1.40	58.50	4.4	2.8	4.4	2.8					
19	24	125	1.65	49.88	4.6	2.9	4.6	2.9					
21	26	116	1.75	46.48	4.7	3.0	4.7	3.0					
25	31	97	2.10	38.80	4.9	3.1	4.9	3.1					
27	33	90	2.25	35.90	4.9	3.1	4.9	3.1					
32	39	76	2.65	30.29	5.0	3.2	5.0	3.2					
33	41	72	2.80	28.67	5.0	3.2	5.0	3.2					
39	49	61	2.65	24.38	5.0	3.2	5.0	3.2					
9.8	12	244	0.85	140.80	2.8	2.3	2.8	2.3	KH033-14P-71-04E	15	434		
13	16	188	1.10	108.75	3.9	2.6	3.9	2.6					
16	20	150	1.35	86.83	4.4	2.8	4.4	2.8					
19	24	124	1.65	71.93	4.7	2.9	4.7	2.9					
21	26	114	1.80	65.63	4.7	3.0	4.7	3.0					
24	29	101	2.00	58.50	4.8	3.1	4.8	3.1					
28	34	86	2.35	49.88	4.9	3.2	4.9	3.2					
30	37	80	2.50	46.48	4.9	3.2	4.9	3.2					
36	44	67	3.00	38.80	5.0	3.3	5.0	3.3					
46	57	52	2.50	29.97	5.1	3.3	5.1	3.3					



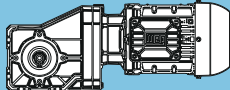
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** ... on request

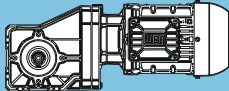
P _N = 0.25 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.25 kW		0.33 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
18	22	134	0.85	53.65	4.7	2.8	4.7	2.8	KH022-14P-80-06D	15	432
20	25	120	0.95	48.10	4.9	2.8	4.9	2.8			
22	27	109	1.05	43.50	4.9	2.8	4.9	2.8			
24	30	98	1.15	39.00	5.0	2.8	5.0	2.8			
28	35	86	1.30	34.27	5.1	2.8	5.1	2.8			
31	39	77	1.45	30.73	5.1	2.8	5.1	2.8			
36	45	66	1.70	26.41	5.2	2.8	5.2	2.8			
40	49	60	1.35	24.05	5.2	2.8	5.2	2.8			
46	57	52	2.00	20.63	5.2	2.8	5.2	2.8			
49	61	49	1.70	19.50	5.2	2.8	5.2	2.8			
52	64	46	2.25	18.50	5.2	2.8	5.2	2.8			
62	77	39	2.45	15.41	5.3	2.8	5.3	2.8			
69	86	35	2.70	13.81	5.3	2.8	5.3	2.8			
72	89	33	2.70	13.29	5.3	2.8	5.3	2.8			
80	99	30	3.00	11.92	5.3	2.8	5.3	2.8			
81	100	30	2.75	11.84	5.3	2.8	5.3	2.8			
82	102	29	2.95	11.60	5.3	2.8	5.3	2.8			
20	25	119	0.95	68.88	4.9	2.8	4.9	2.8	KH022-14P-71-04E	13	432
22	28	107	1.00	61.75	5.0	2.8	5.0	2.8			
26	32	93	1.20	53.65	5.0	2.8	5.0	2.8			
29	35	83	1.35	48.10	5.1	2.8	5.1	2.8			
32	39	75	1.50	43.50	5.1	2.8	5.1	2.8			
35	44	67	1.65	39.00	5.2	2.8	5.2	2.8			
40	50	59	1.90	34.27	5.2	2.8	5.2	2.8			
45	55	53	2.10	30.73	5.2	2.8	5.2	2.8			
52	64	46	2.45	26.41	5.2	2.8	5.2	2.8			
57	71	42	1.95	24.05	5.3	2.8	5.3	2.8			
58	72	41	2.70	23.68	5.3	2.8	5.3	2.8			
67	82	36	2.90	20.63	5.3	2.8	5.3	2.8			
71	87	34	2.45	19.50	5.3	2.8	5.3	2.8			
75	92	32	3.20	18.50	5.3	2.8	5.3	2.8			
90	110	27	3.50	15.41	5.3	2.8	5.3	2.8			
100	123	24	3.90	13.81	5.3	2.8	5.3	2.8			
117	144	20	4.00	11.84	5.1	2.8	5.1	2.8			
119	147	20	4.25	11.60	5.1	2.8	5.1	2.8			
133	163	18	4.75	10.40	4.9	2.8	4.9	2.8			
149	184	16	5.10	9.25	4.7	2.8	4.7	2.8			
162	200	15	5.25	8.51	4.6	2.8	4.6	2.8			
181	223	13	5.85	7.63	4.4	2.8	4.4	2.8			
200	246	12	6.20	6.91	4.3	2.8	4.3	2.8			
265	327	9	7.25	5.20	3.9	2.8	3.9	2.8			
361	445	7	8.65	3.82	3.5	2.8	3.5	2.8			

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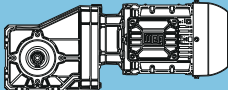
P _N = 0.37 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.13	0.16	23844	0.80	7012.05	**	**	**	**	KH155-14P-80-06E	682	464
0.15	0.18	21198	0.85	6249.84	62.2	108.2	62.2	108.2			
0.16	0.2	19366	0.95	5739.09	72.1	115.2	72.1	115.2			
0.19	0.24	16185	1.15	4845.97	84.9	117.6	84.9	117.6			
0.21	0.26	14679	1.25	4417.59	89.7	118.8	89.7	118.8			
0.23	0.29	13078	1.40	3966.24	94.0	120.0	94.0	120.0			
0.28	0.34	10837	1.70	3337.74	99.0	121.7	99.0	121.7			
0.30	0.37	9835	1.85	3052.96	100.8	122.5	100.8	122.5			
0.34	0.42	8687	2.10	2731.65	102.7	123.4	102.7	123.4			
0.40	0.49	7166	2.55	2306.68	104.7	124.5	104.7	124.5			
0.42	0.51	6846	2.65	2215.09	105.1	124.8	105.1	124.8			
0.14	0.18	21768	0.85	9679.02	58.6	100.6	58.6	100.6	KH155-14P-71-04F	679	464
0.15	0.19	20287	0.90	9043.42	67.4	114.5	67.4	114.5			
0.18	0.22	17620	1.05	7915.09	79.7	116.6	79.7	116.6			
0.20	0.24	15490	1.20	7012.05	87.2	118.2	87.2	118.2			
0.22	0.27	13700	1.35	6249.84	92.4	119.5	92.4	119.5			
0.24	0.30	12516	1.45	5739.09	95.4	120.4	95.4	120.4			
0.29	0.35	10406	1.75	4845.97	99.8	122.1	99.8	122.1			
0.32	0.39	9388	1.95	4417.59	101.6	122.8	101.6	122.8			
0.35	0.43	8320	2.20	3966.24	103.2	123.7	103.2	123.7			
0.42	0.51	6840	2.65	3337.74	105.1	124.8	105.1	124.8			
0.46	0.56	6159	2.95	3052.96	105.9	125.3	105.9	125.3			
0.59	0.72	5115	2.55	1579.81	86.7	92.4	86.7	92.4	KH124-14P-80-06E	415	458
0.67	0.83	4377	3.00	1377.44	87.4	93.1	87.4	93.1			
0.71	0.88	4338	1.85	1301.54	57.7	64.2	57.7	64.2	KH104-14P-80-06E	292	454
0.82	1.0	3712	2.20	1129.81	58.8	64.9	58.8	64.9			
0.92	1.1	3267	2.45	1004.85	59.5	65.4	59.5	65.4			
0.95	1.2	3161	2.55	976.16	59.7	65.6	59.7	65.6			
1.1	1.3	2783	2.90	872.27	60.2	66.0	60.2	66.0			
1.1	1.3	2748	2.95	1301.54	60.3	66.0	60.3	66.0	KH104-14P-71-04F	289	454
0.60	0.74	5318	0.85	1531.00	21.4	36.0	21.4	36.0	KH094-14P-80-06E	163	450
0.62	0.77	5133	0.90	1480.92	23.2	38.5	23.2	38.5			
0.74	0.91	4313	1.05	1251.99	29.1	39.5	29.1	39.5			
0.79	0.97	4012	1.15	1169.35	30.8	39.9	30.8	39.9			
0.94	1.2	3364	1.35	988.58	33.8	40.7	33.8	40.7			
1.0	1.3	3066	1.50	906.69	34.9	41.1	34.9	41.1			
1.2	1.5	2560	1.80	766.52	36.5	41.7	36.5	41.7			
1.5	1.8	2061	2.20	627.37	37.7	42.4	37.7	42.4			
1.6	2.0	1857	2.45	571.21	38.1	42.6	38.1	42.6			
1.9	2.4	1538	2.95	482.91	38.7	43.0	38.7	43.0			
0.77	0.94	4128	1.10	1810.95	30.2	39.7	30.2	39.7	KH094-14P-71-04F	160	450
0.91	1.1	3462	1.30	1531.00	33.4	40.6	33.4	40.6			
0.94	1.2	3341	1.35	1480.92	33.8	40.8	33.8	40.8			
1.1	1.4	2790	1.65	1251.99	35.8	41.5	35.8	41.5			
1.2	1.5	2595	1.75	1169.35	36.4	41.7	36.4	41.7			
1.4	1.7	2162	2.10	988.58	37.5	42.3	37.5	42.3			
1.5	1.9	1967	2.30	906.69	37.9	42.5	37.9	42.5			
1.8	2.2	1629	2.80	766.52	38.6	42.9	38.6	42.9			
1.9	2.3	1570	2.90	742.09	38.7	43.0	38.7	43.0			
0.82	1.0	3923	0.80	1127.18	**	**	**	**			
0.84	1.0	3843	0.80	1104.23	**	**	**	**			
0.94	1.2	3412	0.90	984.20	15.2	25.4	15.2	25.4			
1.0	1.3	3120	1.00	903.77	18.3	32.0	18.3	32.0			
1.1	1.3	3017	1.00	873.98	19.2	33.9	19.2	33.9			
1.2	1.5	2618	1.15	763.13	22.2	40.5	22.2	40.5			
1.3	1.6	2444	1.25	715.32	23.2	41.4	23.2	41.4			
1.5	1.8	2117	1.45	624.59	24.9	41.9	24.9	41.9			
1.7	2.1	1851	1.65	550.61	26.1	42.3	26.1	42.3			
1.8	2.2	1759	1.75	525.61	26.4	42.4	26.4	42.4			
1.9	2.4	1599	1.90	480.77	27.0	42.6	27.0	42.6			
2.2	2.7	1416	2.15	430.17	27.5	42.9	27.5	42.9			
2.5	3.1	1174	2.60	363.25	28.1	43.3	28.1	43.3			
2.7	3.3	1122	2.70	348.82	28.2	43.3	28.2	43.3			



P _N = 0.37 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.37 kW		0.44 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.92	1.1	3503	0.90	1524.22	14.0	22.8	14.0	7.3	KH084-14P-71-04F	110	446
0.98	1.2	3274	0.95	1427.51	16.8	28.8	16.8	7.7			
1.1	1.4	2841	1.10	1246.44	20.6	37.0	20.6	8.3			
1.2	1.5	2559	1.20	1127.18	22.6	41.2	22.6	8.7			
1.3	1.5	2507	1.20	1104.23	22.9	41.3	22.9	8.8			
1.4	1.7	2216	1.40	984.20	24.5	41.7	24.5	9.2			
1.5	1.9	2027	1.50	903.77	25.3	42.0	25.3	9.5			
1.6	2.0	1956	1.55	873.98	25.6	42.1	25.6	9.6			
1.8	2.2	1690	1.80	763.13	26.7	42.5	26.7	10.0			
2.0	2.4	1574	1.95	715.32	27.0	42.7	27.0	10.2			
2.2	2.7	1358	2.25	624.59	27.7	43.0	27.7	10.5			
2.5	3.1	1182	2.55	550.61	28.1	43.3	28.1	10.8			
2.7	3.3	1121	2.70	525.61	28.2	43.3	28.2	10.8			
2.9	3.6	1013	3.00	480.77	28.5	43.5	28.5	11.0			
3.6	4.5	978	1.60	256.14	18.5	17.0	18.5	5.7	KH073-14P-80-06E	59	442
4.7	5.8	755	2.10	197.75	19.3	17.4	19.3	6.2			
5.6	6.9	634	2.45	165.85	19.7	17.7	19.7	6.4			
5.4	6.7	649	2.40	256.14	19.6	17.7	19.6	6.4	KH073-14P-71-04F	56	442
4.7	5.8	756	1.10	198.00	9.2	12.9	9.2	2.9	KH063-14P-80-06E	39	440
5.9	7.3	599	1.40	156.92	10.6	13.4	10.6	3.4			
7.6	9.4	465	1.80	121.85	11.4	13.8	11.4	3.8			
9.3	11	382	2.15	99.98	11.7	14.0	11.7	4.1			
11	14	311	1.85	81.53	12.0	14.3	12.0	4.3			
12	15	296	2.80	77.42	12.0	14.3	12.0	4.4			
21	26	169	1.85	44.35	12.3	14.5	11.9	4.5			
7.0	8.6	502	1.65	198.00	11.2	13.7	11.2	3.7	KH063-14P-71-04F	36	440
8.9	11	397	2.10	156.92	11.7	14.0	11.7	4.0			
11	14	309	2.70	121.85	12.0	14.3	12.0	4.3			
17	21	207	2.80	81.53	12.3	14.6	12.3	4.6			
31	39	112	2.80	44.35	12.4	14.7	10.2	4.8			
4.8	5.9	744	0.85	194.73	2.5	2.7	2.5	2.7	KH053-14P-80-06E	26	438
6.1	7.5	578	1.05	151.20	6.4	10.3	6.4	3.6			
7.5	9.2	474	1.30	124.06	7.7	10.6	7.7	3.9			
9.6	12	367	1.65	96.08	8.6	10.9	8.6	4.2			
11	14	307	1.85	80.46	8.9	11.1	8.9	4.4			
13	16	279	2.15	73.08	9.1	11.2	9.1	4.5			
15	18	244	2.50	63.77	9.2	11.3	9.2	4.6			
24	30	146	1.85	38.32	9.6	11.3	9.6	4.6			
5.7	7.0	622	1.00	245.70	5.7	9.5	5.7	3.4	KH053-14P-71-04F	23	438
7.2	8.8	493	1.25	194.73	7.5	10.5	7.5	3.8			
9.2	11	383	1.60	151.20	8.5	10.8	8.5	4.1			
11	14	314	1.95	124.06	8.9	11.0	8.9	4.3			
15	18	243	2.50	96.08	9.2	11.3	9.2	4.6			
17	21	204	2.80	80.46	9.4	11.4	9.4	4.7			
36	45	97	2.80	38.32	9.7	11.6	9.7	4.9			
6.7	8.2	531	0.80	139.08	**	**	**	**	KH043-14P-80-06E	22	436
8.1	10	435	0.95	113.83	2.9	4.1	2.9	2.2			
10	13	341	1.15	89.17	4.9	8.1	4.9	2.5			
11	13	335	1.20	87.62	5.0	8.2	5.0	2.6			
13	16	279	1.45	72.92	5.7	8.4	5.7	2.8			
14	17	253	1.60	66.20	6.0	8.5	6.0	2.9			
16	20	220	1.85	57.58	6.2	8.6	6.2	3.0			
17	21	207	1.95	54.18	6.3	8.7	6.3	3.1			
20	24	180	1.15	47.07	6.5	8.6	6.5	3.0			
21	26	171	2.35	44.64	6.6	8.8	6.6	3.2			
24	30	147	1.85	38.49	6.7	8.7	6.7	3.1			
25	31	140	2.75	36.78	6.7	8.9	6.7	3.3			
30	38	116	2.80	30.39	6.8	8.9	6.8	3.3			

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** ... on request

P _N = 0.37 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.37 kW		0.44 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.8	9.5	454	0.90	179.37	2.1	2.4	2.1	2.1	KH043-14P-71-04F	19	436	
10	12	352	1.15	139.08	4.7	8.0	4.7	2.5				
12	15	288	1.40	113.83	5.6	8.3	5.6	2.7				
16	19	226	1.70	89.17	6.2	8.6	6.2	3.0				
19	23	185	2.20	72.92	6.5	8.8	6.5	3.2				
21	26	168	2.40	66.20	6.6	8.8	6.6	3.2				
24	30	146	2.75	57.58	6.7	8.9	6.7	3.3				
26	32	137	2.95	54.18	6.7	9.0	6.7	3.4				
30	36	119	1.70	47.07	6.8	8.9	6.8	3.3				
36	44	97	2.80	38.49	6.9	9.0	6.9	3.4				
14	17	251	0.80	65.63	**	**	**	**	KH033-14P-80-06E	19	434	
16	19	223	0.90	58.50	3.3	2.4	3.3	2.4				
19	23	191	1.05	49.88	3.9	2.6	3.9	2.6				
20	25	178	1.15	46.48	4.1	2.6	4.1	2.6				
24	29	148	1.35	38.80	4.4	2.8	4.4	2.8				
26	32	137	1.50	35.90	4.5	2.9	4.5	2.9				
31	38	116	1.75	30.29	4.7	3.0	4.7	3.0				
32	40	110	1.85	28.67	4.8	3.0	4.8	3.0				
38	47	93	1.75	24.38	4.9	3.0	4.9	3.0				
43	53	83	2.45	21.67	4.9	3.2	4.9	3.2				
48	59	74	2.25	19.37	5.0	3.1	5.0	3.1				
62	76	57	2.90	14.96	5.0	3.2	5.0	3.2				
16	20	220	0.95	86.83	3.4	2.4	3.4	2.4	KH033-14P-71-04F	16	434	
19	24	182	1.10	71.93	4.0	2.6	4.0	2.6				
21	26	166	1.25	65.63	4.2	2.7	4.2	2.7				
24	29	148	1.35	58.50	4.4	2.8	4.4	2.8				
28	34	126	1.60	49.88	4.6	2.9	4.6	2.9				
30	37	118	1.70	46.48	4.7	3.0	4.7	3.0				
36	44	98	2.05	38.80	4.8	3.1	4.8	3.1				
39	48	91	2.20	35.90	4.9	3.1	4.9	3.1				
47	57	76	1.70	29.97	5.0	3.1	5.0	3.1				
49	60	73	2.80	28.67	5.0	3.2	5.0	3.2				
57	70	62	2.60	24.38	5.0	3.2	5.0	3.2				
27	33	131	0.85	34.27	4.8	2.8	4.8	2.8	KH022-14P-80-06E	17	432	
30	37	117	0.95	30.73	4.9	2.8	4.9	2.8				
35	43	101	1.10	26.41	5.0	2.8	5.0	2.8				
38	47	92	0.90	24.05	5.0	2.8	5.0	2.8				
39	48	90	1.25	23.68	5.1	2.8	5.1	2.8				
45	55	79	1.35	20.63	5.1	2.8	5.1	2.8				
47	58	74	1.10	19.50	5.1	2.8	5.1	2.8				
50	62	71	1.45	18.50	5.2	2.8	5.2	2.8				
60	74	59	1.60	15.41	5.2	2.8	5.2	2.8				
67	83	53	1.80	13.81	5.2	2.8	5.2	2.8				
70	86	51	1.80	13.29	5.2	2.8	5.2	2.8				
78	96	45	1.80	11.84	5.2	2.8	5.2	2.8				
80	98	44	1.95	11.60	5.2	2.8	5.2	2.8				
89	110	40	2.15	10.40	5.3	2.8	5.3	2.8				
100	123	35	2.30	9.25	5.3	2.8	5.3	2.8				
109	134	33	2.40	8.51	5.3	2.8	5.3	2.8				
121	149	29	2.65	7.63	5.1	2.8	5.1	2.8				
134	165	26	2.85	6.91	4.9	2.8	4.9	2.8				

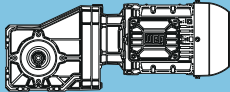


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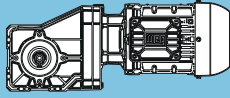
P_N = 0.37 kW

IE3

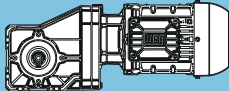
50 Hz 0.37 kW	60 Hz 0.44 kW	M ₂ Nm	f _b	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹										
26	32	136	0.85	53.65	4.7	2.8	4.7	2.8	KH022-14P-71-04F	14	432
29	36	122	0.95	48.10	4.8	2.8	4.8	2.8			
32	39	110	1.00	43.50	4.9	2.8	4.9	2.8			
36	44	99	1.15	39.00	5.0	2.8	5.0	2.8			
41	50	87	1.30	34.27	5.1	2.8	5.1	2.8			
45	56	78	1.45	30.73	5.1	2.8	5.1	2.8			
53	65	67	1.65	26.41	5.2	2.8	5.2	2.8			
58	71	61	1.35	24.05	5.2	2.8	5.2	2.8			
59	72	60	1.85	23.68	5.2	2.8	5.2	2.8			
68	83	52	2.00	20.63	5.2	2.8	5.2	2.8			
72	88	49	1.65	19.50	5.2	2.8	5.2	2.8			
75	92	47	2.20	18.50	5.2	2.8	5.2	2.8			
91	111	39	2.40	15.41	5.3	2.8	5.3	2.8			
101	124	35	2.70	13.81	5.3	2.8	5.3	2.8			
118	144	30	2.75	11.84	5.2	2.8	5.2	2.8			
120	147	29	2.90	11.60	5.1	2.8	5.1	2.8			
134	164	26	3.25	10.40	4.9	2.8	4.9	2.8			
151	185	23	3.50	9.25	4.7	2.8	4.7	2.8			
164	201	22	3.60	8.51	4.6	2.8	4.6	2.8			
183	224	19	4.00	7.63	4.4	2.8	4.4	2.8			
202	247	18	4.25	6.91	4.3	2.8	4.3	2.8			
268	329	13	4.95	5.20	3.9	2.8	3.9	2.8			
365	448	10	5.90	3.82	3.5	2.8	3.5	2.8			

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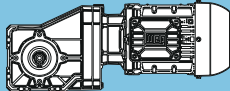
P _N = 0.55 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.21	0.26	21801	0.85	4417.59	58.4	100.2	58.4	100.2	KH155-14P-L80-06F	683	464
0.24	0.29	19474	0.95	3966.24	71.6	115.1	71.6	115.1			
0.28	0.35	16221	1.15	3337.74	84.8	117.6	84.8	117.6			
0.31	0.38	14761	1.25	3052.96	89.5	118.7	89.5	118.7			
0.35	0.42	13106	1.40	2731.65	93.9	120.0	93.9	120.0			
0.41	0.50	10925	1.65	2306.68	98.8	121.7	98.8	121.7			
0.43	0.52	10437	1.75	2215.09	99.7	122.0	99.7	122.0			
0.50	0.61	8735	2.10	1887.82	102.6	123.3	102.6	123.3			
0.51	0.62	8580	2.10	1854.30	102.8	123.5	102.8	123.5			
0.62	0.75	6884	2.65	1530.83	105.1	124.7	105.1	124.7			
0.63	0.77	6740	2.70	1502.83	105.2	124.9	105.2	124.9			
0.20	0.25	23088	0.80	7012.05	**	**	**	**	KH155-14P-80-04E	681	464
0.23	0.28	20474	0.90	6249.84	66.4	114.4	66.4	114.4			
0.25	0.30	18704	1.00	5739.09	75.2	115.7	75.2	115.7			
0.29	0.35	15672	1.15	4845.97	86.6	118.0	86.6	118.0			
0.32	0.39	14177	1.30	4417.59	91.1	119.2	91.1	119.2			
0.36	0.43	12631	1.45	3966.24	95.1	120.4	95.1	120.4			
0.43	0.52	10466	1.75	3337.74	99.7	122.0	99.7	122.0			
0.47	0.56	9499	1.90	3052.96	101.4	122.8	101.4	122.8			
0.52	0.63	8390	2.15	2731.65	103.1	123.6	103.1	123.6			
0.62	0.75	6903	2.65	2306.68	105.1	124.7	105.1	124.7			
0.64	0.78	6594	2.75	2215.09	105.4	125.0	105.4	125.0			
0.72	0.88	6051	3.00	1308.92	106.0	125.4	106.0	125.4	KH154-14P-L80-06F	670	462
0.60	0.73	7710	1.70	1579.81	83.2	89.8	83.2	89.8	KH124-14P-L80-06F	416	458
0.69	0.84	6639	2.00	1377.44	84.8	90.8	84.8	90.8			
0.77	0.95	5818	2.25	1219.69	85.9	91.7	85.9	91.7			
0.80	0.97	5636	2.35	1186.50	86.1	91.9	86.1	91.9			
0.89	1.1	4989	2.65	1063.46	86.8	92.5	86.8	92.5			
0.92	1.1	4779	2.75	1022.92	87.0	92.7	87.0	92.7			
0.90	1.1	4932	2.65	1579.81	86.9	92.6	86.9	92.6	KH124-14P-80-04E	414	458
0.73	0.89	6471	1.25	1301.54	51.9	61.8	51.9	61.8	KH104-14P-L80-06F	293	454
0.84	1.0	5571	1.45	1129.81	54.7	62.8	54.7	62.8			
0.94	1.1	4914	1.65	1004.85	56.4	63.6	56.4	63.6			
0.97	1.2	4764	1.70	976.16	56.7	63.7	56.7	63.7			
1.1	1.3	4222	1.90	872.27	57.9	64.3	57.9	64.3			
1.3	1.5	3595	2.25	753.64	59.0	65.1	59.0	65.1			
1.4	1.7	3109	2.60	661.38	59.8	65.6	59.8	65.6			
1.5	1.8	2953	2.75	632.05	60.0	65.8	60.0	65.8			
1.1	1.3	4184	1.95	1301.54	58.0	64.4	58.0	64.4	KH104-14P-80-04E	291	454
1.3	1.5	3587	2.25	1129.81	59.0	65.1	59.0	65.1			
1.4	1.7	3150	2.55	1004.85	59.7	65.6	59.7	65.6			
1.5	1.8	3048	2.65	976.16	59.9	65.7	59.9	65.7			
1.6	2.0	2684	3.00	872.27	60.3	66.1	60.3	66.1			
0.81	0.99	5922	0.80	1169.35	**	**	**	**	KH094-14P-L80-06F	164	450
0.96	1.2	4976	0.95	988.58	24.5	38.7	24.5	38.7			
1.0	1.3	4554	1.00	906.69	27.6	39.2	27.6	39.2			
1.2	1.5	3819	1.20	766.52	31.8	40.1	31.8	40.1			
1.3	1.6	3689	1.25	742.09	32.4	40.3	32.4	40.3			
1.5	1.8	3087	1.50	627.37	34.8	41.1	34.8	41.1			
1.7	2.0	2793	1.65	571.21	35.8	41.4	35.8	41.4			
2.0	2.4	2332	1.95	482.91	37.1	42.0	37.1	42.0			
2.2	2.7	2063	2.20	431.58	37.7	42.4	37.7	42.4			
2.6	3.2	1712	2.65	364.86	38.4	42.8	38.4	42.8			
2.7	3.3	1650	2.75	353.21	38.5	42.9	38.5	42.9			
0.93	1.1	5139	0.90	1531.00	23.1	38.5	23.1	38.5	KH094-14P-80-04E	162	450
0.96	1.2	4960	0.95	1480.92	24.6	38.7	24.6	38.7			
1.1	1.4	4168	1.10	1251.99	29.9	39.7	29.9	39.7			
1.2	1.5	3877	1.20	1169.35	31.5	40.1	31.5	40.1			
1.4	1.7	3251	1.40	988.58	34.2	40.9	34.2	40.9			
1.6	1.9	2963	1.55	906.69	35.2	41.2	35.2	41.2			
1.9	2.2	2474	1.85	766.52	36.7	41.9	36.7	41.9			
2.3	2.7	1987	2.30	627.37	37.9	42.5	37.9	42.5			
2.5	3.0	1791	2.55	571.21	38.3	42.7	38.3	42.7			



P _N = 0.55 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.55 kW		0.66 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.2	1.5	3865	0.80	763.13	**	**	**	**	KH084-14P-L80-06F	114	446
1.3	1.6	3615	0.85	715.32	12.4	19.5	12.4	7.2			
1.4	1.7	3509	0.90	695.67	13.9	22.6	13.9	7.3			
1.5	1.8	3137	1.00	624.59	18.1	31.6	18.1	7.9			
1.7	2.1	2754	1.10	550.61	21.3	38.5	21.3	8.4			
1.8	2.2	2624	1.15	525.61	22.2	40.5	22.2	8.6			
2.0	2.4	2385	1.30	480.77	23.6	41.5	23.6	9.0			
2.2	2.7	2121	1.45	430.17	24.9	41.9	24.9	9.4			
2.3	2.8	2047	1.50	416.02	25.3	42.0	25.3	9.5			
2.6	3.2	1773	1.70	363.25	26.4	42.4	26.4	9.9			
2.7	3.3	1695	1.80	348.82	26.6	42.5	26.6	10.0			
2.8	3.4	1651	1.85	340.47	26.8	42.6	26.8	10.1			
3.2	3.9	1424	2.15	297.29	27.5	42.9	27.5	10.4			
3.4	4.2	1314	2.30	276.09	27.8	43.1	27.8	10.6			
3.9	4.8	1129	2.70	241.07	28.2	43.3	28.2	10.8			
4.0	4.9	1106	2.75	236.66	28.3	43.4	28.3	10.9			
4.1	5.0	1078	2.80	231.12	28.3	43.4	28.3	10.9			
1.3	1.5	3799	0.80	1127.18	**	**	**	**	KH084-14P-80-04E	112	446
1.4	1.7	3297	0.95	984.20	16.5	28.1	16.5	7.6			
1.6	1.9	3021	1.00	903.77	19.2	33.9	19.2	8.0			
1.9	2.3	2530	1.20	763.13	22.7	41.3	22.7	8.8			
2.0	2.4	2362	1.30	715.32	23.7	41.5	23.7	9.0			
2.3	2.8	2045	1.50	624.59	25.3	42.0	25.3	9.5			
2.6	3.1	1788	1.70	550.61	26.3	42.4	26.3	9.9			
2.7	3.3	1700	1.80	525.61	26.6	42.5	26.6	10.0			
3.0	3.6	1545	1.95	480.77	27.1	42.7	27.1	10.2			
3.3	4.0	1368	2.20	430.17	27.6	43.0	27.6	10.5			
3.4	4.1	1318	2.30	416.02	27.8	43.1	27.8	10.6			
3.9	4.7	1134	2.65	363.25	28.2	43.3	28.2	10.8			
4.1	4.9	1082	2.80	348.82	28.3	43.4	28.3	10.9			
4.2	5.1	1054	2.85	340.47	28.4	43.4	28.4	10.9			
4.6	5.6	1146	2.65	206.12	28.2	43.3	28.2	10.8	KH083-14P-L80-06F	101	444
3.7	4.5	1424	1.10	256.14	16.1	16.1	16.1	4.8	KH073-14P-L80-06F	60	442
4.8	5.8	1099	1.45	197.75	18.0	16.7	18.0	5.5			
5.7	7.0	922	1.70	165.85	18.8	17.1	18.8	5.8			
7.3	8.9	723	2.15	130.16	19.4	17.5	19.4	6.3			
9.4	11	558	2.80	100.45	19.9	17.8	19.4	6.6			
9.5	12	555	2.35	99.87	19.9	17.9	19.4	6.6			
20	24	264	2.35	47.56	20.3	18.2	14.6	6.9			
5.5	6.7	947	1.65	256.14	18.7	17.0	18.7	5.8	KH073-14P-80-04E	58	442
7.2	8.7	731	2.15	197.75	19.4	17.5	19.4	6.2			
8.6	10	613	2.55	165.85	19.7	17.7	19.7	6.5			
6.0	7.4	872	0.95	156.92	7.9	12.5	7.9	2.6	KH063-14P-L80-06F	40	440
7.8	9.5	677	1.25	121.85	10.0	13.1	10.0	3.2			
9.5	12	556	1.50	99.98	10.8	13.5	10.8	3.5			
12	14	453	1.30	81.53	11.4	13.8	11.4	3.9			
15	18	359	2.30	64.62	11.8	14.1	11.8	4.2			
16	20	327	2.55	58.89	11.9	14.2	11.9	4.3			
19	23	279	2.95	50.17	12.1	14.4	12.1	4.4			
21	26	247	1.30	44.35	12.2	14.2	12.2	4.2			
27	33	195	2.35	35.15	12.3	14.4	11.2	4.4			
7.2	8.7	732	1.15	198.00	9.5	12.9	9.5	3.0			
9.0	11	580	1.45	156.92	10.7	13.4	10.7	3.5			
12	14	451	1.85	121.85	11.4	13.8	11.4	3.9			
14	17	370	2.25	99.98	11.8	14.1	11.8	4.1			
17	21	302	1.90	81.53	12.0	14.3	12.0	4.4			
18	22	286	2.90	77.42	12.1	14.3	12.1	4.4			
32	39	164	1.90	44.35	12.3	14.5	10.4	4.6			

Legend see page 337

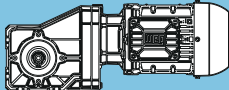
** ... on request

P _N = 0.55 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
0.55 kW		0.66 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.6	9.3	690	0.90	124.06	4.3	6.5	4.3	3.2	KH053-14P-L80-06F	27	438
9.8	12	534	1.15	96.08	7.0	10.4	7.0	3.7			
12	14	447	1.30	80.46	7.9	10.6	7.9	3.9			
13	16	406	1.50	73.08	8.3	10.8	8.3	4.1			
15	18	354	1.70	63.77	8.6	10.9	8.6	4.2			
16	19	335	1.80	60.26	8.8	11.0	8.8	4.3			
19	23	275	2.20	49.52	9.1	11.2	9.1	4.5			
23	28	233	2.60	42.00	9.3	11.3	9.3	4.6			
25	30	213	1.30	38.32	9.4	11.0	9.4	4.3			
31	38	169	2.35	30.37	9.5	11.2	9.5	4.5			
7.3	8.8	720	0.85	194.73	3.4	4.6	3.4	3.1	KH084-14P-80-04E	25	446
9.4	11	559	1.10	151.20	6.7	10.3	6.7	3.6			
11	14	459	1.35	124.06	7.8	10.6	7.8	3.9			
15	18	355	1.70	96.08	8.6	10.9	8.6	4.2			
18	21	298	1.90	80.46	9.0	11.1	9.0	4.4			
19	24	270	2.25	73.08	9.1	11.2	9.1	4.5			
22	27	236	2.55	63.77	9.3	11.3	9.3	4.6			
24	29	223	2.70	60.26	9.3	11.3	9.3	4.6			
37	45	142	1.90	38.32	9.6	11.4	9.6	4.7			
11	13	496	0.80	89.17	**	**	**	**			
13	16	405	1.00	72.92	3.7	5.8	3.7	2.3			
14	17	368	1.10	66.20	4.5	7.5	4.5	2.4			
16	20	320	1.25	57.58	5.2	8.2	5.2	2.6			
17	21	301	1.35	54.18	5.4	8.3	5.4	2.7			
20	25	262	0.80	47.07	**	**	**	**			
21	26	248	1.65	44.64	6.0	8.5	6.0	2.9			
22	26	244	1.65	43.93	6.0	8.5	6.0	2.9			
25	30	214	1.30	38.49	6.3	8.4	6.3	2.8			
26	31	204	1.90	36.78	6.4	8.7	6.4	3.1			
31	38	169	1.95	30.39	6.6	8.6	6.6	3.0			
32	39	166	2.20	29.81	6.6	8.8	6.6	3.2			
34	41	156	2.60	28.13	6.6	8.9	6.6	3.3			
40	49	131	2.35	23.57	6.8	8.8	6.8	3.2			
49	60	107	2.75	19.29	6.9	8.9	6.9	3.3			
10	12	514	0.80	139.08	**	**	**	**	KH084-14P-80-04E	21	446
12	15	421	1.00	113.83	3.3	4.9	3.3	2.2			
16	19	330	1.15	89.17	5.1	8.2	5.1	2.6			
19	24	270	1.50	72.92	5.8	8.4	5.8	2.8			
21	26	245	1.65	66.20	6.0	8.5	6.0	2.9			
25	30	213	1.90	57.58	6.3	8.6	6.3	3.0			
26	32	200	2.00	54.18	6.4	8.7	6.4	3.1			
30	37	174	1.15	47.07	6.5	8.6	6.5	3.0			
32	39	165	2.45	44.64	6.6	8.8	6.6	3.2			
37	45	142	1.90	38.49	6.7	8.8	6.7	3.2			
39	47	136	2.85	36.78	6.7	9.0	6.7	3.4			
47	57	112	2.90	30.39	6.8	8.9	6.8	3.3			
20	25	258	0.80	46.48	**	**	**	**	KH033-14P-L80-06F	20	434
24	30	216	0.95	38.80	3.4	2.4	3.4	2.4			
26	32	200	1.05	35.90	3.7	2.5	3.7	2.5			
31	38	168	1.20	30.29	4.2	2.7	4.2	2.7			
32	39	167	0.80	29.97	**	**	**	**			
33	40	159	1.30	28.67	4.3	2.7	4.3	2.7			
39	47	136	1.20	24.38	4.6	2.7	4.6	2.7			
44	53	120	1.70	21.67	4.7	3.0	4.7	3.0			
49	60	108	1.55	19.37	4.8	2.9	4.8	2.9			
57	70	92	2.20	16.47	4.9	3.1	4.9	3.1			
63	77	83	2.00	14.96	4.9	3.1	4.9	3.1			
74	90	71	2.85	12.81	5.0	3.2	5.0	3.2			
79	97	66	2.50	11.94	5.0	3.2	5.0	3.2			



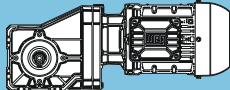
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** ... on request

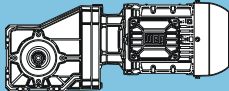
P _N = 0.55 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
0.55 kW		0.66 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
20	24	266	0.80	71.93	**	**	**	**	KH033-14P-80-04E	18	434			
22	26	243	0.85	65.63	2.8	2.3	2.8	2.3						
24	29	216	0.95	58.50	3.4	2.4	3.4	2.4						
28	34	185	1.10	49.88	4.0	2.6	4.0	2.6						
31	37	172	1.20	46.48	4.1	2.7	4.1	2.7						
37	44	144	1.40	38.80	4.5	2.8	4.5	2.8						
40	48	133	1.55	35.90	4.6	2.9	4.6	2.9						
47	57	112	1.80	30.29	4.7	3.0	4.7	3.0						
50	60	106	1.90	28.67	4.8	3.1	4.8	3.1						
58	71	90	1.80	24.38	4.9	3.0	4.9	3.0						
66	79	80	2.50	21.67	4.9	3.2	4.9	3.2						
73	89	72	2.30	19.37	5.0	3.1	5.0	3.1						
95	115	55	2.95	14.96	5.1	3.3	5.1	3.3						
40	49	132	0.85	23.68	4.8	2.8	4.8	2.8				KH022-14P-L80-06F	18	432
46	56	115	0.90	20.63	4.9	2.8	4.9	2.8						
51	62	103	1.00	18.50	5.0	2.8	5.0	2.8						
61	75	86	1.10	15.41	5.1	2.8	5.1	2.8						
62	75	85	0.95	15.36	5.1	2.8	5.1	2.8						
68	84	77	1.25	13.81	5.1	2.8	5.1	2.8						
71	87	74	1.25	13.29	5.1	2.8	5.1	2.8						
79	97	66	1.35	11.92	5.2	2.8	5.2	2.8						
80	98	66	1.25	11.84	5.2	2.8	5.2	2.8						
81	100	64	1.35	11.60	5.2	2.8	5.2	2.8						
91	111	58	1.50	10.40	5.2	2.8	5.2	2.8						
102	125	51	1.60	9.25	5.2	2.8	5.2	2.8						
111	136	47	1.65	8.51	5.2	2.8	5.2	2.8						
124	151	42	1.85	7.63	5.1	2.8	5.1	2.8						
137	167	38	1.95	6.91	4.9	2.8	4.9	2.8						
159	194	33	2.10	5.96	4.7	2.8	4.7	2.8						
182	222	29	2.25	5.20	4.5	2.8	4.5	2.8						
247	302	21	2.70	3.82	4.0	2.8	4.0	2.8						
36	44	144	0.80	39.00	**	**	**	**	KH022-14P-80-04E	16	432			
41	50	127	0.90	34.27	4.8	2.8	4.8	2.8						
46	56	114	1.00	30.73	4.9	2.8	4.9	2.8						
54	65	98	1.15	26.41	5.0	2.8	5.0	2.8						
59	72	89	0.95	24.05	5.1	2.8	5.1	2.8						
60	73	88	1.30	23.68	5.1	2.8	5.1	2.8						
69	83	76	1.35	20.63	5.1	2.8	5.1	2.8						
73	88	72	1.15	19.50	5.1	2.8	5.1	2.8						
77	93	68	1.50	18.50	5.2	2.8	5.2	2.8						
92	112	57	1.65	15.41	5.2	2.8	5.2	2.8						
103	125	51	1.85	13.81	5.2	2.8	5.2	2.8						
107	129	49	1.85	13.29	5.2	2.8	5.2	2.8						
119	144	44	2.05	11.92	5.2	2.8	5.2	2.8						
120	145	44	1.85	11.84	5.2	2.8	5.2	2.8						
122	148	43	2.00	11.60	5.2	2.8	5.2	2.8						
137	165	38	2.25	10.40	4.9	2.8	4.9	2.8						
154	186	34	2.40	9.25	4.7	2.8	4.7	2.8						
167	202	31	2.45	8.51	4.6	2.8	4.6	2.8						
186	225	28	2.75	7.63	4.4	2.8	4.4	2.8						
205	249	26	2.90	6.91	4.3	2.8	4.3	2.8						
238	289	22	3.15	5.96	4.1	2.8	4.1	2.8						
273	331	19	3.40	5.20	3.9	2.8	3.9	2.8						
372	450	14	4.05	3.82	3.5	2.8	3.5	2.8						

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** ... on request

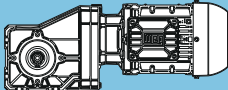
P _N = 0.75 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.28	0.34	22639	0.80	3337.74	**	**	**	**	KH155-11P-90S/L-06E	689	464	
0.31	0.38	20602	0.90	3052.96	65.7	114.3	65.7	114.3				
0.34	0.42	18339	1.00	2731.65	76.7	116.0	76.7	116.0				
0.41	0.5	15328	1.20	2306.68	87.7	118.3	87.7	118.3				
0.42	0.52	14682	1.25	2215.09	89.7	118.8	89.7	118.8				
0.50	0.61	12353	1.50	1887.82	95.7	120.6	95.7	120.6				
0.51	0.62	12133	1.50	1854.30	96.2	120.7	96.2	120.7				
0.61	0.75	9837	1.85	1530.83	100.8	122.5	100.8	122.5				
0.63	0.76	9632	1.90	1502.83	101.2	122.7	101.2	122.7				
0.73	0.89	8066	2.25	1281.49	103.6	123.8	103.6	123.8				
0.91	1.10	6336	2.85	1038.59	105.7	125.2	105.7	125.2				
0.30	0.36	21551	0.85	4845.97	60.0	103.6	60.0	103.6	KH155-11P-80-04F	683	464	
0.32	0.39	19546	0.95	4417.59	71.2	115.1	71.2	115.1				
0.36	0.44	17459	1.05	3966.24	80.3	116.7	80.3	116.7				
0.43	0.52	14542	1.25	3337.74	90.1	118.9	90.1	118.9				
0.47	0.57	13199	1.40	3052.96	93.7	119.9	93.7	119.9				
0.52	0.64	11719	1.55	2731.65	97.1	121.1	97.1	121.1				
0.62	0.75	9744	1.85	2306.68	101.0	122.6	101.0	122.6				
0.65	0.79	9309	1.95	2215.09	101.7	122.9	101.7	122.9				
0.76	0.92	7770	2.35	1887.82	104.0	124.1	104.0	124.1				
0.77	0.94	7612	2.40	1854.30	104.2	124.2	104.2	124.2				
0.93	1.1	6107	2.95	1530.83	105.9	125.3	105.9	125.3				
0.72	0.87	8613	2.10	1308.92	102.8	123.4	102.8	123.4	KH154-11P-90S/L-06E	676	462	
0.83	1.0	7296	2.50	1127.36	104.6	124.4	104.6	124.4				
0.91	1.1	6635	2.75	1035.99	105.4	124.9	105.4	124.9				
0.96	1.2	6193	2.95	975.12	105.8	125.3	105.8	125.3				
0.60	0.72	10767	1.25	1579.81	76.9	86.7	76.9	86.7	KH154-11P-90S/L-06E	422	462	
0.68	0.83	9330	1.40	1377.44	80.2	88.1	80.2	88.1				
0.77	0.94	8194	1.60	1219.69	82.3	89.3	82.3	89.3				
0.79	0.97	7954	1.65	1186.50	82.8	89.5	82.8	89.5				
0.88	1.1	7071	1.85	1063.46	84.2	90.4	84.2	90.4				
0.92	1.1	6773	1.95	1022.92	84.6	90.7	84.6	90.7				
1.0	1.2	6003	2.20	916.04	85.6	91.5	85.6	91.5				
1.1	1.3	5832	2.25	891.88	85.9	91.7	85.9	91.7				
1.2	1.4	5185	2.55	802.79	86.6	92.3	86.6	92.3				
1.3	1.6	4446	2.95	699.95	87.3	93.0	87.3	93.0				
0.91	1.1	6890	1.90	1579.81	84.4	90.6	84.4	90.6	KH124-11P-80-04F	416	458	
1.0	1.3	5933	2.20	1377.44	85.7	91.6	85.7	91.6				
1.2	1.4	5178	2.55	1219.69	86.6	92.3	86.6	92.3				
1.3	1.6	4440	2.95	1063.46	87.3	93.1	87.3	93.1				
0.72	0.88	8999	0.90	1301.54	40.4	58.9	40.4	58.9	KH104-11P-90S/L-06E	299	454	
0.83	1.0	7764	1.05	1129.81	46.9	60.3	46.9	60.3				
0.94	1.1	6863	1.20	1004.85	50.5	61.3	50.5	61.3				
0.96	1.2	6667	1.20	976.16	51.3	61.6	51.3	61.6				
1.1	1.3	5908	1.40	872.27	53.7	62.4	53.7	62.4				
1.2	1.5	5063	1.60	753.64	56.0	63.4	56.0	63.4				
1.3	1.6	4904	1.65	731.54	56.4	63.6	56.4	63.6				
1.4	1.7	4397	1.85	661.38	57.5	64.1	57.5	64.1				
1.5	1.8	4185	1.95	632.05	58.0	64.4	58.0	64.4				
1.6	2.0	3770	2.15	574.12	58.7	64.9	58.7	64.9				
1.8	2.2	3310	2.45	510.43	59.5	65.4	59.5	65.4				
1.9	2.3	3210	2.50	496.04	59.6	65.5	59.6	65.5				
2.1	2.6	2826	2.85	443.08	60.2	65.9	60.2	65.9				
2.2	2.7	2676	3.00	422.20	60.3	66.1	60.3	66.1				
1.1	1.3	5795	1.40	1301.54	54.1	62.5	54.1	62.5	KH104-11P-80-04F	293	454	
1.3	1.5	4979	1.65	1129.81	56.2	63.5	56.2	63.5				
1.4	1.7	4392	1.85	1004.85	57.5	64.1	57.5	64.1				
1.5	1.8	4258	1.90	976.16	57.8	64.3	57.8	64.3				
1.6	2.0	3765	2.15	872.27	58.7	64.9	58.7	64.9				
1.7	2.1	3623	2.25	842.74	59.0	65.0	59.0	65.0				
1.9	2.3	3206	2.50	753.64	59.6	65.5	59.6	65.5				
2.0	2.4	3099	2.60	731.54	59.8	65.6	59.8	65.6				
2.2	2.6	2767	2.90	661.38	60.2	66.0	60.2	66.0				



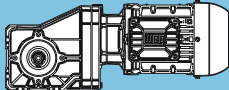
P _N = 0.75 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.75 kW		0.90 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.2	1.5	5311	0.85	766.52	21.5	36.2	21.5	36.2	KH094-11P-90S/L-06E	170	450
1.3	1.5	5131	0.90	742.09	23.2	38.5	23.2	38.5			
1.5	1.8	4311	1.05	627.37	29.1	39.5	29.1	39.5			
1.6	2.0	3901	1.20	571.21	31.4	40.0	31.4	40.0			
1.9	2.4	3271	1.40	482.91	34.1	40.8	34.1	40.8			
2.2	2.7	2905	1.55	431.58	35.4	41.3	35.4	41.3			
2.6	3.1	2421	1.90	364.86	36.9	41.9	36.9	41.9			
2.7	3.2	2339	1.95	353.21	37.1	42.0	37.1	42.0			
3.1	3.8	1945	2.35	298.61	38.0	42.5	38.0	42.5			
3.3	4.0	1858	2.45	286.42	38.1	42.6	38.1	42.6			
3.9	4.7	1538	2.95	242.14	38.7	43.0	38.7	43.0			
1.1	1.4	5714	0.80	1251.99	**	**	**	**	KH094-11P-80-04F	164	450
1.2	1.5	5326	0.85	1169.35	21.3	35.8	21.3	35.8			
1.4	1.8	4465	1.05	988.58	28.2	39.3	28.2	39.3			
1.6	1.9	4079	1.15	906.69	30.4	39.8	30.4	39.8			
1.9	2.3	3420	1.35	766.52	33.5	40.7	33.5	40.7			
2.3	2.8	2765	1.65	627.37	35.9	41.5	35.9	41.5			
2.5	3.0	2502	1.80	571.21	36.6	41.8	36.6	41.8			
3.0	3.6	2080	2.20	482.91	37.7	42.4	37.7	42.4			
3.3	4.0	1840	2.45	431.58	38.2	42.7	38.2	42.7			
3.9	4.8	1520	3.00	364.86	38.7	43.1	38.7	43.1			
1.7	2.1	3823	0.80	550.61	**	**	**	**	KH084-11P-90S/L-06E	120	446
1.8	2.2	3642	0.85	525.61	11.9	18.4	11.9	7.1			
2.0	2.4	3317	0.95	480.77	16.3	27.7	16.3	7.6			
2.2	2.7	2956	1.05	430.17	19.7	35.0	19.7	8.1			
2.3	2.8	2859	1.05	416.02	20.5	36.8	20.5	8.3			
2.6	3.2	2476	1.25	363.25	23.1	41.3	23.1	8.8			
2.7	3.3	2372	1.30	348.82	23.7	41.5	23.7	9.0			
2.8	3.4	2316	1.30	340.47	24.0	41.6	24.0	9.1			
3.2	3.9	2005	1.50	297.29	25.4	42.0	25.4	9.5			
3.4	4.1	1851	1.65	276.09	26.1	42.3	26.1	9.8			
3.9	4.7	1600	1.90	241.07	27.0	42.6	27.0	10.1			
4.0	4.8	1567	1.95	236.66	27.1	42.7	27.1	10.2			
4.1	5.0	1527	2.00	231.12	27.2	42.7	27.2	10.2			
4.7	5.7	1317	2.30	201.80	27.8	43.1	27.8	10.6			
5.0	6.1	1212	2.50	187.31	28.0	43.2	28.0	10.7			
5.7	7.0	1041	2.90	163.55	28.4	43.5	28.4	11.0			
1.6	2.0	3988	0.80	873.98	**	**	**	**	KH084-11P-80-04F	114	446
1.9	2.3	3468	0.90	763.13	14.5	23.9	14.5	7.4			
2.0	2.4	3244	0.95	715.32	17.1	29.4	17.1	7.7			
2.1	2.5	3149	1.00	695.67	18.0	31.3	18.0	7.8			
2.3	2.8	2816	1.10	624.59	20.8	37.4	20.8	8.3			
2.6	3.2	2467	1.25	550.61	23.1	41.4	23.1	8.9			
2.7	3.3	2350	1.30	525.61	23.8	41.5	23.8	9.0			
3.0	3.6	2136	1.45	480.77	24.8	41.8	24.8	9.3			
3.3	4.0	1900	1.60	430.17	25.9	42.2	25.9	9.7			
3.4	4.2	1833	1.65	416.02	26.1	42.3	26.1	9.8			
3.9	4.8	1584	1.90	363.25	27.0	42.7	27.0	10.2			
4.1	5.0	1515	2.00	348.82	27.2	42.8	27.2	10.3			
4.2	5.1	1476	2.05	340.47	27.3	42.8	27.3	10.3			
4.8	5.9	1270	2.40	297.29	27.9	43.1	27.9	10.6			
4.9	6.0	1245	2.45	292.01	28.0	43.2	28.0	10.7			
5.2	6.3	1170	2.60	276.09	28.1	43.3	28.1	10.8			
5.9	7.2	1004	3.00	241.07	28.5	43.5	28.5	11.0			
4.6	5.6	1571	1.95	206.12	27.1	42.7	27.1	10.2	KH083-11P-90S/L-06E	107	444
5.8	7.0	1243	2.45	163.14	28.0	43.2	28.0	10.7			
6.6	8.0	1085	2.80	142.45	28.3	43.4	28.3	10.9			
6.9	8.4	1032	2.95	206.12	28.4	43.5	28.4	11.0			

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** ... on request

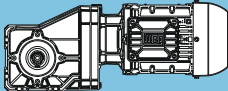
P _N = 0.75 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.7	4.5	1952	0.80	256.14	**	**	**	**	KH073-11P-90S/L-06E	66	442	
4.8	5.8	1507	1.05	197.75	15.5	15.9	15.5	4.6				
5.7	6.9	1264	1.25	165.85	17.1	16.4	17.1	5.1				
7.2	8.8	992	1.60	130.16	18.5	17.0	18.5	5.7				
9.4	11	765	2.05	100.45	19.3	17.4	19.3	6.2				
11	14	633	2.45	83.09	19.7	17.7	18.9	6.4				
12	15	588	2.65	77.11	19.8	17.8	18.2	6.5				
13	16	538	2.90	70.67	19.9	17.9	17.6	6.6				
20	24	362	1.70	47.56	20.2	17.9	15.0	6.6				
26	31	280	2.75	36.72	20.3	18.1	13.5	6.9				
5.6	6.8	1283	1.25	256.14	17.0	16.3	17.0	5.1	KH073-11P-80-04F	60	442	
7.2	8.8	990	1.60	197.75	18.5	17.0	18.5	5.7				
8.6	10	831	1.90	165.85	19.1	17.3	19.1	6.0				
11	13	652	2.40	130.16	19.6	17.7	18.9	6.4				
14	17	500	2.60	99.87	20.0	18.0	17.1	6.7				
30	37	238	2.60	47.56	20.4	18.3	12.8	7.0				
7.7	9.4	928	0.90	121.85	7.0	11.1	7.0	2.4	KH063-11P-90S/L-06E	46	440	
9.4	11	762	1.10	99.98	9.2	12.9	9.2	2.9				
12	14	621	0.95	81.53	10.4	13.3	10.4	3.3				
15	18	492	1.70	64.62	11.2	13.7	11.2	3.7				
16	19	449	1.85	58.89	11.4	13.8	11.4	3.9				
19	23	382	2.15	50.17	11.7	14.0	11.7	4.1				
21	26	338	0.95	44.35	11.9	13.7	11.9	3.8				
23	28	314	2.65	41.17	12.0	14.3	12.0	4.3				
24	29	303	2.65	39.83	12.0	14.3	12.0	4.3				
27	33	268	1.70	35.15	12.1	14.1	11.6	4.1				
28	34	258	2.95	33.85	12.1	14.4	11.2	4.5				
34	42	208	2.45	27.29	12.3	14.3	10.5	4.4				
42	51	171	2.95	22.40	12.3	14.5	9.6	4.5				
7.2	8.8	992	0.85	198.00	5.9	8.7	5.9	2.2	KH063-11P-80-04F	40	440	
9.1	11	786	1.05	156.92	8.9	12.8	8.9	2.8				
12	14	610	1.35	121.85	10.5	13.3	10.5	3.4				
14	17	501	1.65	99.98	11.2	13.7	11.2	3.7				
18	21	408	1.40	81.53	11.6	14.0	11.6	4.0				
22	27	324	2.55	64.62	11.9	14.2	11.9	4.3				
24	30	295	2.80	58.89	12.0	14.3	12.0	4.4				
32	39	222	1.45	44.35	12.2	14.3	10.8	4.3				
41	50	176	2.60	35.15	12.3	14.5	9.7	4.5				
9.8	12	732	0.85	96.08	3.0	3.8	3.0	3.1	KH053-11P-90S/L-06E	33	438	
12	14	613	0.95	80.46	5.9	9.9	5.9	3.4				
13	16	557	1.10	73.08	6.7	10.3	6.7	3.6				
15	18	486	1.25	63.77	7.6	10.5	7.6	3.8				
16	19	459	1.35	60.26	7.8	10.6	7.8	3.9				
19	23	377	1.60	49.43	8.5	10.9	8.5	4.2				
22	27	320	1.90	42.00	8.9	11.0	8.9	4.3				
23	28	310	1.95	40.63	8.9	11.1	8.9	4.4				
25	30	292	0.95	38.32	9.0	10.7	9.0	4.0				
27	33	263	2.30	34.53	9.2	11.2	9.2	4.5				
30	36	240	2.55	31.46	9.3	11.3	9.3	4.6				
31	38	231	1.70	30.37	9.3	11.0	9.3	4.3				
34	42	209	2.80	27.39	9.4	11.4	9.4	4.7				
40	49	180	2.30	23.58	9.5	11.2	9.5	4.5				
49	59	147	2.85	19.35	9.6	11.3	9.6	4.6				
9.5	12	757	0.80	151.20	**	**	**	**	KH053-11P-80-04F	26	438	
12	14	621	1.00	124.06	5.7	9.5	5.7	3.4				
15	18	481	1.25	96.08	7.6	10.5	7.6	3.8				
18	22	403	1.40	80.46	8.3	10.8	8.3	4.1				
20	24	366	1.65	73.08	8.6	10.9	8.6	4.2				
22	27	319	1.90	63.77	8.9	11.0	8.9	4.3				
24	29	302	2.00	60.26	9.0	11.1	9.0	4.4				
29	35	248	2.45	49.43	9.2	11.3	9.2	4.6				
34	41	210	2.90	42.00	9.4	11.4	9.4	4.7				
35	43	204	2.95	40.63	9.4	11.4	9.4	4.7				
37	45	192	1.40	38.32	9.4	11.1	9.4	4.4				
47	57	152	2.60	30.37	9.6	11.3	9.6	4.6				



P _N = 0.75 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
0.75 kW		0.90 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
14	17	504	0.80	66.20	**	**	**	**	KH043-11P-90S/L-06E	29	436
16	20	439	0.95	57.58	2.7	3.6	2.7	2.1			
17	21	413	1.00	54.18	3.5	5.3	3.5	2.2			
21	26	340	1.20	44.64	4.9	8.1	4.9	2.5			
24	30	293	0.95	38.49	5.5	8.0	5.5	2.4			
26	31	280	1.40	36.78	5.7	8.4	5.7	2.8			
31	38	232	1.40	30.39	6.1	8.3	6.1	2.7			
32	38	227	1.60	29.81	6.2	8.6	6.2	3.0			
33	41	214	1.90	28.13	6.3	8.6	6.3	3.0			
40	49	180	1.75	23.57	6.5	8.6	6.5	3.0			
44	54	162	2.50	21.25	6.6	8.9	6.6	3.3			
49	59	147	2.05	19.29	6.7	8.7	6.7	3.1			
63	77	113	2.50	14.85	6.8	8.9	6.8	3.3			
16	20	447	0.85	89.17	2.4	3.0	2.4	2.1	KH043-11P-80-04F	23	436
20	24	365	1.10	72.92	4.5	7.5	4.5	2.4			
22	26	332	1.25	66.20	5.0	8.2	5.0	2.6			
25	30	288	1.40	57.58	5.6	8.3	5.6	2.7			
26	32	271	1.50	54.18	5.8	8.4	5.8	2.8			
30	37	236	0.85	47.07	6.1	8.3	6.1	2.7			
32	39	224	1.80	44.64	6.2	8.6	6.2	3.0			
33	40	220	1.85	43.93	6.2	8.6	6.2	3.0			
37	45	193	1.45	38.49	6.4	8.5	6.4	2.9			
39	47	184	2.10	36.78	6.5	8.8	6.5	3.2			
39	48	183	2.20	36.54	6.5	8.8	6.5	3.2			
47	57	152	2.15	30.39	6.7	8.7	6.7	3.1			
48	58	149	2.45	29.81	6.7	8.9	6.7	3.3			
51	62	141	2.85	28.13	6.7	8.9	6.7	3.3			
61	74	118	2.65	23.57	6.8	8.9	6.8	3.3			
31	38	231	0.90	30.29	3.1	2.3	3.1	2.3	KH033-11P-90S/L-06E	26	434
33	40	218	0.95	28.67	3.4	2.4	3.4	2.4			
39	47	186	0.90	24.38	4.0	2.3	4.0	2.3			
43	53	165	1.25	21.67	4.2	2.7	4.2	2.7			
49	59	148	1.15	19.37	4.4	2.6	4.4	2.6			
57	70	125	1.60	16.47	4.6	2.9	4.6	2.9			
63	77	114	1.45	14.96	4.7	2.8	4.7	2.8			
73	89	98	2.05	12.81	4.8	3.1	4.8	3.1			
79	96	91	1.80	11.94	4.9	3.0	4.9	3.0			
94	115	76	2.65	10.00	5.0	3.2	5.0	3.2			
104	127	69	2.40	9.03	5.0	3.2	5.0	3.2			
137	167	52	2.90	6.86	5.1	3.3	5.1	3.3			
29	35	250	0.85	49.88	2.6	2.2	2.6	2.2			
31	37	233	0.90	46.48	3.1	2.3	3.1	2.3			
37	45	194	1.05	38.80	3.8	2.6	3.8	2.6			
40	48	180	1.15	35.90	4.0	2.6	4.0	2.6			
47	57	152	1.35	30.29	4.4	2.8	4.4	2.8			
48	58	150	0.90	29.97	4.4	2.6	4.4	2.6			
50	61	144	1.40	28.67	4.5	2.8	4.5	2.8			
59	71	122	1.35	24.38	4.7	2.8	4.7	2.8			
66	80	109	1.85	21.67	4.8	3.0	4.8	3.0			
74	90	97	1.70	19.37	4.9	3.0	4.9	3.0			
87	106	82	2.45	16.47	4.9	3.2	4.9	3.2			
96	116	75	2.20	14.96	5.0	3.1	5.0	3.1			
120	146	60	2.75	11.94	5.0	3.2	5.0	3.2			

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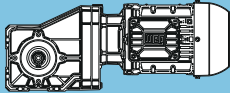
** ... on request

P _N = 0.75 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
0.75 kW		0.90 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
61	74	117	0.80	15.41	**	**	**	**	KH022-11P-90S/L-06E	24	432	
68	83	105	0.90	13.81	5.0	2.8	5.0	2.8				
71	86	101	0.90	13.29	5.0	2.8	5.0	2.8				
79	96	91	1.00	11.92	5.1	2.8	5.1	2.8				
81	99	88	1.00	11.60	5.1	2.8	5.1	2.8				
90	110	79	1.10	10.40	5.1	2.8	5.1	2.8				
102	124	70	1.15	9.25	5.2	2.8	5.2	2.8				
110	135	65	1.20	8.51	5.2	2.8	5.2	2.8				
123	150	58	1.35	7.63	5.2	2.8	5.2	2.8				
136	166	53	1.45	6.91	5.0	2.8	5.0	2.8				
158	192	45	1.55	5.96	4.8	2.8	4.8	2.8				
181	220	40	1.65	5.20	4.5	2.8	4.5	2.8				
246	300	29	2.00	3.82	4.1	2.8	4.1	2.8				
54	66	132	0.85	26.41	4.8	2.8	4.8	2.8				KH022-11P-80-04F
60	73	119	0.95	23.68	4.9	2.8	4.9	2.8				
69	84	103	1.00	20.63	5.0	2.8	5.0	2.8				
73	89	98	0.85	19.50	5.0	2.8	5.0	2.8				
77	94	93	1.15	18.50	5.0	2.8	5.0	2.8				
93	113	77	1.25	15.41	5.1	2.8	5.1	2.8				
104	126	69	1.35	13.81	5.2	2.8	5.2	2.8				
108	131	67	1.35	13.29	5.2	2.8	5.2	2.8				
120	146	60	1.50	11.92	5.2	2.8	5.2	2.8				
121	147	59	1.40	11.84	5.2	2.8	5.2	2.8				
123	150	58	1.50	11.60	5.2	2.8	5.2	2.8				
138	167	52	1.65	10.40	5.0	2.8	5.0	2.8				
155	188	46	1.75	9.25	4.8	2.8	4.8	2.8				
168	204	43	1.85	8.51	4.6	2.8	4.6	2.8				
187	228	38	2.05	7.63	4.5	2.8	4.5	2.8				
207	252	35	2.15	6.91	4.3	2.8	4.3	2.8				
240	292	30	2.35	5.96	4.1	2.8	4.1	2.8				
275	335	26	2.50	5.20	3.9	2.8	3.9	2.8				
374	455	19	3.00	3.82	3.5	2.8	3.5	2.8				

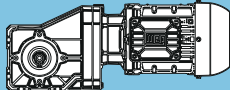
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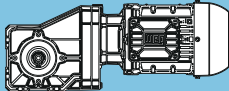
** ... on request

P _N = 1.1 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.1 kW		1.3 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.44	0.53	21397	0.85	3337.74	61.0	105.7	61.0	105.7	KH155-11P-90S/L-04E	687	464
0.48	0.58	19471	0.95	3052.96	71.6	115.1	71.6	115.1			
0.53	0.64	17333	1.05	2731.65	80.8	116.8	80.8	116.8			
0.63	0.76	14487	1.25	2306.68	90.2	118.9	90.2	118.9			
0.66	0.79	13876	1.30	2215.09	91.9	119.4	91.9	119.4			
0.77	0.93	11674	1.55	1887.82	97.2	121.1	97.2	121.1			
0.78	0.95	11438	1.60	1854.30	97.7	121.3	97.7	121.3			
0.95	1.1	9273	1.95	1530.83	101.8	122.9	101.8	122.9			
0.97	1.2	9080	2.00	1502.83	102.1	123.1	102.1	123.1			
1.1	1.4	7583	2.40	1281.49	104.2	124.2	104.2	124.2			
0.42	0.51	22412	0.85	2306.68	54.1	91.1	54.1	91.1	KH155-11P-100L-06D	693	464
0.43	0.53	21522	0.85	2215.09	60.2	104.0	60.2	104.0			
0.51	0.62	18202	1.00	1887.82	77.3	116.1	77.3	116.1			
0.52	0.63	17833	1.05	1854.30	78.8	116.4	78.8	116.4			
0.63	0.76	14571	1.25	1530.83	90.0	118.9	90.0	118.9			
0.64	0.78	14268	1.30	1502.83	90.9	119.1	90.9	119.1			
0.75	0.91	12042	1.50	1281.49	96.4	120.8	96.4	120.8			
0.92	1.1	9560	1.90	1038.59	101.3	122.7	101.3	122.7			
1.1	1.3	8111	2.25	1308.92	103.5	123.8	103.5	123.8	KH154-11P-90S/L-04E	674	462
1.3	1.6	6870	2.65	1127.36	105.1	124.8	105.1	124.8			
1.4	1.7	6248	2.90	1035.99	105.8	125.2	105.8	125.2			
0.73	0.89	12706	1.45	1308.92	94.9	120.3	94.9	120.3	KH154-11P-100L-06D	680	462
0.85	1.0	10832	1.70	1127.36	99.0	121.7	99.0	121.7			
0.93	1.1	9892	1.85	1035.99	100.7	122.5	100.7	122.5			
0.98	1.2	9272	1.95	975.12	101.8	122.9	101.8	122.9			
1.1	1.3	8531	2.15	904.58	102.9	123.5	102.9	123.5			
1.2	1.5	7446	2.45	799.45	104.4	124.3	104.4	124.3			
1.4	1.7	6294	2.90	688.57	105.7	125.2	105.7	125.2			
0.92	1.1	10181	1.30	1579.81	78.3	87.3	78.3	87.3	KH124-11P-90S/L-04E	420	458
1.1	1.3	8804	1.50	1377.44	81.2	88.7	81.2	88.7			
1.2	1.4	7732	1.70	1219.69	83.1	89.8	83.1	89.8			
1.4	1.7	6672	1.95	1063.46	84.8	90.8	84.8	90.8			
1.6	1.9	5664	2.30	916.04	86.1	91.8	86.1	91.8			
1.8	2.2	4882	2.70	802.79	86.9	92.6	86.9	92.6			
1.9	2.3	4652	2.80	768.25	87.1	92.8	87.1	92.8			
0.61	0.74	15719	0.85	1579.81	59.8	81.7	59.8	81.7	KH124-11P-100L-06D	426	458
0.70	0.85	13621	1.00	1377.44	68.3	83.8	68.3	83.8			
0.79	0.96	12012	1.10	1219.69	73.5	85.5	73.5	85.5			
0.81	0.98	11661	1.15	1186.50	74.5	85.8	74.5	85.8			
0.90	1.1	10409	1.25	1063.46	77.8	87.1	77.8	87.1			
0.94	1.1	9971	1.35	1022.92	78.8	87.5	78.8	87.5			
1.0	1.3	8874	1.50	916.04	81.1	88.6	81.1	88.6			
1.1	1.3	8622	1.55	891.88	81.6	88.9	81.6	88.9			
1.2	1.5	7713	1.70	802.79	83.2	89.8	83.2	89.8			
1.4	1.7	6642	2.00	699.95	84.8	90.8	84.8	90.8			
1.5	1.8	6252	2.10	661.56	85.3	91.2	85.3	91.2			
1.6	1.9	5639	2.35	602.92	86.1	91.8	86.1	91.8			
1.8	2.2	4989	2.65	540.20	86.8	92.5	86.8	92.5			
1.9	2.3	4704	2.80	512.47	87.1	92.8	87.1	92.8			
1.1	1.4	8509	0.95	1301.54	43.2	59.4	43.2	59.4	KH104-11P-90S/L-04E	297	454
1.3	1.6	7341	1.10	1129.81	48.7	60.8	48.7	60.8			
1.4	1.8	6489	1.25	1004.85	51.9	61.8	51.9	61.8			
1.5	1.8	6291	1.30	976.16	52.5	62.0	52.5	62.0			
1.7	2.0	5587	1.45	872.27	54.7	62.8	54.7	62.8			
1.9	2.3	4777	1.70	753.64	56.7	63.7	56.7	63.7			
2.0	2.4	4628	1.75	731.54	57.0	63.9	57.0	63.9			
2.2	2.7	4149	1.95	661.38	58.0	64.4	58.0	64.4			
2.3	2.8	3949	2.05	632.05	58.4	64.7	58.4	64.7			
2.5	3.1	3557	2.25	574.12	59.1	65.1	59.1	65.1			
2.9	3.4	3117	2.60	510.43	59.8	65.6	59.8	65.6			

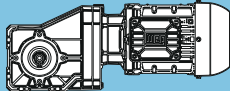
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P _N = 1.1 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.96	1.2	10019	0.80	1004.85	**	**	**	**	KH104-11P-100L-06D	303	454
0.98	1.2	9713	0.85	976.16	35.6	58.1	35.6	58.1			
1.1	1.3	8643	0.95	872.27	42.5	59.3	42.5	59.3			
1.3	1.5	7422	1.10	753.64	48.3	60.7	48.3	60.7			
1.5	1.8	6473	1.25	661.38	51.9	61.8	51.9	61.8			
1.7	2.0	5573	1.45	574.12	54.7	62.8	54.7	62.8			
1.9	2.3	4914	1.65	510.43	56.4	63.6	56.4	63.6			
2.2	2.6	4222	1.90	443.08	57.9	64.3	57.9	64.3			
2.3	2.8	4006	2.00	422.20	58.3	64.6	58.3	64.6			
2.5	3.0	3595	2.25	382.82	59.0	65.1	59.0	65.1			
2.6	3.2	3428	2.35	366.49	59.3	65.3	59.3	65.3			
2.7	3.2	3352	2.40	359.12	59.4	65.3	59.4	65.3			
3.0	3.7	2912	2.75	316.65	60.0	65.8	60.0	65.8			
3.1	3.7	2861	2.80	311.74	60.1	65.9	60.1	65.9			
1.6	1.9	5964	0.80	906.69	**	**	**	**	KH124-11P-90S/L-04E	168	458
1.9	2.3	5022	0.90	766.52	24.1	38.6	24.1	38.6			
2.0	2.4	4852	0.95	742.09	25.5	38.8	25.5	38.8			
2.3	2.8	4068	1.15	627.37	30.5	39.8	30.5	39.8			
2.5	3.1	3689	1.25	571.21	32.4	40.3	32.4	40.3			
3.0	3.6	3087	1.50	482.91	34.8	41.1	34.8	41.1			
3.4	4.1	2742	1.65	431.58	35.9	41.5	35.9	41.5			
4.0	4.8	2284	2.00	364.86	37.2	42.1	37.2	42.1			
4.1	5.0	2207	2.05	353.21	37.4	42.2	37.4	42.2			
4.9	5.9	1831	2.50	298.61	38.2	42.7	38.2	42.7			
5.1	6.1	1749	2.60	286.42	38.4	42.8	38.4	42.8			
1.7	2.0	5695	0.80	571.21	**	**	**	**	KH094-11P-100L-06D	174	450
2.0	2.4	4785	0.95	482.91	26.0	38.9	26.0	38.9			
2.2	2.7	4250	1.10	431.58	29.5	39.6	29.5	39.6			
2.6	3.2	3564	1.30	364.86	32.9	40.5	32.9	40.5			
2.7	3.3	3443	1.35	353.21	33.4	40.6	33.4	40.6			
3.2	3.9	2881	1.60	298.61	35.5	41.3	35.5	41.3			
3.4	4.1	2758	1.65	286.42	35.9	41.5	35.9	41.5			
4.0	4.8	2298	2.00	242.14	37.2	42.1	37.2	42.1			
4.7	5.7	1892	2.40	202.70	38.1	42.6	38.1	42.6			
4.9	6.0	1806	2.50	194.32	38.2	42.7	38.2	42.7			
5.7	6.9	1852	2.45	169.25	38.2	42.6	38.2	42.6			
6.7	8.1	1566	2.90	143.08	38.7	43.0	38.7	43.0			
2.6	3.2	3615	0.85	550.61	12.4	19.5	12.4	7.2	KH084-11P-90S/L-04E	118	446
2.8	3.3	3443	0.90	525.61	14.8	24.5	14.8	7.4			
3.0	3.7	3137	1.00	480.77	18.1	31.6	18.1	7.9			
3.4	4.1	2795	1.10	430.17	21.0	37.9	21.0	8.4			
3.5	4.2	2698	1.15	416.02	21.7	39.4	21.7	8.5			
4.0	4.8	2341	1.30	363.25	23.8	41.5	23.8	9.0			
4.2	5.0	2243	1.35	348.82	24.3	41.7	24.3	9.2			
4.3	5.2	2185	1.40	340.47	24.6	41.8	24.6	9.3			
4.9	5.9	1892	1.60	297.29	25.9	42.2	25.9	9.7			
5.0	6.0	1855	1.65	292.01	26.1	42.3	26.1	9.8			
5.3	6.4	1747	1.75	276.09	26.5	42.4	26.5	9.9			
6.0	7.3	1509	2.00	241.07	27.2	42.8	27.2	10.3			
6.1	7.4	1479	2.05	236.66	27.3	42.8	27.3	10.3			
6.3	7.6	1441	2.10	231.12	27.4	42.9	27.4	10.4			
7.2	8.7	1240	2.45	201.80	28.0	43.2	28.0	10.7			
7.8	9.4	1141	2.65	187.31	28.2	43.3	28.2	10.8			
2.6	3.2	3614	0.85	363.25	12.4	19.5	12.4	7.2	KH093-11P-100L-06D	124	448
2.8	3.3	3464	0.90	348.82	14.5	23.9	14.5	7.4			
3.2	3.9	2934	1.05	297.29	19.9	35.5	19.9	8.2			
3.3	4.0	2882	1.05	292.01	20.3	36.3	20.3	8.2			
3.5	4.2	2713	1.15	276.09	21.6	39.2	21.6	8.5			
4.0	4.8	2355	1.30	241.07	23.7	41.5	23.7	9.0			
4.1	4.9	2312	1.30	236.66	24.0	41.6	24.0	9.1			
4.2	5.0	2253	1.35	231.12	24.3	41.7	24.3	9.2			
4.8	5.8	1951	1.55	201.80	25.7	42.1	25.7	9.6			
5.1	6.2	1800	1.70	187.31	26.3	42.3	26.3	9.8			
5.9	7.1	1555	1.95	163.55	27.1	42.7	27.1	10.2			



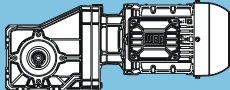
P _N = 1.1 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
1.1 kW		1.3 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
7.1	8.5	1488	2.05	206.12	27.3	42.8	27.3	10.3	KH083-11P-90S/L-04E	105	444
8.9	11	1178	2.55	163.14	28.1	43.3	28.1	10.8			
10	12	1028	2.95	142.45	28.4	43.5	27.9	11.0			
4.7	5.7	2256	1.35	206.12	24.3	41.7	24.3	9.2	KH083-11P-100L-06D	111	444
5.9	7.1	1785	1.70	163.14	26.3	42.4	26.3	9.9			
6.7	8.2	1559	1.95	142.45	27.1	42.7	27.1	10.2			
7.6	9.3	1378	2.20	125.90	27.6	43.0	27.6	10.5			
9.0	11	1165	2.60	106.46	28.2	43.3	28.2	10.8			
10	13	1001	3.00	91.51	28.5	43.5	27.8	11.0			
5.7	6.9	1849	0.85	256.14	12.3	15.2	12.3	3.9	KH073-11P-90S/L-04E	64	442
7.4	8.9	1428	1.10	197.75	16.1	16.0	16.1	4.8			
8.8	11	1197	1.30	165.85	17.5	16.5	17.5	5.3			
11	14	940	1.65	130.16	18.7	17.1	18.7	5.8			
14	18	725	2.15	100.45	19.4	17.5	18.0	6.3			
15	18	721	1.80	99.87	19.4	17.5	17.6	6.3			
18	21	600	2.60	83.09	19.8	17.8	16.3	6.5			
19	23	557	2.80	77.11	19.9	17.8	15.8	6.6			
31	37	343	1.80	47.56	20.2	17.9	13.1	6.7			
40	48	265	2.90	36.72	20.3	18.2	11.8	6.9			
5.8	7	1815	0.90	165.85	12.6	15.2	12.6	4.0	KH073-11P-100L-06D	70	442
7.4	9	1424	1.10	130.16	16.1	16.1	16.1	4.8			
9.6	12	1099	1.45	100.45	18.0	16.7	18.0	5.5			
12	14	909	1.75	83.09	18.8	17.1	18.8	5.9			
14	16	773	2.05	70.67	19.3	17.4	18.2	6.2			
15	18	708	2.20	64.67	19.5	17.5	17.6	6.3			
16	19	670	2.35	61.25	19.6	17.6	17.1	6.4			
19	23	566	2.75	51.72	19.8	17.8	15.9	6.6			
20	24	520	1.20	47.56	19.9	17.4	15.8	6.1			
26	32	402	1.90	36.72	20.2	17.7	14.1	6.5			
31	38	337	2.75	30.79	20.3	17.9	13.1	6.7			
12	14	880	0.95	121.85	7.8	12.5	7.8	2.5	KH063-11P-90S/L-04E	44	440
15	18	722	1.15	99.98	9.6	13.0	9.6	3.0			
18	22	589	1.00	81.53	10.6	13.4	10.6	3.4			
19	23	559	1.50	77.42	10.8	13.5	10.8	3.5			
23	27	467	1.80	64.62	11.4	13.8	11.4	3.8			
25	30	425	1.95	58.89	11.5	13.9	11.5	4.0			
29	35	362	2.30	50.17	11.8	14.1	11.7	4.2			
30	36	351	2.35	48.56	11.9	14.1	11.5	4.2			
33	40	320	1.00	44.35	12.0	13.8	11.3	3.9			
35	43	297	2.80	41.17	12.0	14.3	10.8	4.4			
37	44	288	2.80	39.83	12.1	14.3	10.5	4.4			
41	50	254	1.80	35.15	12.2	14.1	10.2	4.2			
53	64	197	2.55	27.29	12.3	14.4	9.2	4.4			
12	15	847	1.00	77.42	8.2	12.6	8.2	2.6	KH063-11P-100L-06D	50	440
15	18	707	1.20	64.62	9.7	13.0	9.7	3.1			
16	20	644	1.30	58.89	10.2	13.2	10.2	3.3			
19	23	549	1.50	50.17	10.9	13.5	10.9	3.6			
20	24	531	1.55	48.56	11.0	13.6	11.0	3.6			
23	28	451	1.85	41.17	11.4	13.8	11.4	3.9			
24	29	436	1.85	39.83	11.5	13.9	11.5	3.9			
27	33	385	1.20	35.15	11.7	13.5	11.7	3.6			
28	34	370	2.05	33.85	11.8	14.1	11.8	4.1			
30	37	349	2.40	31.88	11.9	14.2	11.5	4.2			
34	42	305	2.35	27.83	12.0	14.3	10.9	4.3			
35	43	299	1.70	27.29	12.0	13.9	11.0	4.0			
40	48	265	2.95	24.25	12.1	14.4	10.2	4.5			
43	52	245	2.05	22.40	12.2	14.2	10.0	4.2			
55	67	190	2.65	17.34	12.3	14.4	9.0	4.5			

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P _N = 1.1 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.1 kW		1.3 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
15	18	694	0.90	96.08	4.2	6.3	4.2	3.2	KH053-11P-90S/L-04E	31	438
18	22	581	1.00	80.46	6.4	10.2	6.4	3.5			
20	24	528	1.15	73.08	7.1	10.4	7.1	3.7			
23	28	460	1.35	63.77	7.8	10.6	7.8	3.9			
24	29	435	1.40	60.26	8.0	10.7	8.0	4.0			
29	36	358	1.70	49.52	8.6	10.9	8.6	4.2			
35	42	303	2.00	42.00	9.0	11.1	9.0	4.4			
36	43	293	2.05	40.63	9.0	11.1	9.0	4.4			
38	46	277	1.00	38.32	9.1	10.8	9.1	4.1			
42	51	249	2.45	34.53	9.2	11.2	9.2	4.5			
46	56	227	2.65	31.46	9.3	11.3	9.3	4.6			
48	58	219	1.80	30.37	9.3	11.0	9.3	4.3			
53	64	198	2.95	27.39	9.4	11.4	9.4	4.7			
62	75	170	2.45	23.58	9.5	11.2	9.5	4.5			
75	91	140	3.00	19.35	9.6	11.4	9.6	4.7			
13	16	800	0.80	73.08	**	**	**	**	KH053-11P-100L-06D	36	438
15	18	698	0.90	63.77	4.1	6.1	4.1	3.2			
16	19	659	0.95	60.26	5.0	8.0	5.0	3.3			
19	24	542	1.15	49.52	6.9	10.4	6.9	3.7			
23	28	460	1.35	42.00	7.8	10.6	7.8	3.9			
24	29	445	1.35	40.63	8.0	10.7	8.0	4.0			
28	34	378	1.60	34.53	8.5	10.9	8.5	4.2			
31	37	344	1.75	31.46	8.7	11.0	8.7	4.3			
32	38	332	1.20	30.37	8.8	10.5	8.8	3.8			
35	43	300	1.95	27.39	9.0	11.1	9.0	4.4			
40	49	262	2.30	23.93	9.2	11.2	9.2	4.5			
41	49	258	1.65	23.58	9.2	10.8	9.2	4.1			
49	59	216	2.80	19.73	9.4	11.3	9.4	4.6			
50	60	212	2.00	19.35	9.4	11.1	9.4	4.4			
64	78	164	2.55	14.98	9.5	11.3	9.5	4.6			
20	24	526	0.80	72.92	**	**	**	**	KH043-11P-90S/L-04E	27	436
22	27	478	0.85	66.20	**	**	**	**			
25	31	416	1.00	57.58	3.4	5.1	3.4	2.2			
27	32	391	1.05	54.18	4.0	6.4	4.0	2.3			
33	39	322	1.25	44.64	5.2	8.2	5.2	2.6			
38	46	278	1.00	38.49	5.7	8.1	5.7	2.5			
40	48	266	1.45	36.78	5.8	8.4	5.8	2.8			
48	58	219	1.50	30.39	6.2	8.4	6.2	2.8			
49	59	215	1.70	29.81	6.3	8.6	6.3	3.0			
52	63	203	2.00	28.13	6.4	8.7	6.4	3.1			
62	75	170	1.85	23.57	6.6	8.6	6.6	3.0			
68	83	153	2.65	21.25	6.7	8.9	6.7	3.3			
75	91	139	2.15	19.29	6.7	8.8	6.7	3.2			
98	119	107	2.60	14.85	6.9	8.9	6.9	3.3			
22	26	488	0.85	44.64	**	**	**	**			
26	32	402	1.00	36.78	3.8	6.0	3.8	2.3			
32	38	333	1.00	30.39	5.0	7.8	5.0	2.2			
34	41	308	1.30	28.13	5.4	8.3	5.4	2.7			
41	49	258	1.20	23.57	5.9	8.2	5.9	2.6			
45	55	233	1.75	21.25	6.1	8.6	6.1	3.0			
50	60	211	1.40	19.29	6.3	8.4	6.3	2.8			
55	67	190	2.15	17.39	6.4	8.7	6.4	3.1			
65	78	162	1.75	14.85	6.6	8.7	6.6	3.1			
68	83	154	2.60	14.10	6.7	8.9	6.7	3.3			
86	104	123	2.15	11.22	6.8	8.9	6.8	3.3			
105	127	100	2.50	9.18	6.9	9.0	6.9	3.4			
129	157	81	2.95	7.44	6.9	9.1	6.4	3.5			

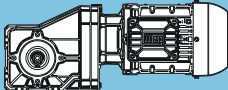
Legend see page 337

** ... on request

P _N = 1.1 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.1 kW		1.3 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
41	49	259	0.80	35.90	**	**	**	**	KH033-11P-90S/L-04E	24	434
48	58	219	0.95	30.29	3.4	2.4	3.4	2.4			
51	61	207	1.00	28.67	3.6	2.5	3.6	2.5			
60	72	176	0.95	24.38	4.1	2.4	4.1	2.4			
67	81	156	1.30	21.67	4.3	2.8	4.3	2.8			
75	91	140	1.20	19.37	4.5	2.6	4.5	2.6			
88	107	119	1.70	16.47	4.7	3.0	4.7	3.0			
97	118	108	1.55	14.96	4.8	2.9	4.8	2.9			
114	137	92	2.20	12.81	4.9	3.1	4.9	3.1			
122	147	86	1.90	11.94	4.9	3.0	4.9	3.0			
146	176	72	2.80	10.00	5.0	3.2	5.0	3.2			
161	195	65	2.55	9.03	5.0	3.2	5.0	3.2			
44	54	237	0.85	21.67	3.0	2.3	3.0	2.3	KH033-11P-100L-06D	29	434
50	60	212	0.80	19.37	**	**	**	**			
58	71	180	1.15	16.47	4.0	2.6	4.0	2.6			
64	78	164	1.00	14.96	4.3	2.5	4.3	2.5			
75	91	140	1.45	12.81	4.5	2.9	4.5	2.9			
80	98	131	1.25	11.94	4.6	2.7	4.6	2.7			
96	117	109	1.85	10.00	4.8	3.0	4.8	3.0			
106	129	99	1.65	9.03	4.8	2.9	4.8	2.9			
140	170	75	2.00	6.86	5.0	3.1	5.0	3.1			
180	218	58	2.35	5.34	5.0	3.2	5.0	3.2			
230	279	46	2.80	4.17	5.1	3.3	5.1	3.3			
79	95	134	0.80	18.50	**	**	**	**	KH022-11P-90S/L-04E	22	432
94	114	111	0.85	15.41	4.9	2.8	4.9	2.8			
105	127	100	0.95	13.81	5.0	2.8	5.0	2.8			
109	132	96	0.95	13.29	5.0	2.8	5.0	2.8			
122	148	86	1.05	11.92	5.1	2.8	5.1	2.8			
123	149	85	0.95	11.84	5.1	2.8	5.1	2.8			
125	152	84	1.05	11.60	5.1	2.8	5.1	2.8			
140	169	75	1.15	10.40	5.1	2.8	5.1	2.8			
157	190	67	1.25	9.25	4.9	2.8	4.9	2.8			
171	207	61	1.30	8.51	4.7	2.8	4.7	2.8			
191	231	55	1.40	7.63	4.5	2.8	4.5	2.8			
211	255	50	1.50	6.91	4.4	2.8	4.4	2.8			
244	295	43	1.65	5.96	4.1	2.8	4.1	2.8			
280	338	38	1.75	5.20	3.9	2.8	3.9	2.8			
381	461	28	2.10	3.82	3.5	2.8	3.5	2.8			

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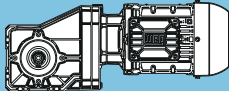
** ... on request

P _N = 1.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
1.5 kW		1.8 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.63	0.76	20182	0.90	2306.68	68.0	114.6	68.0	114.6	KH155-11P-90S/L-04F	688	464
0.65	0.79	19331	0.95	2215.09	72.3	115.2	72.3	115.2			
0.77	0.93	16307	1.15	1887.82	84.5	117.6	84.5	117.6			
0.78	0.95	16017	1.15	1854.30	85.5	117.8	85.5	117.8			
0.95	1.1	13054	1.40	1530.83	94.1	120.0	94.1	120.0			
0.96	1.2	12782	1.45	1502.83	94.7	120.2	94.7	120.2			
1.1	1.4	10760	1.70	1281.49	99.1	121.8	99.1	121.8			
1.4	1.7	8520	2.15	1038.59	102.9	123.5	102.9	123.5			
1.1	1.3	11401	1.60	1308.92	97.8	121.3	97.8	121.3	KH154-11P-90S/L-04F	675	462
1.3	1.6	9698	1.90	1127.36	101.0	122.6	101.0	122.6			
1.4	1.7	8857	2.05	1035.99	102.4	123.2	102.4	123.2			
1.5	1.8	8285	2.20	975.12	103.3	123.7	103.3	123.7			
1.6	1.9	7622	2.40	904.58	104.2	124.2	104.2	124.2			
1.8	2.2	6639	2.75	799.45	105.4	124.9	105.4	124.9			
1.9	2.3	6456	2.80	779.11	105.6	125.1	105.6	125.1			
0.92	1.1	14133	0.95	1579.81	66.5	83.3	66.5	83.3	KH124-11P-90S/L-04F	421	458
1.1	1.3	12247	1.10	1377.44	72.8	85.2	72.8	85.2			
1.2	1.5	10485	1.25	1186.50	77.6	87.0	77.6	87.0			
1.4	1.7	9340	1.40	1063.46	80.1	88.1	80.1	88.1			
1.6	1.9	7962	1.65	916.04	82.7	89.5	82.7	89.5			
1.8	2.2	6906	1.90	802.79	84.4	90.6	84.4	90.6			
1.9	2.3	6582	2.00	768.25	84.9	90.9	84.9	90.9			
2.1	2.5	5947	2.20	699.95	85.7	91.5	85.7	91.5			
2.2	2.7	5586	2.35	661.56	86.1	91.9	86.1	91.9			
2.3	2.8	5188	2.55	619.56	86.6	92.3	86.6	92.3			
2.4	2.9	5038	2.60	602.92	86.7	92.5	86.7	92.5			
2.7	3.2	4448	2.95	540.20	87.3	93.0	87.3	93.0			
1.3	1.6	10170	0.80	1129.81	**	**	**	**	KH104-11P-90S/L-04F	298	454
1.4	1.7	9008	0.90	1004.85	40.3	58.9	40.3	58.9			
1.5	1.8	8733	0.95	976.16	42.0	59.2	42.0	59.2			
1.7	2.0	7772	1.05	872.27	46.8	60.3	46.8	60.3			
1.9	2.3	6673	1.20	753.64	51.2	61.5	51.2	61.5			
2.0	2.4	6464	1.25	731.54	52.0	61.8	52.0	61.8			
2.2	2.7	5808	1.40	661.38	54.0	62.5	54.0	62.5			
2.3	2.8	5539	1.45	632.05	54.8	62.8	54.8	62.8			
2.5	3.1	5001	1.60	574.12	56.2	63.5	56.2	63.5			
2.8	3.4	4400	1.85	510.43	57.5	64.1	57.5	64.1			
2.9	3.5	4267	1.90	496.04	57.8	64.3	57.8	64.3			
3.3	4.0	3772	2.15	443.08	58.7	64.9	58.7	64.9			
3.4	4.2	3580	2.25	422.20	59.1	65.1	59.1	65.1			
3.8	4.6	3212	2.50	382.82	59.6	65.5	59.6	65.5			
4.0	4.8	3056	2.65	366.49	59.8	65.7	59.8	65.7			
2.3	2.8	5647	0.80	627.37	**	**	**	**	KH094-11P-90S/L-04F	169	450
2.5	3.1	5121	0.90	571.21	23.3	38.5	23.3	38.5			
3.0	3.6	4302	1.05	482.91	29.2	39.5	29.2	39.5			
3.4	4.1	3822	1.20	431.58	31.7	40.1	31.7	40.1			
4.0	4.8	3198	1.45	364.86	34.4	40.9	34.4	40.9			
4.1	5.0	3089	1.50	353.21	34.8	41.1	34.8	41.1			
4.9	5.9	2585	1.75	298.61	36.4	41.7	36.4	41.7			
5.1	6.1	2469	1.85	286.42	36.7	41.9	36.7	41.9			
6.0	7.2	2057	2.20	242.14	37.7	42.4	37.7	42.4			
7.2	8.7	1687	2.70	202.70	38.5	42.9	38.5	42.9			
7.5	9.0	1610	2.80	194.32	38.6	43.0	38.6	43.0			
8.6	10	1672	2.70	169.25	38.5	42.9	38.5	42.9	KH093-11P-90S/L-04F	156	448



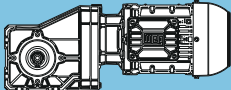
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** ... on request

P _N = 1.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
1.5 kW	1.8 kW			Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.4	4.1	3872	0.80	430.17	**	**	**	**	KH084-11P-90S/L-04F	119	446
3.5	4.2	3737	0.85	416.02	10.2	14.9	10.2	7.0			
4.0	4.8	3250	0.95	363.25	17.0	29.2	17.0	7.7			
4.2	5.0	3114	1.00	348.82	18.4	32.2	18.4	7.9			
4.3	5.2	3040	1.00	340.47	19.0	33.5	19.0	8.0			
4.9	5.9	2638	1.15	297.29	22.1	40.3	22.1	8.6			
5.0	6.0	2586	1.20	292.01	22.4	41.0	22.4	8.7			
5.3	6.4	2440	1.25	276.09	23.3	41.4	23.3	8.9			
6.0	7.3	2113	1.45	241.07	25.0	41.9	25.0	9.4			
6.1	7.4	2074	1.45	236.66	25.1	41.9	25.1	9.4			
6.3	7.6	2021	1.50	231.12	25.4	42.0	25.4	9.5			
7.2	8.7	1747	1.75	201.80	26.5	42.4	26.5	9.9			
7.7	9.4	1611	1.90	187.31	26.9	42.6	26.9	10.1			
8.9	11	1390	2.20	163.55	27.6	42.9	27.6	10.4			
7.0	8.5	2036	1.50	206.12	25.3	42.0	25.3	9.5	KH083-11P-90S/L-04F	106	444
8.9	11	1612	1.90	163.14	26.9	42.6	26.9	10.1			
10	12	1407	2.15	142.45	27.5	42.9	27.5	10.4			
12	14	1244	2.45	125.90	28.0	43.2	27.2	10.7			
14	16	1052	2.90	106.46	28.4	43.4	25.4	10.9			
7.3	8.9	1954	0.80	197.75	**	**	**	**	KH073-11P-90S/L-04F	65	442
8.7	11	1638	0.95	165.85	14.4	15.6	14.4	4.4			
11	13	1286	1.25	130.16	17.0	16.3	17.0	5.1			
14	17	992	1.60	100.45	18.5	16.9	18.5	5.7			
15	18	987	1.35	99.87	18.5	17.0	18.5	5.7			
17	21	821	1.90	83.09	19.1	17.3	17.4	6.1			
19	23	762	2.05	77.11	19.3	17.4	16.7	6.2			
21	25	698	2.25	70.67	19.5	17.6	16.0	6.3			
22	27	639	2.45	64.67	19.7	17.7	15.5	6.4			
24	29	605	2.60	61.25	19.8	17.7	15.0	6.5			
30	37	470	1.35	47.56	20.0	17.5	13.9	6.3			
39	48	363	2.10	36.72	20.2	17.9	12.4	6.6			
47	57	304	3.00	30.79	20.3	18.1	11.5	6.8			
15	18	988	0.85	99.98	6.0	8.9	6.0	2.2	KH073-11P-90S/L-04F	45	442
19	23	765	1.10	77.42	9.1	12.8	9.1	2.9			
22	27	638	1.30	64.62	10.3	13.2	10.3	3.3			
25	30	582	1.45	58.89	10.7	13.4	10.7	3.5			
29	35	496	1.70	50.17	11.2	13.7	11.2	3.7			
30	36	480	1.75	48.56	11.3	13.7	11.3	3.8			
35	43	407	2.05	41.17	11.6	14.0	11.3	4.0			
36	44	393	2.05	39.83	11.7	14.0	11.2	4.1			
41	50	347	1.35	35.15	11.9	13.7	10.8	3.8			
43	52	334	2.30	33.85	11.9	14.2	10.3	4.2			
45	55	315	2.65	31.88	12.0	14.3	10.1	4.3			
52	63	275	2.60	27.83	12.1	14.4	9.5	4.4			
53	64	270	1.90	27.29	12.1	14	9.6	4.1			
65	78	221	2.30	22.40	12.2	14.3	8.8	4.3			
84	101	171	2.95	17.34	12.3	14.5	7.9	4.5			
20	24	722	0.85	73.08	3.4	4.6	3.4	3.1	KH053-11P-90S/L-04F	32	438
23	28	630	1.00	63.77	5.6	9.3	5.6	3.4			
24	29	595	1.05	60.26	6.2	10.2	6.2	3.5			
29	35	489	1.25	49.52	7.5	10.5	7.5	3.8			
35	42	415	1.45	42.00	8.2	10.7	8.2	4.0			
36	43	401	1.50	40.63	8.3	10.8	8.3	4.1			
42	51	341	1.80	34.53	8.7	11.0	8.7	4.3			
46	56	311	1.95	31.46	8.9	11.1	8.9	4.4			
48	58	300	1.35	30.37	9.0	10.7	9.0	4.0			
53	64	271	2.15	27.39	9.1	11.2	9.1	4.5			
61	73	236	2.55	23.93	9.3	11.3	9.3	4.6			
75	91	191	2.20	19.35	9.4	11.1	9.4	4.4			
97	117	148	2.80	14.98	9.6	11.3	9.1	4.6			

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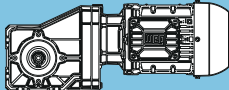
** ... on request

P _N = 1.5 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
1.5 kW		1.8 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
32	39	441	0.95	44.64	2.6	3.4	2.6	2.1	KH043-11P-90S/L-04F	29	436	
33	40	434	0.95	43.93	2.9	4.1	2.9	2.2				
39	48	363	1.10	36.78	4.5	7.5	4.5	2.4				
40	48	361	1.15	36.54	4.6	7.8	4.6	2.5				
48	58	300	1.10	30.39	5.5	8.0	5.5	2.4				
49	59	295	1.25	29.81	5.5	8.3	5.5	2.7				
52	62	278	1.45	28.13	5.7	8.4	5.7	2.8				
62	74	233	1.35	23.57	6.1	8.3	6.1	2.7				
68	83	210	1.95	21.25	6.3	8.7	6.3	3.1				
75	91	191	1.55	19.29	6.4	8.5	6.4	2.9				
83	101	172	2.35	17.39	6.6	8.8	6.6	3.2				
98	118	147	1.90	14.85	6.7	8.7	6.7	3.1				
103	124	139	2.90	14.10	6.7	8.9	6.7	3.3				
129	156	111	2.40	11.22	6.8	8.9	6.7	3.3				
158	191	91	2.80	9.18	6.9	9.0	6.1	3.4				
67	81	214	0.95	21.67	3.5	2.4	3.5	2.4	KH033-11P-90S/L-04F	25	434	
75	91	191	0.90	19.37	3.9	2.3	3.9	2.3				
88	107	163	1.25	16.47	4.3	2.7	4.3	2.7				
97	117	148	1.15	14.96	4.4	2.6	4.4	2.6				
113	137	127	1.60	12.81	4.6	2.9	4.6	2.9				
121	147	118	1.40	11.94	4.7	2.8	4.7	2.8				
145	176	99	2.05	10.00	4.8	3.1	4.8	3.1				
161	194	89	1.85	9.03	4.9	3.0	4.9	3.0				
211	256	68	2.20	6.86	5.0	3.2	5.0	3.2				
272	329	53	2.60	5.34	5.0	3.3	5.0	3.3				
122	147	118	0.80	11.92	**	**	**	**	KH022-11P-90S/L-04F	23	432	
139	169	103	0.85	10.40	5.0	2.8	5.0	2.8				
157	190	91	0.90	9.25	5.0	2.8	5.0	2.8				
170	206	84	0.95	8.51	4.8	2.8	4.8	2.8				
190	230	75	1.05	7.63	4.6	2.8	4.6	2.8				
210	254	68	1.10	6.91	4.4	2.8	4.4	2.8				
243	294	59	1.20	5.96	4.2	2.8	4.2	2.8				
279	338	51	1.30	5.20	4.0	2.8	4.0	2.8				
380	459	38	1.55	3.82	3.6	2.8	3.6	2.8				



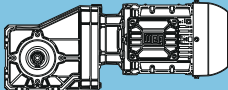
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** ... on request

P _N = 2.2 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
0.94	1.1	19799	0.95	1530.83	70.0	114.9	70.0	114.9	KH155-11P-100L-04E	698	464
0.95	1.2	19437	0.95	1502.83	71.8	115.2	71.8	115.2			
0.99	1.2	18694	1.00	1449.16	75.2	115.7	75.2	115.7			
1.1	1.4	16447	1.10	1281.49	84.0	117.4	84.0	117.4			
1.4	1.7	13125	1.40	1038.59	93.9	120.0	93.9	120.0			
1.1	1.3	17283	1.05	1308.92	81.0	116.8	81.0	116.8	KH154-11P-100L-04E	685	462
1.3	1.5	14764	1.25	1127.36	89.4	118.7	89.4	118.7			
1.4	1.7	13511	1.35	1035.99	92.9	119.7	92.9	119.7			
1.5	1.8	12665	1.45	975.12	95.0	120.3	95.0	120.3			
1.6	1.9	11701	1.55	904.58	97.2	121.1	97.2	121.1			
1.8	2.2	10235	1.80	799.45	100.1	122.2	100.1	122.2			
1.9	2.3	9860	1.85	771.80	100.8	122.5	100.8	122.5			
2.1	2.5	8706	2.10	688.57	102.6	123.4	102.6	123.4			
2.4	2.9	7422	2.45	595.58	104.4	124.3	104.4	124.3			
2.5	3.0	7241	2.50	582.27	104.7	124.5	104.7	124.5			
2.8	3.4	6191	2.95	507.30	105.8	125.3	105.8	125.3			
2.9	3.5	6108	2.95	500.51	105.9	125.3	105.9	125.3			
1.2	1.4	16271	0.80	1219.69	**	**	**	**	KH124-11P-100L-04E	431	458
1.3	1.6	14100	0.95	1063.46	66.6	83.4	66.6	83.4			
1.4	1.7	13534	1.00	1022.92	68.6	83.9	68.6	83.9			
1.6	1.9	12070	1.10	916.04	73.3	85.4	73.3	85.4			
1.8	2.2	10513	1.25	802.79	77.5	87.0	77.5	87.0			
1.9	2.3	10040	1.30	768.25	78.6	87.4	78.6	87.4			
2.1	2.5	9091	1.45	699.95	80.6	88.4	80.6	88.4			
2.2	2.6	8557	1.55	661.56	81.7	88.9	81.7	88.9			
2.3	2.8	7981	1.65	619.56	82.7	89.5	82.7	89.5			
2.4	2.9	7751	1.70	602.92	83.1	89.7	83.1	89.7			
2.7	3.2	6887	1.90	540.20	84.5	90.6	84.5	90.6			
2.8	3.4	6592	2.00	519.19	84.9	90.9	84.9	90.9			
3.1	3.8	5847	2.25	465.31	85.8	91.6	85.8	91.6			
3.2	3.9	5591	2.35	446.82	86.1	91.9	86.1	91.9			
3.3	4.0	5443	2.40	435.90	86.3	92.0	86.3	92.0			
3.6	4.4	4952	2.65	400.70	86.8	92.5	86.8	92.5			
3.7	4.5	4736	2.75	384.88	87.1	92.8	87.1	92.8			
3.8	4.6	4667	2.80	380.06	87.1	92.8	87.1	92.8			
1.9	2.3	10053	0.80	753.64	**	**	**	**	KH104-11P-100L-04E	308	454
2.0	2.4	9739	0.85	731.54	35.4	58.0	35.4	58.0			
2.2	2.6	8769	0.95	661.38	41.8	59.1	41.8	59.1			
2.3	2.8	8363	1.00	632.05	44.0	59.6	44.0	59.6			
2.5	3.0	7565	1.10	574.12	47.7	60.5	47.7	60.5			
2.8	3.4	6698	1.20	510.43	51.1	61.5	51.1	61.5			
2.9	3.5	6496	1.25	496.04	51.8	61.7	51.8	61.7			
3.2	3.9	5767	1.40	443.08	54.1	62.6	54.1	62.6			
3.4	4.1	5472	1.50	422.20	55.0	62.9	55.0	62.9			
3.7	4.6	4931	1.65	382.82	56.3	63.5	56.3	63.5			
3.9	4.8	4711	1.70	366.49	56.9	63.8	56.9	63.8			
4.0	4.9	4607	1.75	359.12	57.1	63.9	57.1	63.9			
4.5	5.5	4020	2.00	316.65	58.3	64.6	58.3	64.6			
4.6	5.6	3950	2.05	311.74	58.4	64.7	58.4	64.7			
5.3	6.5	3374	2.40	270.17	59.4	65.3	59.4	65.3			
5.5	6.6	3275	2.45	262.82	59.5	65.4	59.5	65.4			
5.7	6.9	3145	2.55	253.44	59.7	65.6	59.7	65.6			
6.1	7.5	2867	2.80	233.43	60.1	65.9	60.1	65.9			
6.3	7.6	2790	2.90	228.15	60.2	66.0	60.2	66.0			
6.5	7.9	2679	3.00	220.00	60.3	66.1	60.3	66.1			

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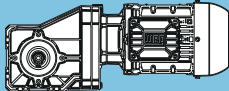
** ... on request

P _N = 2.2 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.3	4.0	5757	0.80	431.58	**	**	**	**	KH094-11P-100L-04E	179	450	
3.9	4.8	4837	0.95	364.86	25.6	38.8	25.6	38.8				
4.1	4.9	4673	1.00	353.21	26.8	39.1	26.8	39.1				
4.8	5.8	3927	1.15	298.61	31.2	40.0	31.2	40.0				
5.0	6.1	3759	1.20	286.42	32.0	40.2	32.0	40.2				
5.9	7.2	3145	1.45	242.14	34.6	41.0	34.6	41.0				
6.0	7.3	3114	1.45	239.77	34.7	41.0	34.7	41.0				
7.1	8.6	2600	1.75	202.70	36.4	41.7	36.4	41.7				
7.4	9.0	2483	1.85	194.32	36.7	41.8	36.7	41.8				
7.7	9.3	2389	1.90	187.38	36.9	42.0	36.9	42.0				
8.7	11	2069	2.20	164.28	37.7	42.4	37.7	42.4				
9.1	11	1986	2.30	158.41	37.9	42.5	37.9	42.5				
8.5	10	2478	1.85	169.25	36.7	41.8	36.7	41.8	KH093-11P-100L-04E	166	448	
10	12	2095	2.15	143.08	37.7	42.3	37.7	42.3				
12	14	1813	2.50	123.86	38.2	42.7	38.2	42.7				
13	16	1606	2.85	109.70	38.6	43.0	38.6	43.0				
4.8	5.9	3966	0.80	297.29	**	**	**	**	KH084-11P-100L-04E	129	446	
4.9	6.0	3895	0.80	292.01	**	**	**	**				
5.2	6.3	3675	0.85	276.09	11.4	17.4	11.4	7.1				
6.0	7.2	3196	0.95	241.07	17.6	30.5	17.6	7.8				
6.1	7.4	3131	1.00	236.66	18.2	31.8	18.2	7.9				
6.2	7.6	3058	1.00	231.12	18.9	33.3	18.9	8.0				
6.3	7.6	3019	1.00	228.21	19.2	33.9	19.2	8.0				
7.1	8.6	2654	1.15	201.80	22.0	40.1	22.0	8.6				
7.7	9.3	2453	1.25	187.31	23.2	41.4	23.2	8.9				
7.9	9.7	2361	1.30	180.62	23.7	41.5	23.7	9.0				
8.8	11	2124	1.45	163.55	24.9	41.9	24.9	9.4				
9.1	11	2044	1.50	157.71	25.3	42.0	25.3	9.5				
7.0	8.5	3018	1.00	206.12	19.2	33.9	19.2	8.0	KH083-11P-100L-04E	116	444	
8.8	11	2389	1.30	163.14	23.6	41.5	23.6	9.0				
10	12	2086	1.45	142.45	25.1	41.9	25.1	9.4				
11	14	1843	1.65	125.90	26.1	42.3	26.1	9.8				
13	16	1559	1.95	106.46	27.1	42.7	27.1	10.2				
16	19	1340	2.25	91.51	27.7	43.0	25.5	10.5				
18	22	1170	2.60	79.89	28.1	43.3	24.1	10.8				
21	25	1002	3.00	68.44	28.5	43.5	22.5	11.0				
32	38	666	2.45	45.48	29.0	43.7	19.1	11.2				
11	13	1906	0.85	130.16	11.6	15.1	11.6	3.8				KH073-11P-100L-04E
14	17	1471	1.10	100.45	15.8	16.0	15.8	4.7				
17	21	1217	1.30	83.09	17.4	16.5	17.4	5.2				
19	23	1129	1.40	77.11	17.9	16.7	17.9	5.4				
20	25	1035	1.50	70.67	18.3	16.9	17.6	5.6				
22	27	947	1.65	64.67	18.7	17.0	16.8	5.8				
23	28	897	1.75	61.25	18.9	17.1	16.4	5.9				
28	34	757	2.05	51.72	19.3	17.4	15.0	6.2				
29	35	730	2.15	49.88	19.4	17.5	14.8	6.2				
34	41	624	2.50	42.61	19.7	17.7	13.7	6.5				
37	45	573	2.75	39.17	19.8	17.8	13.2	6.6				
39	48	538	1.45	36.72	19.9	17.3	13.2	6.1				
47	57	451	2.05	30.79	20.1	17.6	12.2	6.3				
59	72	354	2.60	24.17	20.2	17.9	11.0	6.6				

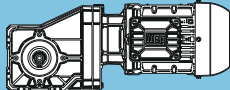


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** ... on request

P _N = 2.2 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
2.2 kW		2.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
24	30	862	1.00	58.89	8.0	12.5	8.0	2.6	KH063-11P-100L-04E	55	440
29	35	735	1.15	50.17	9.4	12.9	9.4	3.0			
30	36	711	1.20	48.56	9.7	13.0	9.7	3.1			
35	42	603	1.40	41.17	10.5	13.4	10.5	3.4			
36	44	583	1.40	39.83	10.7	13.4	10.7	3.5			
42	52	496	1.55	33.85	11.2	13.7	11.2	3.7			
45	55	467	1.80	31.88	11.4	13.8	10.9	3.8			
52	63	407	1.80	27.83	11.6	14.0	10.2	4.0			
53	64	400	1.30	27.29	11.7	13.5	10.4	3.5			
59	72	355	2.25	24.25	11.8	14.1	9.6	4.2			
64	78	328	1.55	22.40	11.9	13.8	9.5	3.8			
65	79	323	2.10	22.07	11.9	14.2	9.2	4.3			
72	87	293	2.55	20.00	12.0	14.3	8.8	4.4			
83	101	254	2.00	17.34	12.2	14.1	8.4	4.2			
88	106	240	2.90	16.40	12.2	14.5	8.0	4.5			
109	132	193	2.60	13.19	12.3	14.4	7.4	4.4			
29	35	725	0.85	49.52	3.3	4.4	3.3	3.1	KH053-11P-100L-04E	42	438
34	42	615	1.00	42.00	5.9	9.9	5.9	3.4			
35	43	595	1.05	40.63	6.2	10.2	6.2	3.5			
42	51	506	1.20	34.53	7.3	10.5	7.3	3.8			
43	52	488	1.25	33.30	7.5	10.5	7.5	3.8			
46	55	461	1.35	31.46	7.8	10.6	7.8	3.9			
52	64	401	1.45	27.39	8.3	10.8	8.3	4.1			
60	73	350	1.75	23.93	8.7	10.9	8.7	4.2			
61	74	345	1.20	23.58	8.7	10.5	8.7	3.8			
73	88	289	2.10	19.73	9.0	11.1	9.0	4.4			
74	90	283	1.50	19.35	9.1	10.7	9.1	4.0			
89	108	237	2.55	16.19	9.3	11.3	9.3	4.6			
96	116	219	1.90	14.98	9.3	11.0	9.3	4.3			
104	127	201	3.00	13.75	9.4	11.4	9.1	4.7			
126	153	167	2.50	11.40	9.5	11.3	8.5	4.6			
48	59	436	0.85	29.81	2.8	3.9	2.8	2.2	KH043-11P-100L-04E	38	436
50	61	421	0.85	28.74	3.3	4.9	3.3	2.2			
51	62	412	1.00	28.13	3.5	5.4	3.5	2.3			
61	74	345	0.90	23.57	4.8	7.7	4.8	2.1			
68	82	311	1.30	21.25	5.3	8.3	5.3	2.7			
74	90	282	1.05	19.29	5.7	8.0	5.7	2.4			
83	100	255	1.60	17.39	5.9	8.5	5.9	2.9			
97	118	217	1.30	14.85	6.3	8.4	6.3	2.8			
102	124	206	1.95	14.10	6.3	8.7	6.3	3.1			
122	148	173	2.35	11.81	6.6	8.8	6.6	3.2			
128	156	164	1.60	11.22	6.6	8.7	6.6	3.1			
150	182	140	2.70	9.57	6.7	8.9	6.5	3.3			
155	189	135	2.75	9.23	6.7	9.0	6.4	3.4			
156	190	134	1.90	9.18	6.7	8.8	6.5	3.2			
193	235	109	2.25	7.44	6.8	8.9	5.9	3.3			
230	280	91	2.55	6.23	6.9	9.0	5.5	3.4			
284	346	74	3.00	5.05	6.9	9.1	5.0	3.5			
87	106	241	0.85	16.47	2.9	2.3	2.9	2.3	KH033-11P-100L-04E	35	434
112	136	188	1.10	12.81	3.9	2.6	3.9	2.6			
120	146	175	0.95	11.94	4.1	2.4	4.1	2.4			
144	175	146	1.40	10.00	4.4	2.8	4.4	2.8			
159	193	132	1.25	9.03	4.6	2.7	4.6	2.7			
209	254	100	1.50	6.86	4.8	2.9	4.8	2.9			
269	327	78	1.80	5.34	5.0	3.1	5.0	3.1			
344	418	61	2.10	4.17	4.7	3.2	4.7	3.2			

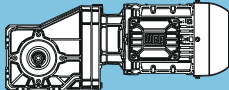
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P _N = 3.0 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
3.0 kW		3.6 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
1.1	1.4	22696	0.80	1281.49	**	**	**	**	KH155-11P-L100L-04F	705	464
1.4	1.7	18207	1.00	1038.59	77.3	116.1	77.3	116.1			
1.1	1.3	23728	0.80	1308.92	**	**	**	**	KH154-11P-L100L-04F	692	462
1.3	1.5	20353	0.90	1127.36	67.1	114.5	67.1	114.5			
1.4	1.7	18627	1.00	1035.99	75.5	115.8	75.5	115.8			
1.5	1.8	17496	1.05	975.12	80.2	116.6	80.2	116.6			
1.6	1.9	16164	1.15	904.58	85.0	117.7	85.0	117.7			
1.8	2.2	14198	1.30	799.45	91.1	119.2	91.1	119.2			
1.9	2.3	13678	1.35	771.80	92.5	119.6	92.5	119.6			
2.1	2.5	12128	1.50	688.57	96.2	120.7	96.2	120.7			
2.4	2.9	10383	1.75	595.58	99.8	122.1	99.8	122.1			
2.5	3.0	10130	1.80	582.27	100.3	122.3	100.3	122.3			
2.8	3.4	8716	2.10	507.30	102.6	123.3	102.6	123.3			
2.9	3.5	8653	2.10	503.64	102.7	123.4	102.7	123.4			
3.3	4.0	7399	2.45	436.93	104.5	124.4	104.5	124.4			
3.4	4.2	7068	2.55	419.11	104.9	124.6	104.9	124.6			
3.8	4.6	6281	2.90	377.93	105.8	125.2	105.8	125.2			
3.9	4.7	6135	2.95	369.91	105.9	125.3	105.9	125.3			
1.6	1.9	16606	0.80	916.04	**	**	**	**	KH124-11P-L100L-04F	438	458
1.8	2.2	14493	0.90	802.79	65.1	83.0	65.1	83.0			
1.9	2.3	13841	0.95	768.25	67.5	83.6	67.5	83.6			
2.1	2.5	12559	1.05	699.95	71.9	84.9	71.9	84.9			
2.2	2.6	11846	1.10	661.56	74.0	85.6	74.0	85.6			
2.3	2.8	11048	1.20	619.56	76.2	86.4	76.2	86.4			
2.4	2.9	10730	1.25	602.92	77.0	86.7	77.0	86.7			
2.7	3.2	9554	1.40	540.20	79.7	87.9	79.7	87.9			
2.8	3.4	9164	1.45	519.19	80.5	88.3	80.5	88.3			
3.1	3.7	8162	1.60	465.31	82.4	89.3	82.4	89.3			
3.2	3.9	7805	1.70	446.82	83.0	89.7	83.0	89.7			
3.3	4.0	7599	1.75	435.90	83.4	89.9	83.4	89.9			
3.6	4.3	6942	1.90	400.70	84.4	90.5	84.4	90.5			
3.7	4.5	6640	2.00	384.88	84.8	90.8	84.8	90.8			
3.8	4.6	6557	2.00	380.06	84.9	90.9	84.9	90.9			
4.3	5.2	5636	2.35	331.43	86.1	91.9	86.1	91.9			
4.4	5.3	5601	2.35	329.39	86.1	91.9	86.1	91.9			
4.5	5.5	5402	2.45	319.02	86.4	92.1	86.4	92.1			
4.7	5.7	5187	2.55	307.62	86.6	92.3	86.6	92.3			
5.1	6.1	4745	2.75	283.73	87.0	92.7	87.0	92.7			
5.2	6.3	4632	2.85	278.15	87.2	92.9	87.2	92.9			
5.4	6.5	4448	2.95	268.22	87.3	93.0	87.3	93.0			
5.5	6.6	4349	3.00	262.80	87.4	93.1	87.4	93.1			
2.5	3	10407	0.80	574.12	**	**	**	**	KH104-11P-L100L-04F	315	454
2.8	3.4	9215	0.90	510.43	39.1	58.6	39.1	58.6			
2.9	3.5	8955	0.90	496.04	40.7	58.9	40.7	58.9			
3.2	3.9	7950	1.05	443.08	46.0	60.1	46.0	60.1			
3.4	4.1	7560	1.10	422.20	47.8	60.5	47.8	60.5			
3.8	4.5	6827	1.20	382.82	50.7	61.4	50.7	61.4			
3.9	4.7	6522	1.25	366.49	51.8	61.7	51.8	61.7			
4.0	4.8	6378	1.30	359.12	52.2	61.9	52.2	61.9			
4.5	5.5	5589	1.45	316.65	54.6	62.8	54.6	62.8			
4.6	5.6	5491	1.50	311.74	54.9	62.9	54.9	62.9			
5.3	6.4	4720	1.70	270.17	56.8	63.8	56.8	63.8			
5.5	6.6	4582	1.75	262.82	57.1	63.9	57.1	63.9			
5.7	6.9	4400	1.85	253.44	57.5	64.1	57.5	64.1			
6.2	7.5	4027	2.00	233.43	58.3	64.6	58.3	64.6			
6.3	7.6	3928	2.05	228.15	58.4	64.7	58.4	64.7			
6.5	7.9	3772	2.15	220.00	58.7	64.9	58.7	64.9			
6.7	8	3705	2.20	216.51	58.8	64.9	58.8	64.9			
7.3	8.8	3345	2.40	197.12	59.4	65.3	59.4	65.3			
7.6	9.2	3212	2.50	190.08	59.6	65.5	59.6	65.5			
7.7	9.3	3169	2.55	187.95	59.7	65.5	59.7	65.5			
8.9	11	2687	3.00	162.39	60.3	66.1	60.3	66.1			



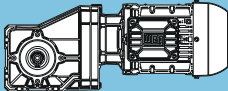
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** ... on request

P _N = 3.0 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
3.0 kW		3.6 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
4.8	5.8	5402	0.85	298.61	20.6	34.3	20.6	34.3	KH094-11P-L100L-04F	186	450
5.0	6.1	5171	0.90	286.42	22.8	38.4	22.8	38.4			
5.9	7.2	4345	1.05	242.14	28.9	39.5	28.9	39.5			
6.0	7.3	4302	1.05	239.77	29.2	39.5	29.2	39.5			
7.1	8.6	3607	1.25	202.70	32.7	40.4	32.7	40.4			
7.4	9.0	3444	1.35	194.32	33.4	40.6	33.4	40.6			
7.7	9.3	3314	1.40	187.38	34.0	40.8	34.0	40.8			
8.8	11	2882	1.60	164.28	35.5	41.3	35.5	41.3			
9.1	11	2773	1.65	158.41	35.8	41.5	35.8	41.5			
8.5	10	3367	1.35	169.25	33.7	40.7	33.7	40.7	KH093-11P-L100L-04F	173	448
10	12	2847	1.60	143.08	35.6	41.4	35.6	41.4			
12	14	2464	1.85	123.86	36.7	41.9	36.7	41.9			
13	16	2183	2.10	109.70	37.5	42.2	37.5	42.2			
15	18	1888	2.40	94.90	38.1	42.6	38.1	42.6			
16	19	1821	2.50	91.51	38.2	42.7	38.2	42.7			
18	22	1606	2.85	80.74	38.6	43.0	38.6	43.0			
7.1	8.6	3651	0.85	201.80	11.8	18.2	11.8	7.1	KH084-11P-L100L-04F	136	446
7.7	9.3	3382	0.90	187.31	15.6	26.2	15.6	7.5			
8.0	9.6	3254	0.95	180.62	17.0	29.2	17.0	7.7			
8.8	11	2935	1.05	163.55	19.9	35.5	19.9	8.2			
9.1	11	2824	1.10	157.71	20.8	37.4	20.8	8.3			
8.8	11	3246	0.95	163.14	17.1	29.4	17.1	7.7	KH083-11P-L100L-04F	123	444
10	12	2834	1.10	142.45	20.7	37.2	20.7	8.3			
11	14	2505	1.20	125.90	22.9	41.3	22.9	8.8			
14	16	2118	1.45	106.46	24.9	41.9	24.9	9.4			
16	19	1821	1.65	91.51	26.2	42.3	26.2	9.8			
18	22	1589	1.90	79.89	27.0	42.7	25.5	10.2			
21	25	1362	2.25	68.44	27.7	43.0	23.7	10.5			
22	26	1313	2.30	66.00	27.8	43.1	23.3	10.6			
23	28	1256	2.30	63.12	27.9	43.1	22.8	10.6			
25	30	1159	2.60	58.25	28.2	43.3	21.9	10.8			
26	32	1096	2.75	55.11	28.3	43.4	21.5	10.9			
32	38	905	1.80	45.48	28.7	43.2	20	10.7			
40	48	716	2.30	35.99	29.0	43.6	18.1	11.1			
14	17	1999	0.80	100.45	**	**	**	**	KH073-11P-L100L-04F	82	442
17	21	1653	0.95	83.09	14.3	15.6	14.3	4.3			
19	23	1534	1.05	77.11	15.3	15.8	15.3	4.6			
20	25	1406	1.15	70.67	16.2	16.1	16.2	4.8			
22	27	1287	1.25	64.67	17.0	16.3	17.0	5.1			
24	28	1219	1.30	61.25	17.4	16.5	17.4	5.2			
28	34	1029	1.55	51.72	18.3	16.9	16.2	5.6			
29	35	992	1.60	49.88	18.5	16.9	15.9	5.7			
34	41	848	1.85	42.61	19.0	17.2	14.7	6.0			
37	44	779	2.00	39.17	19.3	17.4	14.1	6.1			
39	47	731	1.05	36.72	19.4	16.7	14.1	5.5			
44	54	645	2.45	32.40	19.7	17.7	12.9	6.4			
47	57	613	1.50	30.79	19.7	17.1	12.9	5.8			
52	63	548	2.85	27.56	19.9	17.9	11.9	6.6			
60	72	481	1.90	24.17	20.0	17.5	11.5	6.2			
77	93	371	2.50	18.65	20.2	17.8	10.3	6.6			
93	113	307	3.00	15.43	20.3	18.0	9.4	6.8			

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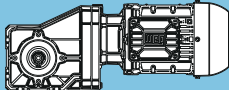
** ... on request

P _N = 3.0 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
3.0 kW		3.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
29	35	998	0.85	50.17	5.8	8.5	5.8	2.2	KH063-11P-L100L-04F	62	440	
30	36	966	0.85	48.56	6.4	9.8	6.4	2.3				
35	42	819	1.05	41.17	8.6	12.7	8.6	2.7				
36	44	792	1.05	39.83	8.9	12.8	8.9	2.8				
43	51	673	1.15	33.85	10.0	13.1	10.0	3.2				
45	55	634	1.30	31.88	10.3	13.3	10.3	3.3				
52	63	554	1.30	27.83	10.9	13.5	10.9	3.6				
53	64	543	0.95	27.29	10.9	12.8	10.9	2.9				
54	65	534	1.35	26.84	11.0	13.6	10.8	3.6				
59	72	482	1.65	24.25	11.3	13.7	10.3	3.8				
64	78	446	1.15	22.40	11.5	13.3	10.2	3.3				
65	79	439	1.55	22.07	11.5	13.9	9.8	3.9				
72	87	398	1.90	20.00	11.7	14.0	9.3	4.0				
83	100	345	1.45	17.34	11.9	13.7	9.0	3.8				
88	106	326	2.15	16.40	11.9	14.2	8.5	4.3				
103	125	277	2.40	13.94	12.1	14.4	7.9	4.4				
109	132	262	1.95	13.19	12.1	14.1	7.9	4.1				
126	152	228	2.75	11.46	12.2	14.5	7.2	4.6				
130	157	220	2.85	11.05	12.2	14.6	7.1	4.6				
132	160	216	2.35	10.88	12.2	14.3	7.2	4.3				
161	195	177	2.85	8.92	12.3	14.5	6.6	4.5				
42	50	687	0.90	34.53	4.4	6.7	4.4	3.2	KH053-11P-L100L-04F	48	438	
43	52	663	0.95	33.30	5.0	8.0	5.0	3.3				
46	55	626	1.00	31.46	5.7	9.5	5.7	3.4				
53	64	545	1.10	27.39	6.9	10.3	6.9	3.6				
60	73	476	1.30	23.93	7.7	10.6	7.7	3.9				
61	74	469	0.90	23.58	7.7	9.9	7.7	3.2				
73	88	393	1.55	19.73	8.4	10.8	8.4	4.1				
74	90	385	1.10	19.35	8.4	10.3	8.4	3.6				
89	107	322	1.90	16.19	8.8	11.0	8.8	4.3				
96	116	298	1.40	14.98	9.0	10.7	9.0	4.0				
105	127	274	2.20	13.75	9.1	11.2	9.1	4.5				
126	153	227	1.85	11.40	9.3	11.0	9.0	4.3				
127	154	225	2.70	11.31	9.3	11.3	8.7	4.6				
132	159	217	2.80	10.91	9.3	11.3	8.6	4.6				
153	185	187	2.25	9.40	9.5	11.2	8.2	4.5				
187	226	153	2.70	7.71	9.5	11.3	7.5	4.6				
68	82	423	0.95	21.25	3.2	4.7	3.2	2.2	KH043-11P-L100L-04F	45	436	
75	90	384	0.80	19.29	**	**	**	**				
83	100	346	1.20	17.39	4.8	8.1	4.8	2.5				
97	117	295	0.95	14.85	5.5	8.0	5.5	2.4				
102	123	281	1.45	14.10	5.7	8.4	5.7	2.8				
122	147	235	1.75	11.81	6.1	8.6	6.1	3.0				
128	155	223	1.20	11.22	6.2	8.4	6.2	2.8				
150	182	190	2.00	9.57	6.4	8.7	6.4	3.1				
156	189	184	2.05	9.23	6.5	8.8	6.5	3.2				
157	190	183	1.40	9.18	6.5	8.6	6.5	3.0				
194	234	148	1.65	7.44	6.7	8.7	6.2	3.1				
231	279	124	1.90	6.23	6.8	8.9	5.7	3.3				
285	345	100	2.20	5.05	6.9	9.0	5.2	3.4				
296	357	97	2.30	4.87	6.9	9.0	5.2	3.4				
112	136	255	0.80	12.81	**	**	**	**	KH033-11P-L100L-04F	41	434	
144	174	199	1.05	10.00	3.7	2.5	3.7	2.5				
159	193	180	0.95	9.03	4.0	2.4	4.0	2.4				
210	254	136	1.10	6.86	4.5	2.7	4.5	2.7				
270	326	106	1.30	5.34	4.8	2.9	4.8	2.9				
345	417	83	1.55	4.17	4.9	3.1	4.9	3.1				

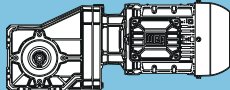


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** ... on request

P _N = 4.0 kW										IE3		
50 Hz 4.0 kW		60 Hz 4.8 kW		at 50 Hz						m kg	Dimension sheet see page	
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	Output shaft		Hollow shaft					
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN				
1.4	1.8	23487	0.80	1001.50	**	**	**	**	KH155-11P-112M-04E	706	464	
1.5	1.8	23406	0.80	975.12	**	**	**	**				
1.6	1.9	21669	0.85	904.58	59.3	102.1	59.3	102.1				
1.8	2.2	19072	0.95	799.45	73.5	115.4	73.5	115.4				
1.9	2.3	18549	1.00	779.11	75.8	115.8	75.8	115.8				
2.1	2.5	16292	1.15	688.57	84.6	117.6	84.6	117.6				
2.2	2.6	15945	1.15	673.90	85.7	117.8	85.7	117.8				
2.4	2.9	14006	1.30	595.58	91.6	119.3	91.6	119.3				
2.5	3.0	13664	1.35	582.27	92.5	119.6	92.5	119.6				
2.9	3.5	11807	1.55	507.30	97.0	121.0	97.0	121.0				
3.3	4.0	10065	1.80	436.93	100.4	122.3	100.4	122.3				
3.5	4.2	9615	1.90	419.11	101.2	122.7	101.2	122.7				
3.8	4.6	8598	2.10	377.93	102.8	123.4	102.8	123.4				
3.9	4.7	8499	2.15	374.35	103.0	123.5	103.0	123.5				
4.0	4.9	8162	2.25	360.98	103.4	123.8	103.4	123.8				
4.5	5.4	7245	2.50	323.79	104.6	124.5	104.6	124.5				
4.6	5.5	7114	2.55	318.60	104.8	124.6	104.8	124.6				
4.7	5.7	6900	2.65	310.30	105.1	124.7	105.1	124.7				
5.3	6.4	6039	3.00	275.58	106.0	125.4	106.0	125.4				
2.1	2.5	16801	0.80	699.95	**	**	**	**	KH124-11P-112M-04E	439	458	
2.2	2.7	15847	0.85	661.56	59.2	81.6	59.2	81.6				
2.3	2.8	14811	0.90	619.56	63.8	82.7	63.8	82.7				
2.4	2.9	14383	0.95	602.92	65.5	83.1	65.5	83.1				
2.7	3.2	12834	1.05	540.20	71.0	84.6	71.0	84.6				
2.8	3.4	12310	1.10	519.19	72.6	85.2	72.6	85.2				
3.1	3.8	10987	1.20	465.31	76.3	86.5	76.3	86.5				
3.2	3.9	10529	1.25	446.82	77.5	86.9	77.5	86.9				
3.3	4.0	10251	1.30	435.90	78.1	87.2	78.1	87.2				
3.6	4.4	9384	1.40	400.70	80.0	88.1	80.0	88.1				
3.8	4.6	8995	1.45	384.88	80.8	88.5	80.8	88.5				
4.4	5.3	7666	1.70	331.43	83.2	89.8	83.2	89.8				
4.5	5.5	7349	1.80	319.02	83.8	90.1	83.8	90.1				
4.7	5.7	7072	1.85	307.62	84.2	90.4	84.2	90.4				
5.1	6.2	6469	2.05	283.73	85.0	91.0	85.0	91.0				
5.2	6.3	6328	2.10	278.15	85.2	91.2	85.2	91.2				
5.4	6.5	6090	2.15	268.22	85.5	91.4	85.5	91.4				
5.5	6.7	5954	2.20	262.80	85.7	91.5	85.7	91.5				
5.9	7.2	5490	2.40	244.33	86.3	92.0	86.3	92.0				
6.1	7.3	5372	2.45	239.59	86.4	92.1	86.4	92.1				
6.3	7.6	5159	2.55	231.04	86.6	92.3	86.6	92.3				
7.0	8.5	4540	2.90	206.32	87.2	92.9	87.2	92.9				
7.3	8.8	4360	3.00	198.95	87.4	93.1	87.4	93.1				
3.3	4.0	10635	0.80	443.08	**	**	**	**	KH104-11P-112M-04E	316	454	
3.4	4.2	10134	0.80	422.20	**	**	**	**				
3.8	4.6	9151	0.90	382.82	39.5	58.7	39.5	58.7				
4.0	4.8	8743	0.95	366.49	41.9	59.2	41.9	59.2				
4.6	5.5	7508	1.10	316.65	48.0	60.6	48.0	60.6				
4.7	5.6	7391	1.10	311.74	48.5	60.7	48.5	60.7				
5.4	6.5	6353	1.30	270.17	52.3	61.9	52.3	61.9				
5.5	6.7	6180	1.30	262.82	52.9	62.1	52.9	62.1				
5.7	6.9	5948	1.35	253.44	53.6	62.4	53.6	62.4				
6.2	7.5	5444	1.50	233.43	55.0	62.9	55.0	62.9				
6.4	7.7	5310	1.55	228.15	55.4	63.1	55.4	63.1				
6.6	8.0	5110	1.60	220.00	55.9	63.3	55.9	63.3				
6.7	8.1	5029	1.60	216.51	56.1	63.4	56.1	63.4				
7.4	8.9	4541	1.80	197.12	57.2	64.0	57.2	64.0				
7.6	9.2	4370	1.85	190.08	57.6	64.2	57.6	64.2				
7.7	9.3	4312	1.90	187.95	57.7	64.2	57.7	64.2				
8.9	11	3679	2.20	162.39	58.9	65.0	58.9	65.0				
10	12	3713	2.20	140.95	58.8	64.9	58.8	64.9				
12	14	3280	2.45	124.50	59.5	65.4	59.5	65.4				
13	16	2847	2.85	108.07	60.1	65.9	60.1	65.9				
14	17	2745	2.95	104.21	60.3	66.0	60.3	66.0				
										KH103-11P-112M-04E	292	452

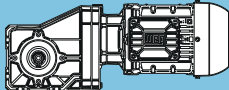
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P _N = 4.0 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
4.0 kW		4.8 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
6.0	7.2	5812	0.80	242.14	**	**	**	**	KH094-11P-112M-04E	187	450	
7.2	8.7	4836	0.95	202.70	25.6	38.9	25.6	38.9				
7.5	9.0	4626	1.00	194.32	27.1	39.1	27.1	39.1				
7.7	9.4	4452	1.05	187.38	28.3	39.3	28.3	39.3				
8.8	11	3879	1.20	164.28	31.5	40.1	31.5	40.1				
9.2	11	3733	1.25	158.41	32.2	40.3	32.2	40.3				
8.6	10	4459	1.05	169.25	28.2	39.3	28.2	39.3	KH093-11P-112M-04E	174	448	
10	12	3769	1.20	143.08	32.0	40.2	32.0	40.2				
12	14	3263	1.40	123.86	34.2	40.9	34.2	40.9				
13	16	2890	1.60	109.70	35.5	41.3	35.5	41.3				
15	18	2500	1.80	94.90	36.6	41.8	36.6	41.8				
16	19	2411	1.90	91.51	36.9	41.9	36.9	41.9				
18	22	2127	2.15	80.74	37.6	42.3	37.6	42.3				
21	26	1810	2.50	68.71	38.2	42.7	38.2	42.7				
23	27	1685	2.70	63.96	38.5	42.9	38.5	42.9				
24	30	1562	2.90	59.28	38.7	43.0	38.7	43.0				
39	47	978	2.85	37.13	39.4	43.3	39.4	43.3				
8.9	11	3926	0.80	163.55	**	**	**	**	KH084-11P-112M-04E	137	446	
9.2	11	3786	0.80	157.71	**	**	**	**				
10	12	3753	0.80	142.45	**	**	**	**	KH083-11P-112M-04E	124	444	
12	14	3317	0.95	125.90	16.3	27.7	16.3	7.6				
14	16	2805	1.10	106.46	20.9	37.7	20.9	8.4				
16	19	2411	1.25	91.51	23.4	41.4	23.4	8.9				
18	22	2105	1.45	79.89	25.0	41.9	25.0	9.4				
21	26	1803	1.70	68.44	26.3	42.3	25.3	9.8				
22	27	1739	1.75	66.00	26.5	42.4	24.7	9.9				
23	28	1663	1.75	63.12	26.8	42.5	24.2	10.0				
25	30	1535	2.00	58.25	27.2	42.7	23.3	10.2				
26	32	1452	2.10	55.11	27.4	42.9	22.7	10.4				
30	36	1287	2.35	48.87	27.9	43.1	21.3	10.6				
32	39	1198	1.40	45.48	28.1	42.6	21.1	10.1				
35	43	1085	2.80	41.18	28.3	43.4	19.8	10.9				
40	49	948	1.75	35.99	28.6	43.1	19.0	10.6				
46	56	828	2.35	31.43	28.8	43.3	17.8	10.8				
52	63	732	2.60	27.78	28.9	43.5	16.9	11.0				
19	23	2031	0.80	77.11	**	**	**	**	KH073-11P-112M-04E	83	442	
21	25	1862	0.85	70.67	12.1	15.2	12.1	3.9				
22	27	1704	0.95	64.67	13.8	15.5	13.8	4.2				
24	29	1614	1.00	61.25	14.6	15.7	14.6	4.4				
28	34	1363	1.15	51.72	16.5	16.2	16.5	4.9				
29	35	1337	1.20	50.75	16.7	16.2	16.7	5.0				
34	41	1123	1.40	42.61	17.9	16.7	15.8	5.4				
37	45	1032	1.55	39.17	18.3	16.9	15.1	5.6				
39	48	967	0.80	36.72	**	**	**	**				
45	54	854	1.85	32.40	19.0	17.2	13.7	6.0				
47	57	811	1.15	30.79	19.2	16.5	13.9	5.2				
53	64	726	2.15	27.56	19.4	17.5	12.6	6.2				
60	73	637	1.45	24.17	19.7	17.0	12.3	5.8				
61	73	629	2.50	23.88	19.7	17.7	11.8	6.5				
72	87	531	2.95	20.17	19.9	17.9	10.9	6.7				
78	94	491	1.90	18.65	20.0	17.5	10.8	6.2				
94	114	407	2.25	15.43	20.2	17.7	9.9	6.5				
111	134	346	2.65	13.12	20.2	17.9	9.2	6.7				



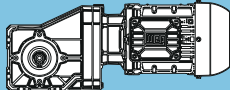
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** ... on request

P _N = 4.0 kW										IE3				
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page			
4.0 kW		4.8 kW			Output shaft		Hollow shaft							
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN						
35	43	1085	0.80	41.17	**	**	**	**	KH063-11P-112M-04E	63	440			
36	44	1049	0.80	39.83	**	**	**	**						
43	52	892	0.85	33.85	7.6	12.4	7.6	2.5						
45	55	840	1.00	31.88	8.3	12.6	8.3	2.7						
52	63	733	1.00	27.83	9.5	12.9	9.5	3.0						
54	65	707	1.00	26.84	9.7	13.0	9.7	3.1						
60	72	639	1.25	24.25	10.3	13.2	10.3	3.3						
65	78	590	0.85	22.40	10.6	12.6	10.6	2.7						
66	80	581	1.15	22.07	10.7	13.4	10.5	3.5						
73	88	527	1.45	20.00	11.0	13.6	10.0	3.6						
84	101	457	1.10	17.34	11.4	13.2	9.6	3.3						
88	107	432	1.65	16.40	11.5	13.9	9.1	3.9						
104	126	367	1.85	13.94	11.8	14.1	8.3	4.1						
110	133	347	1.45	13.19	11.9	13.7	8.4	3.7						
127	153	302	2.10	11.46	12.0	14.3	7.6	4.3						
131	159	291	2.15	11.05	12.0	14.3	7.5	4.4						
133	161	287	1.75	10.88	12.1	14.0	7.6	4.0						
160	193	239	2.45	9.09	12.2	14.5	6.8	4.5						
163	197	235	2.15	8.92	12.2	14.2	6.9	4.3						
191	232	200	2.45	7.58	12.3	14.4	6.4	4.4						
233	282	164	2.80	6.23	12.3	14.5	5.9	4.6						
241	292	158	2.90	6.01	12.3	14.5	5.8	4.6						
53	64	722	0.80	27.39	**	**	**	**				KH053-11P-112M-04E	49	438
61	73	630	1.00	23.93	5.6	9.3	5.6	3.4						
73	89	520	1.20	19.73	7.2	10.4	7.2	3.7						
75	91	510	0.85	19.35	7.3	9.7	7.3	3.0						
90	108	427	1.45	16.19	8.1	10.7	8.1	4.0						
97	117	395	1.05	14.98	8.4	10.2	8.4	3.5						
105	128	362	1.70	13.75	8.6	10.9	8.6	4.2						
127	154	300	1.40	11.40	9.0	10.7	9.0	4.0						
128	155	298	2.05	11.31	9.0	11.1	9.0	4.4						
133	161	287	2.10	10.91	9.0	11.1	9.0	4.4						
154	187	248	1.70	9.40	9.2	10.9	8.6	4.2						
162	196	236	2.40	8.97	9.3	11.3	8.2	4.6						
188	228	203	2.05	7.71	9.4	11.1	7.9	4.4						
221	268	173	2.40	6.55	9.5	11.2	7.3	4.5						
269	326	142	2.95	5.39	9.2	11.4	6.7	4.7						
83	101	458	0.90	17.39	1.9	2.0	1.9	2.0	KH043-11P-112M-04E	46	436			
103	124	371	1.10	14.10	4.4	7.3	4.4	2.4						
123	149	311	1.30	11.81	5.3	8.3	5.3	2.7						
129	156	296	0.90	11.22	5.5	8.0	5.5	2.4						
152	183	252	1.50	9.57	6.0	8.5	6.0	2.9						
157	190	243	1.55	9.23	6.0	8.5	6.0	2.9						
158	191	242	1.05	9.18	6.1	8.3	6.1	2.7						
195	236	196	1.25	7.44	6.4	8.5	6.4	2.9						
233	282	164	1.45	6.23	6.6	8.7	6.0	3.1						
287	348	133	1.70	5.05	6.8	8.8	5.5	3.2						
298	360	128	1.75	4.87	6.8	8.8	5.4	3.2						

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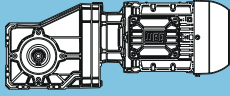
** ... on request

P _N = 5.5 kW										IE3		
50 Hz		60 Hz				at 50 Hz					m kg	Dimension sheet see page
5.5 kW		6.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B			i	F _{rN} kN	F _{aN} kN	F _{rN} kN			
2.1	2.6	22447	0.85	688.57	53.9	90.7	53.9	90.7	KH154-11P-132S-04E	711	462	
2.2	2.6	22039	0.85	676.04	56.8	96.8	56.8	96.8				
2.5	3.0	19336	0.95	595.58	72.2	115.2	72.2	115.2				
2.9	3.5	16369	1.10	507.30	84.3	117.5	84.3	117.5				
3.4	4.0	13983	1.30	436.93	91.7	119.3	91.7	119.3				
3.5	4.2	13385	1.35	419.11	93.2	119.8	93.2	119.8				
3.9	4.7	11971	1.55	377.93	96.6	120.9	96.6	120.9				
4.0	4.8	11717	1.55	369.91	97.2	121.1	97.2	121.1				
4.1	4.9	11411	1.60	360.98	97.8	121.3	97.8	121.3				
4.5	5.5	10151	1.80	323.79	100.2	122.3	100.2	122.3				
4.6	5.5	9967	1.85	318.60	100.6	122.4	100.6	122.4				
4.7	5.7	9768	1.85	312.23	100.9	122.5	100.9	122.5				
5.3	6.4	8515	2.15	275.58	102.9	123.5	102.9	123.5				
5.5	6.6	8241	2.20	267.26	103.3	123.7	103.3	123.7				
5.6	6.7	8046	2.25	261.49	103.6	123.9	103.6	123.9				
6.3	7.6	7010	2.60	231.17	104.9	124.7	104.9	124.7				
6.5	7.8	6816	2.65	225.22	105.2	124.8	105.2	124.8				
2.8	3.4	16960	0.80	519.19	**	**	**	**	KH124-11P-132S-04E	457	458	
2.9	3.4	16741	0.80	512.47	**	**	**	**				
3.1	3.8	15138	0.90	465.31	62.4	82.3	62.4	82.3				
3.3	4.0	14537	0.90	446.82	64.9	82.9	64.9	82.9				
3.4	4.0	14152	0.95	435.90	66.4	83.3	66.4	83.3				
3.7	4.4	12956	1.05	400.70	70.6	84.5	70.6	84.5				
3.8	4.6	12445	1.05	384.88	72.2	85.0	72.2	85.0				
3.9	4.6	12264	1.10	380.06	72.8	85.2	72.8	85.2				
4.4	5.3	10629	1.25	331.43	77.2	86.8	77.2	86.8				
4.5	5.4	10499	1.25	327.38	77.5	87.0	77.5	87.0				
4.6	5.5	10210	1.30	319.02	78.2	87.3	78.2	87.3				
4.8	5.7	9825	1.35	307.62	79.1	87.7	79.1	87.7				
5.2	6.2	9024	1.45	283.73	80.8	88.5	80.8	88.5				
5.3	6.3	8829	1.50	278.15	81.2	88.7	81.2	88.7				
5.5	6.6	8496	1.55	268.22	81.8	89.0	81.8	89.0				
5.6	6.7	8307	1.60	262.80	82.1	89.2	82.1	89.2				
6.0	7.2	7691	1.70	244.33	83.2	89.8	83.2	89.8				
6.1	7.4	7527	1.75	239.59	83.5	90.0	83.5	90.0				
6.3	7.6	7243	1.80	231.04	83.9	90.2	83.9	90.2				
6.4	7.7	7169	1.85	229.14	84.0	90.3	84.0	90.3				
7.1	8.6	6401	2.05	206.32	85.1	91.1	85.1	91.1				
7.4	8.9	6147	2.15	198.95	85.5	91.3	85.5	91.3				
8.6	10	5165	2.55	169.97	86.6	92.3	86.6	92.3				
9.7	12	5418	2.40	151.11	86.3	92.1	86.3	92.1	KH123-11P-132S-04E	433	456	
11	13	4724	2.80	131.76	87.1	92.8	87.1	92.8				
12	14	4555	2.90	127.05	87.2	92.9	87.2	92.9				
4.6	5.6	10344	0.80	316.65	**	**	**	**	KH104-11P-132S-04E	334	454	
4.7	5.7	10184	0.80	311.74	**	**	**	**				
5.4	6.5	8772	0.95	270.17	41.7	59.1	41.7	59.1				
5.6	6.7	8533	0.95	262.82	43.1	59.4	43.1	59.4				
5.8	7.0	8211	1.00	253.44	44.7	59.8	44.7	59.8				
6.3	7.6	7532	1.10	233.43	47.9	60.6	47.9	60.6				
6.4	7.7	7362	1.10	228.15	48.6	60.8	48.6	60.8				
6.7	8.0	7084	1.15	220.00	49.7	61.1	49.7	61.1				
6.8	8.2	6972	1.15	216.51	50.1	61.2	50.1	61.2				
7.4	9.0	6308	1.30	197.12	52.5	62.0	52.5	62.0				
7.7	9.3	6071	1.35	190.08	53.2	62.2	53.2	62.2				
7.8	9.4	6003	1.35	187.95	53.4	62.3	53.4	62.3				
9.0	11	5133	1.60	162.39	55.8	63.3	55.8	63.3				
10	13	5054	1.60	140.95	56.0	63.4	56.0	63.4				KH103-11P-132S-04E
12	14	4464	1.80	124.50	57.4	64.1	57.4	64.1				
14	16	3875	2.10	108.07	58.5	64.7	58.5	64.7				
16	19	3348	2.40	93.37	59.4	65.3	59.4	65.3				
18	22	2865	2.80	79.90	60.1	65.9	60.1	65.9	KH094-11P-132S-04E	205	450	
8.9	11	5356	0.85	164.28	21.0	35.2	21.0	35.2				
9.2	11	5154	0.90	158.41	23.0	38.4	23.0	38.4				

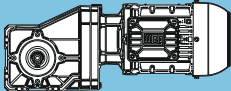


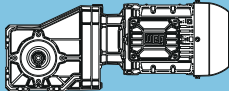
P_N = 5.5 kW

IE3

50 Hz 5.5 kW n ₅₀ min ⁻¹	60 Hz 6.6 kW n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	at 50 Hz					m kg	Dimension sheet see page
					Output shaft		Hollow shaft				
					F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
10	12	5130	0.90	143.08	23.2	38.5	23.2	38.5	KH093-11P-132S-04E	192	448
12	14	4441	1.05	123.86	28.3	39.4	28.3	39.4			
13	16	3933	1.15	109.70	31.2	40.0	31.2	40.0			
15	19	3402	1.35	94.90	33.6	40.7	33.6	40.7			
16	19	3281	1.40	91.51	34.1	40.8	34.1	40.8			
18	22	2895	1.60	80.74	35.5	41.3	35.5	41.3			
21	26	2463	1.85	68.71	36.7	41.9	36.7	41.9			
23	28	2293	2.00	63.96	37.2	42.1	37.2	42.1			
25	30	2125	2.15	59.28	37.6	42.3	37.6	42.3			
27	33	1939	2.35	54.07	38.0	42.5	38.0	42.5			
31	38	1678	2.70	46.81	38.5	42.9	38.5	42.9			
39	48	1331	2.10	37.13	39.0	42.7	39.0	42.7			
47	56	1125	2.50	31.39	39.3	43.0	39.3	43.0			
54	65	974	2.90	27.18	39.4	43.3	39.4	43.3			
14	17	3817	0.80	106.46	**	**	**	**			
16	19	3281	0.95	91.51	16.7	28.6	16.7	7.7			
18	22	2864	1.05	79.89	20.5	36.8	20.5	8.3			
21	26	2454	1.25	68.44	23.2	41.4	23.2	8.9			
22	27	2366	1.30	66.00	23.7	41.5	23.7	9.0			
23	28	2263	1.30	63.12	24.2	41.7	24.2	9.2			
25	30	2088	1.45	58.25	25.1	41.9	25.1	9.4			
27	32	1976	1.55	55.11	25.6	42.1	24.3	9.6			
30	36	1752	1.75	48.87	26.4	42.4	23.0	9.9			
32	39	1631	1.00	45.48	26.9	41.7	22.8	9.2			
36	43	1477	2.05	41.19	27.3	42.8	21.0	10.3			
41	49	1290	1.30	35.99	27.9	42.4	20.2	9.9			
47	56	1127	1.75	31.43	28.2	42.7	18.9	10.2			
53	64	996	1.95	27.78	28.5	43.0	17.8	10.5			
62	75	842	2.30	23.49	28.8	43.3	16.5	10.8			
73	87	724	2.65	20.19	29.0	43.5	15.3	11.0			
28	34	1854	0.85	51.72	12.2	15.2	12.2	3.9	KH073-11P-132S-04E	101	442
29	35	1820	0.90	50.75	12.6	15.2	12.6	4.0			
34	41	1528	1.05	42.61	15.3	15.8	15.3	4.6			
37	45	1404	1.15	39.17	16.2	16.1	15.7	4.8			
45	54	1162	1.35	32.40	17.7	16.6	15.0	5.3			
48	57	1104	0.85	30.79	18.0	15.6	14.4	4.3			
53	64	988	1.60	27.56	18.5	17.0	13.7	5.7			
61	73	867	1.10	24.17	19.0	16.3	13.3	5.0			
73	88	723	2.15	20.17	19.4	17.5	11.6	6.3			
75	91	697	2.25	19.45	19.5	17.6	11.5	6.3			
79	95	669	1.40	18.65	19.6	16.9	11.6	5.7			
88	106	596	2.65	16.61	19.8	17.8	10.6	6.5			
95	114	553	1.65	15.43	19.9	17.3	10.6	6.0			
112	135	470	1.95	13.12	20.0	17.5	9.7	6.3			
129	155	408	2.25	11.37	20.1	17.7	9.1	6.5			
153	184	344	2.65	9.60	20.2	17.9	8.4	6.7			
158	191	332	2.75	9.26	20.3	18.0	8.3	6.7			
60	73	869	0.90	24.25	7.9	12.5	7.9	2.6	KH063-11P-132S-04E	81	440
66	80	791	0.85	22.07	8.9	12.8	8.9	2.8			
73	88	717	1.05	20.00	9.6	13.0	9.6	3.0			
84	102	622	0.85	17.34	10.4	12.5	10.1	2.5			
89	108	588	1.20	16.40	10.6	13.4	9.9	3.4			
105	127	500	1.35	13.94	11.2	13.7	9.0	3.7			
111	134	473	1.10	13.19	11.3	13.1	9.1	3.2			
128	154	411	1.55	11.46	11.6	14.0	8.2	4.0			
133	160	396	1.60	11.05	11.7	14.0	8.0	4.1			
135	162	390	1.30	10.88	11.7	13.5	8.2	3.6			
161	194	326	1.80	9.09	11.9	14.2	7.3	4.3			
164	198	320	1.60	8.92	12.0	13.8	7.4	3.9			
193	233	272	1.80	7.58	12.1	14.0	6.8	4.1			
235	283	223	2.10	6.23	12.2	14.3	6.2	4.3			
244	294	215	2.15	6.01	12.2	14.3	6.1	4.3			
297	357	177	2.45	4.94	12.3	14.5	5.6	4.5			

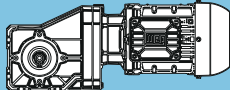
K

P _N = 5.5 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
5.5 kW		6.6 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
74	89	707	0.85	19.73	3.8	5.5	3.8	3.2	KH053-11P-132S-04E	68	438	
90	109	580	1.05	16.19	6.4	10.2	6.4	3.5				
98	118	537	0.80	14.98	**	**	**	**				
107	128	493	1.25	13.75	7.5	10.5	7.5	3.8				
129	155	409	1.05	11.40	8.3	10.2	8.3	3.5				
130	156	406	1.50	11.31	8.3	10.8	8.3	4.1				
134	162	391	1.55	10.91	8.4	10.8	8.4	4.1				
156	188	337	1.25	9.40	8.8	10.5	8.8	3.8				
163	197	322	1.80	8.97	8.9	11.0	8.7	4.3				
190	229	276	1.50	7.71	9.1	10.8	8.4	4.1				
224	269	235	1.80	6.55	9.3	10.9	7.7	4.2				
272	327	193	2.15	5.39	9.4	11.1	7.1	4.4				
282	340	186	2.25	5.19	9.4	11.2	6.9	4.5				
343	413	153	2.70	4.27	8.6	11.3	6.4	4.6				

P _N = 7.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
7.5 kW		9.0 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
2.9	3.5	22598	0.80	507.30	**	**	**	**	KH154-11P-L132M-04F	725	462
3.4	4.1	19344	0.95	436.93	72.2	115.2	72.2	115.2			
3.5	4.2	18517	1.00	419.11	76.0	115.9	76.0	115.9			
3.9	4.7	16629	1.10	377.93	83.4	117.3	83.4	117.3			
4.0	4.8	16243	1.15	369.91	84.7	117.6	84.7	117.6			
4.1	4.9	15851	1.15	360.98	86.1	117.9	86.1	117.9			
4.5	5.5	14130	1.30	323.79	91.2	119.2	91.2	119.2			
4.6	5.6	13904	1.30	318.60	91.9	119.4	91.9	119.4			
4.7	5.7	13598	1.35	312.23	92.7	119.6	92.7	119.6			
5.3	6.4	11903	1.55	275.58	96.7	120.9	96.7	120.9			
5.5	6.6	11520	1.60	267.26	97.6	121.2	97.6	121.2			
5.6	6.8	11271	1.60	261.49	98.1	121.4	98.1	121.4			
6.3	7.7	9862	1.85	231.17	100.8	122.5	100.8	122.5			
6.5	7.9	9588	1.90	225.22	101.2	122.7	101.2	122.7			
7.5	9.1	8191	2.20	194.80	103.4	123.8	103.4	123.8			
3.8	4.6	17145	0.80	384.88	**	**	**	**	KH124-11P-L132M-04F	471	458
3.9	4.7	16930	0.80	380.06	**	**	**	**			
4.4	5.3	14703	0.90	331.43	64.2	82.8	64.2	82.8			
4.5	5.4	14524	0.90	327.38	64.9	82.9	64.9	82.9			
4.6	5.5	14124	0.95	319.02	66.5	83.3	66.5	83.3			
4.8	5.8	13591	1.00	307.62	68.4	83.9	68.4	83.9			
5.2	6.2	12510	1.05	283.73	72.0	85.0	72.0	85.0			
5.3	6.4	12239	1.10	278.15	72.8	85.2	72.8	85.2			
5.5	6.6	11778	1.15	268.22	74.2	85.7	74.2	85.7			
5.6	6.7	11540	1.15	262.80	74.9	85.9	74.9	85.9			
6.0	7.2	10685	1.25	244.33	77.1	86.8	77.1	86.8			
6.1	7.4	10477	1.25	239.59	77.6	87.0	77.6	87.0			
6.3	7.7	10083	1.30	231.04	78.5	87.4	78.5	87.4			
6.4	7.7	9979	1.35	229.14	78.8	87.5	78.8	87.5			
7.1	8.6	8930	1.50	206.32	81.0	88.5	81.0	88.5			
7.4	8.9	8593	1.55	198.95	81.6	88.9	81.6	88.9			
8.6	10	7266	1.80	169.97	83.9	90.2	83.9	90.2			
9.7	12	7388	1.80	151.11	83.7	90.1	83.7	90.1			
11	13	6442	2.05	131.76	85.1	91.0	85.1	91.0			
12	14	6212	2.10	127.05	85.4	91.3	85.4	91.3			
13	16	5549	2.35	113.49	86.2	91.9	86.2	91.9			
15	18	4778	2.75	97.73	87.0	92.7	87.0	92.7			
30	36	2403	2.50	49.16	88.7	95.1	88.7	95.1			
52	63	1370	2.50	28.03	87.3	95.8	87.3	95.8			
6.3	7.6	10398	0.80	233.43	**	**	**	**	KH104-11P-L132M-04F	348	454
6.4	7.8	10163	0.80	228.15	**	**	**	**			
6.7	8.0	9780	0.85	220.00	35.1	58.0	35.1	58.0			
6.8	8.2	9625	0.85	216.51	36.3	58.2	36.3	58.2			
7.4	9.0	8727	0.95	197.12	42.0	59.2	42.0	59.2			
7.7	9.3	8398	1.00	190.08	43.8	59.6	43.8	59.6			
7.8	9.4	8304	1.00	187.95	44.3	59.7	44.3	59.7			
9.0	11	7131	1.15	162.39	49.5	61.0	49.5	61.0			
10	13	6891	1.20	140.95	50.4	61.3	50.4	61.3			
12	14	6087	1.35	124.50	53.2	62.2	53.2	62.2			
14	16	5284	1.55	108.07	55.5	63.1	55.5	63.1			
16	19	4565	1.80	93.37	57.2	64.0	57.2	64.0			
18	22	3906	2.05	79.90	58.5	64.7	58.5	64.7			
21	26	3374	2.40	69.01	59.4	65.3	59.4	65.3			
28	33	2604	2.30	53.27	60.4	66.2	60.4	66.2			
37	45	1925	2.50	39.38	61.1	67.0	61.1	67.0			
48	58	1483	2.30	30.33	61.1	67.1	61.1	67.1			
65	79	1096	2.50	22.42	55.1	67.6	55.1	67.6			

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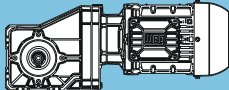
** ... on request

P _N = 7.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
7.5 kW		9.0 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
13	16	5363	0.85	109.70	21.0	35.2	21.0	35.2	KH093-11P-L132M-04F	206	448
15	19	4640	1.00	94.90	27.0	39.1	27.0	39.1			
16	19	4474	1.05	91.51	28.1	39.3	28.1	39.3			
18	22	3947	1.15	80.74	31.1	40.0	31.1	40.0			
21	26	3359	1.35	68.71	33.8	40.7	33.8	40.7			
23	28	3127	1.45	63.96	34.7	41.0	34.7	41.0			
25	30	2898	1.60	59.28	35.4	41.3	35.4	41.3			
27	33	2644	1.75	54.07	36.2	41.6	36.2	41.6			
31	38	2289	2.00	46.81	37.2	42.1	37.2	42.1			
35	43	2027	2.25	41.46	37.8	42.4	37.8	42.4			
39	48	1815	1.55	37.13	38.2	41.8	38.2	41.8			
41	49	1753	2.60	35.86	38.3	42.8	38.3	42.8			
42	51	1691	2.50	34.58	38.5	42.9	38.5	42.9			
47	56	1535	1.85	31.39	38.7	42.3	38.7	42.3			
54	65	1329	2.15	27.18	39.0	42.7	39.0	42.7			
61	74	1177	2.55	24.07	39.2	42.9	39.2	42.9			
70	85	1018	2.95	20.82	39.4	43.2	39.4	43.2			
73	88	982	2.50	20.08	39.4	43.3	39.4	43.3			
18	22	3906	0.80	79.89	**	**	**	**	KH083-11P-L132M-04F	156	444
21	26	3346	0.90	68.44	16.0	27.1	16.0	7.6			
22	27	3227	0.95	66.00	17.3	29.8	17.3	7.7			
23	28	3086	0.95	63.12	18.6	32.6	18.6	7.9			
25	30	2848	1.10	58.25	20.6	37.0	20.6	8.3			
27	32	2694	1.15	55.11	21.7	39.4	21.7	8.5			
30	36	2381	1.30	48.71	23.6	41.5	23.6	9.0			
36	43	2013	1.50	41.18	25.4	42.0	22.9	9.5			
36	43	2014	1.50	41.19	25.4	42.0	22.9	9.5			
41	49	1760	0.95	35.99	26.4	41.5	22.0	9.0			
47	56	1537	1.25	31.43	27.2	41.9	20.5	9.4			
47	57	1511	2.00	30.91	27.2	42.8	19.8	10.3			
53	64	1358	1.40	27.78	27.7	42.3	19.2	9.8			
55	67	1295	2.30	26.48	27.8	43.1	18.3	10.6			
57	69	1249	2.40	25.54	28.0	43.2	18.0	10.7			
62	75	1148	1.70	23.49	28.2	42.7	17.7	10.2			
65	79	1102	2.60	22.54	28.3	43.4	16.9	10.9			
73	88	987	1.95	20.19	28.5	43.0	16.3	10.5			
77	94	925	2.95	18.91	28.6	43.6	15.5	11.1			
83	100	862	2.25	17.63	28.7	43.3	15.3	10.8			
97	117	738	2.65	15.10	28.9	43.5	14.3	11.0			
101	122	712	2.50	14.56	29.0	43.6	14.0	11.1			
37	45	1915	0.85	39.17	11.4	15.0	11.4	3.8	KH073-11P-L132M-04F	115	442
45	55	1584	1.00	32.40	14.9	15.7	13.3	4.5			
53	64	1347	1.20	27.56	16.6	16.2	13.4	5.0			
61	73	1182	0.80	24.17	**	**	**	**			
73	88	986	1.60	20.17	18.5	17.0	12.7	5.7			
75	91	951	1.65	19.45	18.7	17.0	12.5	5.8			
79	95	912	1.00	18.65	18.8	16.2	12.3	4.9			
88	107	812	1.95	16.61	19.2	17.3	11.5	6.1			
95	115	754	1.25	15.43	19.3	16.6	11.5	5.4			
112	135	641	1.45	13.12	19.7	17.0	10.6	5.7			
129	156	556	1.65	11.37	19.9	17.3	9.8	6.0			
153	184	469	1.95	9.60	20.0	17.5	9.0	6.3			
158	191	453	2.05	9.26	20.1	17.6	8.8	6.3			
185	224	387	2.40	7.91	20.2	17.8	8.2	6.5			



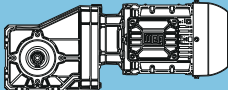
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** ... on request

P _N = 7.5 kW										IE3	
50 Hz	60 Hz				at 50 Hz					m kg	Dimension sheet see page
7.5 kW	9.0 kW	M ₂ Nm	f _B	i	Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹				F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
73	89	978	0.80	20.00	**	**	**	**	KH063-11P-L132M-04F	95	440
89	108	802	0.90	16.40	8.8	12.7	8.8	2.8			
105	127	682	1.00	13.94	9.9	13.1	9.2	3.2			
111	134	645	0.80	13.19	**	**	**	**			
128	154	560	1.15	11.46	10.8	13.5	9.0	3.5			
133	160	540	1.15	11.05	10.9	13.5	8.8	3.6			
135	163	532	0.95	10.88	11.0	12.9	8.6	2.9			
161	195	444	1.35	9.09	11.5	13.9	7.9	3.9			
164	198	436	1.15	8.92	11.5	13.3	8.1	3.4			
193	234	371	1.35	7.58	11.8	13.6	7.4	3.6			
235	284	305	1.55	6.23	12.0	13.9	6.7	3.9			
244	295	294	1.55	6.01	12.0	13.9	6.6	4.0			
297	358	242	1.80	4.94	12.2	14.2	6.0	4.2			
90	109	792	0.80	16.19	**	**	**	**			
107	129	672	0.90	13.75	4.7	7.4	4.7	3.3			
130	156	553	1.10	11.31	6.8	10.3	6.8	3.6			
134	162	533	1.15	10.91	7.0	10.4	7.0	3.7			
156	188	460	0.90	9.40	7.8	9.9	7.8	3.2			
163	197	439	1.30	8.97	8.0	10.7	8.0	4.0			
190	230	377	1.10	7.71	8.5	10.3	8.5	3.6			
224	270	320	1.30	6.55	8.9	10.6	8.3	3.9			
272	328	264	1.60	5.39	9.2	10.8	7.5	4.1			
282	341	254	1.65	5.19	9.2	10.9	7.4	4.2			
343	415	209	2.00	4.27	9.0	11.1	6.7	4.4			

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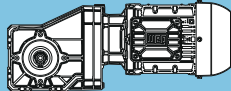
** ... on request

P _N = 9.2 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
9.2 kW		11 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
3.4	4.1	23831	0.80	434.63	**	**	**	**	KH154-11P-L132M-04G	730	462
3.5	4.2	22980	0.80	419.11	**	**	**	**			
3.9	4.7	20637	0.90	377.93	65.5	114.3	65.5	114.3			
4.0	4.9	19671	0.95	360.98	70.6	115.0	70.6	115.0			
4.5	5.5	17572	1.05	323.79	79.9	116.6	79.9	116.6			
4.6	5.5	17291	1.05	318.60	81.0	116.8	81.0	116.8			
4.7	5.7	16910	1.10	312.23	82.4	117.1	82.4	117.1			
5.3	6.4	14834	1.25	275.58	89.2	118.7	89.2	118.7			
5.5	6.6	14356	1.30	267.26	90.6	119.0	90.6	119.0			
5.6	6.7	14046	1.30	261.49	91.5	119.3	91.5	119.3			
6.3	7.6	12316	1.50	231.17	95.8	120.6	95.8	120.6			
6.5	7.8	11974	1.55	225.22	96.6	120.9	96.6	120.9			
7.5	9.1	10250	1.80	194.80	100.1	122.2	100.1	122.2			
4.7	5.7	16867	0.80	307.62	**	**	**	**	KH124-11P-L132M-04G	476	458
5.1	6.2	15525	0.85	283.73	60.7	81.9	60.7	81.9			
5.2	6.3	15426	0.85	281.92	61.1	82.0	61.1	82.0			
5.4	6.6	14646	0.90	268.22	64.4	82.8	64.4	82.8			
5.6	6.7	14321	0.95	262.80	65.7	83.1	65.7	83.1			
6.0	7.2	13287	1.00	244.33	69.5	84.2	69.5	84.2			
6.1	7.4	13029	1.00	239.59	70.4	84.4	70.4	84.4			
6.3	7.6	12539	1.05	231.04	71.9	84.9	71.9	84.9			
6.4	7.7	12436	1.05	229.14	72.3	85.0	72.3	85.0			
7.1	8.6	11128	1.20	206.32	76.0	86.3	76.0	86.3			
7.3	8.9	10709	1.25	198.95	77.0	86.8	77.0	86.8			
7.4	8.9	10624	1.25	197.38	77.2	86.9	77.2	86.9			
8.6	10	9074	1.45	169.97	80.7	88.4	80.7	88.4			
9.7	12	9094	1.45	151.11	80.6	88.4	80.6	88.4	KH123-11P-L132M-04G	452	456
11	13	7929	1.65	131.76	82.8	89.6	82.8	89.6			
13	16	6830	1.95	113.49	84.5	90.7	84.5	90.7			
15	18	5881	2.25	97.73	85.8	91.6	85.8	91.6			
17	21	5137	2.55	85.37	86.6	92.4	86.6	92.4			
25	30	3519	2.50	58.47	88.1	94.0	88.1	94.0			
30	36	2958	2.00	49.16	88.4	94.5	88.4	94.5			
44	53	2006	2.50	33.34	88.9	95.0	88.9	95.0			
52	63	1687	2.00	28.03	88.1	95.4	88.1	95.4			
7.7	9.3	10422	0.80	190.08	**	**	**	**	KH104-11P-L132M-04G	353	454
7.8	9.4	10305	0.80	187.95	**	**	**	**			
9.0	11	8849	0.95	162.39	41.3	59.1	41.3	59.1			
10	13	8482	0.95	140.95	43.3	59.5	43.3	59.5	KH103-11P-L132M-04G	329	452
12	14	7492	1.10	124.50	48.0	60.6	48.0	60.6			
14	16	6503	1.25	108.07	51.8	61.7	51.8	61.7			
16	19	5619	1.45	93.37	54.6	62.7	54.6	62.7			
18	22	4808	1.70	79.90	56.6	63.7	56.6	63.7			
21	26	4153	1.95	69.01	58.0	64.4	58.0	64.4			
27	33	3206	1.90	53.27	59.6	65.5	59.6	65.5			
31	38	2831	2.65	47.05	60.1	65.9	60.1	65.9			
37	45	2370	2.00	39.38	60.7	66.5	60.7	66.5			
48	58	1825	1.90	30.33	61.2	66.6	61.2	66.6			
54	66	1612	2.65	26.79	59.4	66.9	59.4	66.9			
65	79	1349	2.00	22.42	55.7	67.3	55.7	67.3			



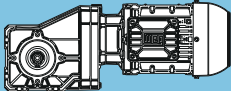
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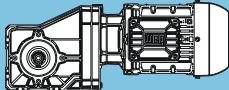
** ... on request

P _N = 9.2 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
9.2 kW		11 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
15	19	5711	0.80	94.90	**	**	**	**	KH093-11P-L132M-04G	211	448
16	19	5507	0.85	91.51	19.4	31.8	19.4	31.8			
18	22	4859	0.95	80.74	25.4	38.8	25.4	38.8			
21	26	4135	1.10	68.71	30.1	39.7	30.1	39.7			
23	28	3849	1.20	63.96	31.6	40.1	31.6	40.1			
25	30	3567	1.30	59.28	32.9	40.5	32.9	40.5			
27	33	3254	1.40	54.07	34.2	40.9	34.2	40.9			
31	38	2817	1.60	46.81	35.7	41.4	35.7	41.4			
35	43	2495	1.85	41.46	36.7	41.8	36.7	41.8			
39	48	2234	1.25	37.13	37.3	41.1	37.3	41.1			
41	49	2158	2.10	35.86	37.5	42.3	37.5	42.3			
42	51	2081	2.00	34.58	37.7	42.4	37.7	42.4			
47	56	1889	1.50	31.39	38.1	41.7	38.1	41.7			
48	58	1836	2.50	30.51	38.2	42.7	38.2	42.7			
54	65	1636	1.75	27.18	38.6	42.2	38.6	42.2			
56	68	1563	2.90	25.97	38.7	43.0	38.7	43.0			
61	73	1448	2.10	24.07	38.9	42.5	38.9	42.5			
70	85	1253	2.40	20.82	39.1	42.8	39.1	42.8			
73	88	1208	2.00	20.08	39.2	42.9	39.2	42.9			
82	100	1066	2.85	17.72	39.3	43.1	39.3	43.1			
22	27	3972	0.80	66.00	**	**	**	**	KH083-11P-L132M-04G	161	444
23	28	3798	0.80	63.12	**	**	**	**			
25	30	3505	0.90	58.25	14.0	22.8	14.0	7.3			
26	32	3316	0.95	55.11	16.3	27.7	16.3	7.6			
30	36	2941	1.05	48.87	19.9	35.5	19.9	8.2			
35	43	2479	1.25	41.19	23.0	41.3	23.0	8.8			
41	49	2166	0.80	35.99	**	**	**	**			
46	56	1891	1.05	31.43	25.9	41.2	21.9	8.7			
47	57	1860	1.65	30.91	26.0	42.3	21.0	9.8			
53	64	1672	1.15	27.78	26.7	41.6	20.4	9.1			
55	67	1594	1.90	26.48	27.0	42.6	19.3	10.1			
57	69	1537	1.95	25.54	27.2	42.7	19.0	10.2			
62	75	1414	1.40	23.49	27.5	42.2	18.7	9.7			
65	78	1356	2.10	22.54	27.7	43.0	17.8	10.5			
72	87	1215	1.60	20.19	28.0	42.6	17.3	10.1			
77	93	1138	2.40	18.91	28.2	43.3	16.3	10.8			
83	100	1061	1.85	17.63	28.4	42.9	16.1	10.4			
92	111	959	2.70	15.93	28.6	43.6	14.9	11.1			
97	117	909	2.15	15.10	28.7	43.2	14.9	10.7			
100	121	876	2.00	14.56	28.7	43.2	14.7	10.7			
114	137	773	2.55	12.85	28.9	43.4	13.8	10.9			
135	164	649	3.00	10.78	29.0	43.7	12.7	11.2			
45	54	1950	0.80	32.40	**	**	**	**	KH073-11P-L132M-04G	120	442
53	64	1659	0.95	27.56	14.2	15.6	11.8	4.3			
61	74	1437	1.10	23.88	16.0	16.0	12.0	4.8			
72	88	1214	1.30	20.17	17.4	16.5	12.1	5.2			
75	91	1170	1.35	19.45	17.6	16.6	12.1	5.3			
78	95	1122	0.85	18.65	17.9	15.5	11.2	4.2			
88	106	1000	1.60	16.61	18.5	16.9	12.0	5.7			
95	114	929	1.00	15.43	18.7	16.1	11.2	4.8			
111	135	790	1.20	13.12	19.2	16.5	11.2	5.3			
128	155	684	1.35	11.37	19.6	16.9	10.4	5.6			
152	184	578	1.60	9.60	19.8	17.2	9.5	5.9			
158	191	557	1.65	9.26	19.9	17.3	9.3	6.0			
185	223	476	1.95	7.91	20.0	17.5	8.6	6.3			
105	127	839	0.80	13.94	**	**	**	**			

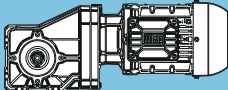
Legend see page 337

** ... on request

P _N = 9.2 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
9.2 kW		11 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
105	127	839	0.80	13.94	**	**	**	**	KH063-11P-L132M-04G	100	440	
127	154	690	0.95	11.46	9.9	13.1	8.3	3.1				
132	160	665	0.95	11.05	10.1	13.2	8.3	3.2				
134	162	655	0.80	10.88	**	**	**	**				
161	194	547	1.10	9.09	10.9	13.5	8.2	3.6				
164	198	537	0.95	8.92	11.0	12.9	7.8	2.9				
193	233	456	1.10	7.58	11.4	13.2	7.8	3.3				
234	283	375	1.25	6.23	11.8	13.6	7.1	3.6				
243	294	362	1.30	6.01	11.8	13.6	7.0	3.7				
296	357	297	1.45	4.94	12	13.9	6.3	4.0				
129	156	681	0.90	11.31	4.5	6.9	4.5	3.2	KH053-11P-L132M-04G	87	438	
134	162	657	0.95	10.91	5.1	8.2	5.1	3.3				
163	197	540	1.05	8.97	6.9	10.4	6.9	3.7				
189	229	464	0.90	7.71	7.8	9.9	7.8	3.2				
223	269	394	1.05	6.55	8.4	10.2	8.4	3.5				
271	327	324	1.30	5.39	8.8	10.5	8.0	3.8				
281	340	312	1.35	5.19	8.9	10.6	7.8	3.9				
342	413	257	1.65	4.27	9.2	10.8	7.1	4.1				

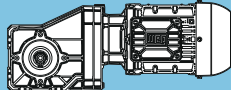
P _N = 11 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
11 kW		13 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
4.5	5.5	20996	0.90	323.79	63.4	110.8	63.4	110.8	KH154-22P-160M-04E	792	462
4.6	5.6	20660	0.90	318.60	65.4	114.2	65.4	114.2			
4.7	5.7	20121	0.90	310.30	68.3	114.6	68.3	114.6			
5.3	6.4	17760	1.05	275.58	79.1	116.4	79.1	116.4			
5.5	6.6	17224	1.05	267.26	81.2	116.9	81.2	116.9			
5.6	6.8	16818	1.10	261.49	82.7	117.2	82.7	117.2			
6.4	7.7	14776	1.25	231.17	89.4	118.7	89.4	118.7			
6.5	7.9	14366	1.30	225.22	90.6	119.0	90.6	119.0			
6.9	8.3	13648	1.35	214.39	92.6	119.6	92.6	119.6			
7.5	9.1	12324	1.50	194.80	95.8	120.6	95.8	120.6			
8.0	9.6	11658	1.55	184.65	97.3	121.1	97.3	121.1			
9.2	11	9960	1.85	159.72	100.6	122.4	100.6	122.4			
10	12	10483	1.75	146.69	99.6	122.0	99.6	122.0	KH153-22P-160M-04E	746	460
12	14	9029	2.00	126.34	102.1	123.1	102.1	123.1			
13	16	7809	2.35	109.28	103.9	124.0	103.9	124.0			
15	18	6888	2.65	96.39	105.1	124.7	105.1	124.7			
26	31	4056	2.70	56.75	107.7	126.9	107.7	126.9			
41	50	2546	2.70	35.63	108.5	127.4	108.5	127.4			
5.6	6.8	17111	0.80	262.80	**	**	**	**	KH124-22P-160M-04E	538	458
6.0	7.3	15876	0.85	244.33	59	81.6	59	81.6			
6.1	7.4	15568	0.85	239.59	60.5	81.9	60.5	81.9			
6.4	7.7	14859	0.90	229.14	63.6	82.6	63.6	82.6			
7.1	8.6	13324	1.00	206.32	69.4	84.1	69.4	84.1			
7.4	9	12721	1.05	197.38	71.4	84.8	71.4	84.8			
8.6	10	10887	1.20	169.97	76.6	86.6	76.6	86.6			
9.7	12	10799	1.25	151.11	76.8	86.7	76.8	86.7			
11	13	9416	1.40	131.76	80.0	88.1	80.0	88.1			
13	16	8110	1.65	113.49	82.5	89.4	82.5	89.4			
15	18	6984	1.90	97.73	84.3	90.5	84.3	90.5			
17	21	6101	2.15	85.37	85.5	91.4	85.5	91.4			
20	24	5270	2.50	73.74	86.5	92.2	86.5	92.2			
24	29	4358	3.00	60.98	87.4	93.1	87.4	93.1			
25	30	4178	2.10	58.47	87.6	93.3	87.6	93.3			
29	35	3643	2.70	50.98	88.0	93.8	88.0	93.8			
44	53	2383	2.10	33.34	88.8	94.6	88.8	94.6			
51	61	2077	2.70	29.07	88.9	94.9	88.9	94.9			
9.1	11	10573	0.80	162.39	**	**	**	**	KH104-22P-160M-04E	415	454
12	14	8897	0.90	124.50	41.0	59.0	41.0	59.0	KH103-22P-160M-04E	391	452
14	16	7723	1.05	108.07	47.0	60.3	47.0	60.3			
16	19	6672	1.20	93.37	51.2	61.5	51.2	61.5			
18	22	5710	1.45	79.90	54.3	62.6	54.3	62.6			
21	26	4932	1.65	69.01	56.3	63.5	56.3	63.5			
25	30	4171	1.95	58.36	58.0	64.4	58.0	64.4			
31	37	3403	2.40	47.62	59.3	65.3	59.3	65.3			
36	43	2919	2.60	40.84	60.0	65.8	60.0	65.8			
38	46	2761	2.90	38.64	60.2	66.0	60.2	66.0			
42	50	2522	3.00	35.29	60.5	66.3	60.5	66.3			
55	66	1914	2.25	26.79	59.9	66.5	59.9	66.5			
63	76	1662	2.60	23.25	57.1	66.8	57.1	66.8			
73	88	1436	3.00	20.09	54.2	67.2	54.2	67.2			
18	22	5770	0.80	80.74	**	**	**	**	KH093-22P-160M-04E	273	448
21	26	4910	0.95	68.71	25.0	38.8	25.0	38.8			
25	30	4236	1.10	59.28	29.6	39.6	29.6	39.6			
30	36	3554	1.30	49.73	33.0	40.5	33.0	40.5			
35	43	2963	1.55	41.46	35.2	41.2	35.2	41.2			
36	44	2889	1.60	40.43	35.5	41.3	35.5	41.3			
41	49	2563	1.80	35.86	36.5	41.7	36.5	41.7			
47	56	2259	2.00	31.61	37.3	42.1	37.3	42.1			
48	58	2180	2.10	30.51	37.5	42.2	37.5	42.2			
57	68	1856	2.45	25.97	38.2	42.6	38.2	42.6			
61	74	1720	1.75	24.07	38.4	42.0	38.4	42.0			
66	79	1601	2.85	22.40	38.6	43.0	38.6	43.0			
71	85	1488	2.05	20.82	38.8	42.4	38.8	42.4			
83	100	1266	2.40	17.72	39.1	42.8	39.1	42.8			
97	118	1078	2.80	15.08	39.3	43.1	39.3	43.1			

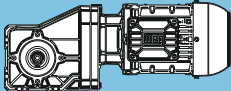
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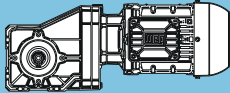
P_N = 11 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
11 kW		13 kW			Output shaft		Hollow shaft				
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B		F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
30	36	3492	0.90	48.87	14.2	23.2	14.2	7.3	KH083-22P-160M-04E	223	444
36	43	2943	1.05	41.18	19.8	35.3	19.8	8.2			
44	53	2413	1.25	33.76	23.4	41.4	22.4	8.9			
48	57	2209	1.40	30.91	24.5	41.7	22.1	9.2			
56	67	1892	1.60	26.48	25.9	42.2	20.3	9.7			
65	79	1611	1.80	22.54	26.9	42.6	18.6	10.1			
78	94	1351	2.00	18.91	27.7	43.0	17.0	10.5			
83	101	1260	1.55	17.63	27.9	42.5	16.9	10.0			
92	111	1138	2.25	15.93	28.2	43.3	15.6	10.8			
97	118	1079	1.80	15.10	28.3	42.8	15.6	10.3			
113	136	933	2.60	13.06	28.6	43.6	14.1	11.1			
114	138	918	2.15	12.85	28.6	43.2	14.4	10.7			
136	165	770	2.55	10.78	28.9	43.5	13.2	11.0			
162	195	650	3.00	9.09	29.0	43.7	12.1	11.2			
62	74	1707	0.95	23.88	13.8	15.5	10.5	4.2			
73	88	1441	1.10	20.17	16.0	16.0	10.8	4.8			
89	107	1187	1.35	16.61	17.6	16.5	11.0	5.3			
129	156	813	1.15	11.37	19.2	16.5	10.3	5.2			
153	185	686	1.35	9.60	19.5	16.9	10.0	5.6			
186	224	565	1.65	7.91	19.8	17.2	9.0	6.0			



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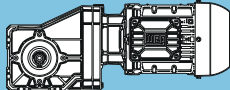
P _N = 15 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
15 kW		18 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
5.5	6.6	23811	0.80	267.26	**	**	**	**	KH154-22P-160L-04F	815	462
5.6	6.8	23296	0.80	261.49	**	**	**	**			
6.3	7.7	20511	0.90	231.17	66.2	114.3	66.2	114.3			
6.5	7.9	19942	0.95	225.22	69.2	114.8	69.2	114.8			
6.8	8.3	18983	0.95	214.39	73.9	115.5	73.9	115.5			
7.5	9.1	17178	1.05	194.80	81.4	116.9	81.4	116.9			
7.9	9.6	16216	1.15	184.65	84.8	117.6	84.8	117.6			
9.2	11	13941	1.30	159.72	91.8	119.4	91.8	119.4			
10	12	14344	1.30	146.69	90.7	119.1	90.7	119.1			
12	14	12354	1.50	126.34	95.7	120.6	95.7	120.6			
13	16	10686	1.70	109.28	99.3	121.8	99.3	121.8			
15	18	9425	1.95	96.39	101.5	122.8	101.5	122.8			
18	21	8095	2.25	82.79	103.5	123.8	103.5	123.8			
21	26	6735	2.70	68.88	105.3	124.9	105.3	124.9			
26	31	5549	1.95	56.75	106.5	125.8	106.5	125.8			
30	36	4780	3.00	48.88	107.1	126.4	107.1	126.4			
41	50	3484	1.95	35.63	108.0	126.4	108.0	126.4			
48	58	3001	3.00	30.69	108.3	126.9	108.3	126.9			
8.6	10	15081	0.90	169.97	62.6	82.4	62.6	82.4	KH124-22P-160L-04F	561	458
9.7	12	14776	0.90	151.11	63.9	82.7	63.9	82.7	KH123-22P-160L-04F	537	456
11	13	12884	1.05	131.76	70.8	84.6	70.8	84.6			
13	16	11097	1.20	113.49	76.0	86.4	76.0	86.4			
15	18	9556	1.40	97.73	79.7	87.9	79.7	87.9			
17	21	8348	1.60	85.37	82.1	89.1	82.1	89.1			
20	24	7210	1.85	73.74	84.0	90.3	84.0	90.3			
24	29	5963	2.20	60.98	85.7	91.5	85.7	91.5			
25	30	5717	1.55	58.47	86.0	91.8	86.0	91.8			
29	35	4985	1.95	50.98	86.8	92.5	86.8	92.5			
33	40	4294	3.00	43.91	87.5	93.2	87.5	93.2			
44	53	3260	1.55	33.34	88.3	93.5	88.3	93.5			
50	61	2843	1.95	29.07	88.5	94.0	88.5	94.0			
59	71	2448	3.00	25.04	86.8	94.5	86.8	94.5			
14	16	10567	0.80	108.07	**	**	**	**	KH103-22P-160L-04F	414	452
16	19	9130	0.90	93.37	39.6	58.7	39.6	58.7			
18	22	7813	1.05	79.90	46.6	60.2	46.6	60.2			
21	26	6748	1.20	69.01	51.0	61.5	51.0	61.5			
25	30	5707	1.45	58.36	54.3	62.6	54.3	62.6			
31	37	4656	1.75	47.62	57.0	63.8	57.0	63.8			
36	43	3993	1.90	40.84	58.3	64.6	58.3	64.6			
38	46	3778	2.15	38.64	58.7	64.9	58.7	64.9			
42	50	3451	2.20	35.29	59.3	65.2	59.3	65.2			
49	59	2953	2.55	30.20	60.0	65.8	60.0	65.8			
55	66	2620	1.65	26.79	60.4	65.5	60.4	65.5			
56	68	2550	2.95	26.08	60.5	66.3	60.5	66.3			
63	76	2273	1.90	23.25	58.7	66.0	58.7	66.0			
73	88	1964	2.20	20.09	55.6	66.4	55.6	66.4			
85	103	1681	2.55	17.19	52.6	66.8	52.6	66.8			
99	120	1452	2.95	14.85	49.8	67.1	49.8	67.1			
25	30	5796	0.80	59.28	**	**	**	**	KH093-22P-160L-04F	296	448
29	36	4863	0.95	49.73	25.4	38.8	25.4	38.8			
35	43	4054	1.15	41.46	30.6	39.8	30.6	39.8			
36	44	3953	1.15	40.43	31.1	40.0	31.1	40.0			
41	49	3506	1.30	35.86	33.2	40.5	33.2	40.5			
46	56	3091	1.50	31.61	34.8	41.1	34.8	41.1			
48	58	2983	1.55	30.51	35.2	41.2	35.2	41.2			
56	68	2539	1.80	25.97	36.5	41.8	36.5	41.8			
61	74	2354	1.30	24.07	37.0	40.9	37.0	40.9			
65	79	2190	2.10	22.40	37.4	42.2	37.4	42.2			
70	85	2036	1.50	20.82	37.8	41.5	37.8	41.5			
78	94	1837	2.45	18.79	38.2	42.7	38.2	42.7			
83	100	1733	1.75	17.72	38.4	42.0	38.4	42.0			
97	118	1475	2.05	15.08	38.8	42.4	38.8	42.4			
113	136	1272	2.40	13.01	39.1	42.8	39.1	42.8			
134	163	1067	2.85	10.91	36.7	43.1	36.7	43.1			

P _N = 15 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
15 kW		18 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
43	53	3301	0.95	33.76	16.5	28.1	16.5	7.6	KH083-22P-160L-04F	246	444	
47	57	3022	1.00	30.91	19.2	33.9	19.1	8.0				
55	67	2589	1.15	26.48	22.4	41.0	19.3	8.7				
65	79	2204	1.30	22.54	24.5	41.7	19.3	9.2				
77	94	1849	1.50	18.91	26.1	42.3	18.8	9.8				
83	101	1724	1.15	17.63	26.5	41.5	18.3	9.0				
92	111	1558	1.65	15.93	27.1	42.7	17.0	10.2				
97	118	1477	1.35	15.10	27.3	42.0	17.1	9.5				
112	136	1277	1.90	13.06	27.9	43.1	15.3	10.6				
114	138	1256	1.55	12.85	27.9	42.5	15.7	10.0				
136	165	1054	1.85	10.78	28.4	42.9	14.3	10.4				
161	195	889	2.20	9.09	28.7	43.2	13.1	10.7				
197	238	728	2.70	7.45	28.9	43.5	11.8	11.0				
73	88	1972	0.80	20.17	**	**	**	**				KH073-22P-160L-04F
88	107	1624	1.00	16.61	14.5	15.6	8.8	4.4				
129	156	1112	0.85	11.37	17.9	15.5	8.5	4.3				
153	185	939	1.00	9.60	18.7	16.1	8.7	4.8				
185	224	773	1.20	7.91	19.3	16.6	8.8	5.3				

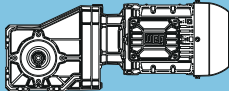
P _N = 18.5 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
18.5 kW		22 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
6.9	8.3	23477	0.80	214.39	**	**	**	**	KH154-22P-180M-04E	829	462
7.5	9.1	21288	0.85	194.80	61.7	107.2	61.7	107.2			
8.0	9.6	20138	0.90	184.65	68.2	114.6	68.2	114.6			
9.2	11	17312	1.05	159.72	80.9	116.8	80.9	116.8			
10	12	17630	1.05	146.69	79.7	116.5	79.7	116.5	KH153-22P-180M-04E	783	460
12	14	15184	1.20	126.34	88.2	118.4	88.2	118.4			
13	16	13134	1.40	109.28	93.9	120.0	93.9	120.0			
15	18	11585	1.60	96.39	97.4	121.2	97.4	121.2			
18	21	9950	1.85	82.79	100.6	122.4	100.6	122.4			
21	26	8278	2.20	68.88	103.3	123.7	103.3	123.7			
26	31	6821	1.60	56.75	105.2	124.8	105.2	124.8			
26	31	6869	2.65	57.15	105.1	124.8	105.1	124.8			
30	36	5875	2.45	48.88	106.2	125.5	106.2	125.5			
41	50	4282	1.60	35.63	107.5	125.6	107.5	125.6			
48	58	3689	2.45	30.69	107.9	126.2	107.9	126.2			
11	13	15836	0.85	131.76	59.2	81.6	59.2	81.6	KH123-22P-180M-04E	551	456
13	16	13640	1.00	113.49	68.3	83.8	68.3	83.8			
15	18	11746	1.15	97.73	74.3	85.7	74.3	85.7			
17	21	10260	1.30	85.37	78.1	87.2	78.1	87.2			
20	24	8863	1.50	73.74	81.1	88.6	81.1	88.6			
24	29	7329	1.80	60.98	83.8	90.2	83.8	90.2			
29	35	6127	1.60	50.98	85.5	91.4	85.5	91.4			
33	40	5277	2.45	43.91	86.5	92.2	86.5	92.2			
36	43	4958	2.65	41.25	86.8	92.5	86.8	92.5			
39	47	4544	2.90	37.81	87.2	92.9	87.2	92.9			
51	61	3494	1.60	29.07	88.1	93.2	88.1	93.2			
59	71	3009	2.45	25.04	88.2	93.8	88.2	93.8			
18	22	9603	0.85	79.90	36.4	58.2	36.4	58.2	KH103-22P-180M-04E	428	452
21	26	8294	1.00	69.01	44.3	59.7	44.3	59.7			
25	30	7014	1.15	58.36	50.0	61.2	50.0	61.2			
31	37	5723	1.40	47.62	54.3	62.6	54.3	62.6			
36	43	4908	1.55	40.84	56.4	63.6	56.4	63.6			
38	46	4644	1.75	38.64	57.0	63.9	57.0	63.9			
42	50	4241	1.80	35.29	57.9	64.3	57.9	64.3			
48	58	3708	2.20	30.85	58.8	64.9	58.8	64.9			
49	59	3630	2.10	30.20	59.0	65.0	59.0	65.0			
56	68	3134	2.40	26.08	59.7	65.6	59.7	65.6			
63	76	2794	1.55	23.25	60.1	65.2	60.1	65.2			
67	80	2650	2.85	22.05	58.0	66.1	58.0	66.1			
73	88	2415	1.80	20.09	56.8	65.8	56.8	65.8			
86	103	2066	2.10	17.19	53.5	66.3	53.5	66.3			
99	120	1785	2.40	14.85	50.7	66.7	50.7	66.7			
117	141	1510	2.85	12.56	47.8	67.0	47.8	67.0			
30	36	5977	0.80	49.73	**	**	**	**	KH093-22P-180M-04E	310	448
36	44	4859	0.95	40.43	25.4	38.8	25.4	38.8			
41	49	4310	1.05	35.86	29.1	39.5	29.1	39.5			
47	56	3799	1.20	31.61	31.9	40.2	31.9	40.2			
48	58	3667	1.25	30.51	32.5	40.3	32.5	40.3			
57	68	3121	1.45	25.97	34.7	41.0	34.7	41.0			
66	79	2692	1.70	22.40	36.1	41.6	36.1	41.6			
71	85	2502	1.20	20.82	36.6	40.6	36.6	40.6			
78	94	2258	2.00	18.79	37.3	42.1	37.3	42.1			
83	100	2130	1.45	17.72	37.6	41.3	37.6	41.3			
96	116	1836	2.50	15.28	38.2	42.7	38.2	42.7			
97	118	1812	1.70	15.08	38.2	41.8	38.2	41.8			
113	136	1564	1.95	13.01	38.7	42.3	38.7	42.3			
135	163	1311	2.30	10.91	37.5	42.7	37.5	42.7			
166	200	1066	2.85	8.87	34.6	43.1	34.6	43.1			

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** ... on request

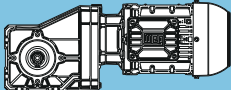
P_N = 18.5 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
18.5 kW		22 kW			Output shaft		Hollow shaft				
n₅₀ min ⁻¹	n₆₀ min ⁻¹	M₂ Nm	f_B		F_{rN} kN	F_{aN} kN	F_{rN} kN	F_{aN} kN			
56	67	3183	0.95	26.48	17.7	30.7	16.6	7.8	KH083-22P-180M-04E	260	444
65	79	2709	1.05	22.54	21.6	39.2	17.2	8.5			
78	94	2273	1.20	18.91	24.2	41.6	17.3	9.1			
92	111	1915	1.35	15.93	25.8	42.2	17.4	9.7			
97	118	1815	1.10	15.10	26.2	41.4	16.5	8.9			
113	136	1570	1.55	13.06	27.1	42.7	16.3	10.2			
114	138	1544	1.30	12.85	27.1	41.9	16.4	9.4			
136	165	1296	1.50	10.78	27.8	42.4	15.2	9.9			
162	195	1093	1.80	9.09	28.3	42.8	13.8	10.3			
197	238	895	2.20	7.45	28.7	43.2	12.5	10.7			

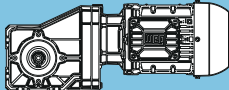
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P _N = 22 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
22 kW		26 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
9.2	11	20714	0.90	159.72	65.1	114.2	65.1	114.2	KH154-22P-180L-04F	850	462
10	12	20966	0.90	146.69	63.6	111.2	63.6	111.2			
12	14	18057	1.00	126.34	77.9	116.2	77.9	116.2			
13	16	15619	1.20	109.28	86.8	118.1	86.8	118.1			
15	18	13777	1.35	96.39	92.2	119.5	92.2	119.5			
18	21	11833	1.55	82.79	96.9	121.0	96.9	121.0			
21	26	9845	1.85	68.88	100.8	122.5	100.8	122.5			
26	31	8168	2.25	57.15	103.4	123.8	103.4	123.8			
30	36	6986	2.05	48.88	105.0	124.7	105.0	124.7			
31	37	6812	2.65	47.66	105.2	124.8	105.2	124.8			
35	42	6043	2.95	42.28	106.0	125.4	106.0	125.4			
41	50	5092	1.35	35.63	106.9	124.7	106.9	124.7			
48	58	4386	2.05	30.69	107.4	125.5	107.4	125.5			
55	67	3793	2.95	26.54	107.8	126.1	107.8	126.1			
13	16	16221	0.85	113.49	57.3	81.2	57.3	81.2	KH123-22P-180L-04F	572	456
15	18	13968	0.95	97.73	67.1	83.5	67.1	83.5			
17	21	12202	1.10	85.37	73.0	85.3	73.0	85.3			
20	24	10539	1.25	73.74	77.4	86.9	77.4	86.9			
24	29	8716	1.50	60.98	81.4	88.8	81.4	88.8			
29	35	7286	1.35	50.98	83.9	90.2	83.9	90.2			
33	40	6276	2.05	43.91	85.3	91.2	85.3	91.2			
36	43	5896	2.25	41.25	85.8	91.6	85.8	91.6			
39	47	5404	2.45	37.81	86.4	92.1	86.4	92.1			
42	51	5005	2.60	35.02	86.8	92.5	86.8	92.5			
45	54	4721	2.80	33.03	87.1	92.8	87.1	92.8			
51	61	4155	1.35	29.07	87.6	92.4	87.6	92.4			
59	71	3579	2.05	25.04	88.0	93.1	88.0	93.1			
68	82	3081	2.65	21.56	85.0	93.7	85.0	93.7			
21	26	9863	0.85	69.01	34.5	57.7	34.5	57.7			
25	30	8341	1.00	58.36	44.1	59.6	44.1	59.6			
31	37	6806	1.20	47.62	50.8	61.4	50.8	61.4			
36	43	5837	1.30	40.84	53.9	62.5	53.9	62.5			
38	46	5523	1.45	38.64	54.8	62.9	54.8	62.9			
42	50	5044	1.50	35.29	56.1	63.4	56.1	63.4			
48	58	4409	1.85	30.85	57.5	64.1	57.5	64.1			
49	59	4316	1.75	30.20	57.7	64.2	57.7	64.2			
56	68	3727	2.05	26.08	58.8	64.9	58.8	64.9			
63	76	3323	1.30	23.25	59.5	64.5	59.5	64.5			
67	80	3152	2.40	22.05	59.3	65.6	59.3	65.6			
73	88	2871	1.50	20.09	58.1	65.1	58.1	65.1			
82	99	2573	2.95	18.00	54.8	66.2	54.8	66.2			
86	103	2457	1.75	17.19	54.5	65.7	54.5	65.7			
99	120	2122	2.05	14.85	51.6	66.2	51.6	66.2			
117	141	1795	2.40	12.56	48.5	66.6	48.5	66.6			
143	173	1465	2.95	10.25	45.1	67.1	45.1	67.1			
36	44	5778	0.80	40.43	**	**	**	**	KH093-22P-180L-04F	331	448
41	49	5125	0.90	35.86	23.2	38.5	23.2	38.5			
47	56	4518	1.00	31.61	27.8	39.3	27.8	39.3			
48	58	4361	1.05	30.51	28.8	39.5	28.8	39.5			
57	68	3712	1.25	25.97	32.3	40.3	32.3	40.3			
66	79	3202	1.45	22.40	34.4	40.9	34.4	40.9			
71	85	2976	1.05	20.82	35.2	39.8	35.2	39.8			
78	94	2686	1.70	18.79	36.1	41.6	36.1	41.6			
83	100	2533	1.20	17.72	36.6	40.6	36.6	40.6			
96	116	2184	2.10	15.28	37.4	42.2	37.4	42.2			
97	118	2155	1.40	15.08	37.5	41.2	37.5	41.2			
113	136	1859	1.65	13.01	38.1	41.8	38.1	41.8			
123	149	1708	2.65	11.95	38.4	42.8	38.4	42.8			
135	163	1559	1.95	10.91	38.4	42.3	38.4	42.3			
166	200	1268	2.40	8.87	35.4	42.8	35.4	42.8			

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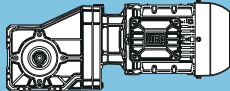
** ... on request

P _N = 22 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
22 kW		26 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
56	67	3785	0.80	26.48	**	**	**	**	KH083-22P-180L-04F	281	444	
65	79	3222	0.90	22.54	17.3	29.8	15.0	7.7				
78	94	2703	1.00	18.91	21.6	39.2	15.5	8.5				
92	111	2277	1.15	15.93	24.2	41.6	15.8	9.1				
97	118	2158	0.90	15.10	24.7	40.7	14.9	8.2				
113	136	1867	1.30	13.06	26.0	42.2	15.9	9.7				
114	138	1837	1.10	12.85	26.1	41.3	15.1	8.8				
136	165	1541	1.30	10.78	27.1	41.9	15.1	9.4				
162	195	1299	1.50	9.09	27.8	42.4	14.6	9.9				
197	238	1065	1.85	7.45	28.4	42.9	13.1	10.4				

P _N = 30 kW										IE3	
50 Hz		60 Hz		at 50 Hz						m kg	Dimension sheet see page
30 kW		36 kW		Output shaft		Hollow shaft					
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B	i	F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
14	16	21155	0.90	109.28	62.5	108.9	62.5	108.9	KH153-22P-200L-04E	862	460
15	18	18659	1.00	96.39	75.4	115.8	75.4	115.8			
18	22	16027	1.15	82.79	85.5	117.8	85.5	117.8			
21	26	13334	1.35	68.88	93.4	119.8	93.4	119.8			
26	31	11063	1.65	57.15	98.5	121.6	98.5	121.6			
31	37	9226	2.00	47.66	101.8	123.0	101.8	123.0			
35	42	8185	2.20	42.28	103.4	123.8	103.4	123.8			
36	43	7931	2.30	40.97	103.8	123.9	103.8	123.9			
40	48	7221	2.50	37.30	104.7	124.5	104.7	124.5			
42	50	6862	2.65	35.45	105.1	124.8	105.1	124.8			
46	56	6200	2.95	32.03	105.8	125.3	105.8	125.3			
56	67	5138	2.20	26.54	106.8	124.7	106.8	124.7			
63	76	4532	3.00	23.41	107.3	125.3	107.3	125.3			
17	21	16526	0.80	85.37	**	**	**	**	KH123-22P-200L-04E	630	456
20	24	14275	0.95	73.74	65.9	83.2	65.9	83.2			
24	29	11805	1.15	60.98	74.1	85.7	74.1	85.7			
29	35	9714	1.35	50.18	79.3	87.8	79.3	87.8			
36	43	7985	1.65	41.25	82.7	89.5	82.7	89.5			
39	47	7319	1.80	37.81	83.8	90.2	83.8	90.2			
42	51	6779	1.95	35.02	84.6	90.7	84.6	90.7			
45	54	6394	2.05	33.03	85.1	91.1	85.1	91.1			
50	60	5786	2.25	29.89	85.9	91.7	85.9	91.7			
52	62	5523	2.40	28.53	86.2	92.0	86.2	92.0			
63	75	4569	2.85	23.60	87.2	92.9	87.2	92.9			
69	83	4174	1.95	21.56	87.3	92.4	87.3	92.4			
79	94	3647	2.25	18.84	82.9	93.0	82.9	93.0			
91	109	3150	2.60	16.27	78.6	93.6	78.6	93.6			
31	37	9218	0.90	47.62	39.0	58.6	39.0	58.6	KH103-22P-200L-04E	507	452
38	46	7480	1.10	38.64	48.1	60.6	48.1	60.6			
48	58	5972	1.35	30.85	53.5	62.3	53.5	62.3			
49	59	5846	1.30	30.20	53.9	62.5	53.9	62.5			
57	68	5049	1.50	26.08	56.1	63.4	56.1	63.4			
67	81	4268	1.80	22.05	57.8	64.3	57.8	64.3			
82	99	3484	2.20	18.00	57.0	65.2	57.0	65.2			
86	104	3328	1.30	17.19	56.9	64.5	56.9	64.5			
100	120	2875	1.50	14.85	53.5	65.1	53.5	65.1			
101	122	2826	2.70	14.60	52.5	65.9	52.5	65.9			
118	142	2431	1.80	12.56	50.1	65.8	50.1	65.8			
144	174	1984	2.20	10.25	46.4	66.4	46.4	66.4			
178	214	1609	2.70	8.31	42.9	66.9	42.9	66.9			
57	69	5027	0.90	25.97	24.1	38.6	24.1	38.6	KH093-22P-200L-04E	389	448
66	79	4336	1.05	22.40	29.0	39.5	29.0	39.5			
79	95	3637	1.25	18.79	32.6	40.4	32.6	40.4			
97	116	2958	1.55	15.28	35.3	41.2	35.3	41.2			
98	118	2919	1.05	15.08	35.4	39.9	35.4	39.9			
114	137	2518	1.20	13.01	36.6	40.6	36.6	40.6			
124	149	2313	1.95	11.95	37.1	42.1	37.1	42.1			
136	163	2112	1.45	10.91	37.6	41.3	37.6	41.3			
167	201	1717	1.75	8.87	37.0	42.0	37.0	42.0			
213	256	1343	2.25	6.94	33.5	42.7	33.5	42.7			

Legend see page 337

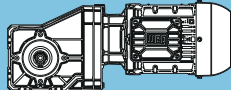
** ... on request

P _N = 37 kW										IE3		
50 Hz		60 Hz		f _B	i	at 50 Hz					m kg	Dimension sheet see page
37 kW		44 kW				Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	F _{rN} kN			F _{aN} kN	F _{rN} kN	F _{aN} kN				
15	18	23013	0.80	96.39	**	**	**	**	KH153-22P-200L-04F	889	460	
18	22	19766	0.95	82.79	70.1	114.9	70.1	114.9				
21	26	16445	1.10	68.88	84.0	117.5	84.0	117.5				
26	31	13645	1.35	57.15	92.6	119.6	92.6	119.6				
31	37	11379	1.60	47.66	97.9	121.3	97.9	121.3				
35	42	10094	1.80	42.28	100.3	122.3	100.3	122.3				
36	43	9782	1.85	40.97	100.9	122.5	100.9	122.5				
40	48	8905	2.05	37.30	102.3	123.2	102.3	123.2				
42	50	8464	2.15	35.45	103.0	123.5	103.0	123.5				
46	56	7647	2.40	32.03	104.1	124.2	104.1	124.2				
56	67	6336	1.80	26.54	105.7	123.5	105.7	123.5				
56	67	6363	2.85	26.65	105.7	125.1	105.7	125.1				
63	76	5589	2.45	23.41	106.4	124.2	106.4	124.2				
74	89	4801	2.80	20.11	107.1	125.0	107.1	125.0				
24	29	14559	0.90	60.98	64.8	82.9	64.8	82.9	KH123-22P-200L-04F	657	456	
29	36	11980	1.10	50.18	73.6	85.5	73.6	85.5				
36	43	9848	1.35	41.25	79.0	87.6	79.0	87.6				
39	47	9027	1.45	37.81	80.8	88.5	80.8	88.5				
42	51	8361	1.60	35.02	82.0	89.1	82.0	89.1				
45	54	7886	1.65	33.03	82.9	89.6	82.9	89.6				
50	60	7136	1.85	29.89	84.1	90.3	84.1	90.3				
52	62	6812	1.95	28.53	84.6	90.7	84.6	90.7				
63	76	5635	2.35	23.60	86.1	91.9	86.1	91.9				
69	83	5147	1.60	21.56	86.6	91.2	86.6	91.2				
76	92	4637	2.85	19.42	85.0	92.9	85.0	92.9				
79	95	4498	1.85	18.84	85.0	92.0	85.0	92.0				
91	110	3884	2.10	16.27	80.4	92.7	80.4	92.7				
110	132	3214	2.55	13.46	74.9	93.6	74.9	93.6				
38	46	9225	0.90	38.64	39.0	58.6	39.0	58.6	KH103-22P-200L-04F	534	452	
48	58	7365	1.10	30.85	48.6	60.8	48.6	60.8				
49	59	7210	1.05	30.20	49.2	60.9	49.2	60.9				
57	68	6227	1.25	26.08	52.7	62.1	52.7	62.1				
67	81	5264	1.45	22.05	55.5	63.2	55.5	63.2				
82	99	4298	1.75	18.00	57.7	64.3	57.7	64.3				
86	104	4104	1.05	17.19	58.1	63.4	58.1	63.4				
100	120	3545	1.25	14.85	55.3	64.2	55.3	64.2				
101	122	3486	2.20	14.60	54.1	65.2	54.1	65.2				
118	142	2999	1.45	12.56	51.7	65.0	51.7	65.0				
127	153	2784	2.70	11.66	49.4	66.0	49.4	66.0				
144	174	2447	1.75	10.25	47.6	65.7	47.6	65.7				
178	214	1984	2.20	8.31	43.9	66.4	43.9	66.4				
223	268	1585	2.70	6.64	40.3	66.9	40.3	66.9				

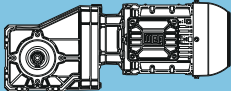


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** ... on request

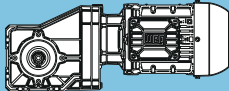
P _N = 45 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
45 kW		55 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _b		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
21	26	20001	0.90	68.88	68.9	114.7	68.9	114.7	KH153-22P-225S/M-04F	1026	460
26	31	16595	1.10	57.15	83.5	117.3	83.5	117.3			
31	37	13839	1.35	47.66	92.0	119.4	92.0	119.4			
35	42	12277	1.50	42.28	95.9	120.6	95.9	120.6			
36	43	11897	1.55	40.97	96.8	120.9	96.8	120.9			
40	48	10831	1.70	37.30	99.0	121.7	99.0	121.7			
42	50	10294	1.75	35.45	100.0	122.1	100.0	122.1			
46	56	9301	1.95	32.03	101.7	122.9	101.7	122.9			
56	67	7738	2.35	26.65	104.0	124.1	104.0	124.1			
63	76	6798	2.00	23.41	105.2	123.0	105.2	123.0			
67	81	6420	2.85	22.11	105.6	125.1	105.6	125.1			
74	89	5839	2.30	20.11	106.2	124.0	106.2	124.0			
88	107	4858	2.95	16.73	107.1	125.0	107.1	125.0			
29	36	14571	0.90	50.18	64.7	82.9	64.7	82.9	KH123-22P-225S/M-04F	794	456
36	43	11978	1.10	41.25	73.6	85.5	73.6	85.5			
39	47	10979	1.20	37.81	76.3	86.5	76.3	86.5			
42	51	10169	1.30	35.02	78.3	87.3	78.3	87.3			
45	54	9591	1.40	33.03	79.6	87.9	79.6	87.9			
50	60	8679	1.50	29.89	81.5	88.8	81.5	88.8			
52	62	8284	1.60	28.53	82.2	89.2	82.2	89.2			
63	76	6853	1.90	23.60	84.5	90.6	84.5	90.6			
69	83	6260	1.30	21.56	85.3	89.8	85.3	89.8			
76	92	5639	2.35	19.42	86.1	91.8	86.1	91.8			
79	95	5471	1.50	18.84	86.3	90.8	86.3	90.8			
91	110	4724	1.75	16.27	82.4	91.7	82.4	91.7			
93	112	4634	2.85	15.96	80.6	92.9	80.6	92.9			
110	132	3908	2.10	13.46	76.5	92.7	76.5	92.7			
134	161	3214	2.55	11.07	71.0	93.5	71.0	93.5			
48	58	8958	0.90	30.85	40.7	58.9	40.7	58.9	KH103-22P-225S/M-04F	671	452
49	59	8769	0.90	30.20	41.8	59.1	41.8	59.1			
57	68	7573	1.00	26.08	47.7	60.5	47.7	60.5			
67	81	6403	1.20	22.05	52.2	61.9	52.2	61.9			
82	99	5227	1.45	18.00	55.6	63.2	55.6	63.2			
86	104	4991	0.90	17.19	56.2	62.2	56.2	62.2			
100	120	4312	1.00	14.85	57.4	63.1	57.4	63.1			
101	122	4239	1.80	14.60	55.9	64.3	55.9	64.3			
118	142	3647	1.20	12.56	53.4	64.0	53.4	64.0			
127	153	3386	2.25	11.66	50.8	65.3	50.8	65.3			
144	174	2976	1.45	10.25	49.1	65.0	49.1	65.0			
178	214	2413	1.80	8.31	45.0	65.8	45.0	65.8			
223	268	1928	2.25	6.64	41.2	66.5	41.2	66.5			

Legend see page 337

P _N = 55 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
55 kW		66 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
26	31	20282	0.90	57.15	67.5	114.5	67.5	114.5	KH153-22P-225S/M-04G	1074	460
31	37	16914	1.10	47.66	82.4	117.1	82.4	117.1			
36	44	14540	1.25	40.97	90.1	118.9	90.1	118.9			
40	48	13238	1.40	37.30	93.6	119.9	93.6	119.9			
42	50	12581	1.45	35.45	95.2	120.4	95.2	120.4			
46	56	11367	1.60	32.03	97.9	121.3	97.9	121.3			
56	67	9458	1.95	26.65	101.4	122.8	101.4	122.8			
63	76	8308	1.65	23.41	103.2	121.4	103.2	121.4			
67	81	7847	2.30	22.11	103.9	124.0	103.9	124.0			
74	89	7137	1.90	20.11	104.8	122.6	104.8	122.6			
80	97	6544	2.80	18.44	105.5	125.0	105.5	125.0			
88	107	5937	2.40	16.73	106.1	123.9	106.1	123.9			
107	129	4926	2.90	13.88	107.0	124.9	107.0	124.9			
36	43	14640	0.90	41.25	64.5	82.8	64.5	82.8	KH123-22P-225S/M-04G	842	456
42	51	12429	1.05	35.02	72.3	85.0	72.3	85.0			
45	54	11722	1.15	33.03	74.3	85.8	74.3	85.8			
50	60	10608	1.25	29.89	77.3	86.9	77.3	86.9			
52	63	10125	1.30	28.53	78.4	87.4	78.4	87.4			
63	76	8376	1.60	23.60	82.0	89.1	82.0	89.1			
76	92	6892	1.90	19.42	84.4	90.6	84.4	90.6			
79	95	6686	1.25	18.84	84.7	89.3	84.7	89.3			
91	110	5774	1.45	16.27	85.0	90.4	85.0	90.4			
93	112	5664	2.30	15.96	82.9	91.8	82.9	91.8			
109	132	4809	2.75	13.55	77.7	92.7	77.7	92.7			
110	133	4777	1.75	13.46	78.6	91.6	78.6	91.6			
134	161	3929	2.10	11.07	72.7	92.7	72.7	92.7			
163	196	3230	2.55	9.10	67.4	93.5	67.4	93.5			
191	231	2743	3.00	7.73	63.5	94.1	63.5	94.1			



Legend see page 337

P _N = 75 kW										IE3	
50 Hz		60 Hz		i	at 50 Hz					m kg	Dimension sheet see page
75 kW		90 kW			Output shaft		Hollow shaft				
n ₅₀ min ⁻¹	n ₆₀ min ⁻¹	M ₂ Nm	f _B		F _{rN} kN	F _{aN} kN	F _{rN} kN	F _{aN} kN			
31	37	23065	0.80	47.66	**	**	**	**	KH153-22P-250S/M-04F	1178	460
36	43	19828	0.95	40.97	69.8	114.9	69.8	114.9			
40	48	18051	1.00	37.30	77.9	116.2	77.9	116.2			
42	50	17156	1.05	35.45	81.5	116.9	81.5	116.9			
46	56	15501	1.20	32.03	87.2	118.2	87.2	118.2			
56	67	12897	1.40	26.65	94.4	120.2	94.4	120.2			
63	76	11329	1.20	23.41	98.0	118.3	98.0	118.3			
67	81	10700	1.70	22.11	99.2	121.8	99.2	121.8			
74	89	9732	1.40	20.11	101.0	120.0	101.0	120.0			
80	97	8924	2.05	18.44	102.3	123.2	102.3	123.2			
88	106	8097	1.75	16.73	103.5	121.6	103.5	121.6			
93	112	7671	2.35	15.85	104.1	124.1	104.1	124.1			
107	128	6717	2.15	13.88	105.3	123.1	105.3	123.1			
108	130	6640	2.75	13.72	105.4	124.9	105.4	124.9			
128	154	5604	2.50	11.58	106.4	124.2	106.4	124.2			
149	179	4815	2.80	9.95	105.6	125.0	105.6	125.0			



Legend see page 337

** ... on request

Selection tables - Gear units

Structure of the selection tables

1 Type	2 i_{ges}	3 M_{2max} [Nm]	4 n_2 [min ⁻¹]	5 i_{exakt}	6 n_{1max} [min ⁻¹]	7 IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	-
						8 IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
9 NEMA adapter																		
						N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
K022																		
2 stages	10																	
$n_1=1400 \text{ min}^{-1}$	11																	
Maximum torque 110 Nm	12																	

1 Type	2 i_{ges}	13 SERVO adapter											15 Input unit														
		13 n_{1max} [min ⁻¹]	14 Adapter size										15 n_{1max} [min ⁻¹]	16 Input shaft [mm]													
			S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		19x40	24x50	28x60	38x80	42x110	48x110	55x110							

- 1 Type of gear unit
- 2 Total ratio
- 3 Permissible output torque at S1 operation ($f_b = 1.0$)
- 4 Output speed (gear unit) at $n_1 = 1400 \text{ min}^{-1}$
- 5 Exact mathematical ratio
- 6 Maximum permissible input speed gear unit. valid for direct mounting and IEC / NEMA adapter
Max. perm. input speed IEC / NEMA adapter: I63 - I132 / N56 - N213 = 3000 min^{-1} , I160 - I280 / N254 - N364 = 2500 min^{-1}
Max. perm. motor speed (Direct mounting): motor frame size 63 - 180 = 3000 min^{-1} , 200 - 250 = 2500 min^{-1} .
Higher motor speed on request
- 7 Possible motor frame sizes (Direct mounting)
- 8 Possible IEC adapter sizes
- 9 Possible NEMA adapter sizes
- 10 Number of gear stages
- 11 Motor speed
- 12 Maximum torque
- 13 Maximum input speed - SERVO adapter
- 14 Possible SERVO adapter sizes
- 15 Maximum input speed - direct mounting, IEC / NEMA adapter and input unit
Higher input speeds on request
- 16 Possible input shafts of the input unit

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	-	-	-	-	-	-	-
						IEC adapter											
						I63	I71	I80	I90	I100	-	-	-	-	-	-	-
						NEMA adapter											
						N56	N143/145	N182	-	-	-	-	-	-	-		
						[Nm]	[min ⁻¹]										
K022	68.88	110	20	551/8	6000												
	61.75	102	23	247/4	6000												
	53.65	110	26	1073/20	6000												
	48.10	110	29	481/10	6000												
	43.50	110	32	87/2	6000												
	39.00	110	36	39/1	6000												
	34.27	110	41	377/11	6000												
	30.88	51	45	247/8	6000												
	30.73	110	46	338/11	6000												
	26.41	110	53	1479/56	6000												
	24.05	81	58	481/20	6000												
	23.68	110	59	663/28	6000												
	20.63	103	68	1073/52	6000												
	19.50	81	72	39/2	6000												
	18.50	102	76	37/2	6000												
	15.41	93	91	493/32	6000												
	15.36	81	91	169/11	6000												
	13.81	93	101	221/16	6000												
	13.29	89	105	319/24	6000												
	11.92	89	117	143/12	6000												
	11.84	81	118	663/56	6000												
	11.60	85	121	58/5	6000												
	10.40	85	135	52/5	6000												
	9.25	81	151	37/4	6000												
	8.51	77	164	783/92	6000												
	7.63	77	183	351/46	6000												
	6.91	74	203	221/32	6000												
	5.96	69	235	143/24	6000												
	5.20	65	269	26/5	6000												
	3.82	57	367	351/92	6000												
	K033	217.88	200	6.4	1743/8	6000											
		177.19	200	7.9	2835/16	6000											
		140.80	200	9.9	6195/44	6000											
		108.75	200	13	435/4	6000											
86.83		200	16	4515/52	6000												
71.93		200	19	1079/15	6000												
65.63		200	21	525/8	6000												
58.50		200	24	117/2	6000												
49.88		200	28	399/8	6000												
46.48		200	30	1534/33	6000												
38.80		200	36	1785/46	6000												
35.90		200	39	754/21	6000												
30.29		200	46	1575/52	6000												
29.97		129	47	1079/36	6000												
28.67		200	49	86/3	6000												
24.38		160	57	195/8	6000												
21.67		200	65	65/3	6000												
19.37		163	72	3835/198	6000												
16.47		200	85	247/15	6000												
14.96		163	94	1885/126	6000												
12.81		200	109	884/69	6000												
11.94		163	117	215/18	6000												
10.00		200	140	10/1	6000												
9.03		163	155	325/36	6000												
6.86		149	204	247/36	6000												
5.34		137	262	1105/207	6000												
4.17		126	336	25/6	6000												

Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit																			
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]																	
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110										
K022	68.88	5000													-																	
	61.75	5000													-																	
	53.65	5000													3000																	
	48.10	5000													3000																	
	43.50	5000													3000																	
	39.00	5000													3000																	
	34.27	5000													3000																	
	30.88	5000													-																	
	30.73	5000													3000																	
	26.41	5000													3000																	
	24.05	5000													3000																	
	23.68	5000													3000																	
	20.63	5000													3000																	
	19.50	5000													3000																	
	18.50	5000													3000																	
	15.41	4900													3000																	
	15.36	5000													3000																	
	13.81	4900													3000																	
	13.29	4300													3000																	
	11.92	4300													3000																	
	11.84	5000													3000																	
	11.60	3900													3000																	
	10.40	3900													3000																	
	9.25	5000													3000																	
	8.51	3400													3000																	
	7.63	3400													3000																	
	6.91	4900													3000																	
	5.96	4300													3000																	
	5.20	3900													3000																	
	3.82	3400													3000																	
K033	217.88	5000													3000																	
	177.19	5000													3000																	
	140.80	5000													3000																	
	108.75	5000													3000																	
	86.83	5000													3000																	
	71.93	5000													3000																	
	65.63	5000													3000																	
	58.50	5000													3000																	
	49.88	4400													3000																	
	46.48	5000													3000																	
	38.80	3800													3000																	
	35.90	5000													3000																	
	30.29	3400													3000																	
	29.97	5000													3000																	
	28.67	5000													3000																	
	24.38	5000													3000																	
	21.67	5000													3000																	
	19.37	5000													3000																	
	16.47	4400													3000																	
	14.96	5000													3000																	
	12.81	3800													3000																	
	11.94	5000													3000																	
	10.00	3400													3000																	
	9.03	5000													3000																	
	6.86	4400													3000																	
	5.34	3800													3000																	
	4.17	3400													3000																	



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	112	-	-	-	-	-	-
						IEC adapter											
						163	171	180	190	1100	1112	-	-	-	-	-	-
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	-	-	-	-	-	-		
K 3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 400 Nm	K043	277.79	400	5	14445/52	6000											
		227.16	400	6.2	23625/104	6000											
		179.37	400	7.8	25650/143	6000											
		139.08	400	10	50625/364	6000											
		113.83	400	12	38475/338	6000											
		89.17	378	16	535/6	6000											
		87.62	400	16	18225/208	6000											
		72.92	400	19	875/12	6000											
		66.20	400	21	6885/104	6000											
		57.58	400	24	1900/33	6000											
		54.18	400	26	16200/299	6000											
		47.07	200	30	93197/1980	6000											
		44.64	400	31	625/14	6000											
		43.93	400	32	7425/169	6000											
		38.49	270	36	30485/792	6000											
		36.78	384	38	3825/104	5600											
		36.54	400	38	475/13	6000											
		30.39	324	46	33098/1089	6000											
		29.81	361	47	775/26	5000											
		28.74	357	49	20925/728	4800											
		28.13	400	50	225/8	6000											
		23.57	307	59	21775/924	6000											
		21.25	400	66	85/4	6000											
		19.29	294	73	1273/66	6000											
		17.39	400	81	400/23	6000											
		14.85	278	94	2613/176	6000											
		14.10	400	99	550/39	6000											
		11.81	400	119	425/36	5600											
		11.22	262	125	14807/1320	6000											
		9.57	373	146	775/81	5000											
		9.23	369	152	775/84	4800											
		9.18	251	152	6968/759	6000											
		7.44	240	188	67/9	6000											
	6.23	231	225	14807/2376	5600												
	5.05	221	277	27001/5346	5000												
	4.87	219	287	27001/5544	4800												

Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	-	-	-	-	-	-
NEMA adapter						N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
	[Nm]	[min ⁻¹]			[min ⁻¹]													
K 3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 600 Nm	245.70	600	5.7	2457/10	6000													
	194.73	600	7.2	2142/11	6000													
	151.20	600	9.3	756/5	6000													
	124.06	600	11	8064/65	6000													
	96.08	600	15	3843/40	6000													
	80.46	564	17	7644/95	6000													
	73.08	600	19	1827/25	6000													
	63.77	600	22	13328/209	6000													
	60.26	600	23	1386/23	6000													
	49.52	600	28	4704/95	6000													
	49.43	600	28	3213/65	6000													
	42.00	600	33	42/1	5600													
	40.63	600	34	50176/1235	6000													
	38.32	268	37	728/19	6000													
	34.53	600	41	518/15	5000													
	33.30	600	42	333/10	4800													
	31.46	600	44	2989/95	6000													
	30.37	392	46	19040/627	6000													
	27.39	577	51	630/23	4400													
	23.93	600	58	11368/475	6000													
	23.58	413	59	448/19	6000													
	19.73	600	71	8624/437	6000													
	19.35	413	72	14336/741	6000													
	16.19	600	86	19992/1235	6000													
	14.98	413	93	854/57	6000													
	13.75	600	102	784/57	5600													
	11.40	413	123	3248/285	6000													
	11.31	600	124	29008/2565	5000													
	10.91	600	128	1036/95	4800													
	9.40	413	149	12320/1311	6000													
	8.97	565	156	3920/437	4400													
	7.71	413	182	1904/247	6000													
6.55	413	214	1120/171	5600														
5.39	413	260	8288/1539	5000														
5.19	413	270	296/57	4800														
4.27	413	328	5600/1311	4400														

Legend see page 397

Type	$i_{ges.}$	SERVO adapter											Input unit																
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]														
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110							
K053	245.70	5000														3000													
	194.73	5000														3000													
	151.20	5000														3000													
	124.06	5000														3000													
	96.08	5000														3000													
	80.46	5000														3000													
	73.08	5000														3000													
	63.77	5000														3000													
	60.26	4500														3000													
	49.52	5000														3000													
	49.43	3900														3000													
	42.00	3600														3000													
	40.63	5000														3000													
	38.32	5000														3000													
	34.53	3200														3000													
	33.30	3100														3000													
	31.46	5000														3000													
	30.37	5000														3000													
	27.39	2800														2800													
	23.93	5000														3000													
	23.58	5000														3000													
	19.73	4500														3000													
	19.35	5000														3000													
	16.19	3900														3000													
	14.98	5000														3000													
	13.75	3600														3000													
	11.40	5000														3000													
	11.31	3200														3000													
	10.91	3100														3000													
	9.40	4500														3000													
	8.97	2800														2800													
	7.71	3900														3000													
	6.55	3600														3000													
	5.39	3200														3000													
	5.19	3100														3000													
	4.27	2800														2800													



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K063 3 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 820 Nm	198.00	820	7.1	198/1	6000													
	156.92	820	8.9	2040/13	6000													
	121.85	820	11	1584/13	6000													
	99.98	820	14	16896/169	6000													
	81.53	571	17	1386/17	6000													
	77.42	820	18	2013/26	6000													
	64.62	820	22	840/13	6000													
	58.89	820	24	3828/65	6000													
	50.17	820	28	11088/221	6000													
	48.56	820	29	14520/299	6000													
	44.35	311	32	754/17	6000													
	41.17	820	34	118272/2873	6000													
	39.83	795	35	6732/169	6000													
	35.15	454	40	1160/33	6000													
	33.85	757	41	440/13	5600													
	31.88	820	44	14091/442	6000													
	27.83	714	50	3256/117	5000													
	27.29	500	51	464/17	6000													
	26.84	707	52	2442/91	4800													
	24.25	782	58	26796/1105	6000													
	22.40	500	63	14848/663	6000													
	22.07	666	63	6600/299	4400													
	20.00	738	70	101640/5083	6000													
	17.34	500	81	1769/102	6000													
	16.40	695	85	2772/169	6000													
	13.94	662	100	3080/221	5600													
	13.19	500	106	3364/255	6000													
	11.46	624	122	22792/1989	5000													
	11.05	618	127	2442/221	4800													
	10.88	500	129	12760/1173	6000													
	9.09	582	154	46200/5083	4400													
	8.92	500	157	116/13	6000													
	7.58	487	185	1160/153	5600													
6.23	459	225	8584/1377	5000														
6.01	454	233	2146/357	4800														
4.94	428	283	5800/1173	4400														

Legend see page 397

Type	$i_{ges.}$	SERVO adapter											Input unit												
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K063	198.00	5000													3000										
	156.92	5000													3000										
	121.85	5000													2500										
	99.98	5000													2500										
	81.53	5000													3000										
	77.42	5000													2500										
	64.62	5000													3000										
	58.89	5000													2500										
	50.17	5000													2500										
	48.56	4700													2500										
	44.35	5000													3000										
	41.17	5000													2500										
	39.83	4200													2500										
	35.15	5000													3000										
	33.85	3700													2500										
	31.88	5000													2500										
	27.83	3300													2500										
	27.29	5000													2500										
	26.84	3200													2500										
	24.25	5000													2500										
	22.40	5000													2500										
	22.07	2900													2500										
	20.00	4700													2500										
	17.34	5000													2500										
	16.40	4200													2500										
	13.94	3700													2500										
	13.19	5000													2500										
	11.46	3300													2500										
	11.05	3200													2500										
	10.88	4700													2500										
	9.09	2900													2500										
	8.92	4200													2500										
	7.58	3700													2500										
	6.23	3300													2500										
	6.01	3200													2500										
	4.94	2900													2500										

K

Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size											
						63	71	80	90	100	112	132	160	-	-	-	-
						IEC adapter											
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	
NEMA adapter																	
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-		
K073	256.14	1550	5.5	5635/22	6000												
	197.75	1550	7.1	791/4	6000												
	165.85	1550	8.4	2156/13	6000												
	130.16	1550	11	4165/32	6000												
	100.45	1550	14	2009/20	6000												
	99.87	1288	14	18676/187	6000												
	83.09	1550	17	1911/23	6000												
	77.11	1550	18	6554/85	6000												
	70.67	1550	20	3675/52	6000												
	64.67	1550	22	71456/1105	6000												
	61.25	1550	23	245/4	5600												
	51.72	1550	27	931/18	5000												
	50.75	1550	28	203/4	6000												
	49.88	1550	28	399/8	4800												
	47.56	613	29	26680/561	6000												
	42.61	1550	33	980/23	4400												
	39.17	1550	36	16646/425	6000												
	36.72	757	38	13108/357	6000												
	32.40	1550	43	63336/1955	6000												
	30.79	910	45	20416/663	6000												
	27.56	1550	51	6090/221	6000												
	24.17	910	58	145/6	6000												
	23.88	1550	59	406/17	5600												
	20.17	1550	69	15428/765	5000												
	19.45	1550	72	1653/85	4800												
	18.65	910	75	4756/255	6000												
	16.61	1550	84	6496/391	4400												
	15.43	910	91	6032/391	6000												
	13.12	910	107	2900/221	6000												
	11.37	910	123	580/51	5600												
	9.60	910	146	4408/459	5000												
	9.26	910	151	1102/119	4800												
	7.91	910	177	9280/1173	4400												

Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit											
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]									
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110		
K073	256.14	5000												3000										
	197.75	5000												2500										
	165.85	5000												2500										
	130.16	5000												2500										
	100.45	5000												2500										
	99.87	5000												3000										
	83.09	5000												2500										
	77.11	5000												2500										
	70.67	4600												2500										
	64.67	5000												2500										
	61.25	4200												2500										
	51.72	3700												2500										
	50.75	5000												2500										
	49.88	3600												2500										
	47.56	5000												3000										
	42.61	3300												2500										
	39.17	5000												2500										
	36.72	5000												2500										
	32.40	5000												2500										
	30.79	5000												2500										
	27.56	4600												2500										
	24.17	5000												2500										
	23.88	4200												2500										
	20.17	3700												2500										
	19.45	3600												2500										
	18.65	5000												2500										
	16.61	3300												2500										
	15.43	5000												2500										
	13.12	4600												2500										
	11.37	4200												2500										
	9.60	3700												2500										
	9.26	3600												2500										
	7.91	3300												2500										



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
K 3 stages $n_1=1400\text{ min}^{-1}$ Maximum torque 3000 Nm	K083	206.12	3000	6.8	13398/65	6000												
		163.14	3000	8.6	26103/160	6000												
		142.45	3000	9.8	2849/20	6000												
		125.90	3000	11	25179/200	6000												
		106.46	3000	13	12243/115	6000												
		91.51	3000	15	23793/260	6000												
		79.89	3000	18	6391/80	5600												
		79.75	2851	18	319/4	6000												
		68.44	3000	20	616/9	5000												
		66.00	3000	21	66/1	4800												
		63.12	2860	22	16159/256	6000												
		58.25	3000	24	6699/115	4400												
		55.11	3000	25	5291/96	6000												
		48.87	3000	29	2541/52	3900												
		48.71	3000	29	15587/320	6000												
		45.48	1626	31	2001/44	6000												
		41.19	3000	34	7579/184	6000												
		41.18	3000	34	9471/230	3500												
		35.99	1631	39	101361/2816	6000												
		35.41	3000	40	1133/32	6000												
		33.76	3000	41	4389/130	3100												
		31.43	1916	45	11063/352	6000												
		30.91	3000	45	11869/384	5600												
		27.78	1901	50	97773/3520	6000												
		26.48	2972	53	715/27	5000												
		25.54	2940	55	715/28	4800												
		23.49	1916	60	2067/88	6000												
		22.54	2832	62	4147/184	4400												
		20.19	1886	69	7107/352	6000												
		18.91	2686	74	605/32	3900												
		17.63	1937	79	24817/1408	5600												
		15.93	2552	88	5863/368	3500												
		15.10	1937	93	1495/99	5000												
		14.56	1748	96	4485/308	4800												
		13.06	2404	107	209/16	3100												
		12.85	1937	109	1131/88	4400												
		10.78	1937	130	345/32	3900												
		9.09	1937	154	1599/176	3500												
		7.45	1937	188	1311/176	3100												

Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit										
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K083	206.12	5000												2500									
	163.14	5000												2500									
	142.45	5000												2500									
	125.90	5000												2500									
	106.46	5000												2500									
	91.51	5000												2500									
	79.89	4500												2500									
	79.75	5000												2500									
	68.44	4000												2500									
	66.00	3900												2500									
	63.12	5000												2500									
	58.25	3600												2500									
	55.11	5000												2500									
	48.87	3100												2500									
	48.71	5000												2500									
	45.48	5000												2500									
	41.19	5000												2500									
	41.18	2800												2500									
	35.99	5000												2500									
	35.41	5000												2500									
	33.76	-												2500									
	31.43	5000												2500									
	30.91	4500												2500									
	27.78	5000												2500									
	26.48	4000												2500									
	25.54	3900												2500									
	23.49	5000												2500									
	22.54	3600												2500									
	20.19	5000												2500									
	18.91	3100												2500									
	17.63	4500												2500									
	15.93	2800												2500									
	15.10	4000												2500									
	14.56	3900												2500									
	13.06	-												2500									
	12.85	3600												2500									
	10.78	3100												2500									
	9.09	2800												2500									
	7.45	-												2500									



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						163	171	180	190	1100	1112	1132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K 4 stages $n_1=1400 \text{ min}^{-1}$ Maximum torque 3000 Nm	2205.52	3000	0.63	716793/325	6000													
	1803.58	3000	0.78	46893/26	6000													
	1745.64	3000	0.8	2793021/1600	6000													
	1524.22	3000	0.92	304843/200	6000													
	1427.51	3000	0.98	182721/128	6000													
	1424.12	3000	0.98	92568/65	6000													
	1246.44	3000	1.1	19943/16	6000													
	1127.18	3000	1.2	45087/40	6000													
	1104.23	3000	1.3	14355/13	6000													
	984.20	3000	1.4	4921/5	6000													
	903.77	3000	1.5	763686/845	6000													
	873.98	3000	1.6	55935/64	6000													
	763.13	3000	1.8	6105/8	6000													
	715.32	3000	2	1487871/2080	6000													
	695.67	3000	2	180873/260	6000													
	624.59	3000	2.2	162393/260	6000													
	550.61	3000	2.5	704781/1280	6000													
	525.61	3000	2.7	341649/650	6000													
	480.77	3000	2.9	76923/160	6000													
	430.17	3000	3.3	643104/1495	6000													
	416.02	3000	3.4	1331253/3200	6000													
	363.25	3000	3.9	145299/400	6000													
	348.82	3000	4	294756/845	6000													
	340.47	3000	4.1	78309/230	6000													
	297.29	3000	4.7	34188/115	6000													
	292.01	3000	4.8	37961/130	5600													
	276.09	3000	5.1	287133/1040	6000													
	241.07	3000	5.8	31339/130	6000													
	236.66	3000	5.9	138446/585	5000													
	231.12	3000	6.1	147917/640	5600													
	228.21	3000	6.1	29667/130	4800													
	201.80	3000	6.9	48433/240	5600													
187.31	3000	7.5	269731/1440	5000														
180.62	3000	7.8	115599/640	4800														
163.55	3000	8.6	88319/540	5000														
157.71	3000	8.9	12617/80	4800														

Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	-	-	-	-		
K 3 stages $n_1=1400\text{ min}^{-1}$ Maximum torque 4500 Nm	169.25	4500	8.3	21156/125	6000													
	143.08	4500	9.8	49364/345	6000													
	123.86	4500	11	241531/1950	6000													
	109.70	4500	13	24682/225	5600													
	94.90	4500	15	192167/2025	5000													
	91.51	4500	15	192167/2100	4800													
	80.74	4500	17	139277/1725	4400													
	68.71	4500	20	66994/975	3900													
	63.96	4500	22	1599/25	6000													
	59.28	4500	24	102254/1725	3500													
	54.07	4500	26	3731/69	6000													
	49.73	4500	28	19393/390	3100													
	46.81	4500	30	5617/120	6000													
	41.46	4500	34	3731/90	5600													
	40.43	4500	35	75809/1875	2700													
	37.13	2785	38	8541/230	6000													
	35.86	4500	39	58097/1620	5000													
	34.58	4149	40	58097/1680	4800													
	31.61	4500	44	22919/725	2300													
	31.39	2806	45	33215/1058	6000													
	30.51	4500	46	42107/1380	4400													
	27.18	2795	52	10001/368	6000													
	25.97	4500	54	779/30	3900													
	24.07	2991	58	6643/276	5600													
	22.40	4500	62	15457/690	3500													
	20.82	2991	67	103441/4968	5000													
	20.08	2409	70	103441/5152	4800													
	18.79	4500	75	451/24	3100													
	17.72	2991	79	74971/4232	4400													
	15.28	4500	92	22919/1500	2700													
	15.08	2991	93	1387/92	3900													
	13.01	2991	108	27521/2116	3500													
	11.95	4500	117	6929/580	2300													
10.91	2991	128	4015/368	3100														
8.87	2991	158	40807/4600	2700														
6.94	2991	202	37011/5336	2300														

Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K093	169.25	5000													2500										
	143.08	5000													2500										
	123.86	5000													2500										
	109.70	4800													2500										
	94.90	4200													2500										
	91.51	4100													2500										
	80.74	3700													2500										
	68.71	3300													2500										
	63.96	5000													2500										
	59.28	3000													2500										
	54.07	5000													2500										
	49.73	-													2500										
	46.81	5000													2500										
	41.46	4800													2500										
	40.43	-													2300										
	37.13	5000													2500										
	35.86	4200													2500										
	34.58	4100													2500										
	31.61	-													2000										
	31.39	5000													2500										
	30.51	3700													2500										
	27.18	5000													2500										
	25.97	3300													2500										
	24.07	4800													2500										
	22.40	3000													2500										
	20.82	4200													2500										
	20.08	4100													2500										
	18.79	-													2500										
	17.72	3700													2500										
	15.28	-													2300										
	15.08	3300													2500										
	13.01	3000													2500										
	11.95	-													2000										
	10.91	-													2500										
	8.87	-													2300										
	6.94	-													2000										



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K094	1810.95	4500	0.77	1131846/625	6000													
4 stages	1531.00	4500	0.91	2640974/1725	6000													
	1480.92	4500	0.95	37023/25	6000													
	1251.99	4500	1.1	86387/69	6000													
	1169.35	4500	1.2	1607856/1375	6000													
	988.58	4500	1.4	3751664/3795	6000													
	906.69	4500	1.5	31734/35	6000													
	766.52	4500	1.8	17630/23	6000													
	742.09	4500	1.9	1205892/1625	6000													
	627.37	4500	2.2	937916/1495	6000													
	571.21	4500	2.5	142803/250	6000													
	482.91	4500	2.9	111069/230	6000													
	Maximum torque 4500 Nm	431.58	4500	3.2	269739/625	6000												
		364.86	4500	3.8	209797/575	6000												
		353.21	4500	4	1015488/2875	6000												
		298.61	4500	4.7	789824/2645	6000												
		286.42	4500	4.9	465432/1625	6000												
242.14		4500	5.8	1086008/4485	6000													
239.77		4500	5.8	29971/125	5600													
202.70		4500	6.9	209797/1035	5600													
194.32		4500	7.2	218612/1125	5000													
187.38		4500	7.5	163959/875	4800													
164.28	4500	8.5	1530284/9315	5000														
158.41	4500	8.8	54653/345	4800														

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Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K094	1810.95	5000													3000										
	1531.00	5000													3000										
	1480.92	5000													3000										
	1251.99	5000													3000										
	1169.35	5000													3000										
	988.58	5000													3000										
	906.69	5000													3000										
	766.52	5000													3000										
	742.09	5000													3000										
	627.37	5000													3000										
	571.21	5000													3000										
	482.91	5000													3000										
	431.58	5000													3000										
	364.86	5000													3000										
	353.21	5000													3000										
	298.61	5000													3000										
	286.42	5000													3000										
	242.14	5000													3000										
	239.77	4800													3000										
	202.70	4800													3000										
	194.32	4200													3000										
	187.38	4100													3000										
	164.28	4200													3000										
	158.41	4100													3000										



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						163	171	180	190	1100	1112	1132	1160	1180	1200	1225	-	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
K103	140.95	8000	9.9	128269/910	6000														
	124.50	8000	11	13072/105	5600														
	108.07	8000	13	20425/189	5000														
	104.21	8000	13	20425/196	4800														
	93.37	8000	15	3268/35	4400														
	79.90	8000	18	72713/910	3900														
	69.01	8000	20	55556/805	3500														
	58.36	8000	24	817/14	3100														
	53.27	5963	26	2983/56	6000														
	47.62	8000	29	41667/875	2700														
	47.05	7498	30	988/21	5600														
	40.84	7498	34	30875/756	5000														
	39.38	4728	36	30875/784	4800														
	38.64	8000	36	39216/1015	2300														
	35.29	7498	40	247/7	4400														
	30.85	8000	45	30229/980	2100														
	30.33	3395	46	2669/88	6000														
	30.20	7498	46	1691/56	3900														
	26.79	4269	52	884/33	5600														
	26.08	7498	54	4199/161	3500														
	23.25	4269	60	27625/1188	5000														
	22.42	2692	62	27625/1232	4800														
	22.05	7498	63	1235/56	3100														
	20.09	4269	70	221/11	4400														
	18.00	7498	78	12597/700	2700														
	17.19	4269	81	1513/88	3900														
	14.85	4269	94	3757/253	3500														
	14.60	7498	96	2964/203	2300														
	12.56	4269	111	1105/88	3100														
	11.66	7498	120	9139/784	2100														
	10.25	4269	137	11271/1100	2700														
	8.31	4269	168	2652/319	2300														
6.64	4269	211	8177/1232	2100															

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Legend see page 397

Type	$i_{ges.}$	SERVO adapter											Input unit																					
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]																			
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110												
K103	140.95	5000													2500																			
	124.50	5000													2500																			
	108.07	4500													2500																			
	104.21	4400													2500																			
	93.37	4000													2500																			
	79.90	3500													2500																			
	69.01	3200													1800																			
	58.36	-													1800																			
	53.27	5000													2500																			
	47.62	-													1800																			
	47.05	5000													2500																			
	40.84	4500													2500																			
	39.38	4400													2500																			
	38.64	-													1800																			
	35.29	4000													2500																			
	30.85	-													1800																			
	30.33	5000													2500																			
	30.20	3500													2500																			
	26.79	5000													2500																			
	26.08	3200													1800																			
	23.25	4500													2500																			
	22.42	4400													2500																			
	22.05	-													1800																			
	20.09	4000													2500																			
	18.00	-													1800																			
	17.19	3500													2500																			
	14.85	3200													1800																			
	14.60	-													1800																			
	12.56	-													1800																			
	11.66	-													1800																			
	10.25	-													1800																			
	8.31	-													1800																			
	6.64	-													1800																			

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Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
K104	1301.54	8000	1.1	300656/231	6000													
	1129.81	8000	1.2	2348875/2079	6000													
	1004.85	8000	1.4	738568/735	6000													
	976.16	8000	1.4	75164/77	6000													
	872.27	8000	1.6	2308025/2646	6000													
	842.74	8000	1.7	1150336/1365	6000													
	753.64	8000	1.9	184642/245	6000													
	731.54	8000	1.9	1797400/2457	6000													
	661.38	8000	2.1	13889/21	6000													
	632.05	8000	2.2	287584/455	6000													
	574.12	8000	2.4	1736125/3024	6000													
	510.43	8000	2.7	267976/525	6000													
	496.04	8000	2.8	13889/28	6000													
	443.08	8000	3.2	167485/378	6000													
	422.20	8000	3.3	339872/805	6000													
	382.82	8000	3.7	66994/175	6000													
	366.49	8000	3.8	531050/1449	6000													
	359.12	8000	3.9	32680/91	6000													
	316.65	8000	4.4	254904/805	6000													
	311.74	8000	4.5	510625/1638	6000													
	311.24	8000	4.5	6536/21	5600													
	270.17	8000	5.2	102125/378	5600													
	269.34	8000	5.2	24510/91	6000													
	262.82	8000	5.3	248368/945	5000													
	253.44	8000	5.5	62092/245	4800													
	233.43	8000	6	1634/7	5600													
	228.15	8000	6.1	388075/1701	5000													
	220.00	8000	6.4	388075/1764	4800													
	216.51	8000	6.5	104576/483	4400													
	197.12	8000	7.1	62092/315	5000													
	190.08	8000	7.4	46569/245	4800													
	187.95	8000	7.4	817000/4347	4400													
162.39	8000	8.6	26144/161	4400														



Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K104	1301.54	5000													3000										
	1129.81	5000													3000										
	1004.85	5000													2500										
	976.16	5000													3000										
	872.27	5000													2500										
	842.74	5000													2500										
	753.64	5000													2500										
	731.54	5000													2500										
	661.38	5000													2500										
	632.05	5000													2500										
	574.12	5000													2500										
	510.43	5000													2500										
	496.04	5000													2500										
	443.08	5000													2500										
	422.20	5000													2500										
	382.82	5000													2500										
	366.49	5000													2500										
	359.12	5000													2500										
	316.65	5000													2500										
	311.74	5000													2500										
	311.24	5000													2500										
	270.17	5000													2500										
	269.34	5000													2500										
	262.82	4500													2500										
	253.44	4400													2500										
	233.43	5000													2500										
	228.15	4500													2500										
	220.00	4400													2500										
	216.51	4000													2500										
	197.12	4500													2500										
	190.08	4400													2500										
	187.95	4000													2500										
	162.39	4000													2500										



Legend see page 397

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size													
						63	71	80	90	100	112	132	160	180	200	225	-	-	
						IEC adapter													
						163	171	180	190	1100	1112	1132	1160	1180	1200	1225	1250	-	
NEMA adapter																			
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-			
K123	151.11	13000	9.3	12089/80	5600														
	131.76	13000	11	5929/45	5000														
	127.05	13000	11	2541/20	4800														
	113.49	13000	12	26103/230	4400														
	97.73	13000	14	2541/26	3900														
	85.37	13000	16	3927/46	3500														
	73.74	13000	19	19173/260	3100														
	60.98	13000	23	7623/125	2700														
	58.47	8768	24	22451/384	5600														
	50.98	9688	27	11011/216	5000														
	50.18	13000	28	14553/290	2300														
	49.16	5899	28	1573/32	4800														
	43.91	12727	32	16159/368	4400														
	41.25	13000	34	165/4	2100														
	37.81	13000	37	605/16	3900														
	35.02	13000	40	10857/310	1900														
	33.34	5000	42	46943/1408	5600														
	33.03	13000	42	12155/368	3500														
	29.89	13000	47	2541/85	1700														
	29.07	5525	48	2093/72	5000														
	28.53	13000	49	913/32	3100														
	28.03	3364	50	897/32	4800														
	25.04	7258	56	4407/176	4400														
	23.60	13000	59	4719/200	2700														
	21.56	8053	65	345/16	3900														
	19.42	13000	72	9009/464	2300														
	18.84	8155	74	3315/176	3500														
	16.27	8155	86	5727/352	3100														
	15.96	13000	88	3575/224	2100														
	13.55	13000	103	6721/496	1900														
	13.46	8155	104	2691/200	2700														
	11.57	13000	121	1573/136	1700														
	11.07	8155	126	56511/5104	2300														
9.10	8155	154	22425/2464	2100															
7.73	8155	181	42159/5456	1900															
6.60	8155	212	897/136	1700															

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Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit										
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]								
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110	
K123	151.11	5000												2500									
	131.76	4800												2500									
	127.05	4600												2500									
	113.49	4200												2500									
	97.73	3700												2500									
	85.37	3400												1800									
	73.74	-												1800									
	60.98	-												1800									
	58.47	5000												2500									
	50.98	4800												2500									
	50.18	-												1800									
	49.16	4600												2500									
	43.91	4200												2500									
	41.25	-												1800									
	37.81	3700												2500									
	35.02	-												1800									
	33.34	5000												2500									
	33.03	3400												1800									
	29.89	-												1600									
	29.07	4800												2500									
	28.53	-												1800									
	28.03	4600												2500									
	25.04	4200												2500									
	23.60	-												1800									
	21.56	3700												2500									
	19.42	-												1800									
	18.84	3400												1800									
	16.27	-												1800									
	15.96	-												1800									
	13.55	-												1800									
	13.46	-												1800									
	11.57	-												1600									
	11.07	-												1800									
	9.10	-												1800									
	7.73	-												1800									
	6.60	-												1600									



Legend see page 397

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	-	-	-	-	-		
K124	1579.81	13000	0.89	25277/16	6000													
	1377.44	13000	1	12397/9	6000													
	1219.69	13000	1.1	195151/160	6000													
	1186.50	13000	1.2	2373/2	6000													
	1063.46	13000	1.3	95711/90	6000													
	1022.92	13000	1.4	132979/130	6000													
	1021.73	13000	1.4	26565/26	6000													
	916.04	13000	1.5	421377/460	6000													
	891.88	13000	1.6	521752/585	6000													
	802.79	13000	1.7	205513/256	6000													
	788.83	13000	1.8	41019/52	6000													
	768.25	13000	1.8	1148532/1495	6000													
	699.95	13000	2	100793/144	6000													
	661.56	13000	2.1	111804/169	6000													
	619.56	13000	2.3	495649/800	6000													
	602.92	13000	2.3	443751/736	6000													
	540.20	13000	2.6	243089/450	6000													
	519.19	13000	2.7	215985/416	6000													
	512.47	13000	2.7	471471/920	6000													
	465.31	13000	3	1070223/2300	6000													
	446.82	13000	3.1	154154/345	6000													
	435.90	13000	3.2	181335/416	6000													
	400.70	13000	3.5	104181/260	6000													
	384.88	13000	3.6	1018017/2645	6000													
	380.06	13000	3.7	29645/78	6000													
	377.78	13000	3.7	12089/32	5600													
	331.43	13000	4.2	7623/23	6000													
	329.39	13000	4.3	5929/18	5600													
	327.38	13000	4.3	391545/1196	6000													
	319.02	13000	4.4	229691/720	5000													
	307.62	13000	4.6	98439/320	4800													
	283.73	13000	4.9	26103/92	5600													
	281.92	13000	5	190575/676	6000													
	278.15	13000	5	112651/405	5000													
	268.22	13000	5.2	16093/60	4800													
	262.80	13000	5.3	12089/46	4400													
	244.33	13000	5.7	12705/52	5600													
	239.59	13000	5.8	165319/690	5000													
	231.04	13000	6.1	212553/920	4800													
	229.14	13000	6.1	47432/207	4400													
206.32	13000	6.8	16093/78	5000														
198.95	13000	7	20691/104	4800														
197.38	13000	7.1	104412/529	4400														
169.97	13000	8.2	50820/299	4400														

K

Legend see page 397

Type	$i_{ges.}$	SERVO adapter											Input unit													
		n_{1max}	Adapter size											n_{1max}	Input shaft [mm]											
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110				
K124	1579.81	5000												3000												
	1377.44	5000												3000												
	1219.69	5000												2500												
	1186.50	5000												3000												
	1063.46	5000												2500												
	1022.92	5000												2500												
	1021.73	5000												3000												
	916.04	5000												2500												
	891.88	5000												2500												
	802.79	5000												2500												
	788.83	5000												2500												
	768.25	5000												2500												
	699.95	5000												2500												
	661.56	5000												2500												
	619.56	5000												2500												
	602.92	5000												2500												
	540.20	5000												2500												
	519.19	5000												2500												
	512.47	5000												2500												
	465.31	5000												2500												
	446.82	5000												2500												
	435.90	5000												2500												
	400.70	5000												2500												
	384.88	5000												2500												
	380.06	5000												2500												
	377.78	5000												2500												
	331.43	5000												2500												
	329.39	5000												2500												
	327.38	5000												2500												
	319.02	4800												2500												
	307.62	4600												2500												
	283.73	5000												2500												
	281.92	5000												2500												
	278.15	4800												2500												
	268.22	4600												2500												
	262.80	4200												2500												
	244.33	5000												2500												
	239.59	4800												2500												
	231.04	4600												2500												
	229.14	4200												2500												
	206.32	4800												2500												
	198.95	4600												2500												
	197.38	4200												2500												
	169.97	4200												2500												



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	225	250	-
						IEC adapter												
						I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
						NEMA adapter												
		[Nm]	[min ⁻¹]		[min ⁻¹]	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364	-	-		
K153	146.69	18000	9.5	6601/45	5000													
	126.34	18000	11	23247/184	4400													
	109.28	18000	13	28413/260	3900													
	96.39	18000	15	88683/920	3500													
	82.79	18000	17	4305/52	3100													
	68.88	18000	20	1722/25	2700													
	57.15	18000	24	66297/1160	2300													
	56.75	10785	25	12259/216	5000													
	48.88	14174	29	71955/1472	4400													
	47.66	18000	29	3813/80	2100													
	42.28	17806	33	1353/32	3900													
	40.97	18000	34	50799/1240	1900													
	37.30	18000	38	54899/1472	3500													
	35.63	6771	39	962/27	5000													
	35.45	18000	39	6027/170	1700													
	32.03	18000	44	1025/32	3100													
	30.69	8899	46	64935/2116	4400													
	26.65	18000	53	533/20	2700													
	26.54	11178	53	1221/46	3900													
	23.41	13593	60	49543/2116	3500													
	22.11	18000	63	41041/1856	2300													
	20.11	13390	70	925/46	3100													
	18.44	18000	76	16523/896	2100													
	16.73	14116	84	1924/115	2700													
	15.85	18000	88	31447/1984	1900													
	13.88	14116	101	37037/2668	2300													
	13.72	18000	102	3731/272	1700													
	11.58	13865	121	14911/1288	2100													
	9.95	13306	141	28379/2852	1900													
	8.61	12793	163	3367/391	1700													

K

Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K153	146.69	-													2500										
	126.34	-													2500										
	109.28	-													2500										
	96.39	-													1800										
	82.79	-													1800										
	68.88	-													1800										
	57.15	-													1800										
	56.75	-													2500										
	48.88	-													2500										
	47.66	-													1800										
	42.28	-													2500										
	40.97	-													1800										
	37.30	-													1800										
	35.63	-													2500										
	35.45	-													1700										
	32.03	-													1800										
	30.69	-													2500										
	26.65	-													1800										
	26.54	-													2500										
	23.41	-													1800										
	22.11	-													1800										
	20.11	-													1800										
	18.44	-													1800										
	16.73	-													1800										
	15.85	-													1800										
	13.88	-													1800										
	13.72	-													1700										
	11.58	-													1800										
	9.95	-													1800										
	8.61	-													1700										



Legend see page 397

Type	$i_{ges.}$	M_{znom}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	160	180	200	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	l160	l180	l200	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	-	-	-		
K154	1308.92	18000	1.1	765716/585	6000													
	1127.36	18000	1.2	674163/598	6000													
	1035.99	18000	1.4	745913/720	6000													
	975.12	18000	1.4	823977/845	6000													
	904.58	18000	1.5	244237/270	6000													
	892.29	18000	1.6	2626911/2944	6000													
	799.45	18000	1.8	719509/900	6000													
	779.11	18000	1.8	286713/368	6000													
	771.80	18000	1.8	3210669/4160	6000													
	688.57	18000	2	2533923/3680	6000													
	676.04	18000	2.1	30422/45	6000													
	673.90	18000	2.1	350427/520	6000													
	595.58	18000	2.4	3097017/5200	6000													
	582.27	18000	2.4	1232091/2116	6000													
	581.11	18000	2.4	679903/1170	6000													
	507.30	18000	2.8	547883/1080	5600													
	503.64	18000	2.8	1505889/2990	6000													
	500.51	18000	2.8	2394441/4784	6000													
	436.93	18000	3.2	643167/1472	5600													
	434.63	18000	3.2	105616/243	5000													
	432.92	18000	3.2	2926539/6760	6000													
	419.11	18000	3.3	3772/9	4800													
	377.93	18000	3.7	786093/2080	5600													
	374.35	18000	3.7	8610/23	5000													
	369.91	18000	3.8	16646/45	4400													
	360.98	18000	3.9	16605/46	4800													
	323.79	18000	4.3	12628/39	5000													
	318.60	18000	4.4	674163/2116	4400													
	312.23	18000	4.5	4059/13	4800													
	310.30	18000	4.5	72611/234	3900													
	275.58	18000	5.1	823977/2990	4400													
	267.26	18000	5.2	1278585/4784	3900													
	261.49	18000	5.4	11767/45	3500													
	231.17	18000	6.1	312543/1352	3900													
	225.22	18000	6.2	953127/4232	3500													
	214.39	18000	6.5	125419/585	3100													
	194.80	18000	7.2	1164933/5980	3500													
	184.65	18000	7.6	441693/2392	3100													
	159.72	18000	8.8	539847/3380	3100													

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Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit												
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]										
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110			
K154	1308.92	5000													2500										
	1127.36	5000													2500										
	1035.99	5000													2500										
	975.12	5000													2500										
	904.58	5000													2500										
	892.29	5000													2500										
	799.45	5000													2500										
	779.11	5000													2500										
	771.80	5000													2500										
	688.57	5000													2500										
	676.04	5000													2500										
	673.90	5000													2500										
	595.58	5000													2500										
	582.27	5000													2500										
	581.11	5000													2500										
	507.30	5000													2500										
	503.64	5000													2500										
	500.51	5000													2500										
	436.93	5000													2500										
	434.63	4900													2500										
	432.92	5000													2500										
	419.11	4700													2500										
	377.93	5000													2500										
	374.35	4900													2500										
	369.91	4300													2500										
	360.98	4700													2500										
	323.79	4900													2500										
	318.60	4300													2500										
	312.23	4700													2500										
	310.30	3800													2500										
	275.58	4300													2500										
	267.26	3800													2500										
	261.49	3500													2500										
	231.17	3800													2500										
	225.22	3500													2500										
	214.39	-													2500										
	194.80	3500													2500										
	184.65	-													2500										
	159.72	-													2500										



Legend see page 397

Type	$i_{ges.}$	M_{znenn}	n_2	i_{exakt}	n_{1max}	IEC motor frame size												
						63	71	80	90	100	112	132	-	-	-	-	-	-
						IEC adapter												
						l63	l71	l80	l90	l100	l112	l132	-	-	-	-	-	-
NEMA adapter																		
		[Nm]	[min ⁻¹]			N56	N143/145	N182	N184	N213/215	-	-	-	-	-	-		
K155	14005.40	18000	0.1	40965806/2925	6000													
	11453.02	18000	0.12	1340003/117	6000													
	9679.02	18000	0.14	26133359/2700	6000													
	9043.42	18000	0.15	58194416/6435	6000													
	7915.09	18000	0.18	1709659/216	6000													
	7012.05	18000	0.2	273470/39	6000													
	6249.84	18000	0.22	9281006/1485	6000													
	5739.09	18000	0.24	14548604/2535	6000													
	4845.97	18000	0.29	174455/36	6000													
	4417.59	18000	0.32	574287/130	6000													
	3966.24	18000	0.35	4640503/1170	6000													
	3337.74	18000	0.42	3254293/975	6000													
	3052.96	18000	0.46	244237/80	6000													
	2731.65	18000	0.51	532672/195	6000													
	2306.68	18000	0.61	4152029/1800	6000													
	2215.09	18000	0.63	16845752/7605	6000													
	1887.82	18000	0.74	84952/45	6000													
	1854.30	18000	0.76	3254293/1755	5600													
	1530.83	18000	0.91	2686607/1755	6000													
	1502.83	18000	0.93	23737196/15795	5000													
1449.16	18000	0.97	847757/585	4800														
1281.49	18000	1.1	4152029/3240	5600														
1038.59	18000	1.3	7571347/7290	5000														
1001.50	18000	1.4	1081621/1080	4800														



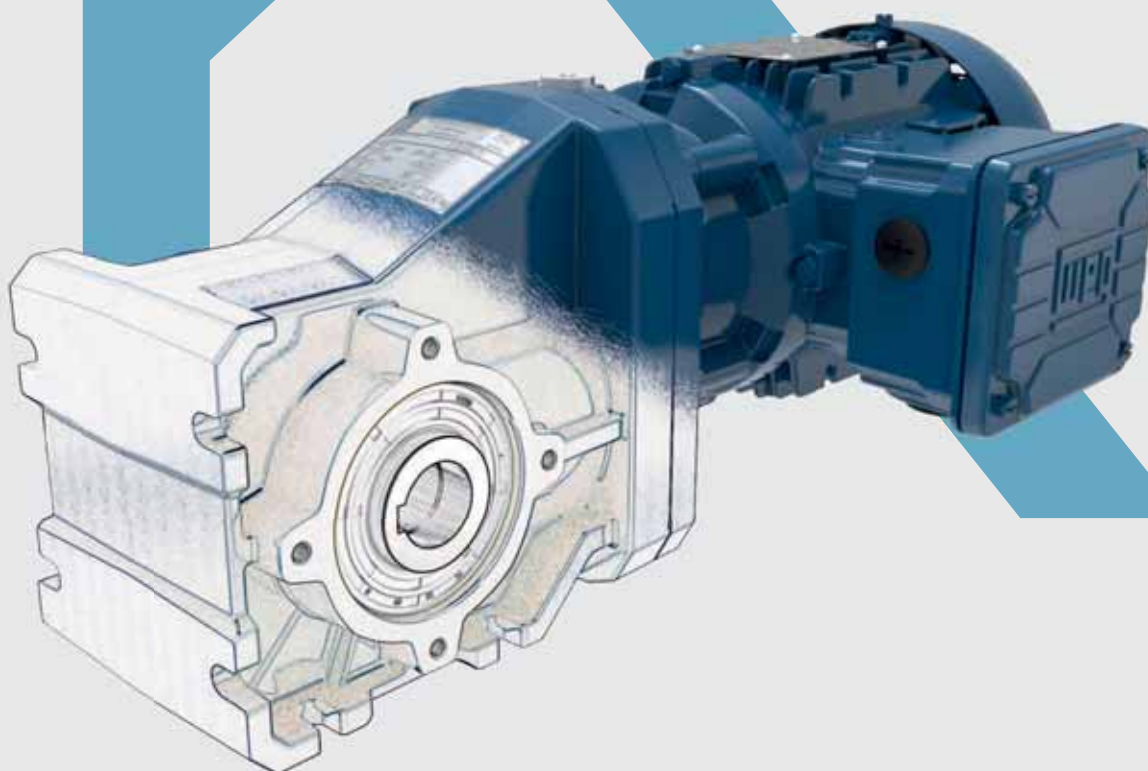
Legend see page 397

Type	i _{ges.}	SERVO adapter											Input unit																						
		n _{1max}	Adapter size											n _{1max}	Input shaft [mm]																				
			[min ⁻¹]	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190		[min ⁻¹]	19x40	24x50	28x60	38x80	42x110	48x110	55x110													
K155	14005.40	5000													3000																				
	11453.02	5000													3000																				
	9679.02	5000													3000																				
	9043.42	5000													3000																				
	7915.09	5000													3000																				
	7012.05	5000													3000																				
	6249.84	5000													3000																				
	5739.09	5000													3000																				
	4845.97	5000													3000																				
	4417.59	5000													3000																				
	3966.24	5000													3000																				
	3337.74	5000													3000																				
	3052.96	5000													3000																				
	2731.65	5000													3000																				
	2306.68	5000													3000																				
	2215.09	5000													3000																				
	1887.82	5000													3000																				
	1854.30	5000													3000																				
	1530.83	5000													3000																				
	1502.83	4900													3000																				
	1449.16	4700													3000																				
	1281.49	5000													3000																				
	1038.59	4900													3000																				
	1001.50	4700													3000																				

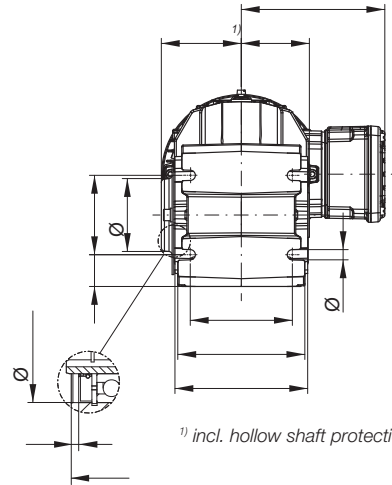
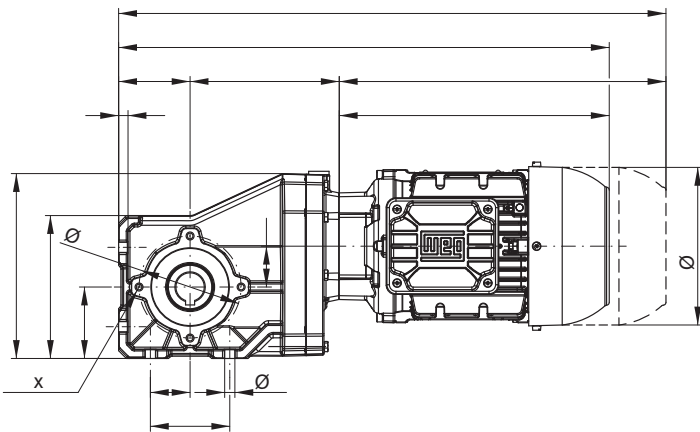


Legend see page 397

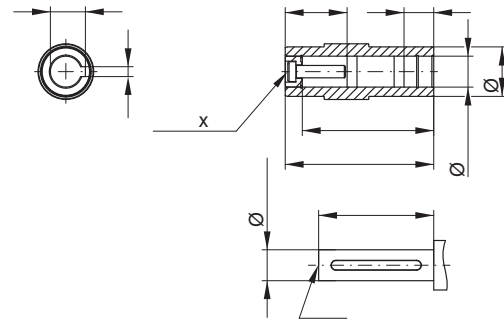
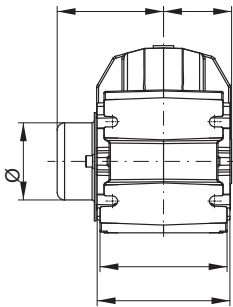
Dimension sheets Geared Motors



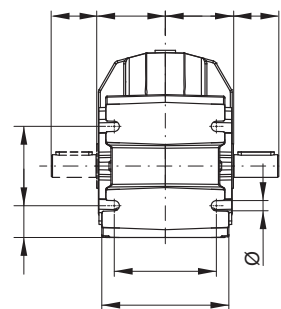
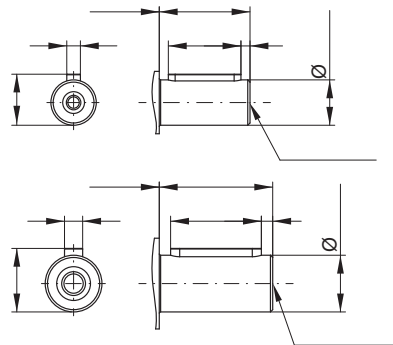
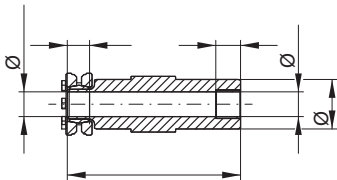
KH022 - Hollow shaft



KD022 - Shrink disc



KS022 - Output shaft KB022 - Output shaft on both sides

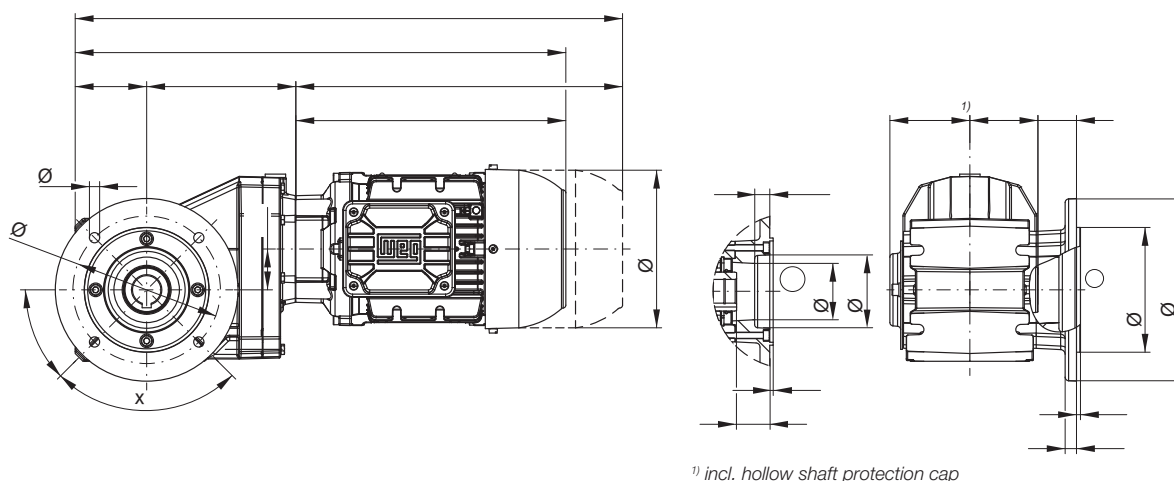


Motor fr.	63	71	80	L80	90S/L
AC	126	141	159	159	178
AD	128	136	145	145	155
k	399	433	441	465	483
kB	443	482	499	523	556
LB	204	238	246	270	288
LB1	248	287	304	328	361

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

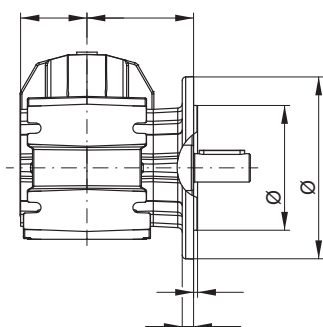
*Design KS(KB)/KF

KO022 - B5 flange execution with hollow shaft

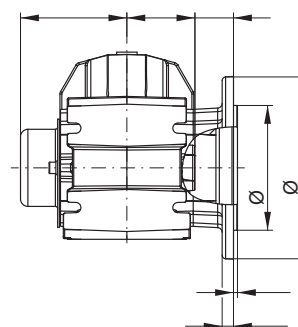


¹⁾ incl. hollow shaft protection cap

KF022 - B5 flange execution with output shaft

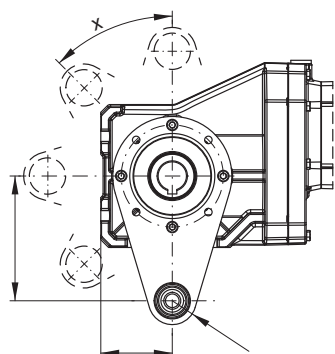


KP022 - B5 flange execution with hollow shaft and shrink disc



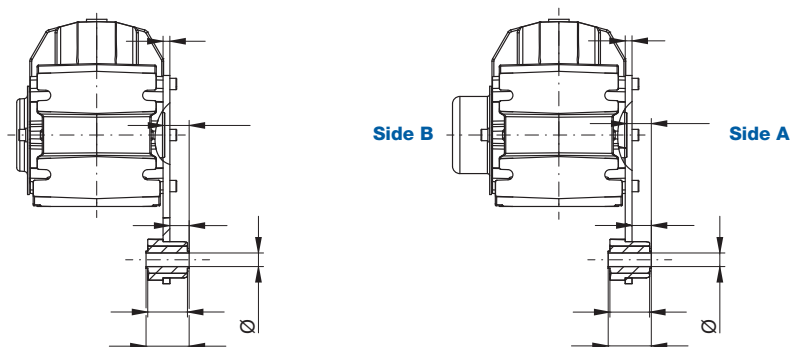
K

KT022 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 135°, 180°, 225°, 270°

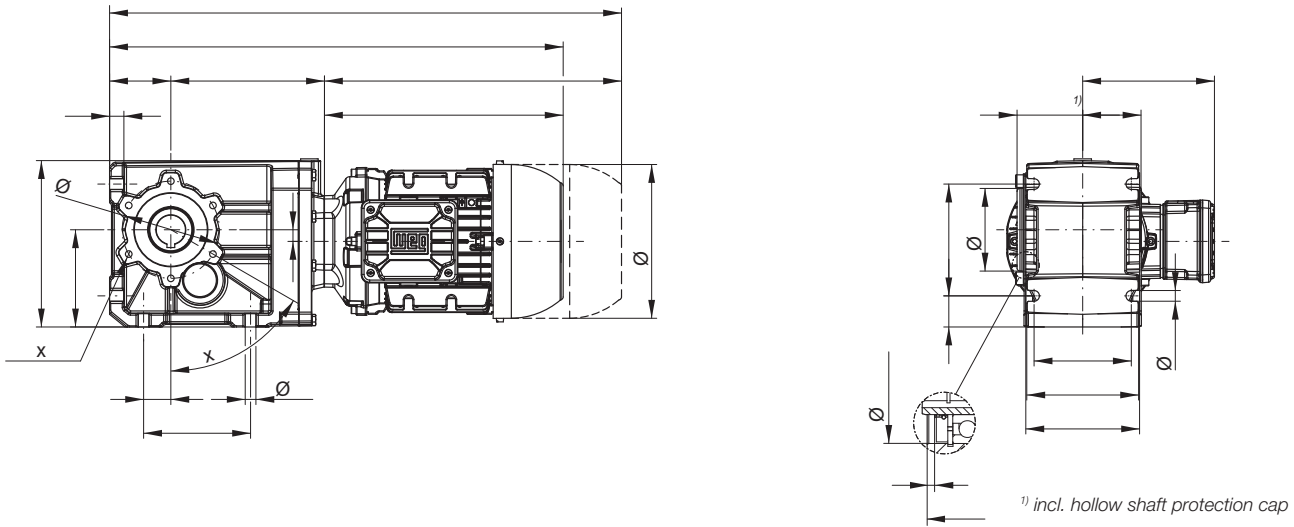
KU022 - Hollow shaft with shrink disc and torque arm **



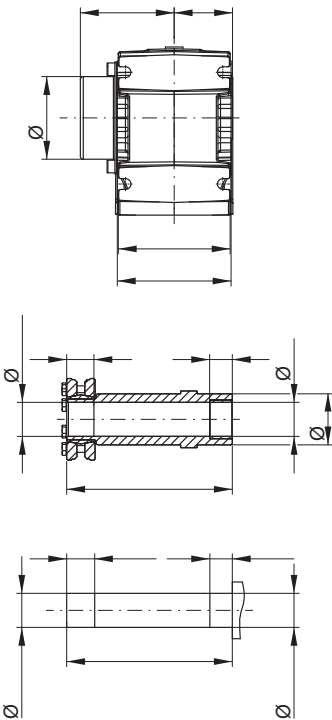
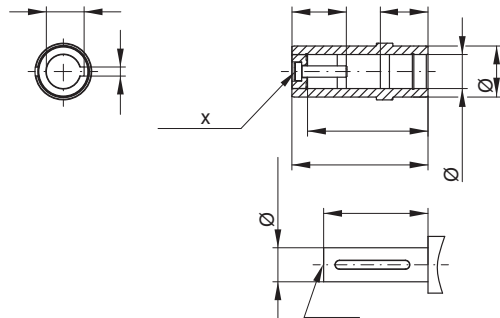
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

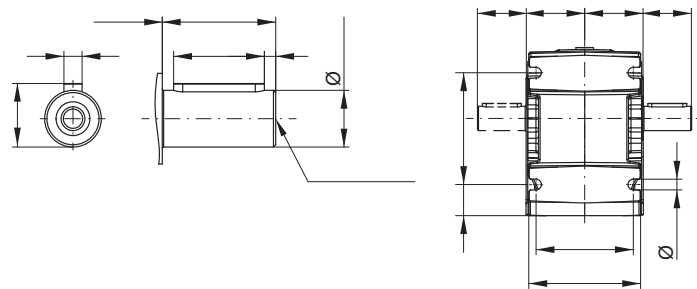
KH033 - Hollow shaft



KD033 - Shrink disc



KS033 - Output shaft KB033 - Output shaft on both sides

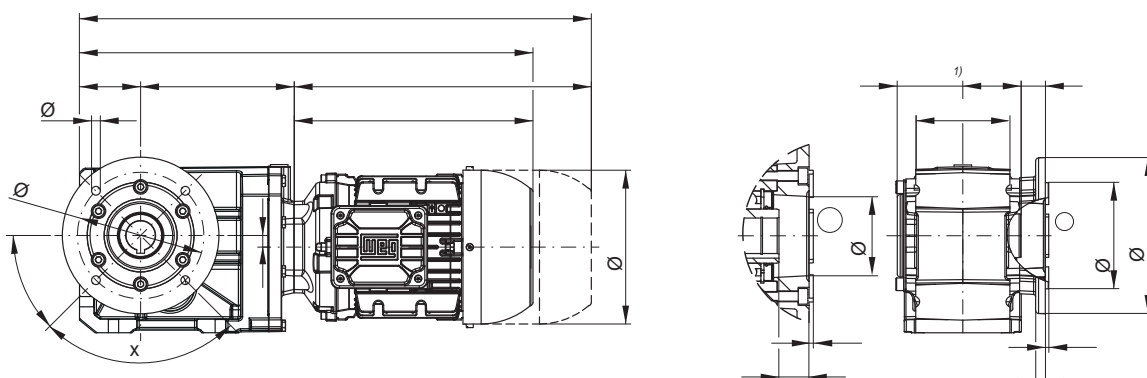


Motor fr.	63	71	80	L80	90S/L	100L	L100L
AC	126	141	159	159	178	199	199
AD	128	136	145	145	155	165	165
k	425	459	467	491	509	559	597
kB	469	508	525	549	582	643	681
LB	204	238	246	270	288	338	376
LB1	248	287	304	328	361	422	460

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

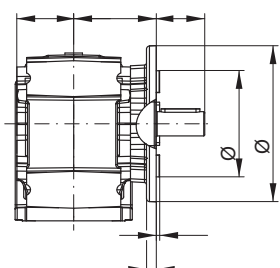
*Design KS(KB)/KF

KO033 - B5 flange execution with hollow shaft

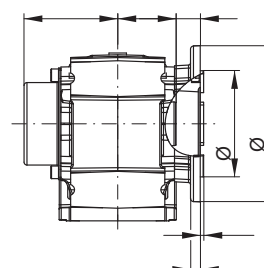


¹⁾ incl. hollow shaft protection cap

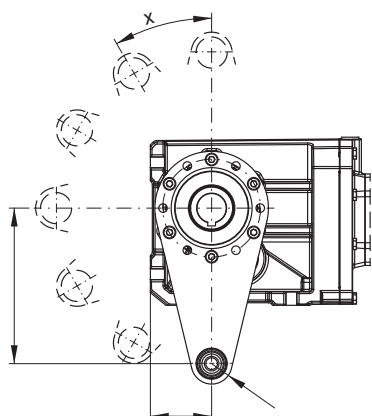
KF033 - B5 flange execution with output shaft



KP033 - B5 flange execution with hollow shaft and shrink disc

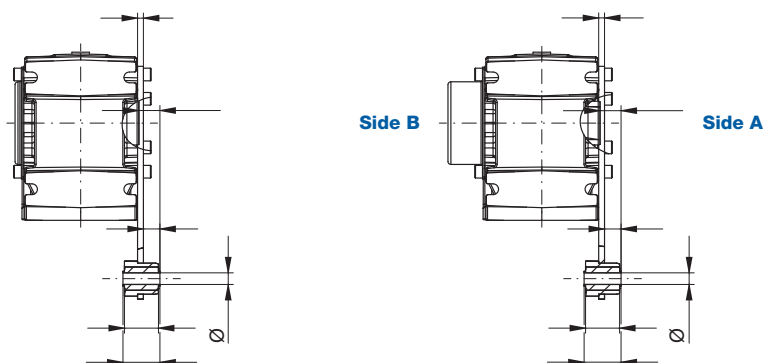


KT033 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 120°, 150°, 180°, 210°, 240°, 270°

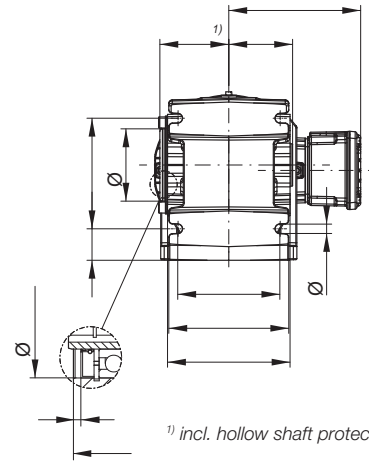
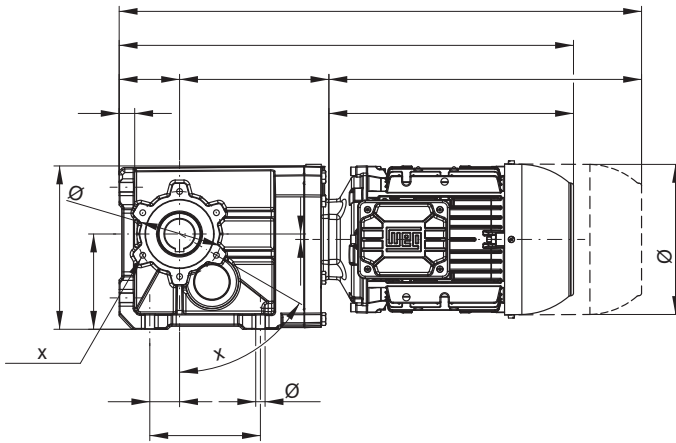
KU033 - Hollow shaft with shrink disc and torque arm **



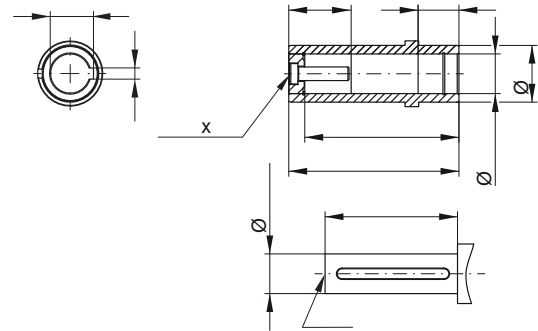
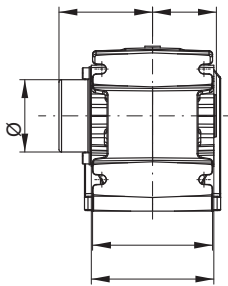
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

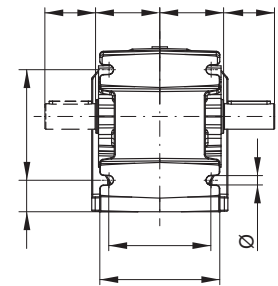
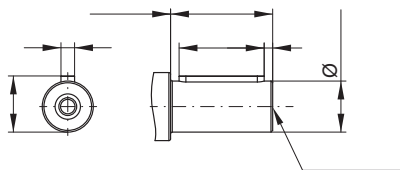
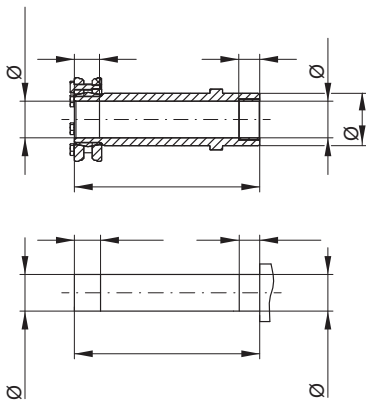
KH043 - Hollow shaft



KD043 - Shrink disc



KS043 - Output shaft KB043 - Output shaft on both sides

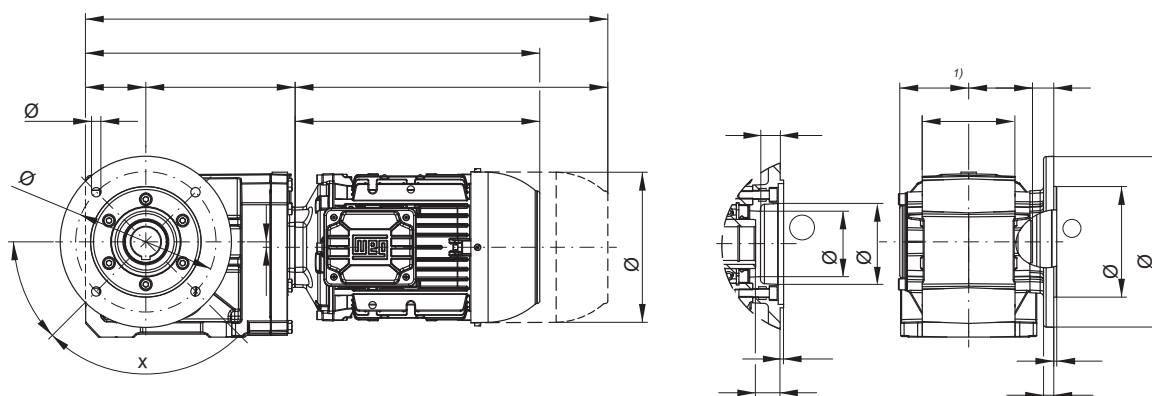


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M
AC	126	141	159	159	178	199	199	221
AD	128	136	145	145	155	165	165	185
k	451	485	493	517	535	585	623	595
kB	495	534	551	575	608	669	707	682
LB	204	238	246	270	288	338	376	348
LB1	248	287	304	328	361	422	460	435

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

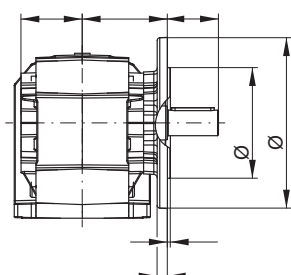
*Design KS(KB)/KF

KO043 - B5 flange execution with hollow shaft

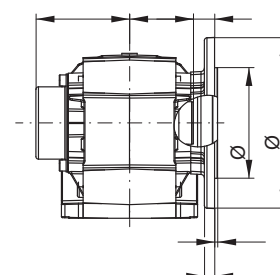


¹⁾ incl. hollow shaft protection cap

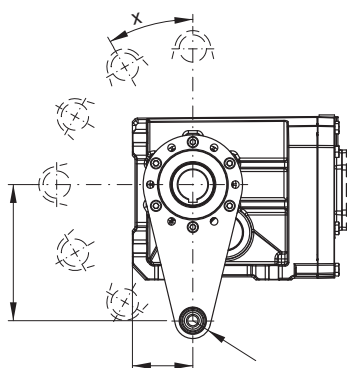
KF043 - B5 flange execution with output shaft



KP043 - B5 flange execution with hollow shaft and shrink disc

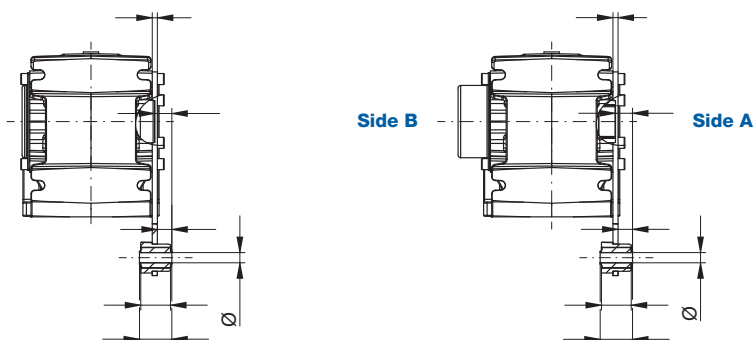


KT043 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 120°, 150°, 180°, 210°, 240°, 270°

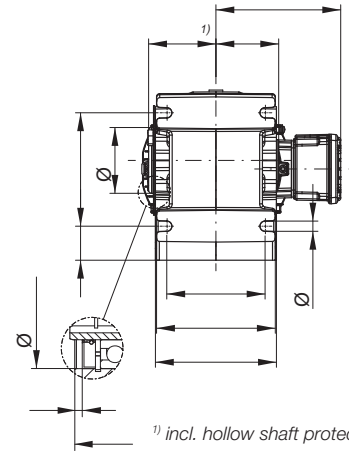
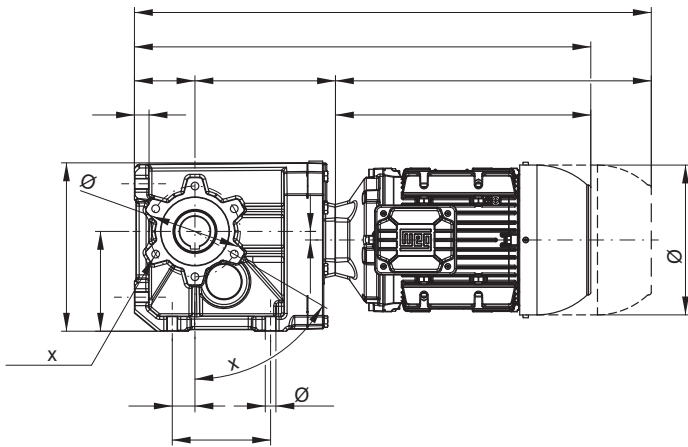
KU043 - Hollow shaft with shrink disc and torque arm **



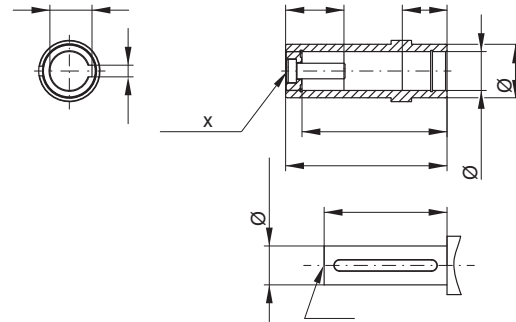
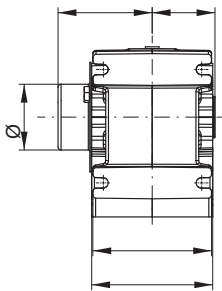
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

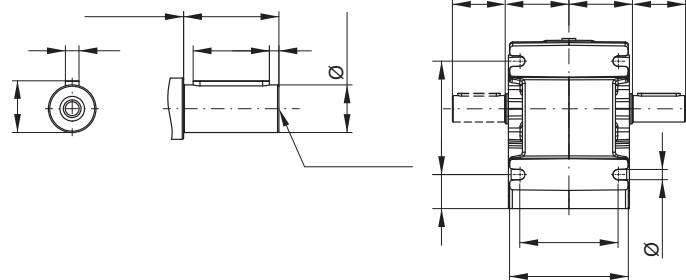
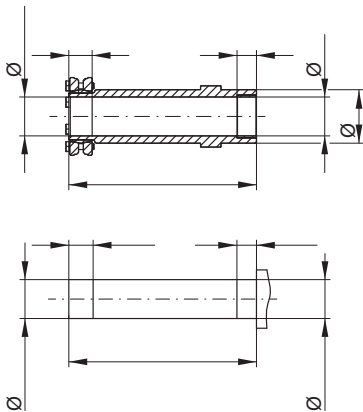
KH053 - Hollow shaft



KD053 - Shrink disc



KS053 - Output shaft KB053 - Output shaft on both sides

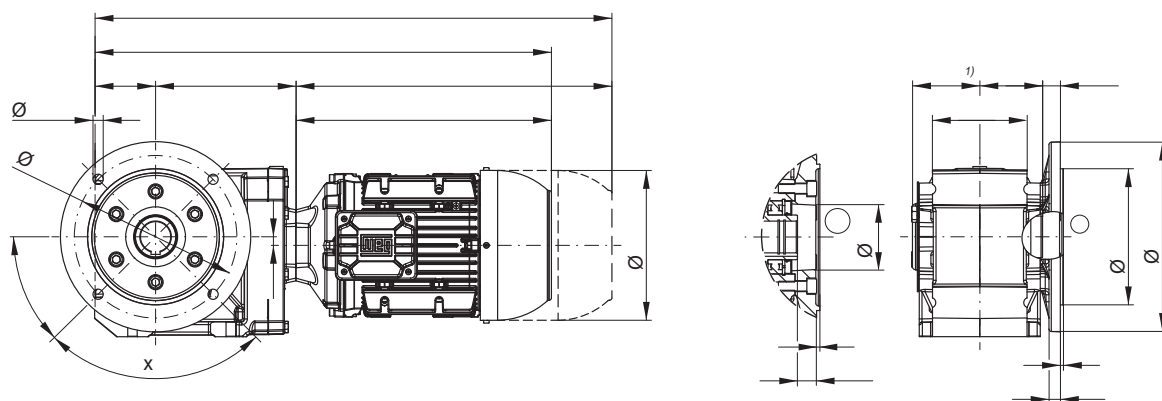


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	470	504	512	536	554	604	642	614	679	717
kB	514	553	570	594	627	688	726	701	797	835
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

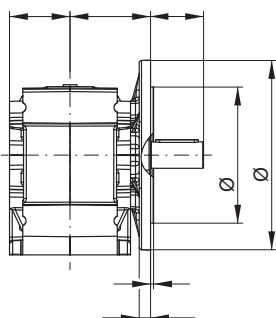
*Design KS(KB)/KF

KO053 - B5 flange execution with hollow shaft

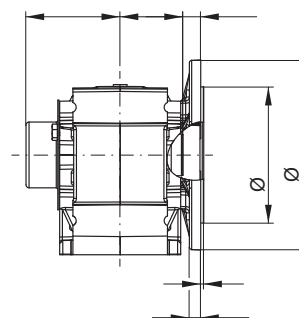


¹⁾ incl. hollow shaft protection cap

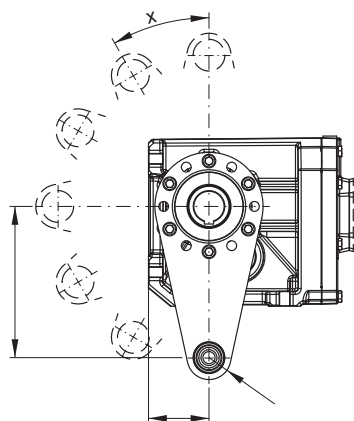
KF053 - B5 flange execution with output shaft



KP053 - B5 flange execution with hollow shaft and shrink disc

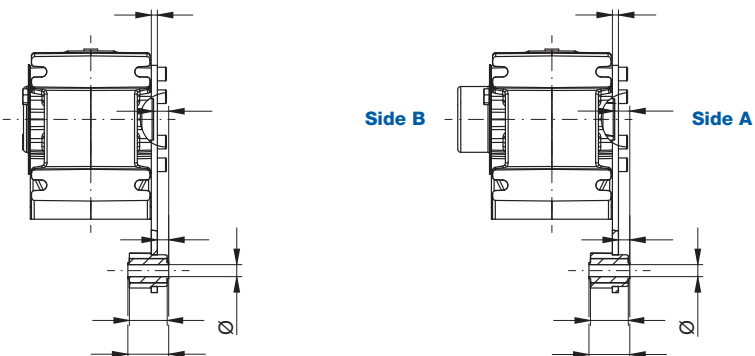


KT053 - Hollow shaft with torque arm **



Torque arm possible positions:
90°, 120°, 150°, 180°, 210°, 240°, 270°

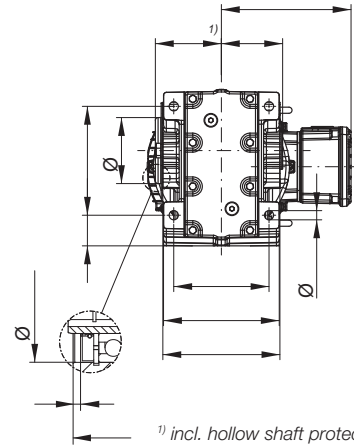
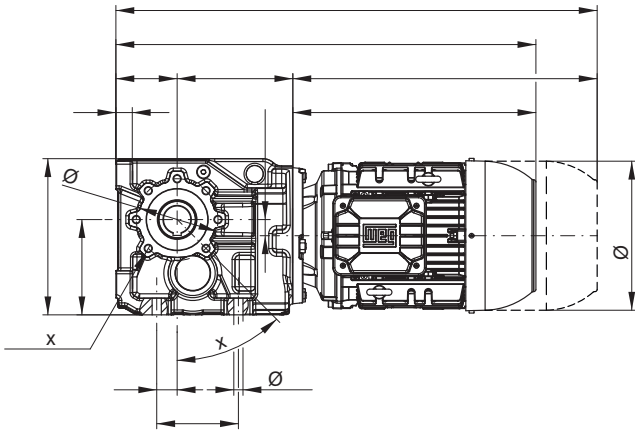
KU053 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

** Torque arm may be mounted on side A or side B.

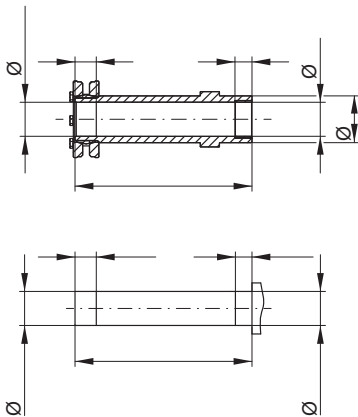
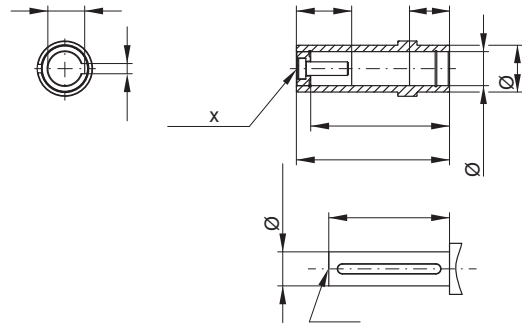
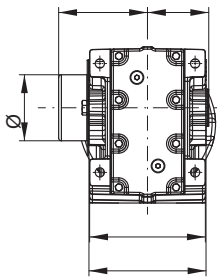
KH063 - Hollow shaft



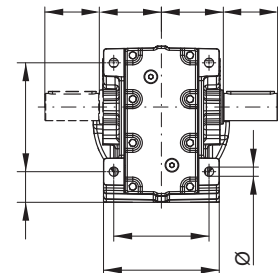
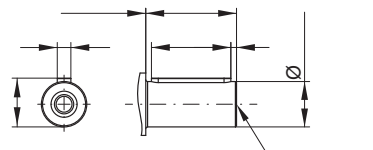
¹⁾ incl. hollow shaft protection cap

K

KD063 - Shrink disc



KS063 - Output shaft KB063 - Output shaft on both sides

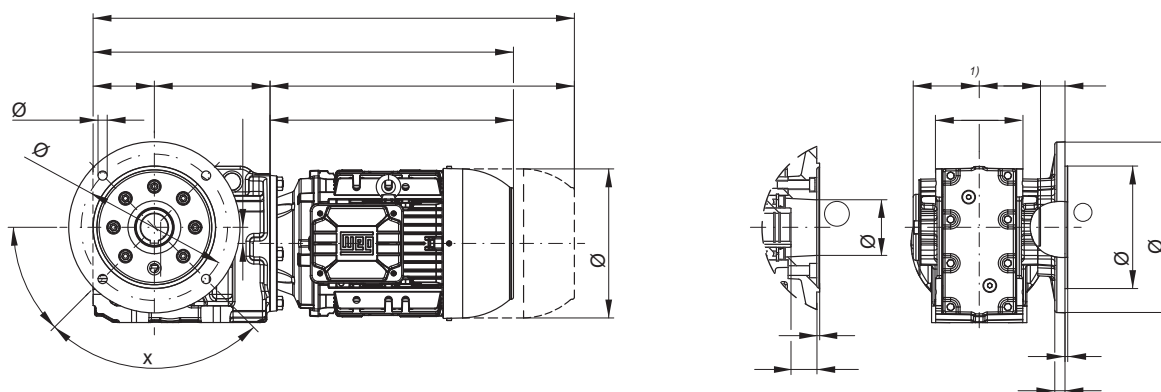


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	464	498	506	530	548	598	636	608	673	711
kB	508	547	564	588	621	682	720	695	791	829
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

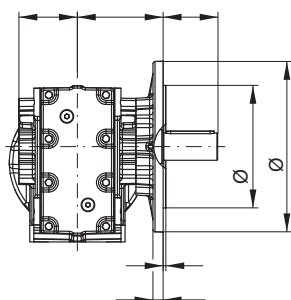
*Design KS(KB)/KF

KO063 - B5 flange execution with hollow shaft

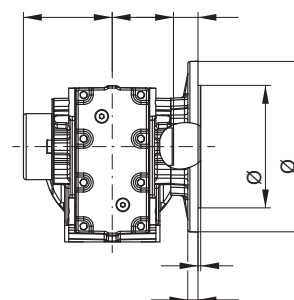


¹⁾ incl. hollow shaft protection cap

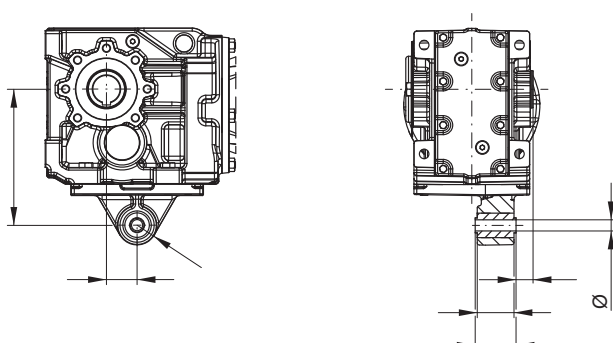
KF063 - B5 flange execution with output shaft



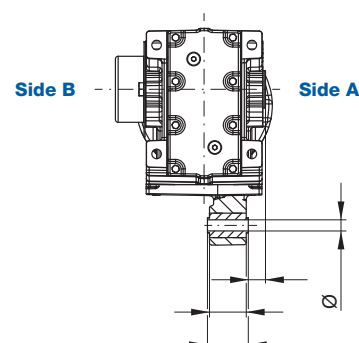
KP063 - B5 flange execution with hollow shaft and shrink disc



KT063 - Hollow shaft with torque arm **



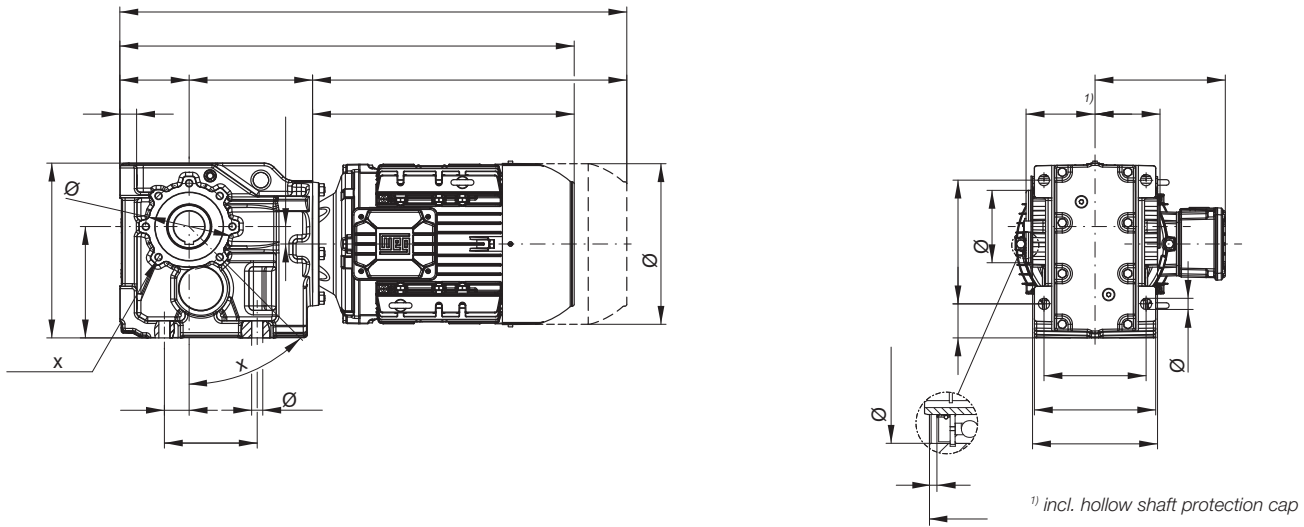
KU063 - Hollow shaft with shrink disc and torque arm **



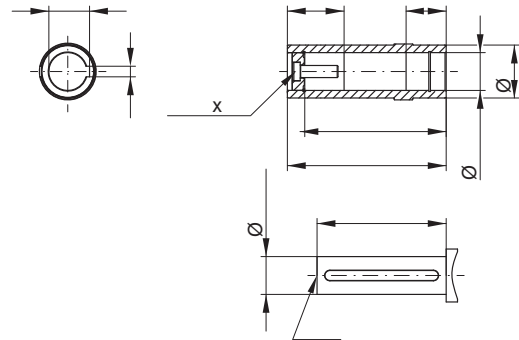
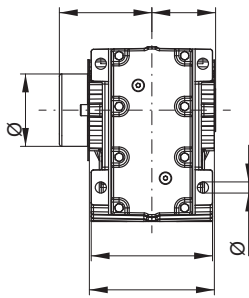
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

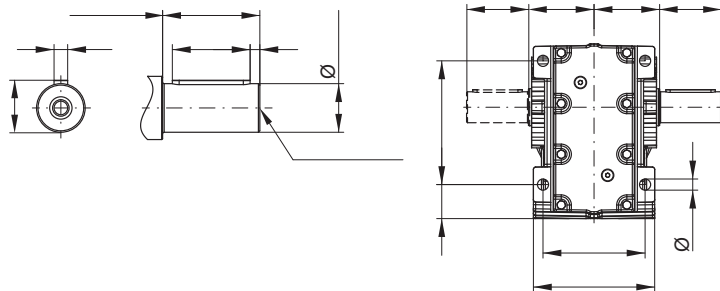
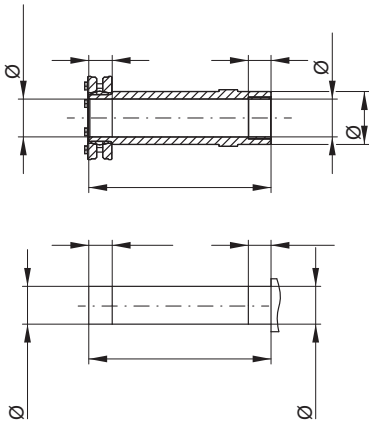
KH073 - Hollow shaft



KD073 - Shrink disc



KS073 - Output shaft KB073 - Output shaft on both sides

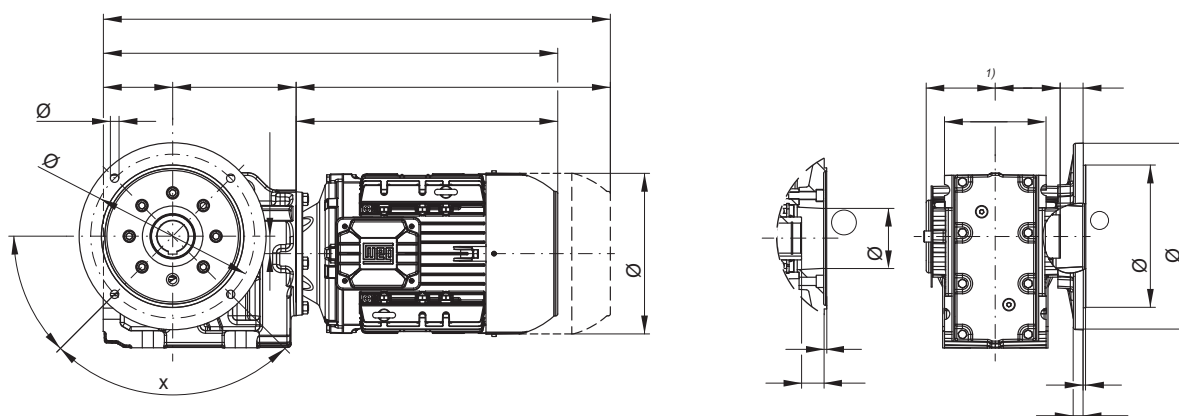


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	516	550	558	582	600	650	688	660	725	763	857	901
kB	560	599	616	640	673	734	772	747	843	881	981	1025
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496. Gear unit size K07 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 500.

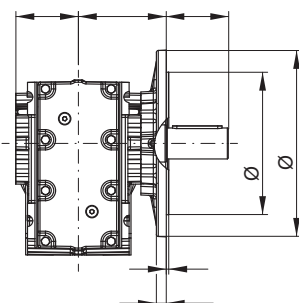
*Design KS(KB)/KF

KO073 - B5 flange execution with hollow shaft

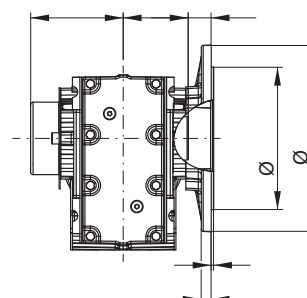


¹⁾ incl. hollow shaft protection cap

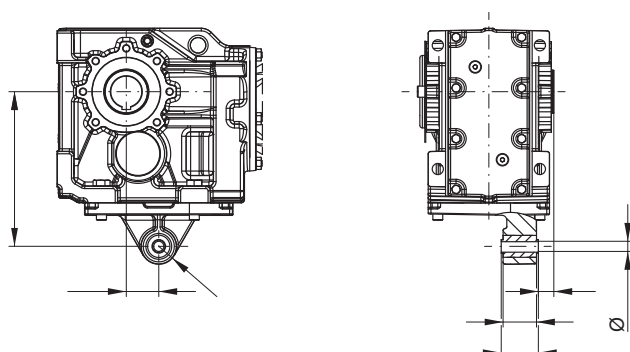
KF073 - B5 flange execution with output shaft



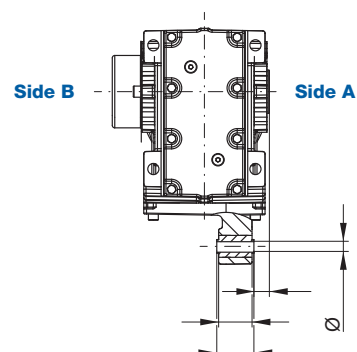
KP073 - B5 flange execution with hollow shaft and shrink disc



KT073 - Hollow shaft with torque arm **



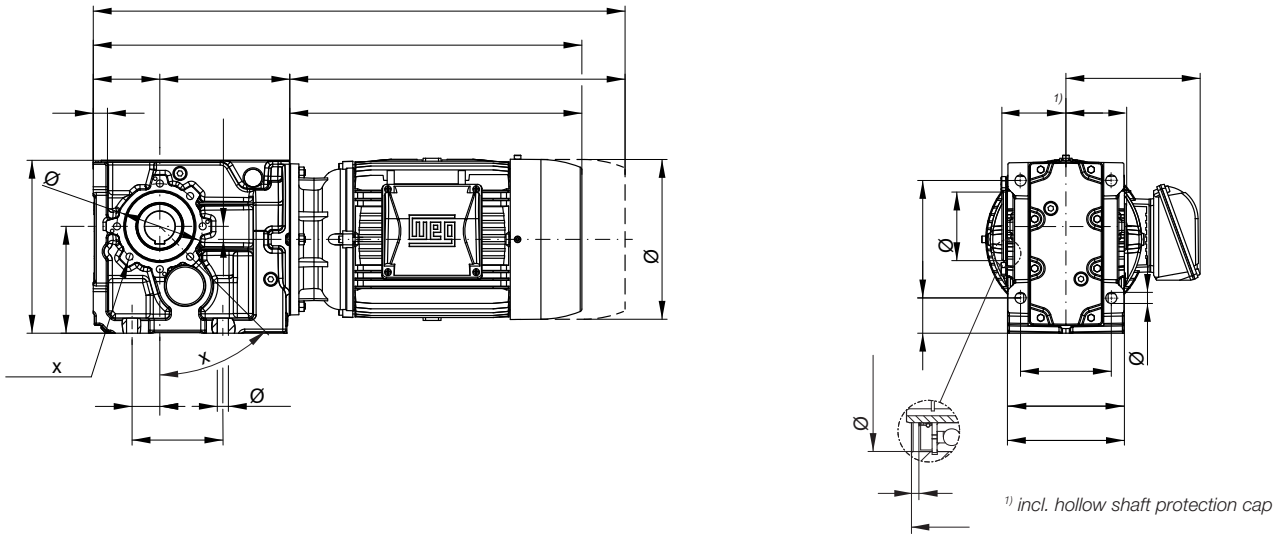
KU073 - Hollow shaft with shrink disc and torque arm **



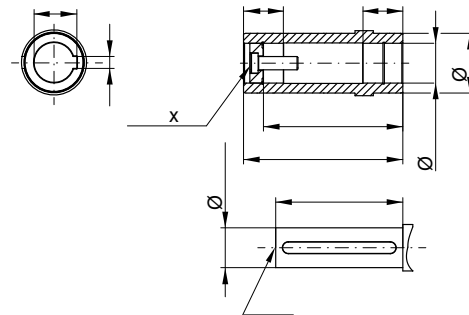
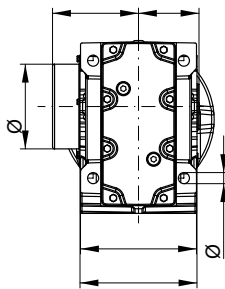
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

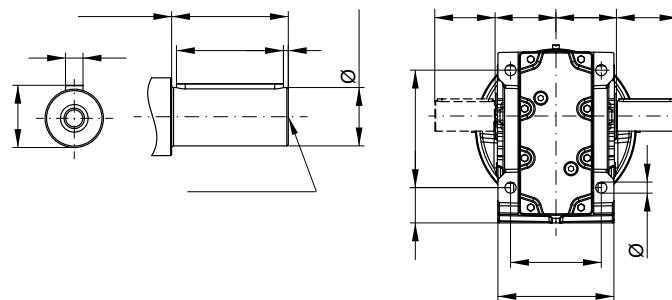
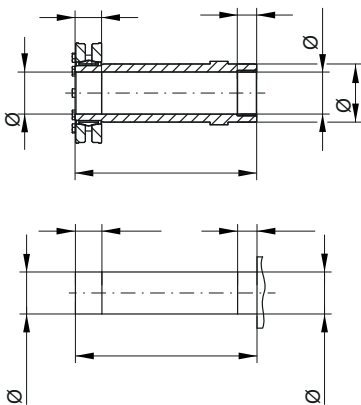
KH083 - Hollow shaft



KD083 - Shrink disc



KS083 - Output shaft KB083 - Output shaft on both sides

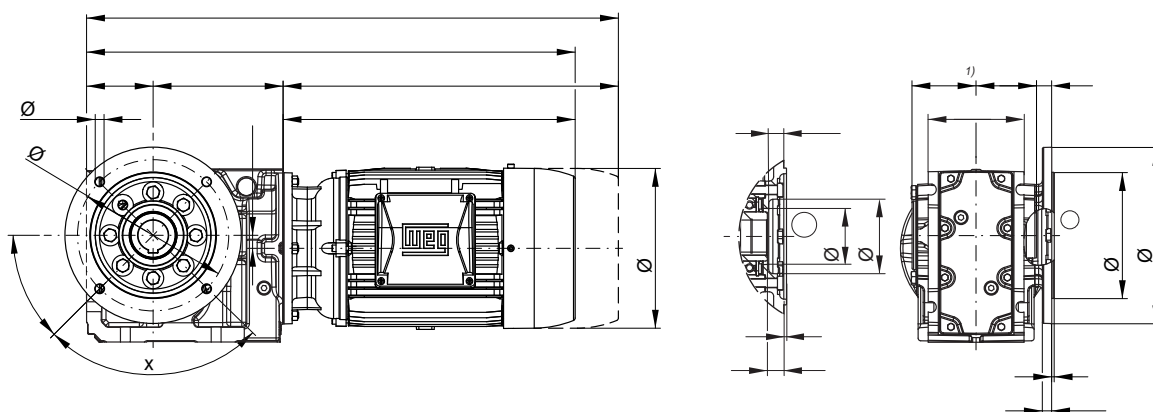


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281
k	594	628	636	660	678	728	766	738	803	841	925	969	993	1031
kB	638	677	694	718	751	812	850	825	921	959	1049	1093	1111	1149
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759

Motor dimension sheets see page 496. Gear unit size K08 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 500.

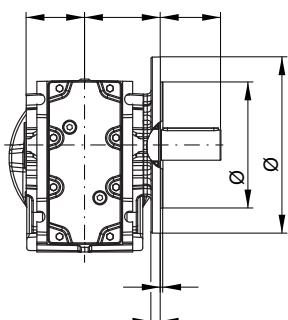
*Design KS(KB)/KF

KO083 - B5 flange execution with hollow shaft

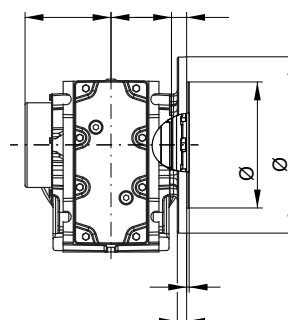


¹⁾ incl. hollow shaft protection cap

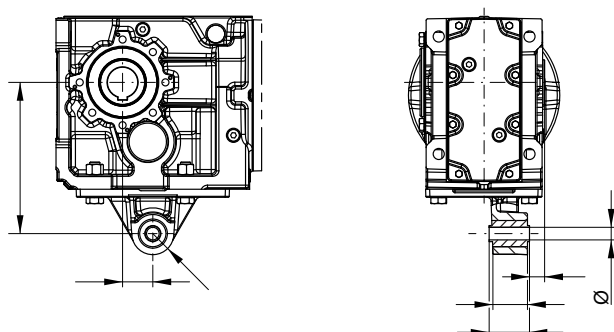
KF083 - B5 flange execution with output shaft



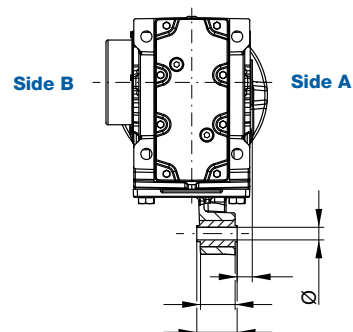
KP083 - B5 flange execution with hollow shaft and shrink disc



KT083 - Hollow shaft with torque arm **



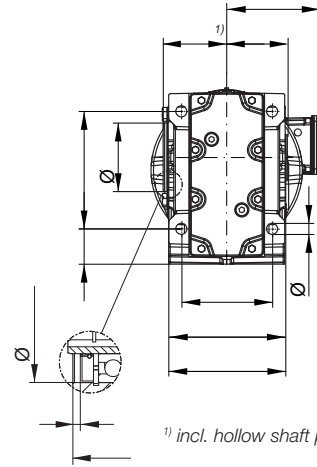
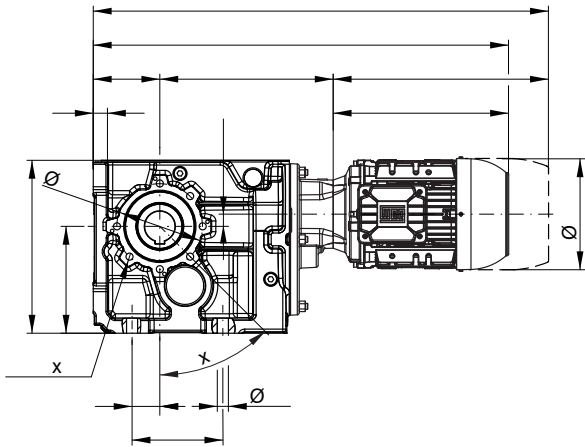
KU083 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

** Torque arm may be mounted on side A or side B.

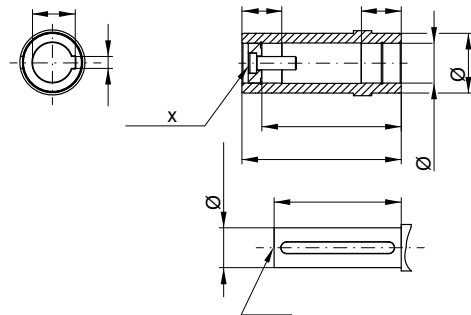
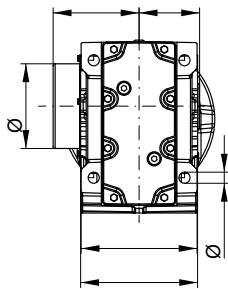
KH084 - Hollow shaft



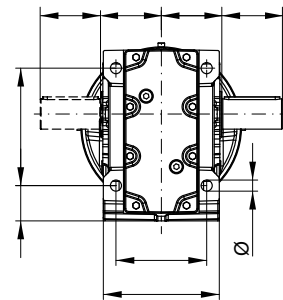
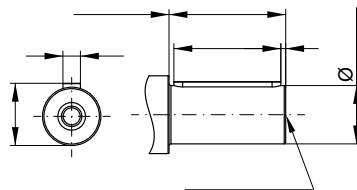
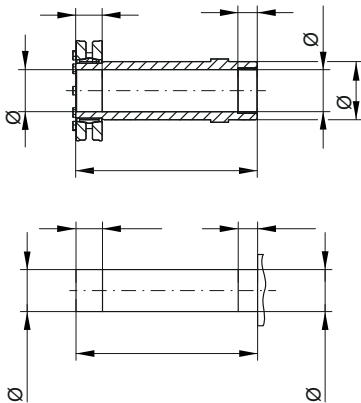
1) incl. hollow shaft protection cap

K

KD084 - Shrink disc



KS084 - Output shaft KB084 - Output shaft on both sides

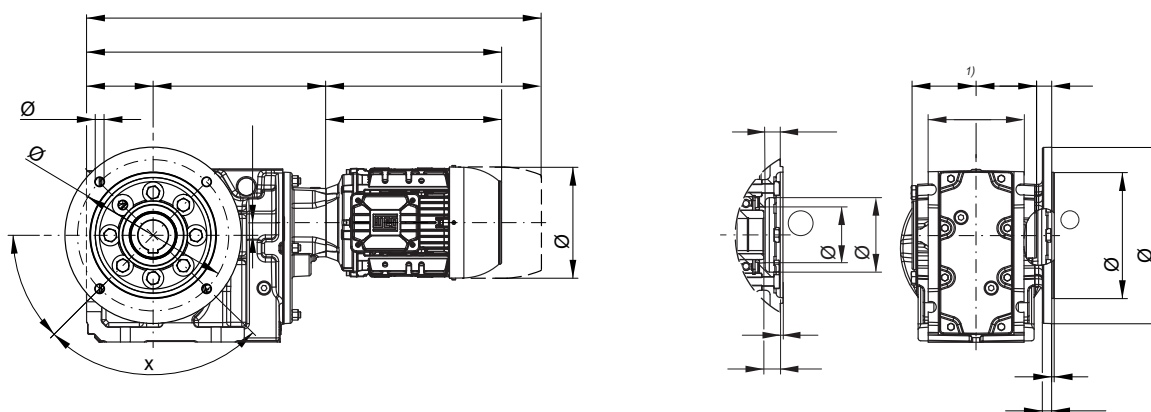


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	679	713	721	745	763	813	851	823	888	926
kB	723	762	779	803	836	897	935	910	1006	1044
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

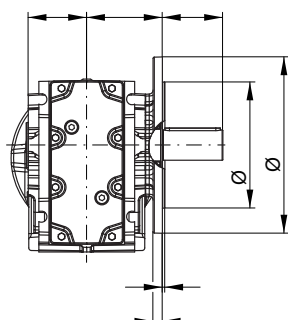
*Design KS(KB)/KF

KO084 - B5 flange execution with hollow shaft

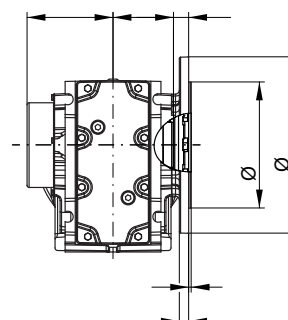


¹⁾ incl. hollow shaft protection cap

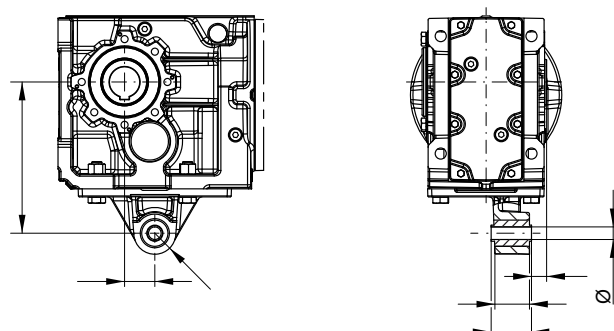
KF084 - B5 flange execution with output shaft



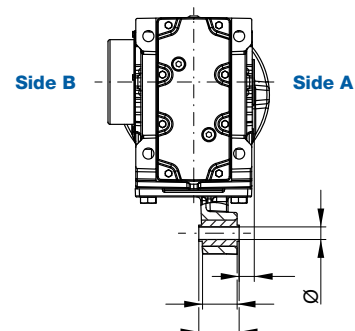
KP084 - B5 flange execution with hollow shaft and shrink disc



KT084 - Hollow shaft with torque arm **



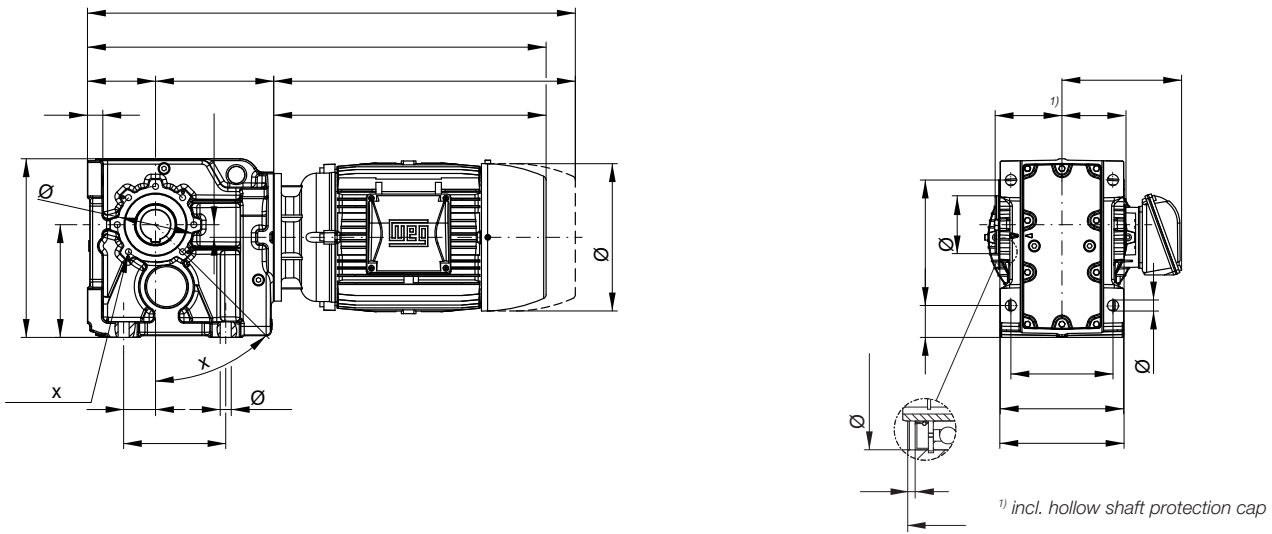
KU084 - Hollow shaft with shrink disc and torque arm **



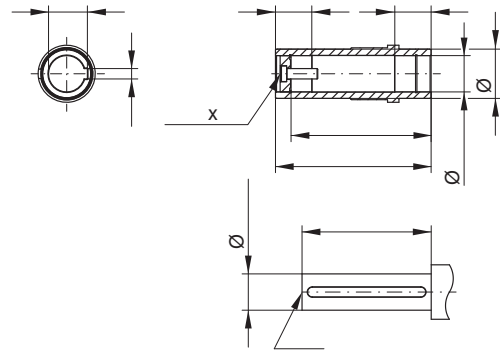
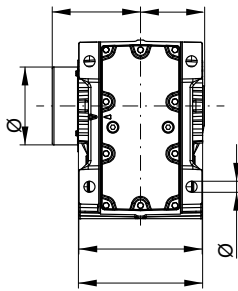
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

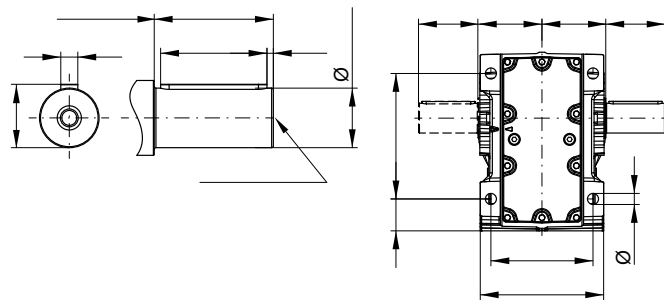
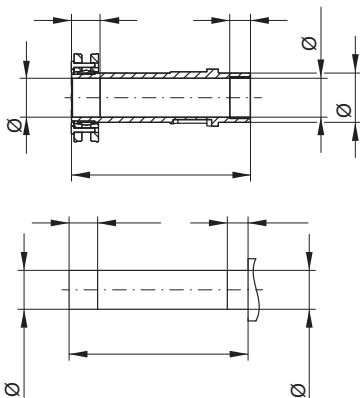
KH093 - Hollow shaft



KD093 - Shrink disc



KS093 - Output shaft KB093 - Output shaft on both sides

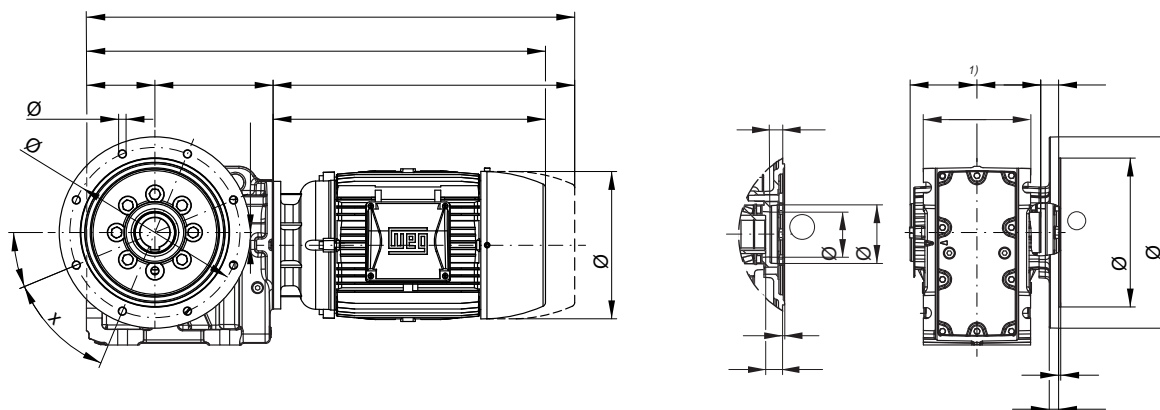


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	642	676	684	708	726	776	814	786	851	889	973	1017	1041	1079	1171
kB	686	725	742	766	799	860	898	873	969	1007	1097	1141	1159	1197	1297
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 496. Gear unit size K09 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 500.

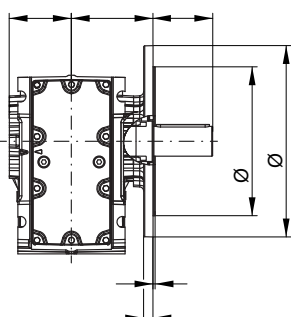
*Design KS(KB)/KF

KO093 - B5 flange execution with hollow shaft

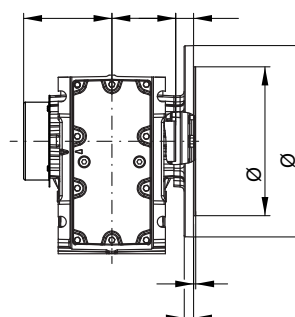


¹⁾ incl. hollow shaft protection cap

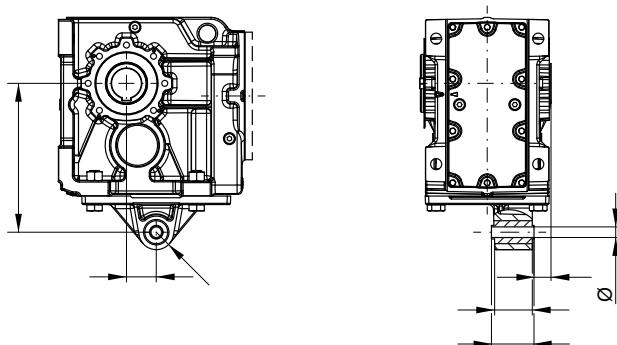
KF093 - B5 flange execution with output shaft



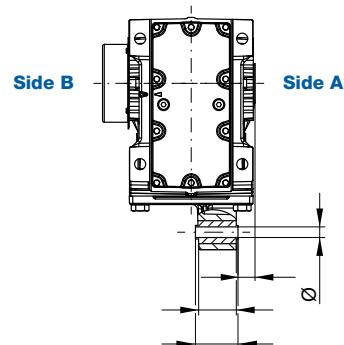
KP093 - B5 flange execution with hollow shaft and shrink disc



KT093 - Hollow shaft with torque arm **



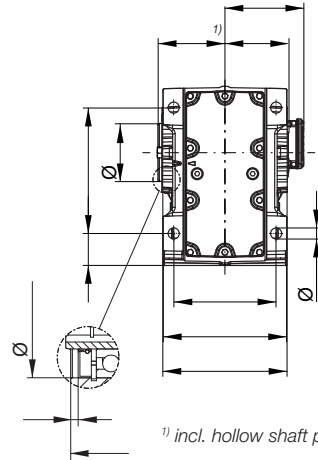
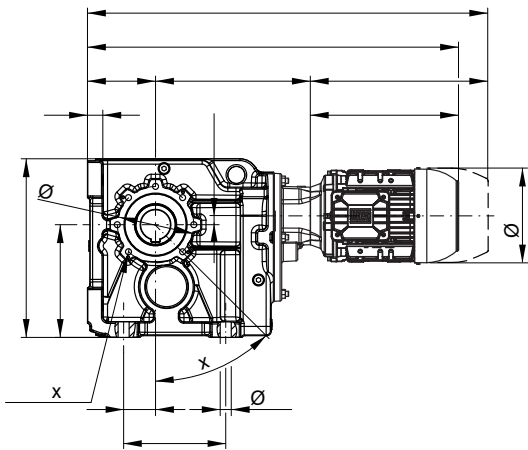
KU093 - Hollow shaft with shrink disc and torque arm **



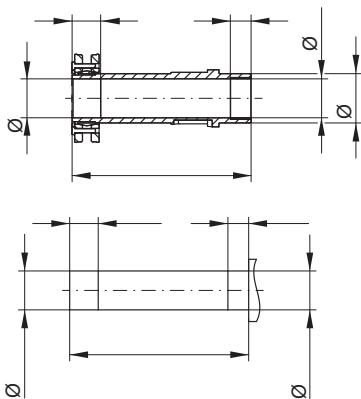
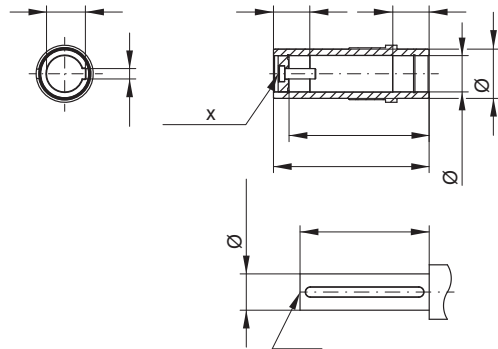
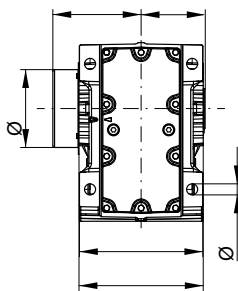
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

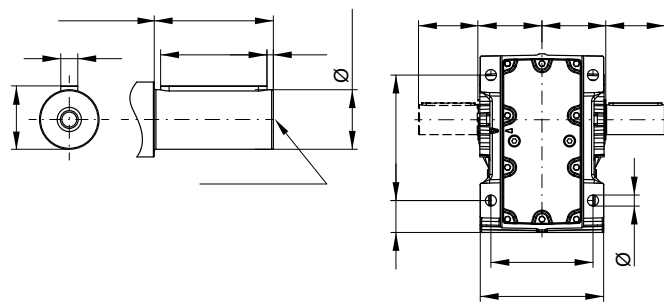
KH094 - Hollow shaft



KD094 - Shrink disc



KS094 - Output shaft KB094 - Output shaft on both sides

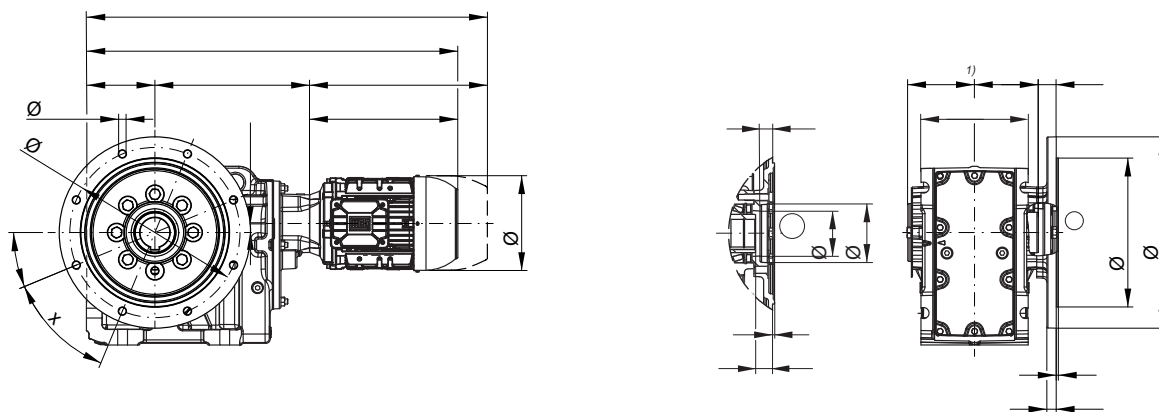


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	727	761	769	793	811	861	899	871	936	974
kB	771	810	827	851	884	945	983	958	1054	1092
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

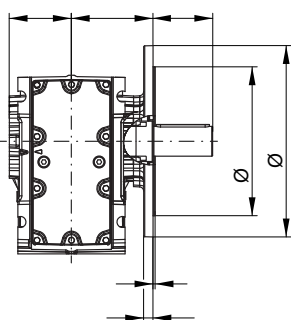
Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

*Design KS(KB)/KF

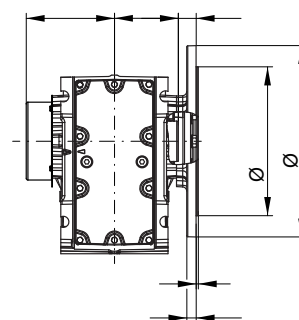
KO094 - B5 flange execution with hollow shaft



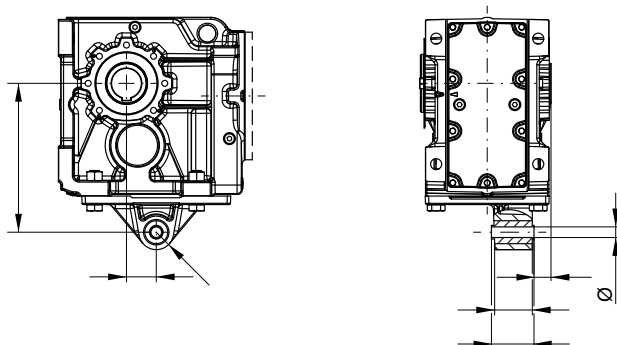
KF094 - B5 flange execution with output shaft



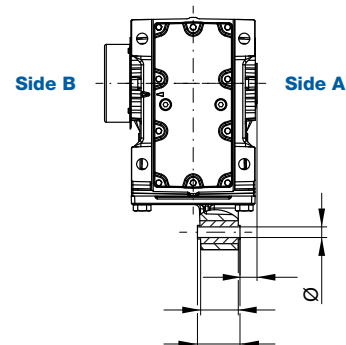
KP094 - B5 flange execution with hollow shaft and shrink disc



KT094 - Hollow shaft with torque arm **



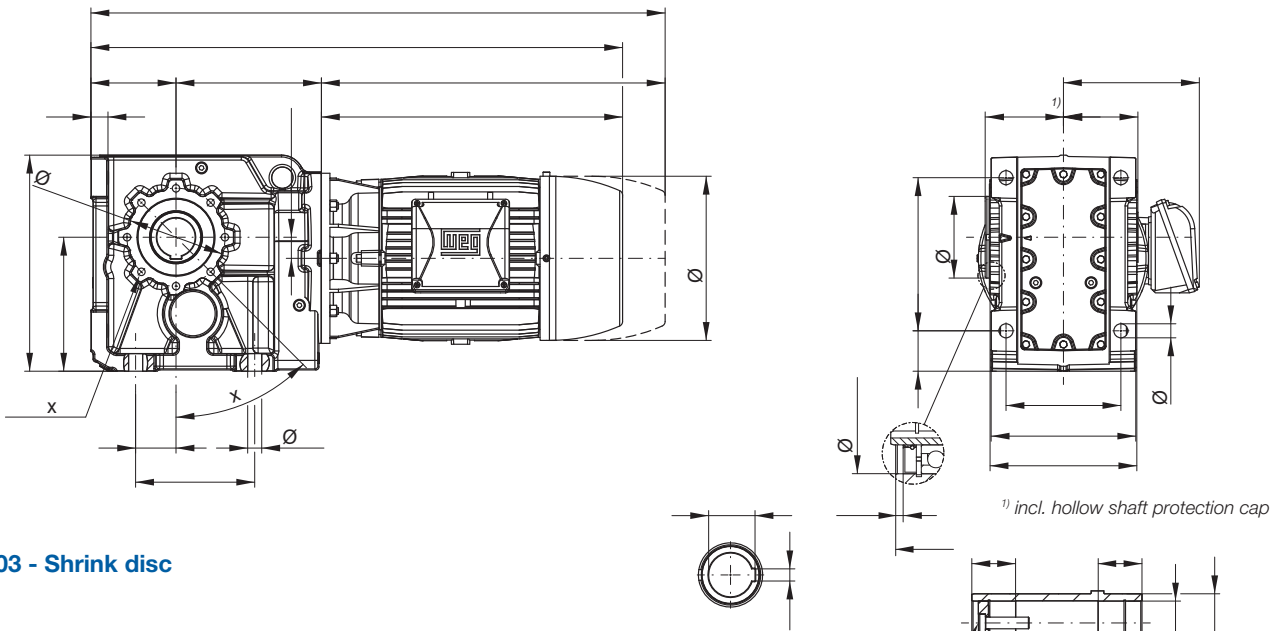
KU094 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

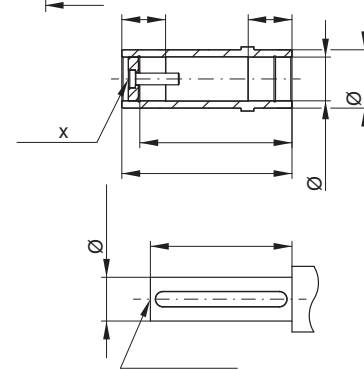
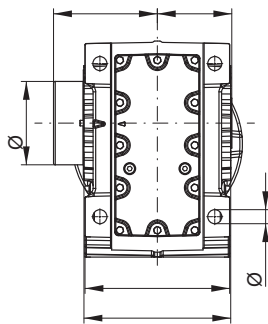
** Torque arm may be mounted on side A or side B.

KH103 - Hollow shaft

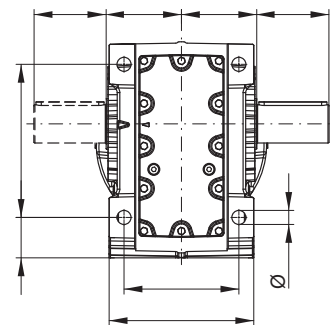
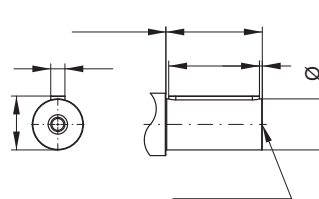
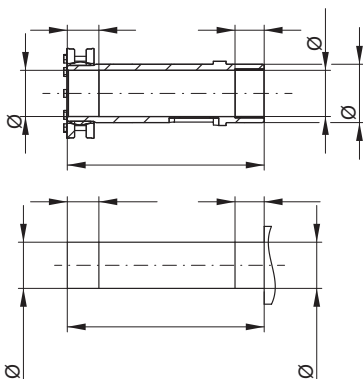


KD103 - Shrink disc

K



KS103 - Output shaft KB103 - Output shaft on both sides

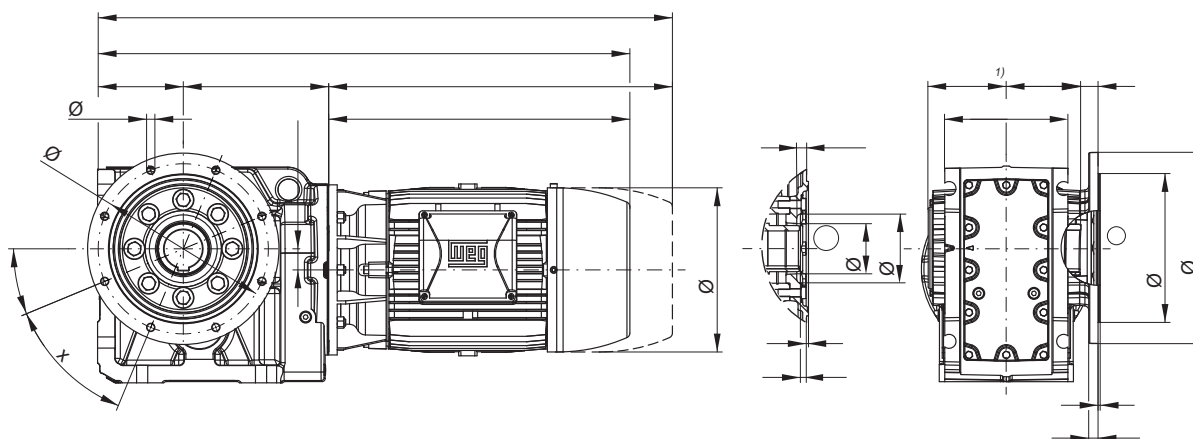


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	890	955	993	1064	1108	1132	1170	1262	1370
kB	-	-	-	-	-	-	-	977	1073	1111	1188	1232	1250	1288	1388	1488
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

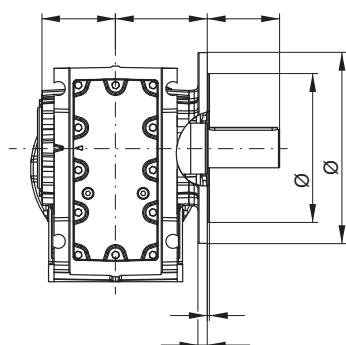
Motor dimension sheets see page 496. Gear unit size K103 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

*Design KS(KB)/KF

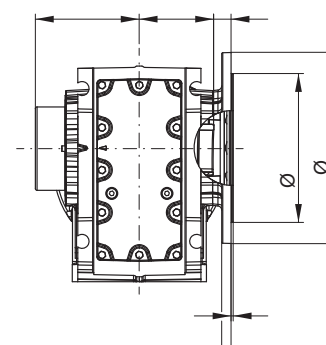
KO103 - B5 flange execution with hollow shaft



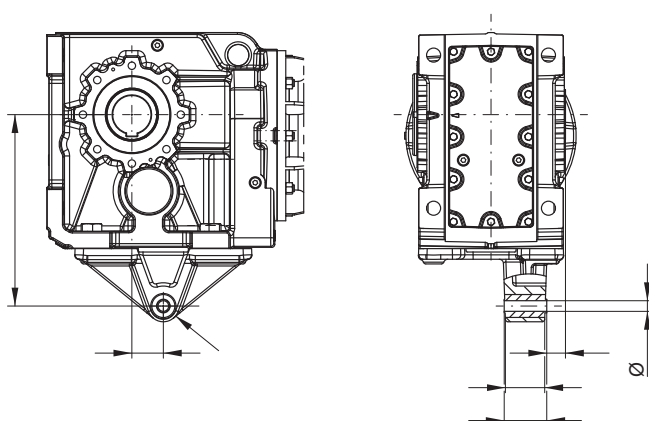
KF103 - B5 flange execution with output shaft



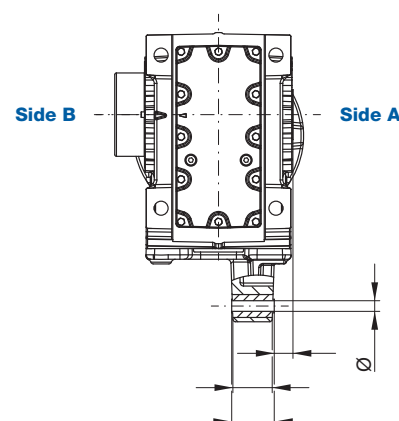
KP103 - B5 flange execution with hollow shaft and shrink disc



KT103 - Hollow shaft with torque arm **



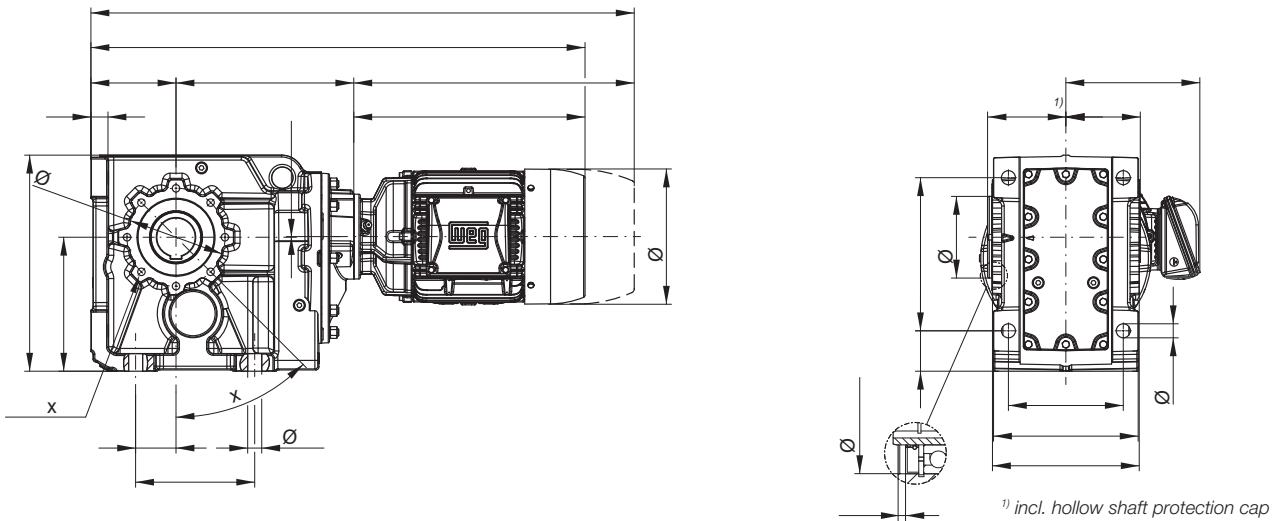
KU103 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

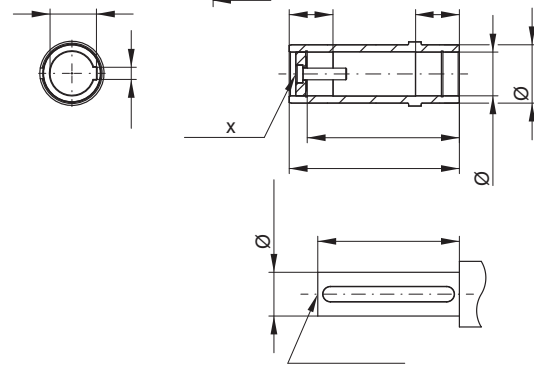
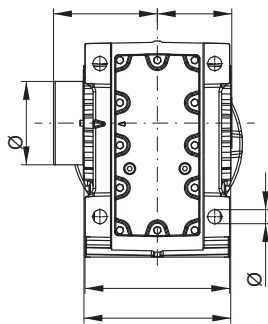
** Torque arm may be mounted on side A or side B.

KH104 - Hollow shaft

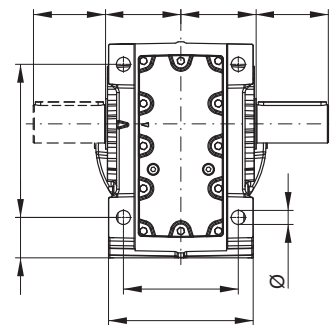
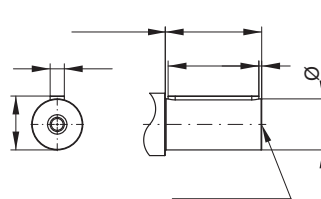
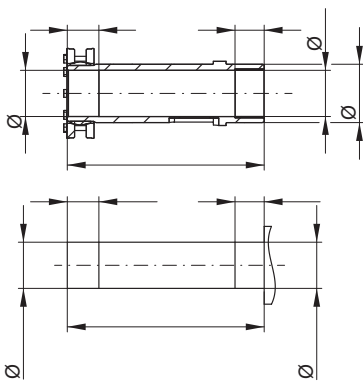


KD104 - Shrink disc

K



KS104 - Output shaft KB104 - Output shaft on both sides

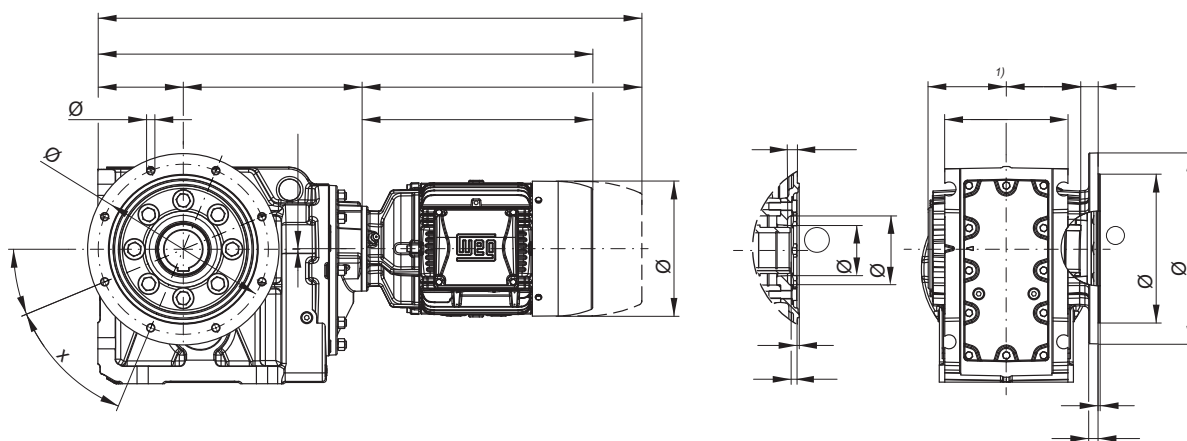


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	822	856	864	888	906	956	994	966	1031	1069	1163	1207
kB	866	905	922	946	979	1040	1078	1053	1149	1187	1287	1331
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496. Gear unit size K104 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 500.

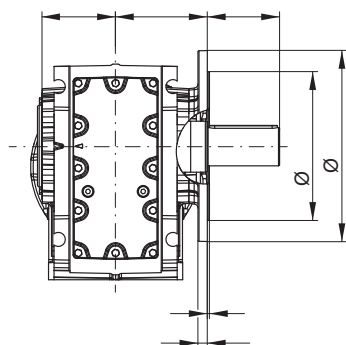
*Design KS(KB)/KF

KO104 - B5 flange execution with hollow shaft

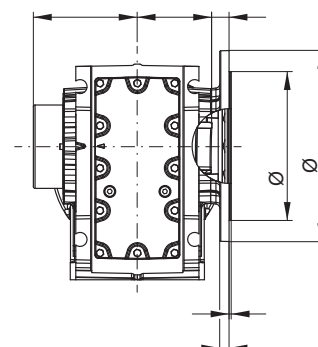


¹⁾ incl. hollow shaft protection cap

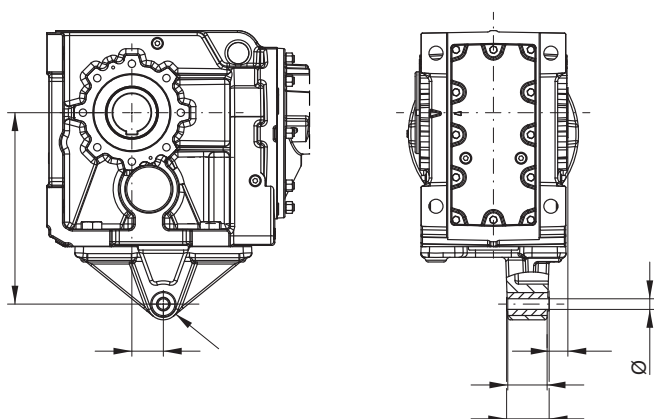
KF104 - B5 flange execution with output shaft



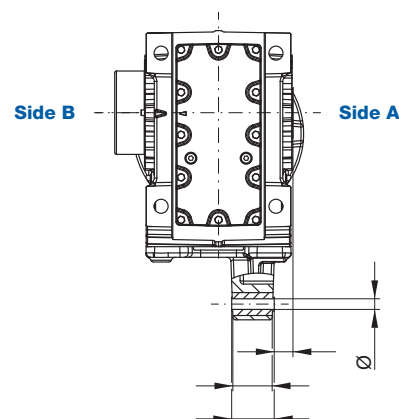
KP104 - B5 flange execution with hollow shaft and shrink disc



KT104 - Hollow shaft with torque arm **



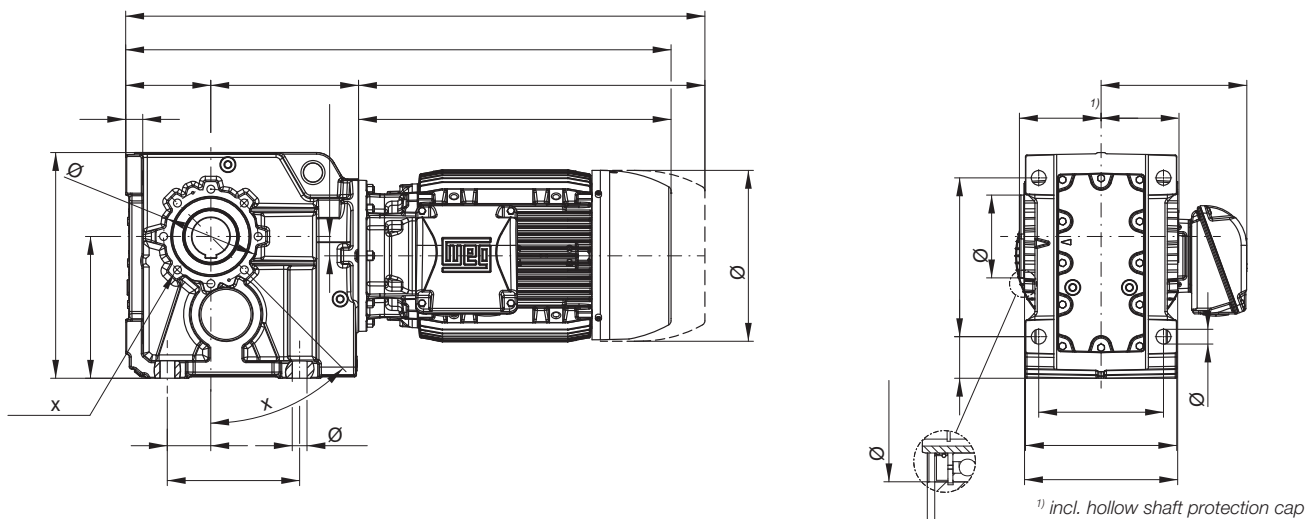
KU104 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

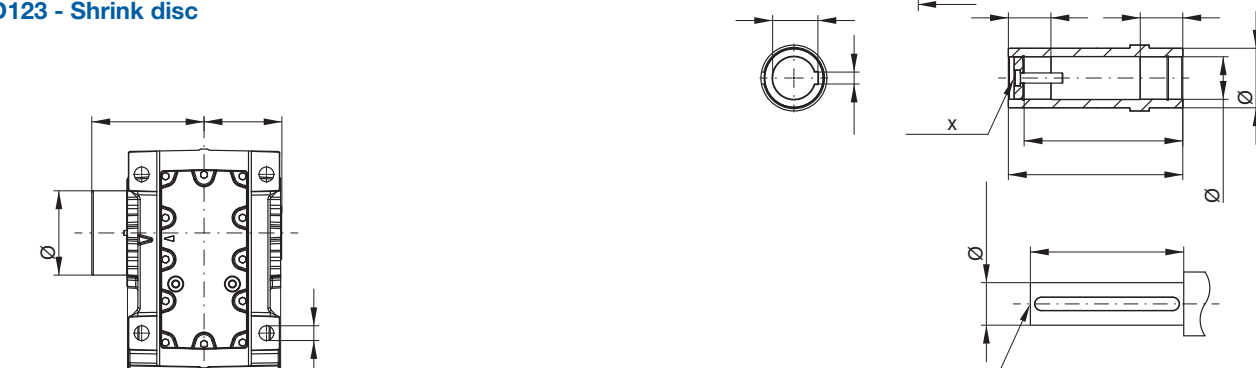
** Torque arm may be mounted on side A or side B.

KH123 - Hollow shaft

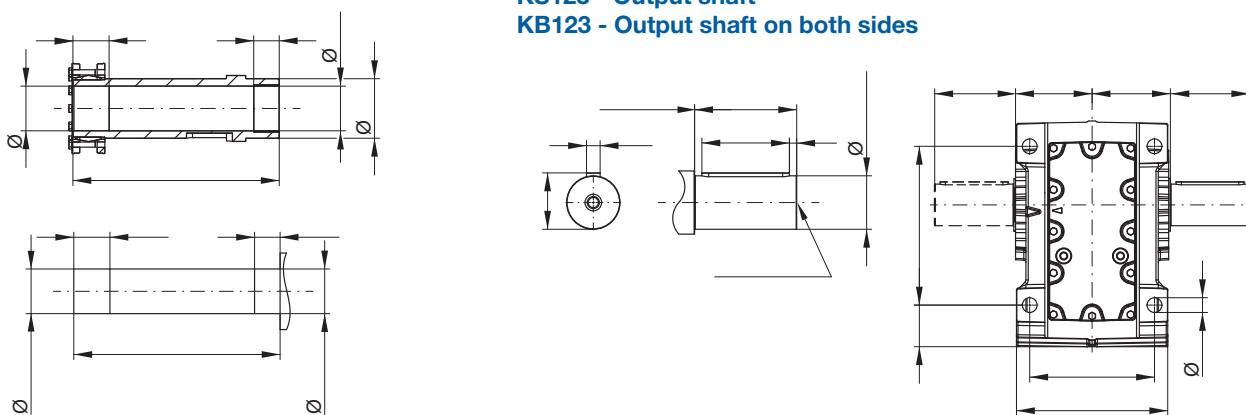


KD123 - Shrink disc

K



KS123 - Output shaft KB123 - Output shaft on both sides

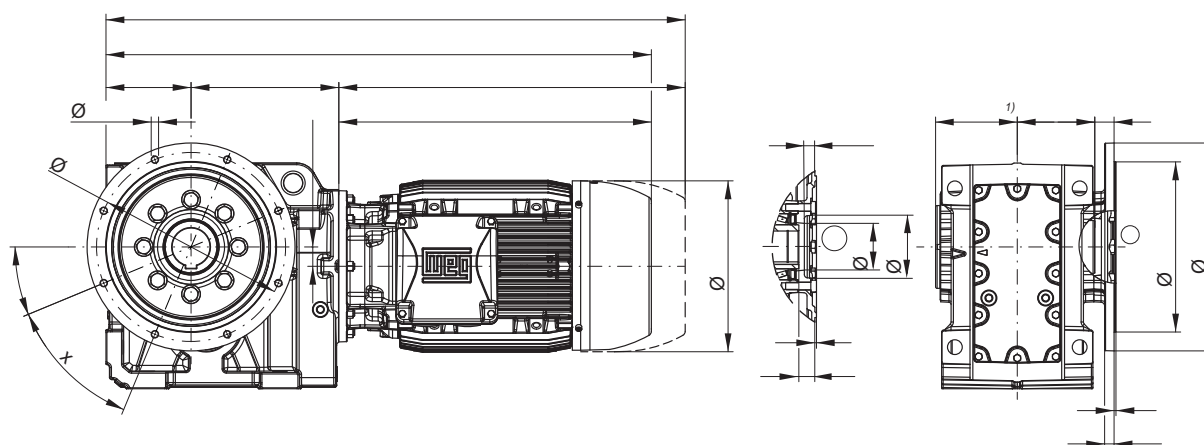


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M
AC	-	-	-	-	-	-	-	221	261	261	329	329	347	347	386	453
AD	-	-	-	-	-	-	-	185	205	205	266	266	281	281	317	385
k	-	-	-	-	-	-	-	964	1029	1067	1138	1182	1206	1244	1336	1444
kB	-	-	-	-	-	-	-	1051	1147	1185	1262	1306	1324	1362	1462	1562
LB	-	-	-	-	-	-	-	348	413	451	522	566	590	628	720	828
LB1	-	-	-	-	-	-	-	435	531	569	646	690	708	746	846	946

Motor dimension sheets see page 496. Gear unit size K123 corresponds to motor flange FR-400. Description of motor lengths LB and LB1 see page 500.

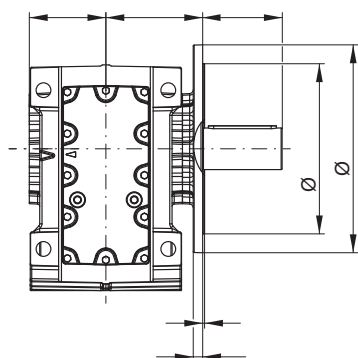
*Design KS(KB)/KF

KO123 - B5 flange execution with hollow shaft

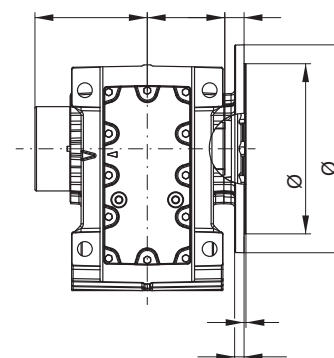


¹⁾ incl. hollow shaft protection cap

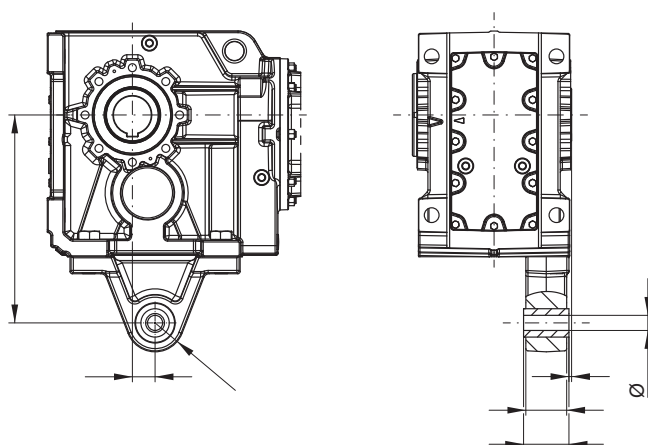
KF123 - B5 flange execution with output shaft



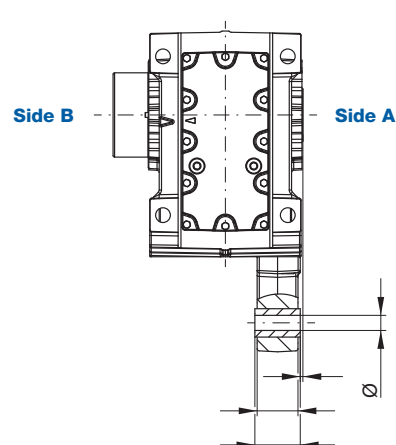
KP123 - B5 flange execution with hollow shaft and shrink disc



KT123 - Hollow shaft with torque arm **



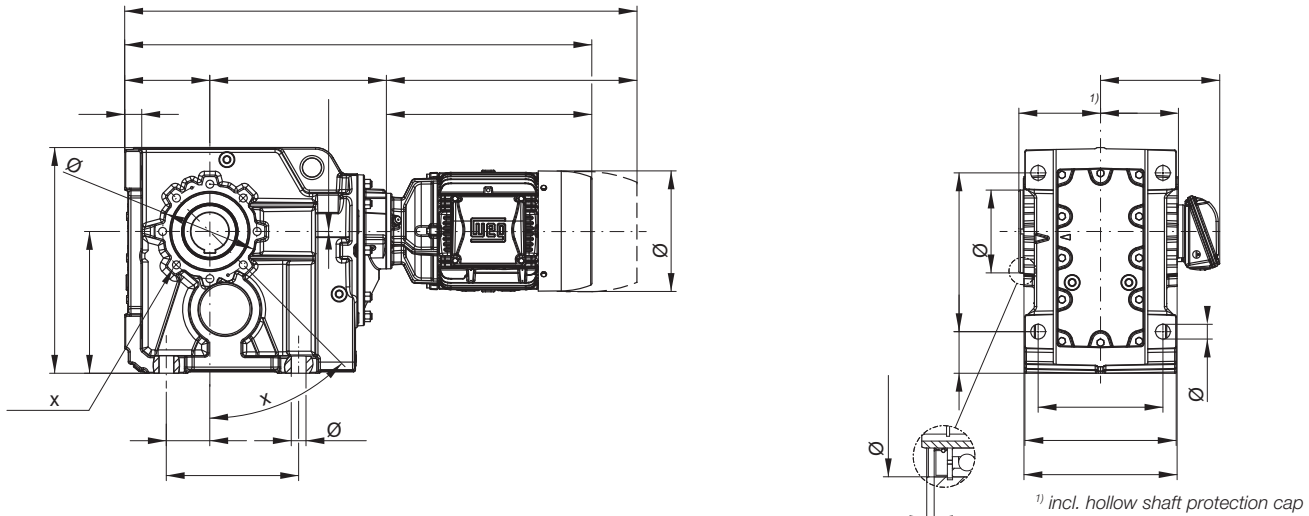
KU123 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

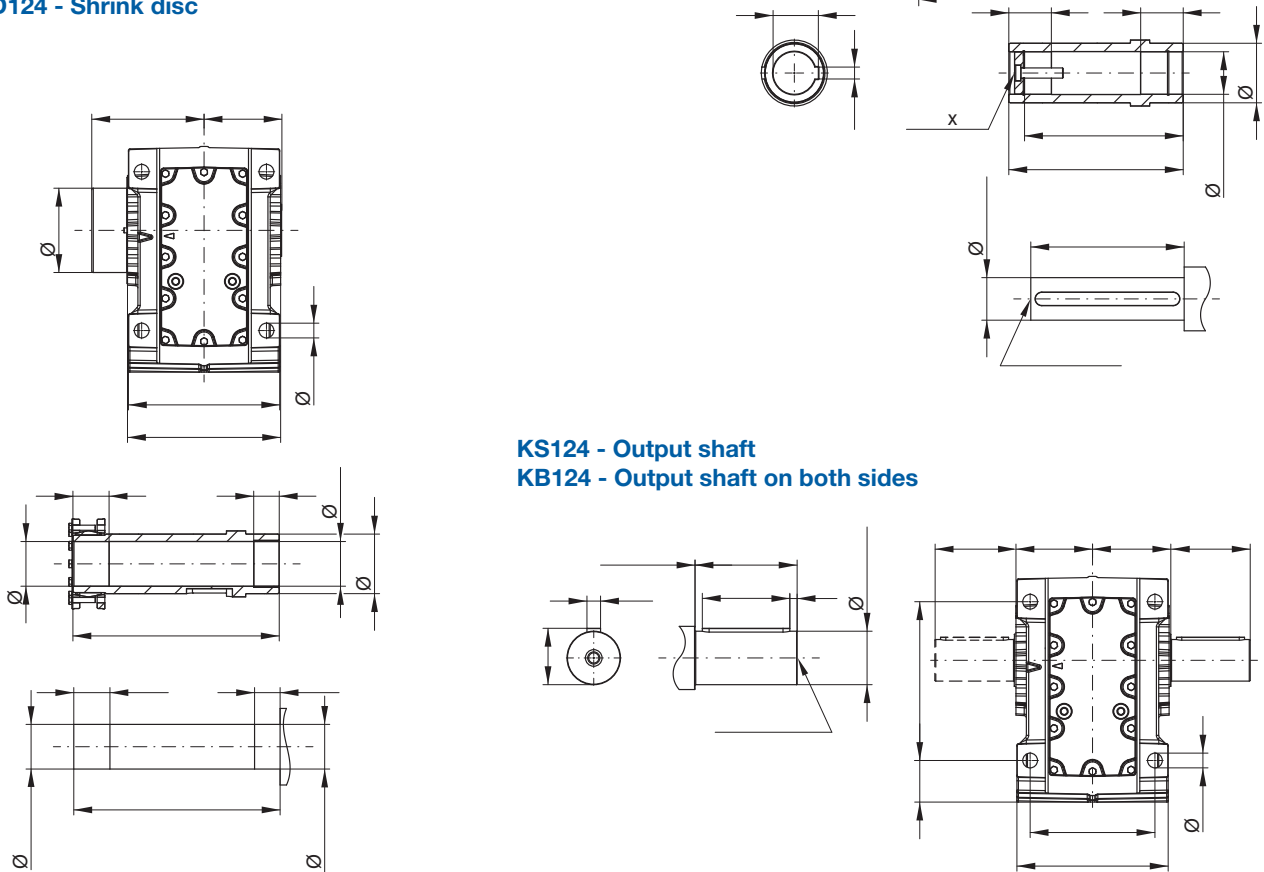
** Torque arm may be mounted on side A or side B.

KH124 - Hollow shaft

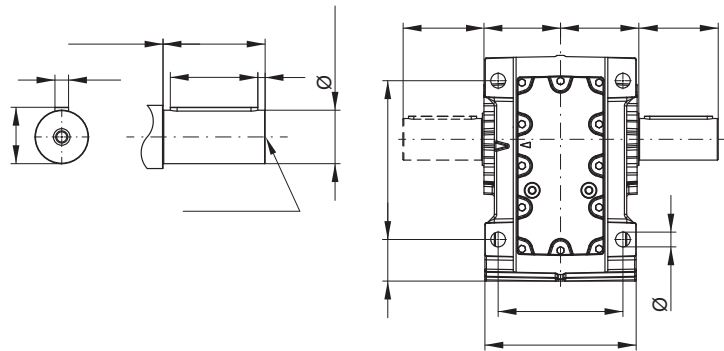


KD124 - Shrink disc

K



KS124 - Output shaft KB124 - Output shaft on both sides

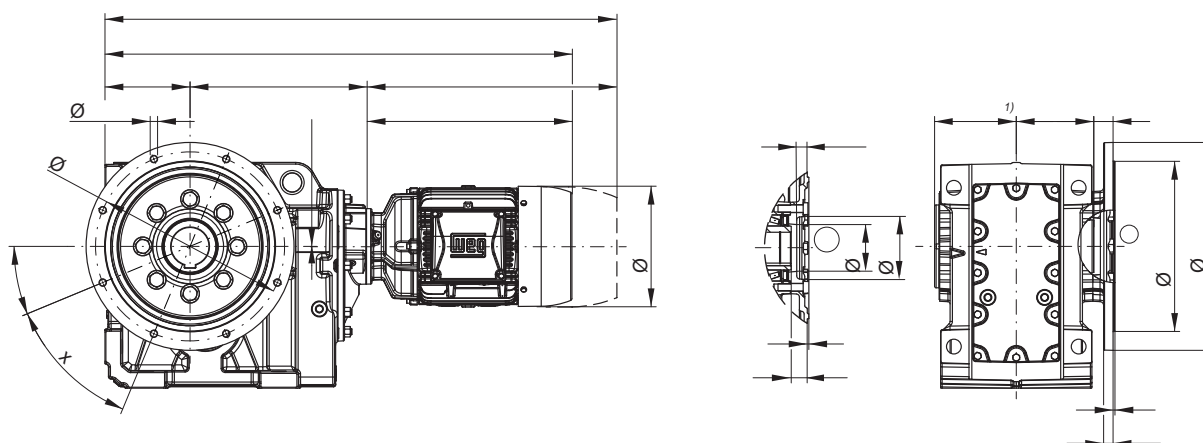


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L
Dimension AC	126	141	159	159	178	199	199	221	261	261	329	329
AD	128	136	145	145	155	165	165	185	205	205	266	266
k	896	930	938	962	980	1030	1068	1040	1105	1143	1237	1281
kB	940	979	996	1020	1053	1114	1152	1127	1223	1261	1361	1405
LB	204	238	246	270	288	338	376	348	413	451	545	589
LB1	248	287	304	328	361	422	460	435	531	569	669	713

Motor dimension sheets see page 496. Gear unit size K124 corresponds to motor flange FR-200. Description of motor lengths LB and LB1 see page 500.

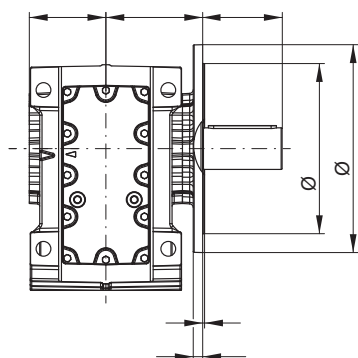
*Design KS(KB)/KF

KO124 - B5 flange execution with hollow shaft

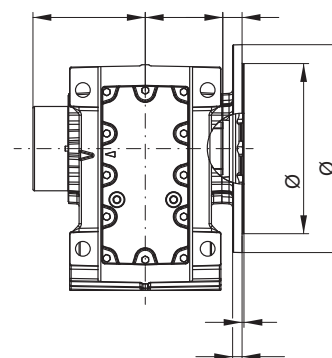


¹⁾ incl. hollow shaft protection cap

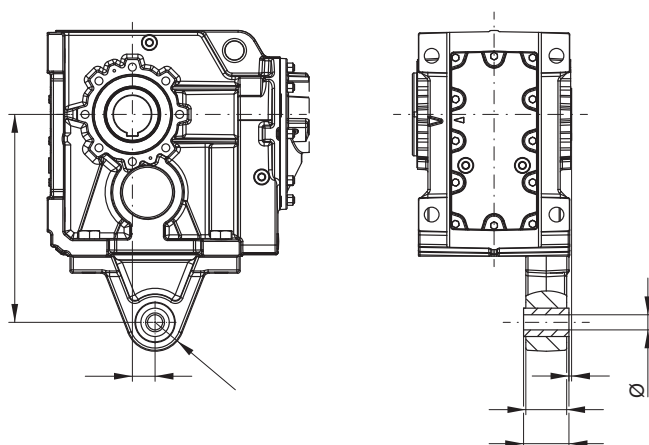
KF124 - B5 flange execution with output shaft



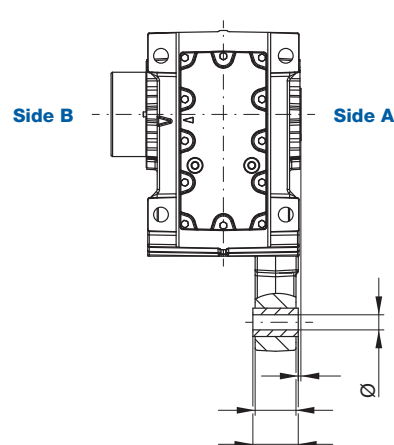
KP124 - B5 flange execution with hollow shaft and shrink disc



KT124 - Hollow shaft with torque arm **



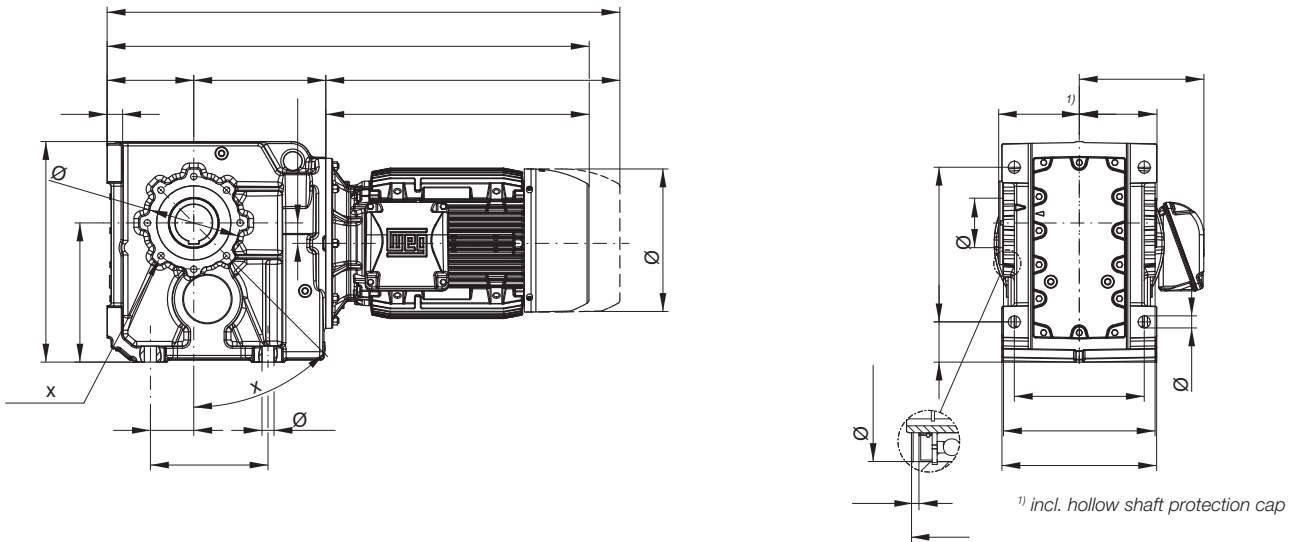
KU124 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

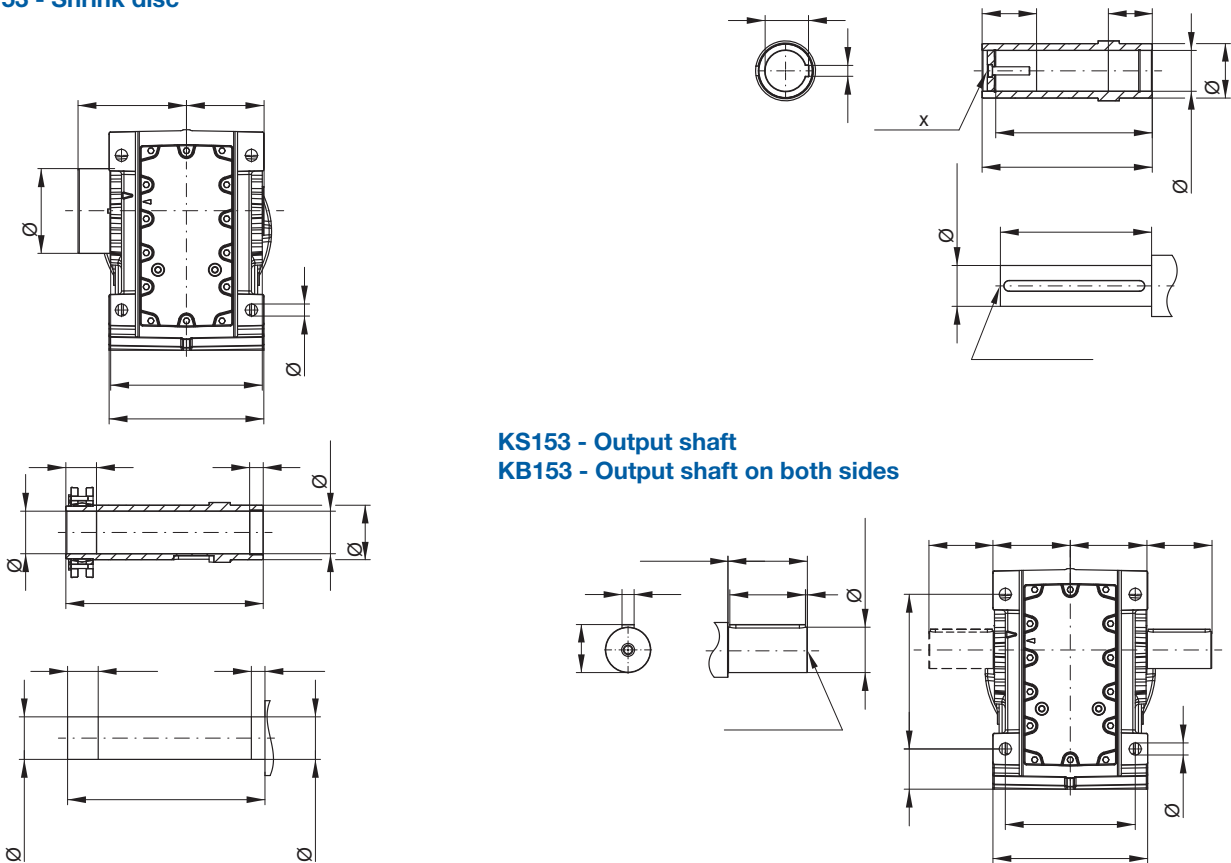
** Torque arm may be mounted on side A or side B.

KH153 - Hollow shaft

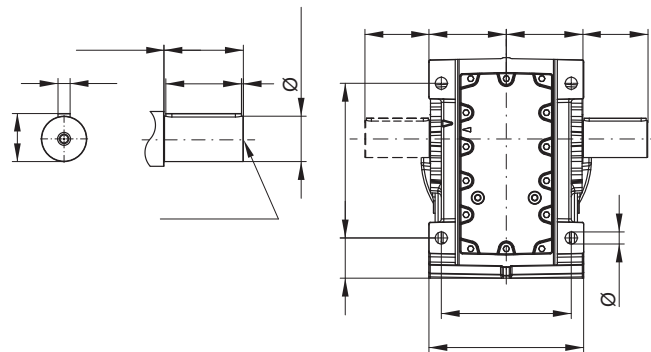


KD153 - Shrink disc

K



KS153 - Output shaft KB153 - Output shaft on both sides

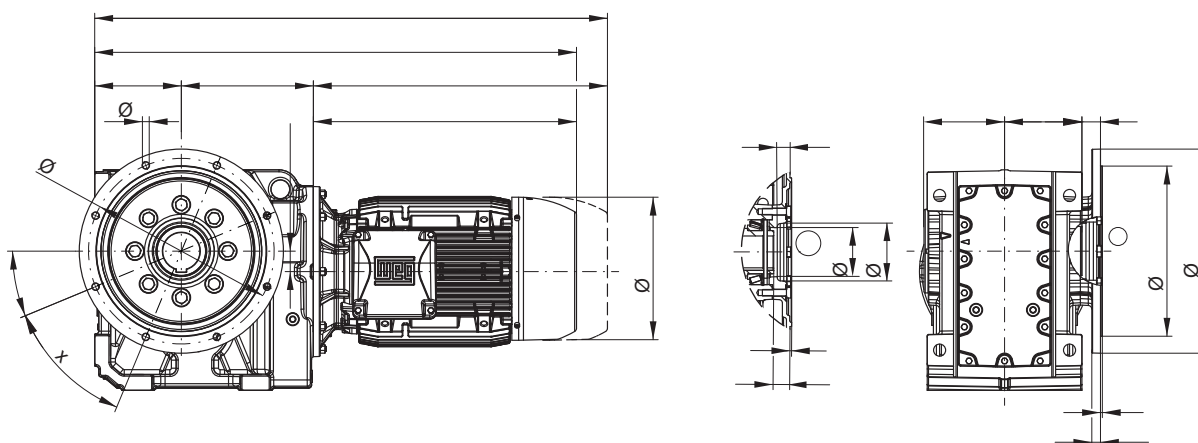


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L	225S/M	250S/M
Dimension AC	-	-	-	-	-	-	-	-	-	-	329	329	347	347	386	453	482
AD	-	-	-	-	-	-	-	-	-	-	266	266	281	281	317	385	403
k	-	-	-	-	-	-	-	-	-	-	1213	1257	1281	1319	1411	1519	1558
kB	-	-	-	-	-	-	-	-	-	-	1337	1381	1399	1437	1537	1637	1676
LB	-	-	-	-	-	-	-	-	-	-	506	550	574	612	704	812	851
LB1	-	-	-	-	-	-	-	-	-	-	630	674	692	730	830	930	969

Motor dimension sheets see page 496. Gear unit size K153 corresponds to motor flange FR-550. Description of motor lengths LB and LB1 see page 500.

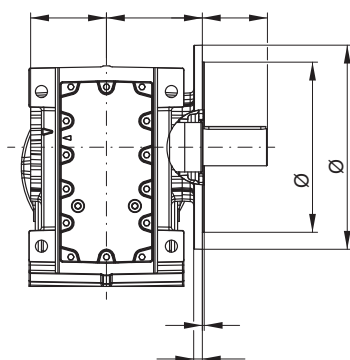
*Design KS(KB)/KF

KO153 - B5 flange execution with hollow shaft

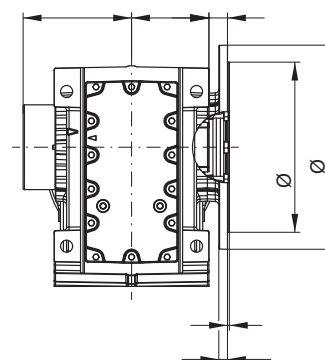


¹⁾ incl. hollow shaft protection cap

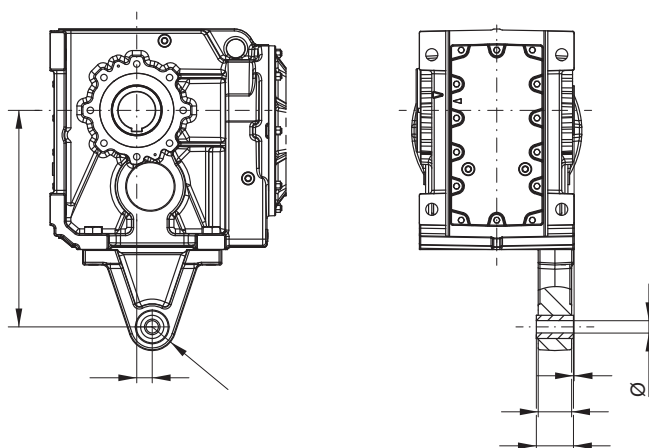
KF153 - B5 flange execution with output shaft



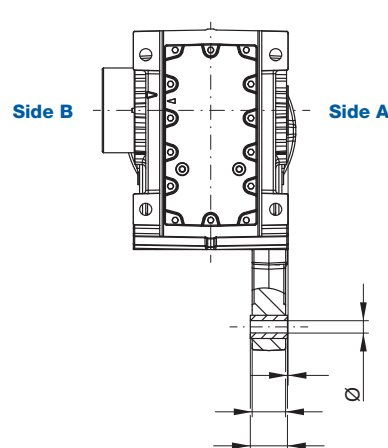
KP153 - B5 flange execution with hollow shaft and shrink disc



KT153 - Hollow shaft with torque arm **



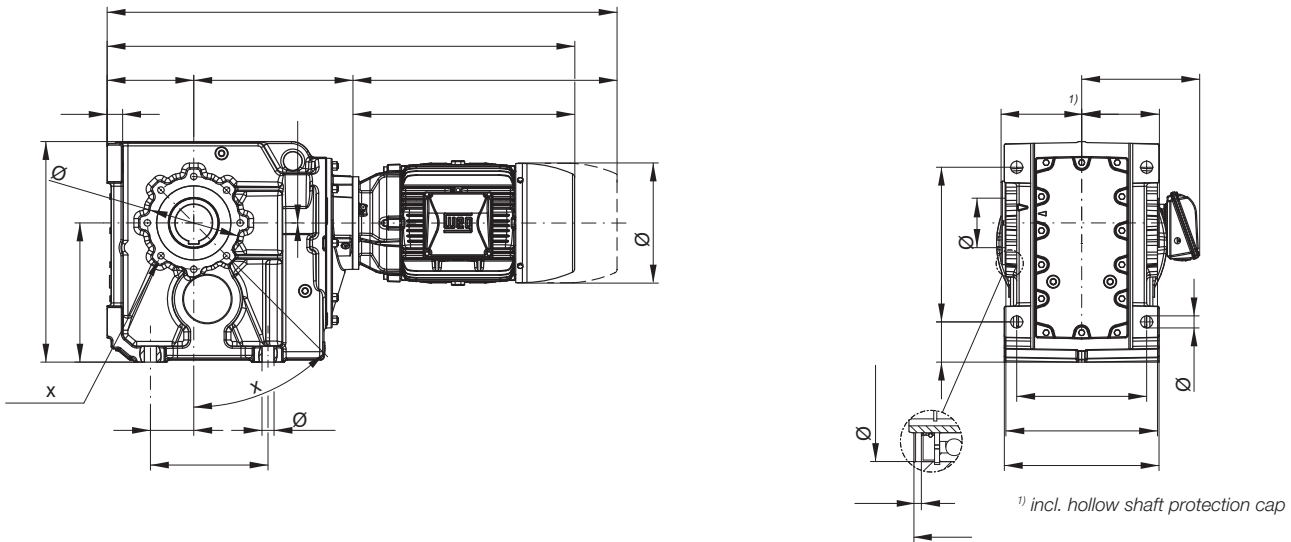
KU153 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

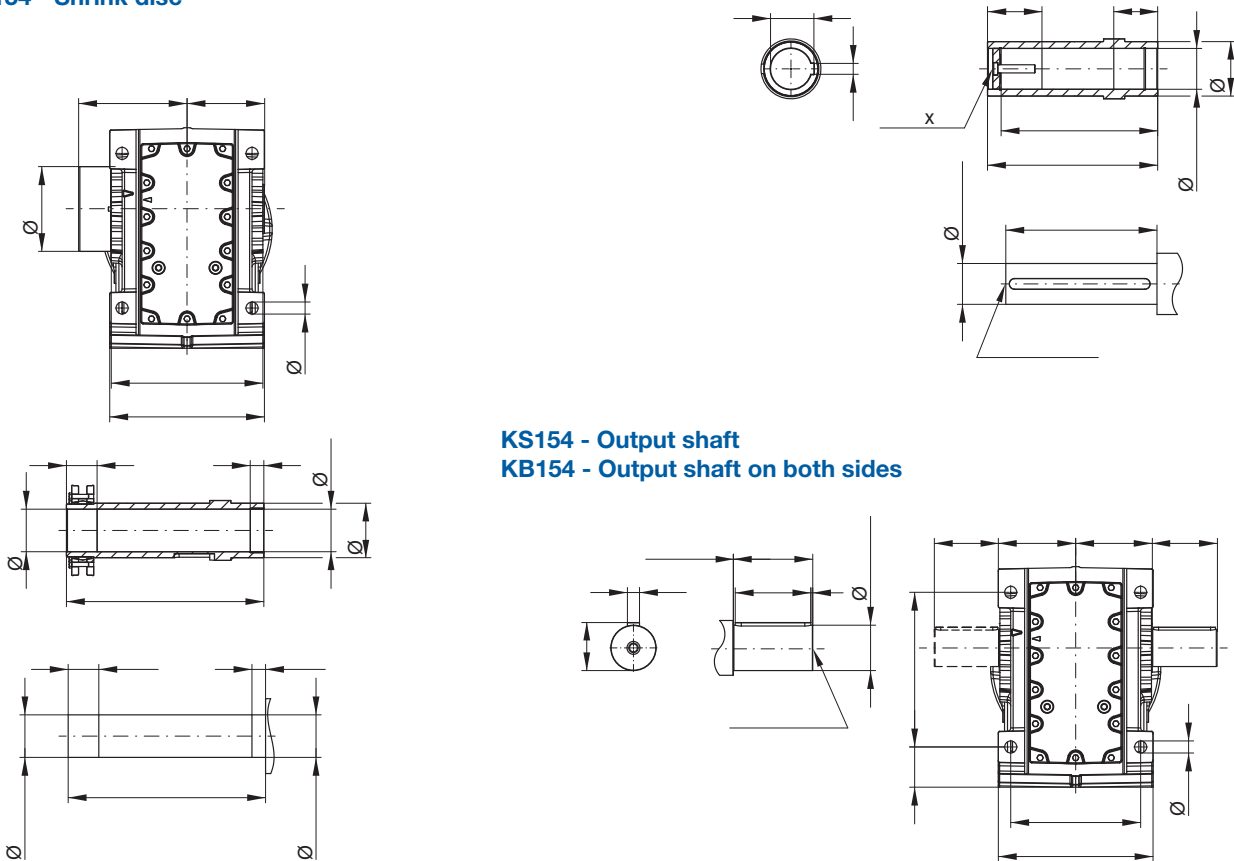
** Torque arm may be mounted on side A or side B.

KH154 - Hollow shaft

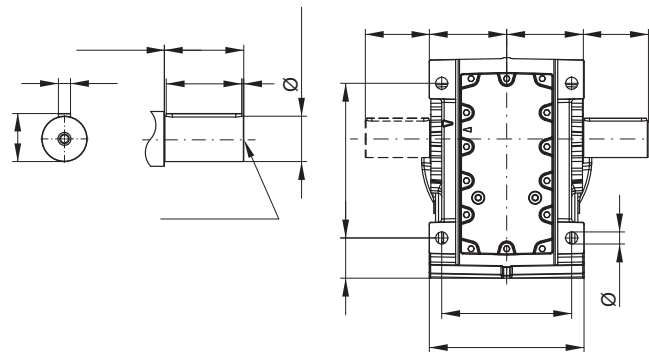


KD154 - Shrink disc

K



KS154 - Output shaft KB154 - Output shaft on both sides

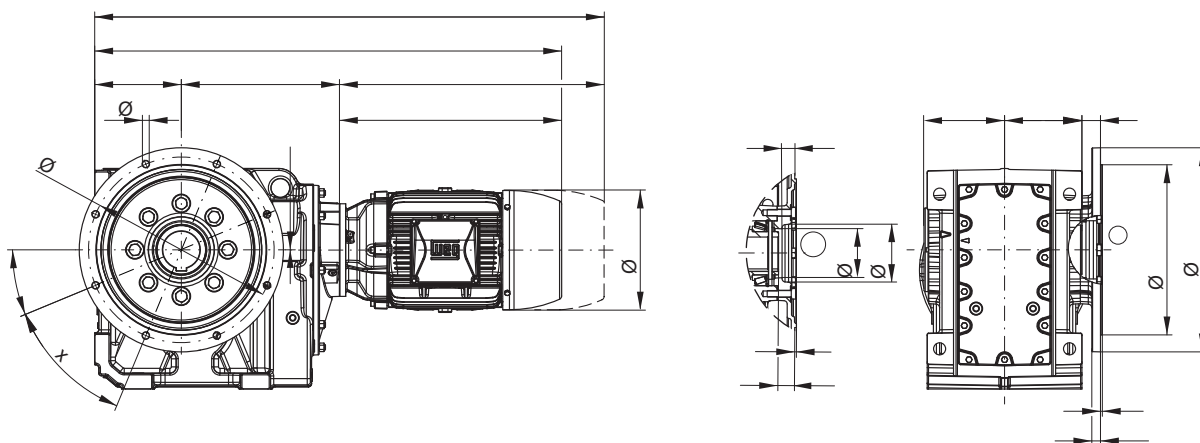


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M	160M	160L	180M	180L	200L
AC	126	141	159	159	178	199	199	221	261	261	329	329	347	347	386
AD	128	136	145	145	155	165	165	185	205	205	266	266	281	281	317
k	998	1032	1040	1064	1082	1132	1170	1142	1207	1245	1329	1373	1397	1435	1527
kB	1042	1081	1098	1122	1155	1216	1254	1229	1325	1363	1453	1497	1515	1553	1653
LB	204	238	246	270	288	338	376	348	413	451	535	579	603	641	733
LB1	248	287	304	328	361	422	460	435	531	569	659	703	721	759	859

Motor dimension sheets see page 496. Gear unit size K154 corresponds to motor flange FR-300. Description of motor lengths LB and LB1 see page 500.

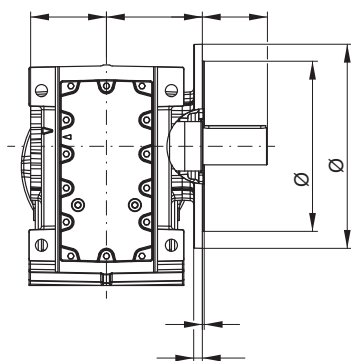
*Design KS(KB)/KF

KO154 - B5 flange execution with hollow shaft

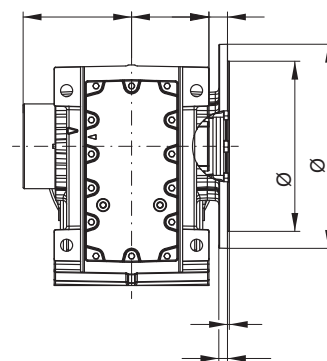


¹⁾ incl. hollow shaft protection cap

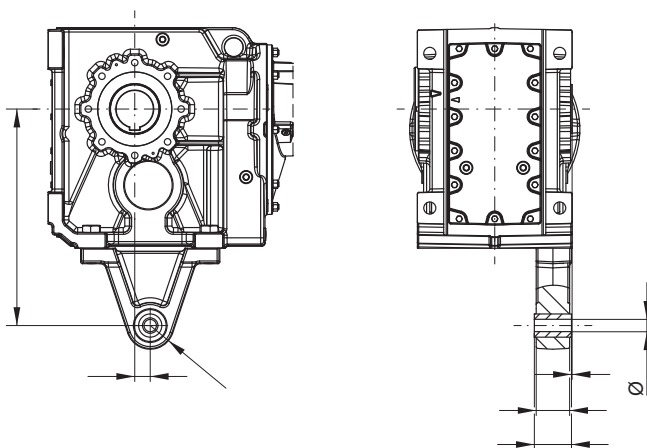
KF154 - B5 flange execution with output shaft



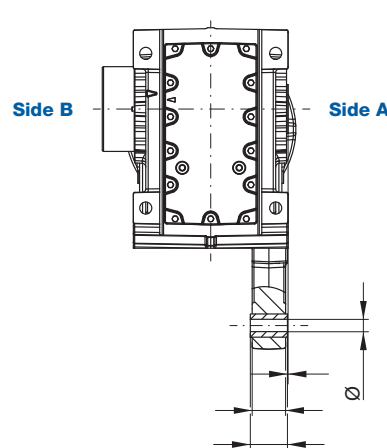
KP154 - B5 flange execution with hollow shaft and shrink disc



KT154 - Hollow shaft with torque arm **



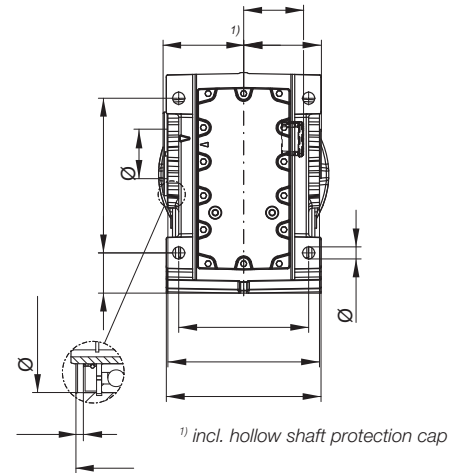
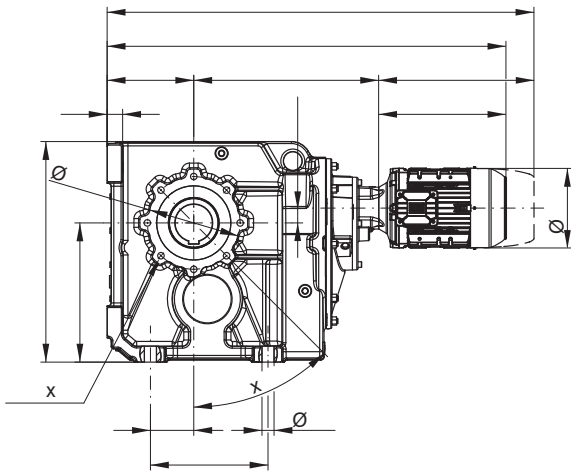
KU154 - Hollow shaft with shrink disc and torque arm **



Dimensions in mm.

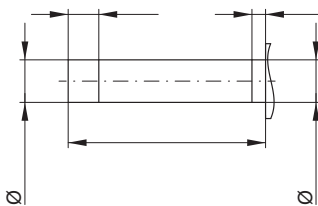
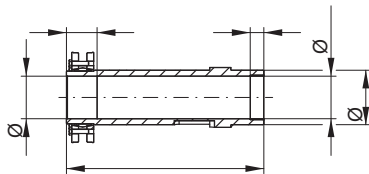
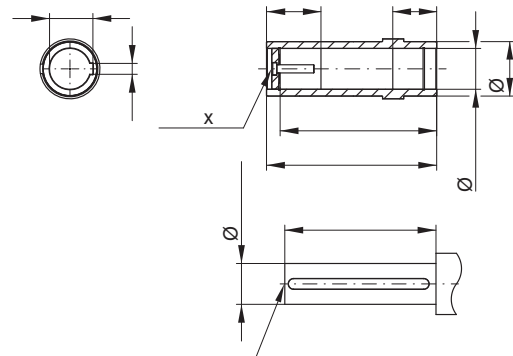
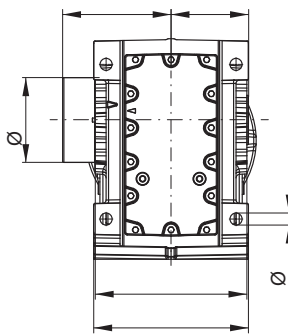
** Torque arm may be mounted on side A or side B.

KH155 - Hollow shaft

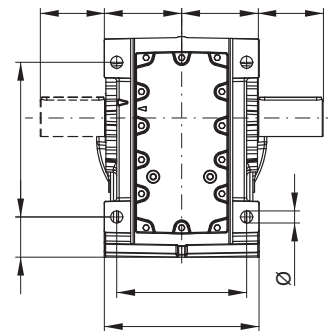
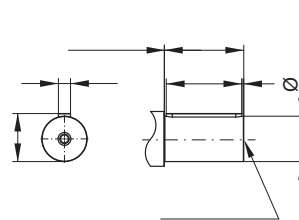


KD155 - Shrink disc

K



KS155 - Output shaft KB155 - Output shaft on both sides

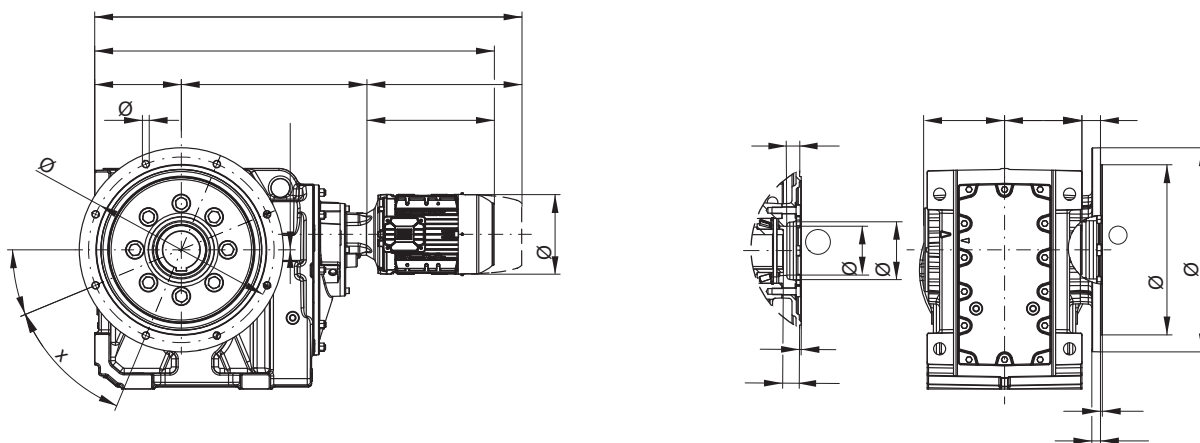


Motor fr.	63	71	80	L80	90S/L	100L	L100L	112M	132S,M	L132M
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
k	1083	1117	1125	1149	1167	1217	1255	1227	1292	1330
kB	1127	1166	1183	1207	1240	1301	1339	1314	1410	1448
LB	204	238	246	270	288	338	376	348	413	451
LB1	248	287	304	328	361	422	460	435	531	569

Motor dimension sheets see page 496. Description of motor lengths LB and LB1 see page 500.

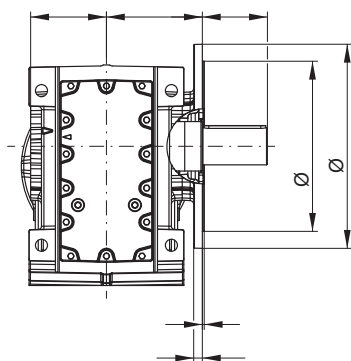
*Design KS(KB)/KF

KO155 - B5 flange execution with hollow shaft

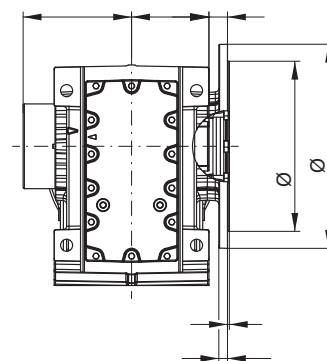


¹⁾ incl. hollow shaft protection cap

KF155 - B5 flange execution with output shaft

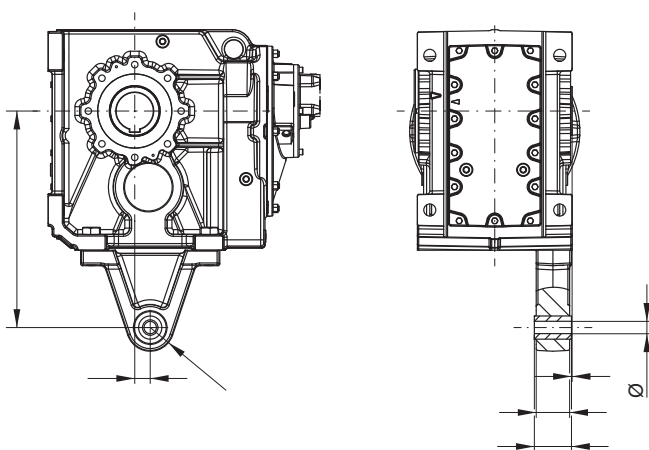


KP155 - B5 flange execution with hollow shaft and shrink disc

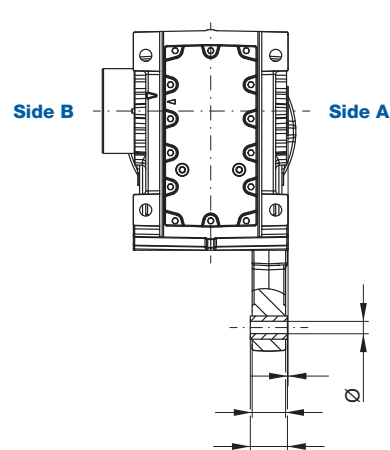


K

KT155 - Hollow shaft with torque arm **



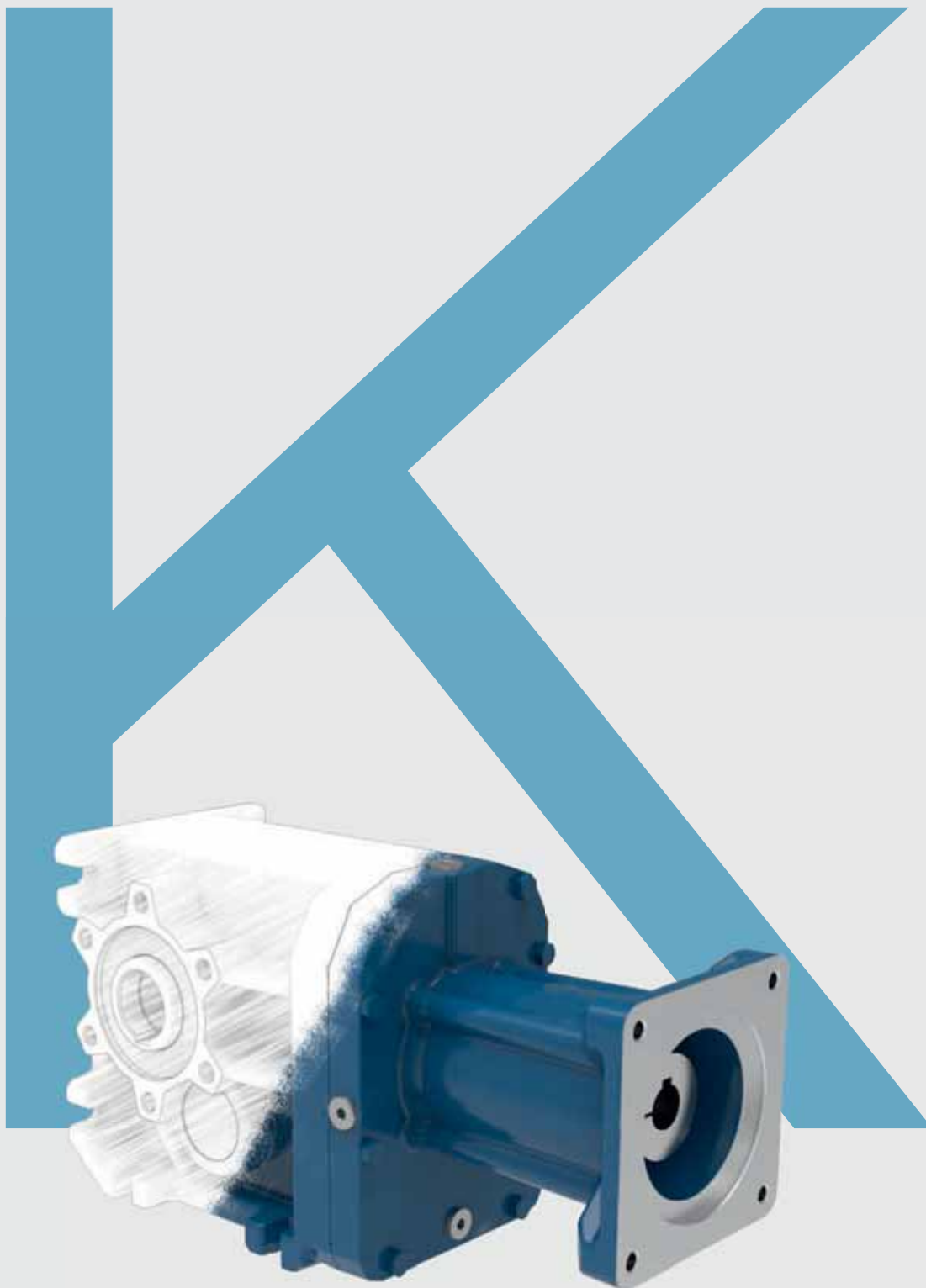
KU155 - Hollow shaft with shrink disc and torque arm **



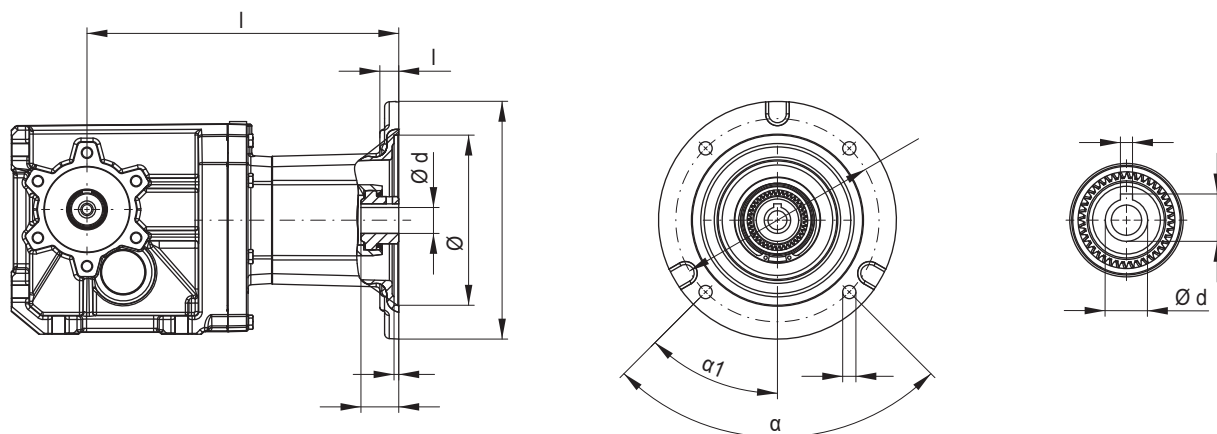
Dimensions in mm.

** Torque arm may be mounted on side A or side B.

Dimension sheets Input types



IEC Adapter I63 to I280



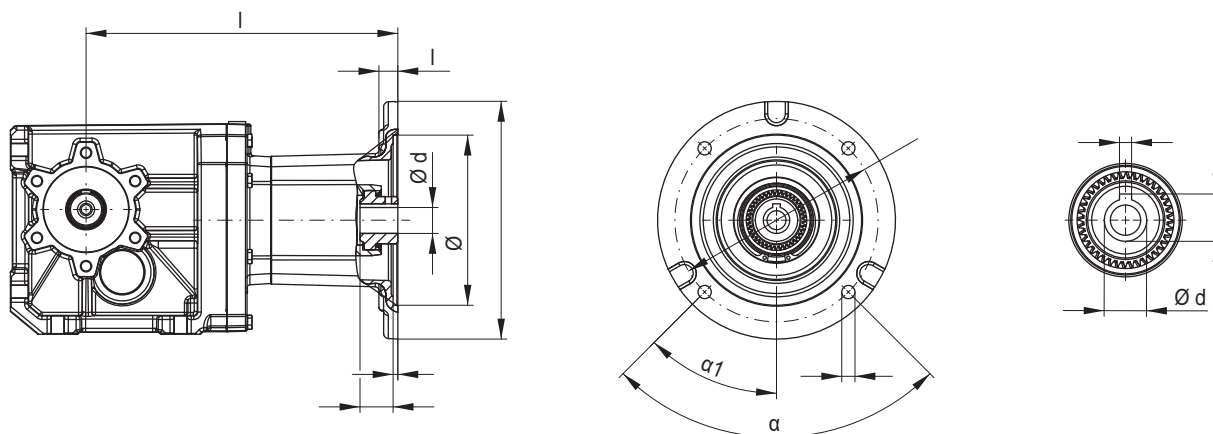
Type	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
p	154	154	200	200	250	250	300	350	350	400	450	550	550
n	95	110	130	130	180	180	230	250	250	300	350	450	450
la	22.5	10	13	13	15	20	15	35	35	20	20	20	20
m	115	130	165	165	215	215	265	300	300	350	400	500	500
t	4.5	4.5	4.5	4.5	5	5	5	5	5	5.5	5	5	5
s	M8x16	M8x10	11	11	13.5	13.5	13.5	17.5	17.5	17.5	17.5	17.5	17.5
α	90	90	90	90	90	90	90	90	90	90	45	45	45
α ₁	35	45	45	45	45	45	45	45	45	45	45	45	45
d	11	14	19	24	28	28	38	42	48	55	60	65	75
f	4	5	6	8	8	8	10	12	14	16	18	18	20
ga	12.8	16.3	21.8	27.3	31.3	31.3	41.3	45.3	51.8	59.3	64.4	69.4	79.9
E ¹⁾	25	32	43	47.5	63	100	85.5	111.5	111.5	114.5	140	146	146

¹⁾ Maximum motor shaft length for motors with key

Gear unit size	I63	I71	I80	I90	I100	I112	I132	I160	I180	I200	I225	I250	I280
	l												
K02	163.5	163.5	191.5	191.5	-	-	-	-	-	-	-	-	-
K03	190	190	218	218	249	-	-	-	-	-	-	-	-
K04	207.5	207.5	235.5	235.5	266.5	319.5	-	-	-	-	-	-	-
K05	218	218	246	246	277	330	341	-	-	-	-	-	-
K06	202.5	202.5	230.5	230.5	261.5	314.5	325.5	-	-	-	-	-	-
K07	232.5	232.5	260.5	260.5	291.5	344.5	355.5	441.5	-	-	-	-	-
K08	281.5	281.5	309.5	309.5	340.5	393.5	404.5	489	489	-	-	-	-
K09	301.5	301.5	329.5	329.5	360.5	413.5	424.5	509	509	537.5	-	-	-
K10	-	-	-	-	-	467.5	478.5	560.5	560.5	589	619	-	-
K12	-	-	-	-	-	516.5	527.5	609.5	609.5	638	668	757	757
K15	-	-	-	-	-	-	-	629.5	629.5	658	688	777	777

Dimensions in mm.

NEMA Adapter N56 to N364

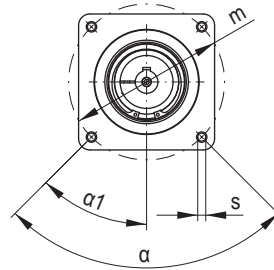
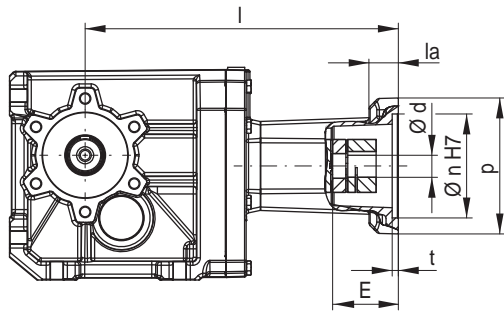


Type	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
p	170	170	250	250	300	225	280	350	400
n	114.3	114.3	215.9	215.9	215.9	215.9	266.7	317.5	317.5
la	13	13	10	16.8	10	30	35	15	15
m	149.225	149.225	184.15	184.15	184.15	184.15	228.6	279.4	279.4
t	4.5	4.5	5	3.2	5	5	3	5	5
s	11	11	14	14	14	14	14	16	16
α	90	90	90	90	90	90	90	90	90
α_1	45	45	45	45	45	45	45	45	45
d	15.875	22.225	28.575	28.575	34.925	41.275	47.625	53.975	60.325
f	4.775	4.775	6.350	6.350	7.950	9.525	12.700	12.700	15.875
ga	18.008	24.486	31.521	31.521	38.557	45.618	53.238	59.690	67.335
E	55	55	67.5	96.8	80.5	105.5	111.5	109.5	109.5

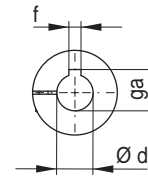
¹⁾ Maximum motor shaft length for motors with key

Gear unit size	N56	N143/145	N182	N184	N213/215	N254/256	N284/286	N324/326	N364
	l								
K02	191.5	191.5	-	-	-	-	-	-	-
K03	218	218	249	-	-	-	-	-	-
K04	235.5	235.5	266.5	319.5	-	-	-	-	-
K05	246	246	277	330	341	-	-	-	-
K06	230.5	230.5	261.5	314.5	325.5	-	-	-	-
K07	260.5	260.5	291.5	344.5	355.5	441.5	-	-	-
K08	309.5	309.5	340.5	393.5	404.5	489	492	-	-
K09	329.5	329.5	360.5	413.5	424.5	509	512	559.5	-
K10	-	-	-	467.5	478.5	560.5	563.5	611	626.5
K12	-	-	-	516.5	527.5	609.5	612.5	660	675.5
K15	-	-	-	-	-	629.5	632.5	695.5	695.5

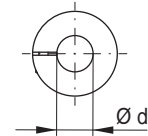
SERVO Adapter S92 to S190



Shaft with key



Smooth shaft



Typ	S92	S105	S114	S115	S130			S141	S142	S180	S189	S190							
p	101	144	144	144	144			144	144	197	197	197							
n	80	95	95	110	110			110	130	114,3	130	180							
la	17,5	31	31	31	31			31	31	35	32	38							
m	100	115	130	130	145			165	165	200	215	215							
t	6,5	6,5	6,5	6,5	6,5			6,5	6,5	6,5	6,5	6,5							
s	M6x12		M8x16	M8x16	M8x16			M8x16	M8x16	13,5	15	15							
α	90°		90°	90°	90°			90°	90°	90°	90°	90°							
α ₁	45°		45°	45°	45°			45°	45°	45°	45°	45°							
d ¹⁾	14	16	19	19	19	24	19	22	24	28	24	24	32	35	32	38	38		
f	5	5	6	6	6	8	6	6	8	8	8	8	10	10	10	10	10		
ga	16,3	18,3	21,8	21,8	21,8	27,3	21,8	24,8	27,3	31,3	27,3	27,3	35,3	38,3	35,3	41,3	41,3		
E ²⁾	46	46	34	67	67	54	67	54	76	63	63	63	54	63	63	66	74	60	87
E ³⁾	46	46	46	67	67	67	67	67	76	76	76	63	67	76	63	87	74	60	87

¹⁾ Other shaft diameters on request

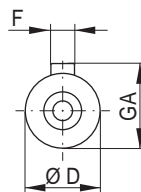
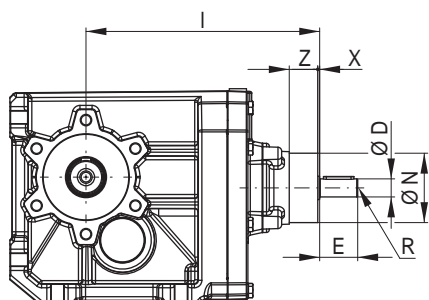
²⁾ Maximum motor shaft length for motors with key

³⁾ Maximum motor shaft length for motors with smooth shaft

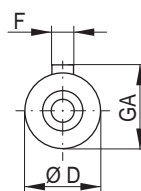
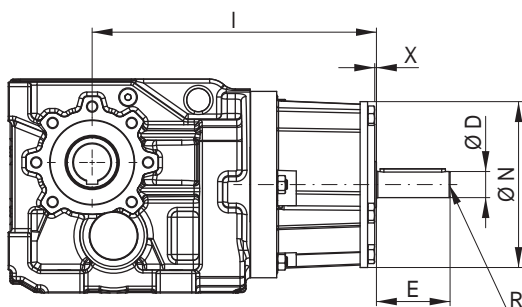
Gear unit size	S92	S105	S114	S115	S130	S141	S142	S180	S189	S190
	I									
K02	229	277	277	277	277	277	277	-	-	-
K03	255.5	303.5	303.5	303.5	303.5	303.5	303.5	-	-	-
K04	273	321	321	321	321	321	321	391.5	385.5	412.5
K05	283.5	331.5	331.5	331.5	331.5	331.5	331.5	402	396	423
K06	268	316	316	316	316	316	316	386.5	380.5	407.5
K07	298	346	346	346	346	346	346	416.5	410.5	437.5
K08	347	395	395	395	395	395	395	465.5	459.5	486.5
K09	367	415	415	415	415	415	415	485.5	479.5	506.5
K10	-	-	-	-	-	-	-	539.5	533.5	560.5
K12	-	-	-	-	-	-	-	588.5	582.5	609.5
K15	-	-	-	-	-	-	-	-	-	-

Dimensions in mm.

Input Unit U2, U3



Input Unit U5, U6, U7



Type	Input shaft [mm]						
	19x40	24x50	28x60	38x80	42x110	48x110	55x110
	U2	U3	U5			U6	U7
D	19	24	28	38	42	48	55
F	6	8	8	10	12	14	16
GA	21.5	27	31	41	45	51.5	59
E	40	50	60	80	110	110	110
N	73	101	178			235	290
X	2	2.5	1.9			6.5	4
Z	3	35	-			-	-
R	M6	M10	M10	M12	M16	M16	M20

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	< Ø 55 mm	k6
	≥ Ø 55 mm	m6

Gear unit size	Input shaft [mm]				
	19x40	24x50	28x60 38x80 42x110	48x110	55x110
	U2	U3	U5	U6	U7
	l				
K02	191.5	-	-	-	-
K03	218	-	-	-	-
K04	235.5	267.5	-	-	-
K05	246	278	-	-	-
K06	230.5	262.5	305	-	-
K07	260.5	292.5	335	-	-
K08	309.5	341.5	382.5	404.5	-
K09	329.5	361.5	402.5	424.5	-
K10	-	415.5	454	476	545
K12	-	464.5	503	525	594
K15	-	-	523	545	614





Modular System Motor





Terminal box designs
page 502



Brake systems
and back stops
page 505



Encoder systems
page 516



Ventilation systems
page 519





Motor series 14 and 11
with aluminium housing
(frame sizes 63 - 132)



Motor series 22
with cast iron housing
(frame sizes 160 - 250)



The modular motor system

Our motor system is an optimised and modularly designed kit. It includes harmonised modules like brakes, encoders, forced ventilation and connecting systems which are combined to the customer's requirements.

The significant advantage of this concept offers fast and reliable delivery times, not only to our local customers but also internationally, because WEG's competent sales network and assembling centres guarantee the availability of components worldwide.

Detailed description of the motor modules see from page 501.

The modular system motor

Three motor series are used for the modular system motor:

Multi-Voltage-Motor:

Motor series 14P (Aluminium), IEC frame sizes 63 to 80 (up to 0.55 kW)

Advantages

- Efficiency class: IE3
- Voltages:
 - 230/400 V - 50 Hz
 - 265/460 V - 60 Hz
- Frequency inverter operation up to 87/105 Hz
- Ambient temperature -20 bis +40 °C
- Nameplate with 50/60 Hz data
- Flexible adjustment of the terminal box
- Reinforced bearings (integral motor)
- Shaft system for immediate assembling of motor modules, like encoders, brakes, back stop, etc.
- Standard degree of protection IP55
- Thermal protection with bimetal switch and PTC thermistor
- Thermal class F
- System motor, prepared for flexible assembling of motor modules
- Certified for worldwide distribution: CE, UKCA, CSA, UL, EAC, CCC

EUSAS®-Motor:

Motor series 11P (Aluminium), IEC frame sizes 80 to 132 (0.75 - 9.2 kW)

Motor series 22P (Cast iron), IEC frame sizes 160 and 250 (11-75 kW)

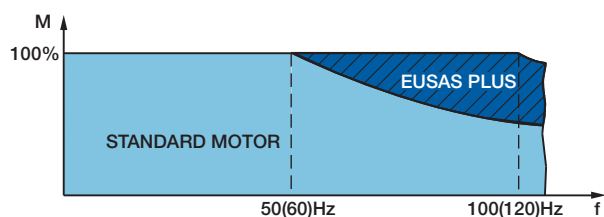
Advantages

- Efficiency class: IE3
- Wide-range winding
- Voltage switchable to all common world voltages (rated voltage):
 - 115-460 V - 50/60 Hz up to frame size 100
 - 200-690 V - 50/60 Hz frame sizes 112 to 250
- Frequency inverter operation 100/120 Hz
- Ambient temperature -20 bis +40 °C
- Nameplate with 50/60 Hz data
- Flexible adjustment of the terminal box
- Reinforced bearings (integral motor)
- Shaft system for immediate assembling of motor modules, like encoders, brakes, back stop, etc.
- Standard degree of protection IP55
- Thermal protection with bimetal switch and/or PTC thermistor
- Thermal class F
- System motor, prepared for flexible assembling of motor modules
- Certified for worldwide distribution: CE, UKCA, CSA, UL, EAC

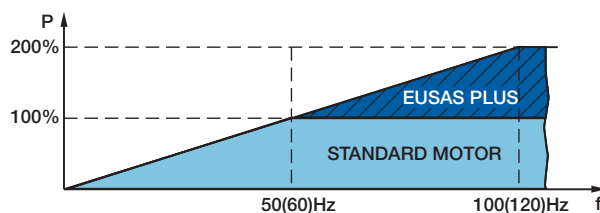
The ideal motor for frequency inverter operation

Switchable to 100/120 Hz. Simply switch over and use the double output.

The excellent combination of the modular system motor and variable speed drives by WEG (type CFW for various applications and decentralised motor drive MW500) enables drive systems with wide speed range.



Rated torque up to double rated speed



Two times rated power at double rated speed

Type code

11P-EX-L100L-04F-LT-TH-SH-K1-KB-MIP-BR..-SG-FL-SD

1 2 3 4 3 5 6 7 8 9 10 11 12 13 14 15 16

- 1** Motor series: 14P = Aluminium motor in energy efficiency class IE3, frame sizes 63 - 80 (up to 0.55 kW)
11P = Aluminium motor in energy efficiency class IE3, frame sizes 80 - 132 (0.75 - 9.2 kW)
22P = Cast iron motor in energy efficiency class IE3, frame sizes 160 - 250 (11 - 75 kW)
- 2** ATEX execution: when operated in explosive atmospheres, see page 484
- 3** Stator length: L.
.S
.S/L
.S/M
.M
.L
- 4** IEC frame size: 63 132
71 160
80 180
90 200
100 225
112 250
- 5** Number of poles: 04 = 4 poles
06 = 6 poles
- 6** Power indicator: D
E
F
G
- 7** High/Low temperature execution: see page 501
- 8** Temperature control: see page 501
- 9** Anti-condensation heating: see page 501
- 10** Climatic protection: see page 502
- 11** Drain: see page 502
- 12** Terminal box designs: see page 502
- 13** Brake systems, back stop: see page 505
- 14** Encoder systems: see page 516
- 15** Ventilation systems: see page 519
- 16** Additional modules: see page 521

Options

1. Basic execution

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250			
Switchable voltage (4 connections)	-	484															
Temperature controller for switch off (+155 °C)	TH	501															
PTC thermistor protection for switch off (+155 °C)	TF	501															
Thermal class F (up to +155 °C)	-	484															
Fixed bearing NDE	-	-															
Fixed bearing DE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Degree of protection IP55	-	17															
Certifications (CE, UKCA, EAC, UL, CSA: all / *CCC: up to 0.55 kW)	-	-	*	*	*												

2. Electrical options

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250			
Special voltage SPECI-Volt	-	484															
Temperature controller for warning and switch off	2TH	501															
PTC thermistor protection for warning and switch off	2TF	501															
Temperature sensor KTY	KTY	501															
Temperature sensor Pt100	-	-															
Anti-condensation heating 230 V	SH	501	-														
Thermal class H (up to +180 °C)	-	-															

3. Mechanical options

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250			
Degree of protection IP56	-	17															
Degree of protection IP65	-	17															
Degree of protection IP66	-	17															
Degree of protection IP67	-	17															
High temperature execution (max. +80 °C ambient temperature)	HT	501															
Low temperature execution	LT	501															
ATEX zone 2+22: II 3G Ex ec IIC T3 Gc / II 3D Ex tc IIIC T125°C Dc	EX	484															
Humidity protection K1	K1	502															
Corrosion protection K2	K2	502															
Drain	KB	502															
Multipin box	MIP	502															
Multi-plug-connect systems	MIG..	503													-	-	-
Multi-plug-connect system for forced ventilation	MIG10-FL	503															
Non-ventilated without NDE shaft end	U	520															
Non-ventilated with NDE shaft end	UW	520															
Different position of the terminal box	-	-															
Relubrication	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	Standard		Special execution (on request)
	Optional		Not available

4. Options - motor modules

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250			
Spring loaded brake - IP55, 24 V	BR..	509															
Spring loaded brake - IP55, 102 V	BR..	509															
Spring loaded brake - IP55, 190 V, 195 V	BR..	509															
Double spring loaded brake in low noise execution	BBRHGD..	510	-														
Totally closed spring loaded brake - IP66	BRGH..	511	-														
Manual release for brake	(BR)H..	509	1)														
Locking device for manual release	(BR)HA..	509	1)														
Corrosion protection IP55 for brake	(BR)R..	509															
Dust protection IP65 for brake	(BR)S..	509	1)														
Corrosion and dust protection IP65 for brake	(BR)SR..	509	1)														
Brake in low noise execution	(BR)GD..	509	-														
Micro switch	(BR)M	509	2)	2)	2)												
Anti-condensation heating for brakes	-	511	-	-													
Fast excitation rectifier	-	513															
Back stop KKM	KKM	516					-	-	-	-	-	-	-	-	-	-	-
Back stop RSM	RSM	516	-	-	-	-											
Encoder outside the fan cover	I.	516															
Encoder inside the fan cover	S.	516	-														
Encoder (1024 pulses, HTL/TTL, IP66)	.G	517	I.	S.													
Mating plug for encoder without cable	-	-	I.	S.													
Mating plug for encoder with cable	-	-	I.	S.													
SINCOS encoder	.C	517	-	-													I. S.
Resolver	.R	517	-													-	-
Special encoder	.A	518															
SSI multiturn encoder	SS	517	-														
Heavy Duty encoder	SV	518	-	-	-												
Forced ventilation (TEFV)	FL	519															
Fly wheel fan	ZL	520	-									-	-	-	-	-	-
Hand wheel	HR	521	-														
Protection cap	SD	521															
Protection cap for encoders	ID	521	-	-	-												
Second shaft end - module shaft	ZWM	522	-														
Second shaft end - solid shaft	ZWV	522														-	-

5. Additional options

Description	Key	Page	IEC frame size														
			63	71	80	90	100	112	132	160	180	200	225	250			
Special nameplate (aluminium)	-	-															
Second nameplate (not fixed, aluminium or stainless steel)	-	-															
Metal fan	ZM	520															
Vibration severity grade "B" (reduced) according to DIN IEC 60034-14	-	484															
Wide range grease (-40 °C to +175 °C)	-	-															

1) not possible with 2 Nm brake

2) Micro switch not possible for totally closed brakes at 2 and 5 Nm

	Standard		Special execution (on request)
	Optional		Not available

General information

Frame size		63	71	(L)80	90S/L	(L)100L	112M	(L)132M,S	160M,L	180M,L	200L	225S/M	250S/M	
Mechanical features														
Mounting form		B14R						B5R						
Housing material		aluminium EN AC-46100						cast iron EN GJL-200						
Degree of protection		IP55												
Grounding		simple grounding - one inside the terminal box										double - in the terminal box and on the frame		
Cooling method		fan - IC411 (TEFC)												
Fan material		polypropylen										aluminium		
Fan cover material		sheet steel												
Endshields material		aluminium EN AC-46100 *						cast iron EN GJL-200						
Drain		rubber drain plug												
Bearings	Locking	without bearing cap with circlip - NDE						without bearing cap with circlip - DE			internal + external bearing cap and spring washers - NDE			
	DE	6203 ZZ	6204 ZZ	6205 ZZ	6305 ZZ	6207 ZZ	6307 ZZ	6309 ZZ	6309 ZZ-C3	6312 ZZ-C3	6314 ZZ-C3	6314 ZZ-C3	6316 ZZ-C3	
	NDE	6201 ZZ	6203 ZZ	6203 ZZ	6205 ZZ	6206 ZZ	6206 ZZ	6308 ZZ	6209 ZZ-C3	6211 ZZ-C3	6212 ZZ-C3	6314 ZZ-C3	6314 ZZ-C3	
Shaft seal	Type	radial shaft seal												
	DE	17x30x7	20x30x7	25x40x7	25x40x7	35x52x7	35x52x7	45x60x8	45x60x8	60x90x10	60x90x10	70x90x10	70x90x10	
	NDE	12x22x7	17x28x5	17x28x5	25x35x7	30x40x4	30x40x4	40x56x8	45x62x7	55x70x8	60x75x8	70x85x8	70x85x8	
	Material	NBR												
Lubrication	Type of grease	Mobil Polyrex EM												
	Grease fitting	without grease fitting												
Terminal block		6 poles						9 poles						
Terminal box material		aluminium EN AC 47000						cast iron EN GJL-200						
Cable entry	Main	2 x M25x1.5				2 x M32x1.5		2 x M40x1.5		2 x M50x1,5		2 x M50x1,5		2 x M63x1,5
	Accessory	2 x M16x1.5												
	Plug	threaded plug for transport and storage; cable gland optional												
Shaft material		1.0511/1.1191 – C40/C45E – AISI 1040/45										1.7225 - 42CrMo4 - AISI 4140		
Direction of rotation		both directions												
Vibration		class A												
Nameplate material		stainless steel 1.4301 (AISI 304)												
Flange		FC-120				FC-160				FR-200 FR-250 FR-300 FR-400 FR-550	FR-250 FR-300 FR-400 FR-550	FR-300 FR-400 FR-550	FR-400 FR-550	FR-550
Electrical features														
Power [kW] 4 poles		0.12 - 0.18	0.25 - 0.37	0.55 - 0.75	1.1 - 1.5	2.2 - 3.0	4.0	5.5 - 9.2	11.0 - 15.0	18.5 - 22	30	45 - 55	75	
Power [kW] 6 poles		0.12	0.18	0.25 - 0.55	0.75	1.1 - 1.5	2.2	3.0 - 5.5	-	-	-	-	-	
Efficiency class		IE3												
Design		N												
Voltage / Frequency	Δ	230 V (50Hz) 265 V (60Hz)						400 V (50 Hz) 460 V (60 Hz)						
	ΔΔ	115 V (50 Hz) ¹⁾ 132 V (60Hz) ¹⁾						200 V (50 Hz) 230 V (60 Hz)						
	Y	400 V (50 Hz) 460 V (60 Hz)						690 V (50 Hz) -						
	YY	200 V (50 Hz) ¹⁾ 230 V (60 Hz) ¹⁾						346 V (50 Hz) 400 V (60 Hz)						
Winding	Impregnation	dip										continuous flow impregnation		
	Insulation class	F (DT 80K)												

* Except frame sizes L100L and L132M: endshield (NDE) made from cast iron EN GJL-200

¹⁾ Not possible for motors up to 0.55 kW

1. Nameplate

The stainless steel plate is fixed on the frame and bears data for 50 Hz and 60 Hz. The information on the nameplate contains all relevant specifications of the product (see examples for motor frame sizes 80, 132 and 180).

WEG W21		EFF(100%) 80Hz GB18113-2020 80.8 Q/32049W001-2020		15687478	
Electric Motor		CCC			
~ 3 W21-AL80-04					
IP55 INS CL F ΔT 80 K S1 SF 1.00 AMB 40°C					
V	Hz	kW	RPM	A	PF
220 Δ / 380 Y	50	0.55	1430	2.16 / 1.25	0.83
230 Δ / 400 Y			1440	2.14 / 1.23	0.80
240 Δ / 415 Y			1445	2.13 / 1.23	0.77
- / 460 Y	60		1745	- / 1.09	0.78
IEC 60034-1					
NEMA Eff 81.1% 0.75HP 460 V 60Hz 1745 RPM 1.09 A PF 0.78 DES A CODE M SF 1.00					
MOBIL POLYREX EM 11 kg					
2753 Markt Piesting, Austria MOD.TE01A0X0\$000030344					

WEG W21		14447191	
Electric Motor			
~ 3 AL132S-04			
IP55 INS CL F ΔT 80 K S1 SF 1.00 AMB 40°C			
V	Hz	kW	RPM
200 Δ / 346 Y Y	50	5.5	1465
400 Δ / 690 Y			1765
230 Δ / 400 Y Y	60		1765
460 Δ / -			1765
50Hz	IE3	90.7 (100%)	90.7 (75%) 90.0 (50%)
60Hz		91.7 (100%)	91.0 (75%) 88.5 (50%)
CE EAC Energy Efficient c UL 3PT9 US LISTED			
IEC 60034-1 MOD.TE01A0X0\$0000302360			
NEMA Eff 91.7% 7.5HP 460 V 60Hz 1765 RPM 9.07 A PF 0.83 DES A CODE K SF 1.15 CC029A			
MOBIL POLYREX EM 53 kg			
2753 Markt Piesting, Austria			

WEG W22 Premium		MODEL M430220018G48R30010G	
		MOD.TE1BF0X0\$ IEC 60034-1	
~ 3 180L-04		IP55 INS CL F ΔT 80 K S1 SF 1.00 AMB 40°C	
V	Hz	kW	RPM
200 Δ / 346 Y Y	50		1470
400 Δ / 690 Y			1775
230 Δ / 400 Y Y	60		1775
460 Δ / -			1775
MOBIL POLYREX EM		2753 Markt Piesting, Austria	
NEMA Eff 93.6% 30HP 460 V 60Hz 1775 RPM 36.0 A PF 0.82 Des A Code K SF 1.00 CC029A		Alt 1000 m.a.s.l. 192 kg	

2. Voltage and frequency fluctuations

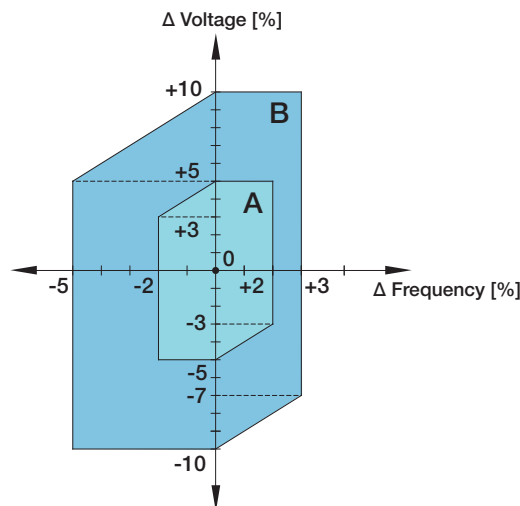
According to DIN EN 60034-1, a distinction is made between range A and range B (outside A) for voltage and frequency fluctuations. Range A and range B describe the permissible range in which frequency and voltage levels are permitted to deviate from the relevant measurement point (see illustration). The coordinate mean point "0" identifies the measurement point for the frequency and voltage in each case. The motor must be able to issue the rated torque in both ranges A and B.

Range A

In continuous operation in range A, the characteristics are permitted to vary from the rated operation, and the heating at the limits of range A can be around 10 K higher.

Range B

The deviations from the characteristics are permitted to be greater than in range A, the heating levels can be higher than at the measurement point. Duration and frequency of operation in range B should be limited. Corrective measures, e.g. power reduction, should be provided. If a machine has multiple rated voltages or a rated voltage range, the permissible voltage and frequency fluctuations apply for each individual value of the rated voltage.



Ranges A and B according to DIN EN 60034-1

3. Modes of operation

Duty type according to DIN EN 60034-1 and VDE 0530-1.

The duty type is designated by the abbreviations S1 to S10. For the duty types S4, S5 and S7 the duty cycles/hour (c/h) and the factor of inertia F_I should also be stated at the bottom.

The factor of inertia F_I is the ratio of the total load moment of inertia (referred to the motor shaft) and the motor moment of inertia, to the motor moment of inertia, i.e.

$$F_I = \frac{\sum J_{\text{ex,red}} + J_{\text{mot}}}{J_{\text{mot}}}$$

Definition		Example
S1	Continuous running duty with constant load	S1
S2	Short-time duty with constant load Duration of operation under rated conditions (recommended values: 10, 30, 60 or 90 min)	S2 10 min
S3	Intermittent periodic duty. Motor temperature not affected by starting operation Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Cycle duration (10 min unless otherwise stated)	S3 25 % 60 min
S4	Intermittent periodic duty. Motor temperature affected by starting operation Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Indication of the duty cycles per hour and of the factor of inertia F_I	S4 40 % 200, $F_I=2$
S5	Intermittent periodic duty. Motor temperature affected by starting operation and electric braking Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Indication of the duty cycles per hour and of the factor of inertia F_I	S5 15 % 300, $F_I=1$
S6	Continuous operation periodic duty. Cyclic duration factor (recommended values: 15, 25, 40 or 60 %): Cycle duration (10 min unless otherwise stated)	S6 25 % 60 min
S7	Continuous operation with starting and electric braking Indication of the duty cycles per hour and of the factor of inertia F_I	S7 200, $F_I=1$
S8	Continuous operation with related load/speed changes (Sequence of similar cycles) Speeds during the duty cycle Periods for which these speeds are maintained during the duty cycle Indication of the factor of inertia F_I	S8 3000 ^{min-1} , 10 min 1500 ^{min-1} , 15 min $F_I=1.5$
S9	Continuous operation duty with unrelated load/speed changes	S9
S10	Duty with discrete constant loads and speed	S10 $F_I=0.6$

Legend see page 512.

4. Rated power according to VDE 0530-1

The listed rated power of the motor corresponds to the output power according to VDE 0530-1 for continuous operation S1, frequency 50/60 Hz, max. ambient temperature +40 °C, max. altitude 1000 m above sea level.

According to this standard at rated values (voltage and frequency) the motors may be overloaded for two minutes by 1.5 times the rated current, without damage of the winding.

The motors are calculated by rated values according to thermal class B, but produced in class F and by operation with rated values fit for higher loads:

- At rated power and rated voltage the ambient temperature may be increased from +40 °C to +60 °C.
- Provided that ambient temperature does not exceed +40 °C, the normal capacity in continuous operation can be increased by appr. 10 %.

All technical data stated applies to rated frequency of 50 Hz and supply voltage of 400 V rated voltage at rated power. If the load changes, the stated values will deviate to higher or lower.

5. Power correction factors

S2			
Time [min]	Motor frame size	Poles	
		2	4-8
15	63 - 132	1.20	1.25
30		1.05	1.10
60		1.00	1.00
15	160 - 200	1.40	1.45
30		1.20	1.25
60		1.10	1.10
15	225 - 250	1.45	1.45
30		1.30	1.30
60		1.15	1.15

- Factors for low voltage safe area motors with insulation class F/B ($\Delta T80K$)
 - The breakdown torque should be at least 30 % higher than factors

S3			
DC [%]	Motor frame size	Poles	
		2	4-8
15	63 - 132	1.15	1.40
25		1.10	1.30
40		1.05	1.20
60		1.03	1.10
15	160 - 200	1.30	1.40
25		1.20	1.30
40		1.10	1.20
60		1.05	1.10
15	225 - 250	1.35	1.40
25		1.25	1.30
40		1.15	1.20
60		1.05	1.10

S6			
DC [%]	Motor frame size	Poles	
		2	4-8
15	63 - 132	1.20	1.30
25		1.15	1.25
40		1.10	1.20
60		1.05	1.15
15	160 - 200	1.25	1.30
25		1.20	1.25
40		1.15	1.20
60		1.10	1.15
15	225 - 250	1.30	1.35
25		1.25	1.30
40		1.15	1.25
60		1.10	1.15

6. Torque

The motors are fitted with squirrel-cage rotors suitable for direct online starting. The values of starting torque and breakdown torque, expressed as a multiple of the rated torque, are given in the performance data. A deviation in the voltage from rated value changes the torques as an approximate function of the square of the voltages.

7. Efficiency class

Standard IEC 60034-30 defines uniform efficiency classes, valid for 2, 4, 6 and 8 pole asynchronous motors (50/60 Hz) with output powers of 0.12 kW to 1,000 kW. This standard divides 3-phase induction motors with cage rotor in efficiency classes IE1=standard efficiency, IE2=high efficiency, IE3=premium efficiency and IE4=super premium efficiency. Our motors are labelled with efficiency class and factor on the nameplate.

8. Motor protection

The correct selection of protective equipment determines essentially the operation reliability and service life of motors. Current dependent protection and thermal protective devices are available. Fuses do not protect the motor against overloads, they only protect the supply cables or switchboards against short circuits.

9. Overload protection (protection relay)

It is recommended to use starters with thermal overload protection. The overloads should be adjusted to the rated current shown on the nameplate. Thermal protective devices (thermistors in windings) see page 501.

10. Speed and rotation direction

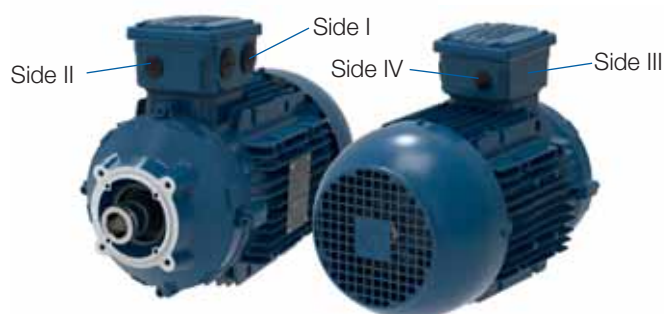
The rated speed is valid for the rated dates (voltage, frequency). The synchronous speed depends on the line frequency.

The motors are able for operation in both directions. By connection of U1, V1, W1 to L1, L2, L3 the rotation will be to the right if you look at the shaft from the drive-side. Left direction can be easily made by changing of two wires.



11. Cable entry

For all frames, the terminal box can be rotated in 90° increments. Terminal boxes are not delivered with cable glands in standard. Motors are supplied with plastic threaded plugs in the cable entries to maintain the degree of protection during transport and storage. In order to guarantee the degree of protection, cable entries must comply with at least the same degree of protection indicated on the motor nameplate.



Side designation for cable entries

12. Motors for the Ex area according to Directive 2014/34/EU

The modular integral motors can be used in both safe area applications and explosion-proof areas. The motors are certified for category 3, zone 2+22.

Zone 2: II 3G Ex ec IIC T3 Gc
 Zone 22: II 3D Ex tc IIIC T125°C Dc

The protection types in this case are increased safety (Ex ec) and protection by means of housing (Ex tc). The motors can be used in a temperature range of -20 to +40°C.

If temperatures deviate or additional motor options (brakes, encoders, etc.) are required, please contact us beforehand.

13. Cooling

The motors are totally enclosed fan cooled (TEFC) by means of external surface ventilation (IC411, as per IEC 60034-6). Maximum ambient temperature +40°C. Please check the minimum distance "Y" (see dimension sheets from page 496) between cover and wall by mounting the motor.

▪ Integral fans (TEFC, IC411)

Particular attention has been dedicated to the shape in order to reduce noise and improve the efficiency of the motor. Radial construction has been selected to allow rotation in both directions.

▪ Fan cover

In treated steel plate, properly profiled to improve efficiency and reduce the noise produced by the fan.

▪ Forced ventilation (TEFV, IC416) see also page 519

For special operating conditions, e.g. increased permissible number of operations per hour or variable speed operation, the motors of IEC sizes 63 to 200 can be supplied with forced ventilation by means of a separately fitted fan motor.

14. Insulation

The motors in this catalogue comply with the requirements of thermal class F. All windings are impregnated with varnish with a high mechanical strength. The maximum temperature of the insulation is, according to thermal class F, at +155 °C. The motors are utilised at rated values according to thermal class B (+130 °C). Copper wire insulation and the impregnation varnish have a temperature index class F and therefore there is a large margin of safety in addition to high overload capacity. Motors from frame size 160 are equipped with the WISE® insulation system of the new W22 motor range by WEG.

15. Noise levels

Noise measurements were taken in accordance with standard IEC 60034-9 (see table to the right).

Frame size	Noise level - dB(A), Distance: 1 meter			
	50 Hz		60 Hz	
	4p	6p	4p	6p
63	44	43	48	47
71	43	43	47	47
80	44	43	48	47
90	49	45	51	49
100	53	44	54	53
112	56	52	56	52
132	56	53	58	55
160	61	56	-	-
180	61	56	-	-
200	63	60	-	-
225	63	61	-	-
250	64	61	-	-

16. Balancing of rotors

Motors comply with vibration strength level "A" according to standard IEC 60034-14. On request, motors may also be balanced according to level "B".

17. Shaft ends

Shaft ends of motors in frame sizes 63 up to 132 are equipped with a conical bore and do not have a key, while the frame sizes 160 to 250 have a shaft with closed end keyway. On the non-driven side, modular motors have a system shaft to mount motor modules, such as brakes, encoders, back stops, etc.

18. Voltage, current and frequency

In standard execution the motors are delivered with following rated voltages: see chapter 19 (basic connection).

Special voltages

Motors for special voltages and/or frequencies are available on request.

Speed and connection

Tolerance of the motor speed according to IEC 60034. Terminal board connection see page 485.

Connection

▪ Direct connection




The starting torque in direct connection amounts to 160 to 330 % of the rated torque, depending on power and number of poles. The starting current is about 2.5 to 8 times of the rated current.

▪ Star-delta starting









The star-delta (Y-D) starting is an easy way to reduce the starting current and starting torque. Motors can be started with this starting method whenever the supply voltage corresponds to the rated voltage of the motors in delta connections. Up from frame size 112 the standard modular motors are supplied with windings designed for this starting method (e.g. 400 V D / 690 V Y). A Y-D-starting is only possible with delta service connection (this shall be considered when selecting a motor!), as the motor is first Y-connected and is changed over to D-connection after the run-up phase. At Y-D-starting, the starting currents and torques will be reduced to about 1/3 of the values produced in case of direct-online starting. Attention should be paid to the fact that a current impulse is produced when changing over to D-connection.

19. Electrical connection







Motor series 14P (IEC frame sizes 63 to 80)

Possible connection		Rated voltage*		Frequency inverter operation	
		Rated power P _N	Increased rated power 1,2 x P _N		
	Delta	230 V at 50 Hz 265 V at 60 Hz	- 265 V at 60 Hz		400 V, 87 Hz
	Star (basic connection)	400 V at 50 Hz 460 V at 60 Hz	- 460 V at 60 Hz	-	-

Motor series 11P (IEC frame sizes 80 to 100)

Possible connection		Rated voltage*		Frequency inverter operation	
		Rated power P _N	Increased rated power 1,2 x P _N		
	Delta	230 V at 50 Hz 265 V at 60 Hz	- 265 V at 60 Hz		400 V, 87 Hz
	Delta - Delta	115 V at 50 Hz 132 V at 60 Hz	- 132 V at 60 Hz		230 V, 100 Hz
	Star (basic connection))	400 V at 50 Hz 460 V at 60 Hz	- 460 V at 60 Hz		400 V, 100 Hz
	Star - Star	200 V at 50 Hz 230 V at 60 Hz	- 230 V at 60 Hz		460 V, 120 Hz

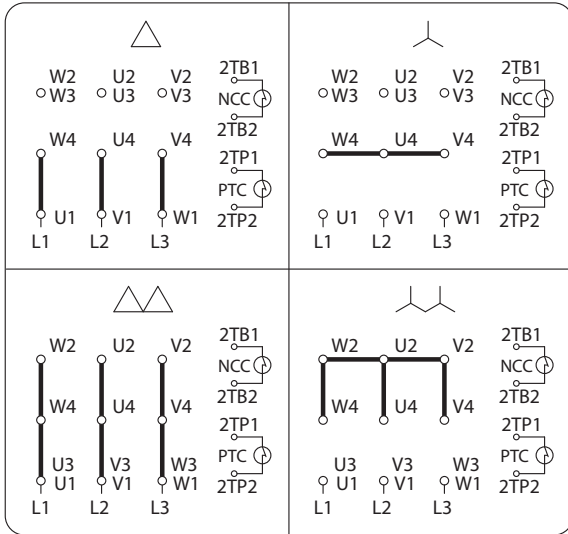
Motor series 11P and 22P (IEC frame sizes 112 to 250)

Possible connection		Rated voltage*		Frequency inverter operation	
		Rated power P _N	Increased rated power 1,2 x P _N		
	Delta (basic connection)	400 V at 50 Hz 460 V at 60 Hz	- 460 V at 60 Hz		400 V, 100 Hz
	Delta - Delta	200 V at 50 Hz 230 V at 60 Hz	- 230 V at 60 Hz		460 V, 120 Hz
	Star	690 V at 50 Hz -	-	-	-
	Star - Star	346 V at 50 Hz 400 V at 60 Hz	- 400 V at 60 Hz	-	-

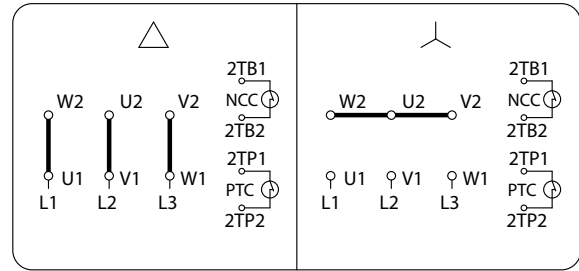
* Tolerances of rated voltages in compliance with range A according to DIN EN 60034-1 (see page 481)

Terminal board connection

Motor series 11P and 22P



Motor series 14P



Bimetal switch (2TB1/2TB2) only available for motor series 11

20. Variable speed drive application

The stator windings of the motors are wound with class F insulation (class H optional) and are suitable for either DOL starting or - regarding the limits shown in the table below - via a variable speed drive.

Rated voltage				
220-240/380-415 V (50 Hz) 400-460 V (60 Hz)				
Motor rated voltage	Voltage spikes	dV/dt *	Rise time *	Time between pulses
	At motor terminals (phase-phase)	At motor terminals (phase-phase)		
$V_{rated} < 460 \text{ V}$	$\leq 1600 \text{ V}$	$\leq 5200 \text{ V}/\mu\text{s}$	$\geq 0.1 \mu\text{s}$	$\geq 6 \mu\text{s}$
$460 \text{ V} \leq V_{rated} < 575 \text{ V}$	$\leq 2000 \text{ V}$	$\leq 6500 \text{ V}/\mu\text{s}$		
$575 \text{ V} \leq V_{rated} \leq 1000 \text{ V}$	$\leq 2400 \text{ V}$	$\leq 7800 \text{ V}/\mu\text{s}$		

* dV/dt and rise time definition according to NEMA MG1 - part 30

Notes:

- In order to protect the motor insulation system, the maximum recommended switching frequency is 5 kHz.
- If one or more of the above conditions is not attended, a filter (load reactor or dV/dt filter) must be installed in the output of the VSD.
- General purpose motors with rated voltage greater than 575 V, which at the time of purchase did not have any indication of operation with VSD, are able to withstand the electrical limits set in the table above for rated voltage up to 575 V. If such conditions are not fully satisfied, output filters must be used.
- General purpose motors of the dual voltage type, for example 400/690 V or 380/660 V, which at the time of purchase did not have any indication of operation with VSD, are able to be driven by a VSD in the higher voltage only if the limits set in the table above for rated voltage up to 460 V are fully attended in the application. Otherwise, a load reactor or a dV/dt filter must be installed in the VSD output.

Electrical basic data

Notes for electrical basic data

The technical data according to selection tables (starting current, torques, power factor, etc.) are valid for the rated values, that means for the rated voltage and rated frequency.

If the motors are running on higher or lower voltage within the wide range voltage, the stator winding will be utilised according to thermal class F. In these cases a power increase in accordance to a. and b. on page 482 is not possible.

The design of the wide range winding permits supply voltage deviations in the indicated wide range voltage of $\pm 5\%$ without reduction of the power.

Series	IEC frame size	Type	1	2	3					4	5	6			7	8	9	10	11	12
			P_N [kW]	n_N [min ⁻¹]	I_N at 115 V [A]	I_N at 200 V [A]	I_N at 230 V [A]	I_N at 400 V [A]	I_N at 690 V [A]	$\frac{I_A}{I_N}$ at 400 V	IE class	η 4/4 [%]	η 3/4 [%]	η 1/2 [%]	$\cos\varphi$	M_N [Nm]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot} [kgm ²]	m [kg]

Type	P_N [kW]	at 380 V						at 420 V						Frequency inverter operation						Brake		
		at 380 V		at 380 V		at 420 V		at 420 V		400 V / 87 Hz			400 V / 100 Hz			M_B	J_B	m				
		I_N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I_N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	P_N [kW]	n_N [min ⁻¹]	I_N [A]	P_N [kW]	n_N [min ⁻¹]	I_N [A]	M_B [Nm]	J_B x10 ⁻³ [kgm ²]	m [kg]						

- 1 P_N = Rated power
- 2 n_N = Rated speed
- 3 I_N = Rated current
- 4 I_A/I_N = Ratio of starting current to rated current
- 5 IE class = Efficiency class
- 6 η 4/4 (3/4, 1/2) = Efficiency at rated power, voltage and frequency
- 7 $\cos\varphi$ = Power factor
- 8 M_N = Rated torque
- 9 M_A/M_N = Ratio of starting torque to rated torque
- 10 M_K/M_N = Ratio of sweeping torque to rated torque
- 11 J_{mot} = Motor moment of inertia
- 12 m = Weight of the motor
- 13 M_B = Braking torque
- 14 J_B = Brake moment of inertia
- 15 m = Weight of the motor brake

4 Poles, 1500 min⁻¹, 50 Hz

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\phi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 115 V [A]	at 200 V [A]	at 230 V [A]	at 400 V [A]	at 690 V [A]	at 400 V		4/4 [%]	3/4 [%]	1/2 [%]						
14P	63	14P-63-04E	0.12	1405	-	-	0.68	0.39	-	5.5	IE3	64.8	60.0	53.0	0.68	0.83	2.8	3.5	0.0004	5.8
		14P-63-04F	0.18	1380	-	-	0.90	0.52	-	4.3	IE3	69.9	67.0	65.0	0.72	1.25	2.2	2.2	0.0006	6.0
	71	14P-71-04E	0.25	1380	-	-	1.19	0.68	-	4.8	IE3	73.5	72.0	69.0	0.72	1.76	2.3	2.3	0.0007	6.9
		14P-71-04F	0.37	1395	-	-	1.74	1.00	-	4.8	IE3	77.3	76.8	76.3	0.69	2.53	2.9	3.0	0.0008	7.8
	80	14P-80-04E	0.55	1420	-	-	2.14	1.23	-	6.6	IE3	80.8	79.0	77.0	0.80	3.70	2.8	3.0	0.0026	10.1
11P	80	11P-80-04F	0.75	1430	5.70	3.28	2.85	1.64	-	7.0	IE3	82.5	82.0	80.0	0.80	5.01	3.2	3.4	0.0032	11.6
	90	11P-90S/L-04E	1.1	1455	8.35	4.80	4.17	2.40	-	7.6	IE3	84.8	84.5	83.0	0.78	7.22	2.5	3.3	0.0055	15.8
		11P-90S/L-04F	1.5	1455	11.2	6.42	5.58	3.21	-	7.4	IE3	85.5	85.0	84.0	0.79	9.88	2.6	3.4	0.0066	17.4
	100	11P-100L-04E	2.2	1435	16.3	9.40	8.15	4.70	-	7.6	IE3	86.7	86.5	85.0	0.78	14.6	2.5	3.0	0.0090	27.0
		11P-L100L-04F	3	1440	21.9	12.6	10.9	6.30	-	7.8	IE3	88.0	88.0	87.0	0.78	19.9	3.5	3.7	0.0120	33.6
	112	11P-112M-04E	4	1450	-	16.4	-	8.20	4.75	7.0	IE3	89.1	89.1	88.7	0.79	26.4	2.3	3.1	0.0182	34.5
	132	11P-132S-04E	5.5	1465	-	20.6	-	10.3	5.97	8.5	IE3	90.7	90.7	90.0	0.85	35.9	2.4	3.4	0.0528	53.4
		11P-L132M-04F	7.5	1465	-	28.4	-	14.2	8.22	8.5	IE3	90.6	90.0	87.5	0.84	48.9	2.5	3.4	0.0638	67.0
		11P-L132M-04G	9.2	1460	-	34.7	-	17.4	10.1	8.5	IE3	91.0	91.0	90.1	0.84	60.2	2.5	3.3	0.0730	72.0
22P	160	22P-160M-04E	11	1470	-	41.8	-	20.9	12.0	7.5	IE3	91.6	91.8	91.1	0.83	71.5	2.8	3.2	0.1191	134
		22P-160L-04F	15	1465	-	55.8	-	27.9	16.2	7.2	IE3	92.3	92.5	92.2	0.84	97.8	2.8	3.1	0.1534	157
	180	22P-180M-04E	18.5	1470	-	70.2	-	35.1	20.4	7.4	IE3	92.8	92.8	92.2	0.82	120	3.0	3.2	0.1740	171
		22P-180L-04F	22	1470	-	82.1	-	41.0	23.8	7.3	IE3	93.2	93.0	92.3	0.83	143	3.4	3.4	0.2097	192
	200	22P-200L-04E	30	1480	-	114	-	57.1	33.1	7.5	IE3	93.7	93.6	92.9	0.81	194	2.8	3.1	0.3202	250
		22P-200L-04F	37	1480	-	144	-	72.0	41.7	8.3	IE3	93.9	93.5	92.5	0.79	239	3.0	3.3	0.3869	277
	225	22P-225S/M-04F	45	1480	-	162	-	80.9	46.9	7.5	IE3	94.4	94.1	93.7	0.85	291	2.8	3.1	0.6733	414
		22P-225S/M-04G	55	1480	-	205	-	102	59.3	8.3	IE3	94.6	94.0	93.5	0.82	355	3.1	3.4	0.7347	462
250	22P-250S/M-04F	75	1480	-	262	-	131	75.9	7.8	IE3	95.0	94.8	94.5	0.87	484	2.8	3.3	1.2200	566	

Legend see page 487

4 Poles, 1500 min⁻¹, 50 Hz

Type	P _N [kW]	at 380 V			at 420 V			Frequency inverter operation						Brake		
		I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	400 V / 87 Hz			400 V / 100 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]
								P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]			
14P-63-04E	0.12	0.41	2.5	3.2	0.37	3.1	3.9	0.21	2445	0.72	-	-	-	2	0.015	1.1
14P-63-04F	0.18	0.54	2.0	2.0	0.49	2.4	2.4	0.31	2401	0.94	-	-	-	4	0.015	1.0
14P-71-04E	0.25	0.72	2.1	2.1	0.65	2.5	2.5	0.44	2401	1.25	-	-	-	4	0.015	1.0
14P-71-04F	0.37	1.05	2.6	2.7	0.95	3.2	3.3	0.64	2427	1.83	-	-	-	2	0.015	1.1
14P-80-04E	0.55	1.29	2.5	2.7	1.17	3.1	3.3	0.96	2471	2.25	-	-	-	8	0.061	1.6
11P-80-04F	0.75	1.73	2.9	3.1	1.56	3.5	3.7	1.3	2488	2.99	1.5	2860	3.44	4	0.015	1.0
11P-90S/L-04E	1.1	2.53	2.3	3.0	2.29	2.8	3.6	1.9	2532	4.38	2.2	2910	5.04	16	0.20	3.1
11P-90S/L-04F	1.5	3.38	2.3	3.1	3.06	2.9	3.7	2.6	2523	5.86	3	2900	6.74	8	0.061	1.6
11P-100L-04E	2.2	4.95	2.3	2.7	4.48	2.8	3.3	3.8	2497	8.56	4.4	2870	9.87	32	0.45	4.2
11P-L100L-04F	3	6.63	3.2	3.3	6.00	3.9	4.1	5.2	2506	11.4	6	2880	13.2	16	0.20	3.1
11P-112M-04E	4	8.63	2.1	2.8	7.81	2.5	3.4	-	-	-	8	2900	17.2	60	0.86	6.3
11P-112M-04F	4	8.63	2.1	2.8	7.81	2.5	3.4	-	-	-	8	2900	17.2	32	0.45	4.2
11P-132S-04E	5.5	10.8	2.2	3.1	9.81	2.6	3.7	-	-	-	11	2930	21.6	100	1.22	10.0
11P-L132M-04F	7.5	14.9	2.3	3.1	13.5	2.8	3.7	-	-	-	15	2930	29.8	60	0.86	6.3
11P-L132M-04G	9.2	18.3	2.3	3.0	16.6	2.8	3.6	-	-	-	18.4	2920	36.5	100	1.22	10.0
22P-160M-04E	11	22.0	2.5	2.9	19.9	3.1	3.5	-	-	-	22	2940	43.9	150	2.85	14.7
22P-160L-04F	15	29.4	2.5	2.8	26.6	3.1	3.4	-	-	-	30	2930	58.6	100	6.65	10.0
22P-180M-04E	18.5	36.9	2.7	2.9	33.4	3.3	3.5	-	-	-	37	2940	73.7	250	6.65	21.5
22P-180L-04F	22	43.2	3.1	3.1	39.0	3.7	3.7	-	-	-	44	2940	86.1	150	2.85	14.7
22P-200L-04E	30	60.1	2.5	2.8	54.4	3.1	3.4	-	-	-	60	2960	120	400	19.5	35
22P-200L-04F	37	75.8	2.7	3.0	68.6	3.3	3.6	-	-	-	74	2960	151	250	6.65	21.5
22P-225S/M-04F	45	85.2	2.5	2.8	77.0	3.1	3.4	-	-	-	90	2960	170	400	19.5	35
22P-225S/M-04G	55	107	2.8	3.1	97.1	3.4	3.7	-	-	-	110	2960	214	250	6.65	21.5
22P-250S/M-04F	75	138	2.5	3.0	125	3.1	3.6	-	-	-	150	2960	275	1000	45	73

Legend see page 487



4 Poles, 1800 min⁻¹, 60 Hz

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\phi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 132 V [A]	at 230 V [A]	at 400 V [A]	at 265 V [A]	at 460 V [A]	at 460 V [A]		[%]	[%]	[%]						
14P	63	14P-63-04E	0.12	1720	-	-	-	0.63	0.36	6.5	IE3	66.0	61.0	53.0	0.63	0.68	3.2	4.2	0.0004	5.8
		14P-63-04F	0.18	1700	-	-	-	0.81	0.47	5.2	IE3	70.0	66.0	62.0	0.69	1.01	2.7	2.8	0.0006	6.0
	71	14P-71-04E	0.25	1700	-	-	-	1.07	0.62	5.3	IE3	74.0	72.0	70.0	0.69	1.43	2.6	2.8	0.0007	6.9
		14P-71-04F	0.37	1710	-	-	-	1.53	0.88	5.6	IE3	78.5	78.0	77.5	0.67	2.07	3.5	3.7	0.0008	7.8
	80	14P-80-04E	0.55	1720	-	-	-	1.89	1.09	7.3	IE3	81.5	80.0	77.0	0.78	3.06	3.4	3.8	0.0026	10.1
11P	80	11P-80-04F	0.75	1740	5.16	2.96	1.71	2.57	1.48	8.3	IE3	83.5	80.0	78.5	0.76	4.12	3.8	4.3	0.0032	11.6
	90	11P-90S/L-04E	1.1	1760	7.32	4.20	2.42	3.65	2.10	8.5	IE3	86.5	84.0	80.0	0.76	5.97	2.9	3.9	0.0055	15.8
		11P-90S/L-04F	1.5	1755	9.86	5.66	3.27	4.91	2.83	8.3	IE3	86.5	85.5	82.5	0.77	8.17	3.0	3.8	0.0066	17.4
	100	11P-100L-04E	2.2	1745	14.1	8.12	4.66	7.02	4.04	9.0	IE3	89.5	88.0	85.0	0.76	12.0	2.8	3.5	0.0090	27.0
		11P-L100L-04F	3	1740	19.0	10.9	6.27	9.46	5.43	8.6	IE3	89.5	86.5	84.0	0.77	16.5	4.6	4.8	0.0120	33.6
	112	11P-112M-04E	4	1755	-	14.6	8.41	-	7.28	8.0	IE3	89.5	89.5	87.5	0.77	21.8	2.5	3.5	0.0182	34.5
	132	11P-132S-04E	5.5	1765	-	18.1	10.5	-	9.07	8.9	IE3	91.7	91.0	88.5	0.83	29.8	2.6	4.3	0.0528	53.4
		11P-L132M-04F	7.5	1770	-	24.8	14.3	-	12.4	9.0	IE3	91.7	91.5	91.0	0.83	40.5	2.7	4.3	0.0638	67.0
		11P-L132M-04G	9.2	1765	-	30.7	17.8	-	15.4	9.0	IE3	91.7	91.5	90.4	0.82	49.8	2.6	3.8	0.0730	72.0
	22P	160	22P-160M-04E	11	1775	-	36.9	21.2	-	18.4	8.2	IE3	92.4	92.2	91.0	0.81	59.2	3.0	3.7	0.1191
22P-160L-04F			15	1775	-	49.4	28.4	-	24.7	7.6	IE3	93.0	92.9	92.0	0.82	80.7	2.9	3.5	0.1534	157
180		22P-180M-04E	18.5	1775	-	61.3	35.2	-	30.6	7.7	IE3	93.6	93.0	92.0	0.81	99.6	3.4	3.6	0.1740	171
		22P-180L-04F	22	1775	-	72.0	41.4	-	36.0	8.5	IE3	93.6	93.2	92.1	0.82	118	3.5	3.8	0.2097	192
200		22P-200L-04E	30	1780	-	100	57.5	-	50.0	8.3	IE3	94.1	93.7	92.6	0.80	161	2.9	3.5	0.3202	250
		22P-200L-04F	37	1782	-	124	71.5	-	62.2	9.3	IE3	94.5	94.0	93.0	0.79	198	3.5	3.6	0.3869	277
225		22P-225S/M-04F	45	1782	-	142	81.4	-	70.8	8.6	IE3	95.0	94.5	93.0	0.84	241	3.2	3.5	0.6733	414
		22P-225S/M-04G	55	1785	-	179	103	-	89.3	9.6	IE3	95.4	94.5	93.8	0.81	294	3.7	4.2	0.7347	462
250	22P-250S/M-04F	75	1780	-	229	132	-	115	8.2	IE3	95.4	95.0	94.1	0.86	403	3.2	4.1	1.2200	566	

Legend see page 487

4 Poles, 1800 min⁻¹, 60 Hz

Type	P _N [kW]	at 380 V			at 420 V			at 440 V			at 480 V			Frequency inverter operation						Brake		
		I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	460 V / 105 Hz			460 V / 120 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]
														P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]			
14P-63-04E	0.12	0.44	2.2	2.9	0.40	2.7	3.5	0.38	2.9	3.8	0.35	3.5	4.6	0.21	3010	0.66	-	-	-	2	0.015	1.1
14P-63-04F	0.18	0.57	1.8	1.9	0.51	2.3	2.3	0.49	2.5	2.6	0.45	2.9	3.0	0.32	2975	0.85	-	-	-	4	0.015	1.0
14P-71-04E	0.25	0.74	1.8	1.9	0.67	2.2	2.3	0.64	2.4	2.6	0.59	2.8	3.0	0.44	2975	1.12	-	-	-	4	0.015	1.0
14P-71-04F	0.37	1.07	2.4	2.5	0.97	2.9	3.1	0.92	3.2	3.4	0.85	3.8	4.0	0.65	2993	1.61	-	-	-	2	0.015	1.1
14P-80-04E	0.55	1.32	2.3	2.6	1.19	2.8	3.2	1.14	3.1	3.5	1.04	3.7	4.1	0.96	3010	1.98	-	-	-	8	0.061	1.6
11P-80-04F	0.75	1.79	2.6	2.9	1.62	3.2	3.6	1.55	3.5	3.9	1.42	4.1	4.7	1.3	3045	2.70	1.5	3480	3.11	4	0.015	1.0
11P-90S/L-04E	1.1	2.54	2.0	2.7	2.30	2.4	3.3	2.20	2.7	3.6	2.01	3.2	4.2	1.9	3080	3.83	2.2	3520	4.41	16	0.20	3.1
11P-90S/L-04F	1.5	3.43	2.0	2.6	3.10	2.5	3.2	2.96	2.7	3.5	2.71	3.3	4.1	2.6	3071	5.16	3	3510	5.94	8	0.061	1.6
11P-100L-04E	2.2	4.89	1.9	2.4	4.42	2.3	2.9	4.22	2.6	3.2	3.87	3.0	3.8	3.9	3054	7.37	4.4	3490	8.48	32	0.45	4.2
11P-L100L-04F	3	6.57	3.1	3.3	5.95	3.8	4.0	5.68	4.2	4.4	5.20	5.0	5.2	5.3	3045	9.93	6	3480	11.4	16	0.20	3.1
11P-112M-04E	4	8.81	2.3	3.2	7.97	2.8	3.9	7.61	2.3	3.2	6.98	2.7	3.8	-	-	-	8	3510	15.3	60	0.86	6.3
11P-112M-04F	4	8.81	2.3	3.2	7.97	2.8	3.9	7.61	2.3	3.2	6.98	2.7	3.8	-	-	-	8	3510	15.3	32	0.45	4.2
11P-132S-04E	5.5	10.9	2.3	3.9	9.90	2.9	4.7	9.48	2.4	3.9	8.69	2.8	4.7	-	-	-	11	3530	19.0	60	0.86	6.3
11P-L132M-04F	7.5	15.1	2.4	3.9	13.6	3.0	4.7	13.0	2.5	3.9	11.9	2.9	4.7	-	-	-	15	3540	26.0	100	1.22	10.0
11P-L132M-04G	9.2	18.6	2.3	3.4	16.9	2.9	4.2	16.1	2.4	3.5	14.8	2.8	4.1	-	-	-	18.4	3530	32.3	60	0.86	6.3
22P-160M-04E	11	22.3	2.7	3.3	20.2	3.3	4.1	19.2	2.7	3.4	17.6	3.3	4.0	-	-	-	22	3550	38.6	150	2.85	14.7
22P-160L-04F	15	29.9	2.6	3.2	27.0	3.2	3.9	25.8	2.7	3.2	23.7	3.2	3.8	-	-	-	30	3550	51.9	100	6.65	10.0
22P-180M-04E	18.5	37.1	3.1	3.2	33.5	3.7	4.0	32.0	3.1	3.3	29.3	3.7	3.9	-	-	-	37	3550	64.3	250	6.65	21.5
22P-180L-04F	22	43.6	3.2	3.4	39.4	3.9	4.2	37.6	3.2	3.5	34.5	3.8	4.1	-	-	-	44	3550	75.6	150	2.85	14.7
22P-200L-04E	30	60.5	2.6	3.2	54.8	3.2	3.9	52.3	2.7	3.2	47.9	3.2	3.8	-	-	-	60	3560	105	400	19.5	35
22P-200L-04F	37	75.3	3.2	3.2	68.1	3.9	4.0	65.0	3.2	3.3	59.6	3.8	3.9	-	-	-	74	3564	131	250	6.65	21.5
22P-225S/M-04F	45	85.7	2.9	3.2	77.5	3.5	3.9	74.0	2.9	3.2	67.9	3.5	3.8	-	-	-	90	3564	149	400	19.5	35
22P-225S/M-04G	55	108	3.3	3.8	98.1	4.1	4.6	93.4	3.4	3.8	85.6	4.0	4.6	-	-	-	110	3570	188	250	6.65	21.5
22P-250S/M-04F	75	139	2.9	3.7	126	3.5	4.5	120	2.9	3.8	110	3.5	4.5	-	-	-	150	3560	242	1000	45	73

Legend see page 487



6 Poles, 1000 min⁻¹, 50 Hz

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\phi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 115 V [A]	at 200 V [A]	at 230 V [A]	at 400 V [A]	at 690 V [A]	at 400 V		4/4 [%]	3/4 [%]	1/2 [%]						
14P	63	14P-63-06F	0.12	925	-	-	0.89	0.51	-	3.1	IE3	57.7	55.0	50.0	0.59	1.24	2.1	2.3	0.00070	6.2
	71	14P-71-06E	0.18	900	-	-	1.24	0.71	-	3.2	IE3	63.9	62.0	56.0	0.57	1.91	2.0	2.1	0.00090	8.5
		14P-80-06D	0.25	955	-	-	1.29	0.74	-	4.3	IE3	68.8	68.5	63.6	0.71	2.50	1.7	2.4	0.00290	9.2
	80	14P-80-06E	0.37	925	-	-	1.69	0.97	-	4.5	IE3	73.5	69.5	66.0	0.75	3.82	1.9	2.1	0.00250	11.0
		14P-L80-06F	0.55	945	-	-	2.59	1.49	-	5.1	IE3	77.2	75.2	70.5	0.69	5.56	2.9	3.1	0.00340	12.4
11P	90	11P-90S/L-06E	0.75	940	6.71	3.86	3.35	1.93	-	5.2	IE3	79.0	79.0	76.5	0.71	7.62	2.5	2.8	0.00660	17.8
	100	11P-100L-06D	1.1	960	9.74	5.60	4.87	2.80	-	6.0	IE3	81.0	80.0	77.0	0.70	10.9	2.1	3.2	0.01100	21.6
		11P-100L-06E	1.5	950	12.9	7.40	6.45	3.70	-	5.5	IE3	82.5	82.5	81.5	0.71	15.1	2.3	2.8	0.01430	25.4
	112	11P-112M-06E	2.2	960	-	10.4	-	5.22	3.03	6.4	IE3	84.5	84.5	83.0	0.72	21.9	2.4	2.9	0.02570	34.4
	132	11P-132S-06E	3	970	-	13.8	-	6.91	4.01	6.0	IE3	85.8	85.8	85.0	0.73	29.6	1.9	2.5	0.05660	55.0
		11P-132M-06F	4	960	-	18.0	-	8.99	5.21	6.5	IE3	86.8	86.8	86.0	0.74	39.8	2.2	2.5	0.05660	56.0
		11P-L132M-06G	5.5	970	-	25.0	-	12.5	7.25	7.3	IE3	88.0	87.0	86.0	0.72	54.2	2.1	2.5	0.07550	71.8

Legend see page 487

6 Poles, 1000 min⁻¹, 50 Hz

Type	P _N [kW]	at 380 V						at 420 V						Frequency inverter operation						Brake		
		at 380 V			at 420 V			400 V / 87 Hz			400 V / 100 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]						
		I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	I _N [A]	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]									
14P-63-06F	0.12	0.54	1.9	2.1	0.48	2.3	2.5	0.21	1609.5	0.93	-	-	-	2 4	0.015 0.015	1.1 1.0						
14P-71-06E	0.18	0.75	1.8	1.9	0.68	2.2	2.3	0.31	1566	1.30	-	-	-	4 2	0.015 0.015	1.0 1.1						
14P-80-06D	0.25	0.78	1.5	2.2	0.70	1.9	2.6	0.44	1661.7	1.35	-	-	-									
14P-80-06E	0.37	1.02	1.7	1.9	0.92	2.1	2.3	0.64	1609.5	1.77	-	-	-	8 4	0.061 0.015	1.6 1.0						
14P-L80-06F	0.55	1.57	2.6	2.8	1.42	3.2	3.4	0.96	1644.3	2.72	-	-	-									
11P-90S/L-06E	0.75	2.03	2.3	2.5	1.84	2.8	3.1	1.3	1635.6	3.52	1.5	1880	4.05	16 8	0.20 0.061	3.1 1.6						
11P-100L-06D	1.1	2.95	1.9	2.9	2.67	2.3	3.5	1.9	1670.4	5.11	2.2	1920	5.88	32 16	0.45 0.20	4.2 3.1						
11P-100L-06E	1.5	3.89	2.1	2.5	3.52	2.5	3.1	2.6	1653	6.77	3.0	1900	7.77									
11P-112M-06E	2.2	5.49	2.2	2.6	4.97	2.6	3.2	-	-	-	4.4	1920	11.0	60 32	0.86 0.45	6.3 4.2						
11P-132S-06E	3.0	7.27	1.7	2.3	6.58	2.1	2.8	-	-	-	6	1940	14.5									
11P-132M-06F	4.0	9.46	2.0	2.3	8.56	2.4	2.8	-	-	-	8	1920	18.9	100 60	1.22 0.86	10.0 6.3						
11P-L132M-06G	5.5	13.2	1.9	2.3	11.90	2.3	2.8	-	-	-	11	1940	26.3									

Legend see page 487



6 Poles, 1200 min⁻¹, 60 Hz

Series	IEC frame size	Type	P_N	n_N	I_N	I_N	I_N	I_N	I_N	$\frac{I_A}{I_N}$	IE class	η	η	η	$\cos\phi$	M_N	$\frac{M_A}{M_N}$	$\frac{M_K}{M_N}$	J_{mot}	m
			[kW]	[min ⁻¹]	at 132 V [A]	at 230 V [A]	at 400 V [A]	at 265 V [A]	at 460 V [A]	at 460 V [A]		[%]	[%]	[%]						
14P	63	14P-63-06F	0.12	1140	1.57	0.91	0.52	0.78	0.45	3.5	IE3	64.0	59.0	52.0	0.52	1.01	2.5	2.8	0.00070	6.2
	71	14P-71-06E	0.18	1110	2.17	1.25	0.72	1.09	0.63	3.7	IE3	68.0	59.5	57.5	0.53	1.55	2.3	2.7	0.00090	8.5
		14P-80-06D	0.25	1165	2.32	1.34	0.77	1.16	0.67	5.1	IE3	72.0	70.5	64.1	0.65	2.05	2.1	3.1	0.00290	9.2
	80	14P-80-06E	0.37	1140	3.05	1.76	1.02	1.53	0.88	4.9	IE3	75.3	70.0	66.0	0.70	3.10	2.4	2.8	0.00250	11.0
		14P-L80-06F	0.55	1155	4.68	2.70	1.56	2.34	1.35	6.1	IE3	80.0	77.0	71.9	0.64	4.55	3.5	3.9	0.00340	12.4
11P	90	11P-90S/L-06E	0.75	1145	5.82	3.34	-	2.90	1.66	6.2	IE3	82.5	80.0	77.0	0.69	6.26	2.9	3.4	0.00660	17.8
	100	11P-100L-06D	1.1	1165	8.22	4.72	-	4.10	2.36	7.9	IE3	87.5	81.0	76.0	0.67	9.02	2.4	3.8	0.01100	21.6
		11P-100L-06E	1.5	1155	11.0	6.30	-	5.48	3.14	6.3	IE2	86.5	85.5	82.5	0.69	12.4	2.5	3.2	0.01430	25.4
	112	11P-112M-06E	2.2	1165	-	8.88	5.11	-	4.44	7.6	IE2	87.5	85.5	82.5	0.71	18.0	2.6	3.4	0.02570	34.4
	132	11P-132S-06E	3	1165	-	12.0	6.91	-	6.00	6.3	IE3	89.5	88.5	85.5	0.70	24.6	1.8	2.9	0.05660	55.0
		11P-132M-06F	4	1165	-	15.8	9.09	-	7.90	6.6	IE3	89.5	88.5	85.5	0.71	32.8	1.9	3.0	0.05660	56.0
		11P-L132M-06G	5.5	1175	-	21.6	12.4	-	10.8	8.0	IE3	91.0	88.5	85.5	0.70	44.7	2.2	2.8	0.07550	71.8



Legend see page 487

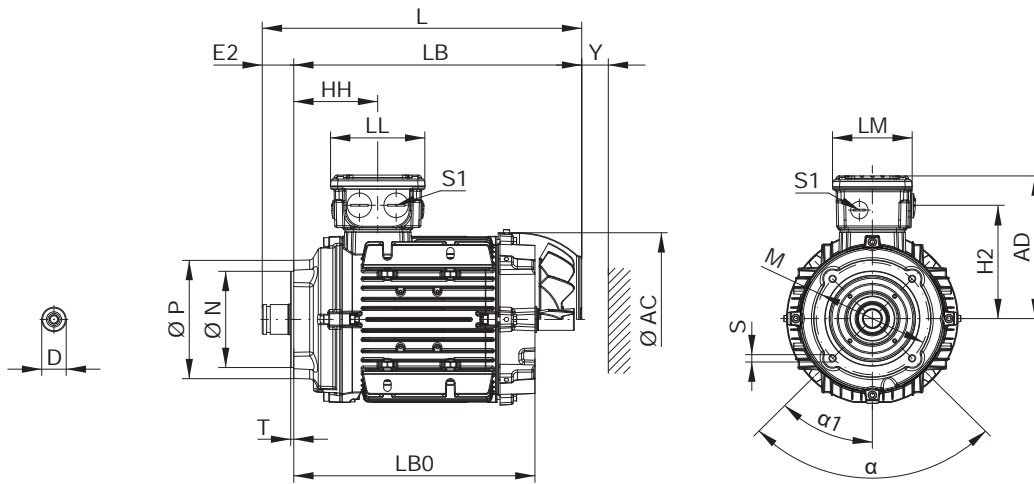
6 Poles, 1200 min⁻¹, 60 Hz

Type	P _N [kW]	at 380 V			at 420 V			at 440 V			at 480 V			Frequency inverter operation						Brake		
		I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	I _N [A]	M _A M _N	M _K M _N	460 V / 105 Hz			460 V / 120 Hz			M _B [Nm]	J _B x10 ⁻³ [kgm ²]	m [kg]
														P _N [kW]	n _N [min ⁻¹]	I _N [A]	P _N [kW]	n _N [min ⁻¹]	I _N [A]			
14P-63-06F	0.12	0.55	1.7	1.9	0.50	2.1	2.3	0.47	2.3	2.6	0.43	2.7	3.0	0.21	1995	0.82	-	-	-	2 4	0.015 0.015	1.1 1.0
14P-71-06E	0.18	0.76	1.6	1.8	0.69	1.9	2.3	0.66	2.1	2.5	0.60	2.5	2.9	0.32	1943	1.14	-	-	-	4 2	0.015 0.015	1.0 1.1
14P-80-06D	0.25	0.81	1.4	2.1	0.73	1.8	2.6	0.70	1.9	2.8	0.64	2.3	3.4	0.44	2039	1.22	-	-	-			
14P-80-06E	0.37	1.07	1.6	1.9	0.96	2.0	2.3	0.92	2.2	2.6	0.84	2.6	3.0	0.65	1995	1.60	-	-	-	8 4	0.061 0.015	1.6 1.0
14P-L80-06F	0.55	1.63	2.4	2.7	1.48	2.9	3.3	1.41	3.2	3.6	1.29	3.8	4.2	0.96	2021	2.46	-	-	-			
11P-90S/L-06E	0.75	2.01	2.0	2.3	1.82	2.4	2.8	1.74	2.7	3.1	1.59	3.2	3.7	1.31	2004	3.05	1.5	2290	3.49	16 8	0.20 0.061	3.1 1.6
11P-100L-06D	1.1	2.86	1.6	2.6	2.58	2.0	3.2	2.47	2.2	3.5	2.26	2.6	4.1	1.93	2039	4.31	2.2	2330	4.96	32 16	0.45 0.20	4.2 3.1
11P-100L-06E	1.5	3.80	1.7	2.2	3.44	2.1	2.7	3.28	2.3	2.9	3.01	2.7	3.5	2.63	-	5.75	3	2310	6.59			
11P-112M-06E	2.2	5.38	2.3	3.1	4.87	2.9	3.7	4.64	2.4	3.1	4.26	2.8	3.7	-	-	-	4.4	2330	9.32	60 32	0.86 0.45	6.3 4.2
11P-132S-06E	3	7.27	1.6	2.6	6.58	2.0	3.2	6.27	1.6	2.7	5.75	2.0	3.2	-	-	-	6	2330	12.6			
11P-132M-06F	4	9.57	1.7	2.7	8.66	2.1	3.3	8.26	1.7	2.7	7.57	2.1	3.3	-	-	-	8	2330	16.6	100 60	1.22 0.86	10.0 6.3
11P-L132M-06G	5.5	13.1	2.0	2.5	11.8	2.4	3.1	11.3	2.0	2.6	10.4	2.4	3.0	-	-	-	11	2350	22.7			

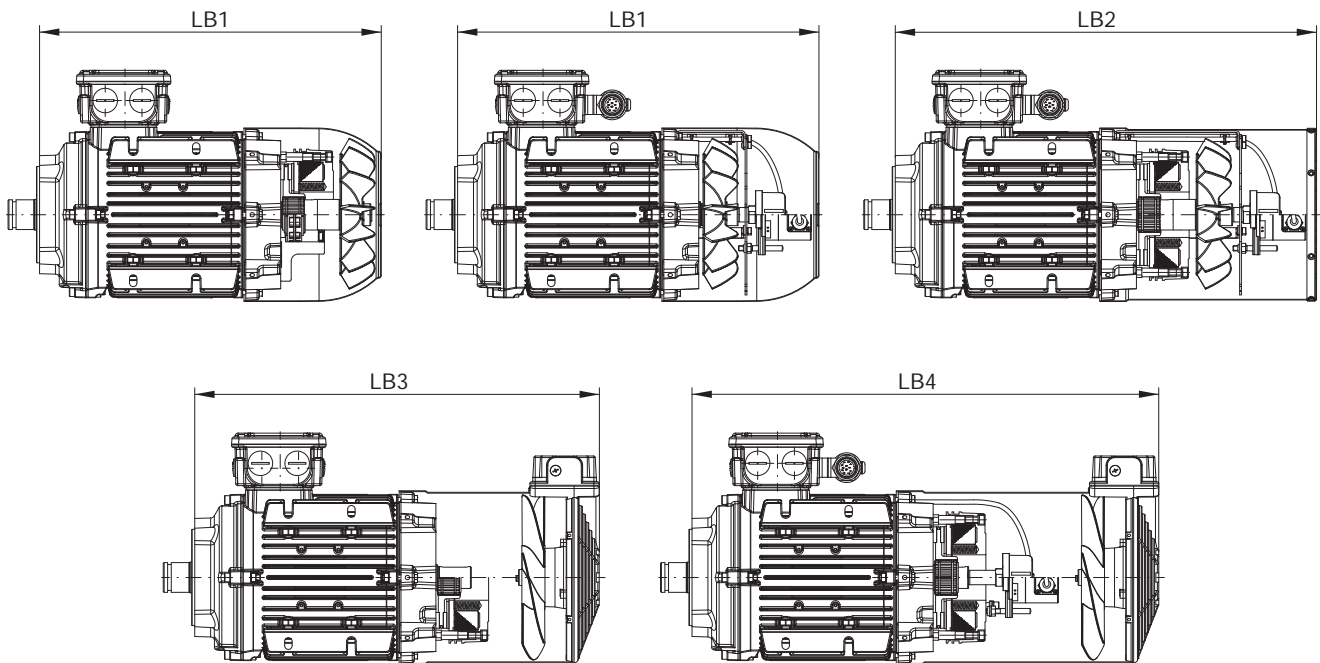
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Dimension sheets

Integral motor frame sizes 63 - 132



M



Description of the dimensions L, LB, LB0,... see page 500

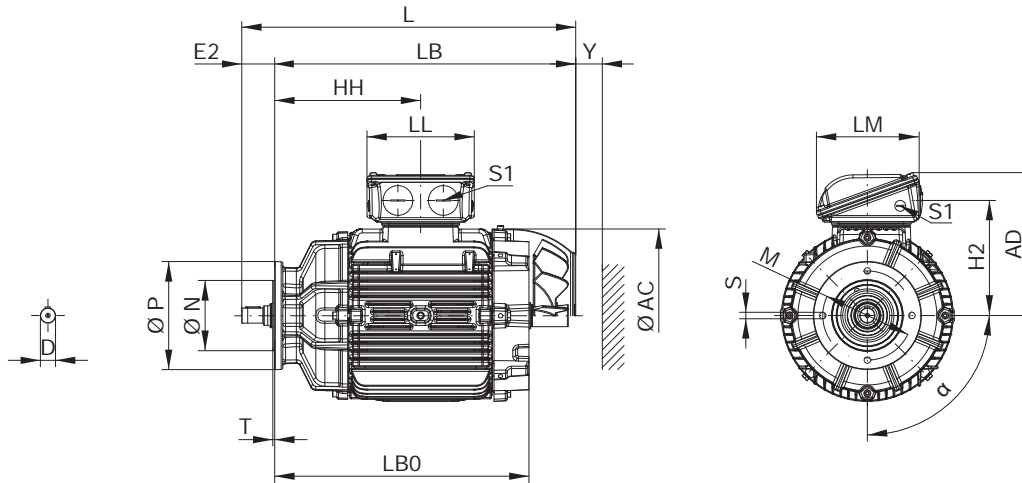
Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	≤ Ø 30 mm	j6
	> Ø 30 mm to Ø 50 mm	k6
	> Ø 50 mm	m6
N	≤ Ø 250 mm	j6
	> Ø 250 mm	h6

Dimension tolerances		
Dimension name	Dimensions	Permissible deviation
M	up to 200 mm	± 0.25 mm
	more than 200 up to 500 mm	± 0.5 mm
	ore than 500 mm	± 1.0 mm

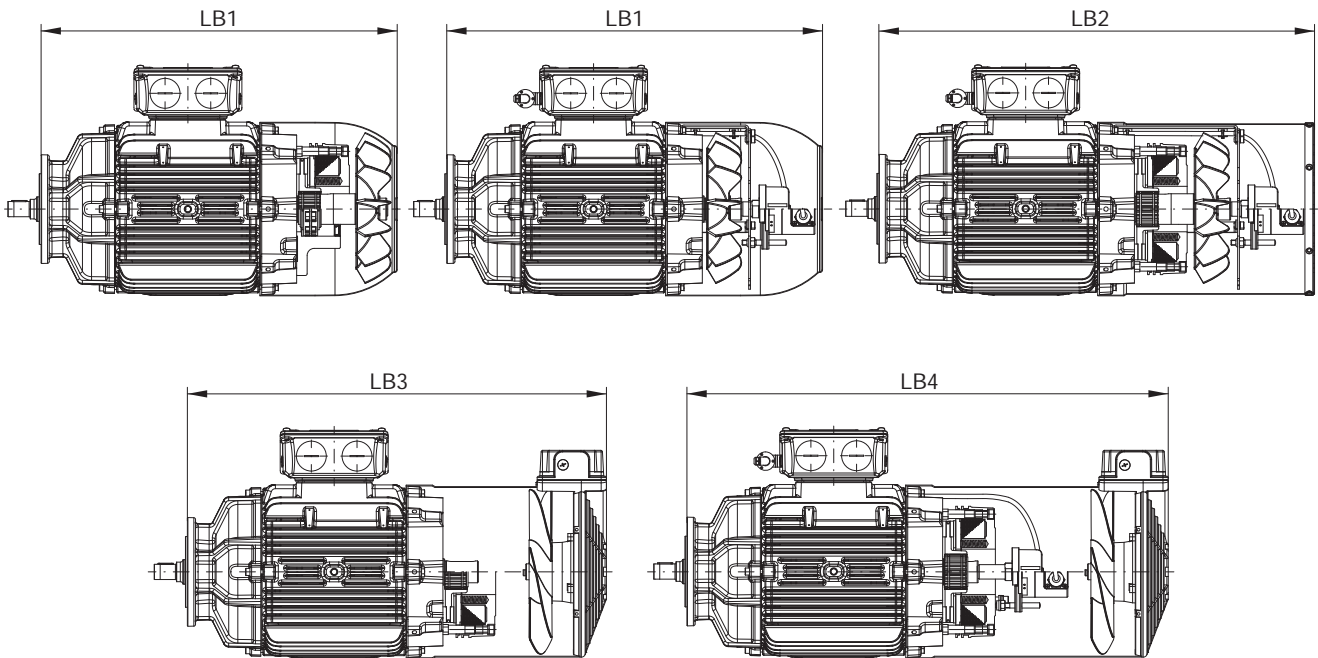
Dimensions in mm. Motor dimensions are typical values.
Subject to change.

IEC frame size	63	71	80	L80	90	100	L100	112	132	L132
AC	126	141	159	159	178	199	199	221	261	261
AD	128	136	145	145	155	165	165	185	205	205
D	16	19	24	24	24	34	34	34	42	42
E2	26	26	26	26	26	26	26	36	36	36
HH	83	91	88	88	88	107	107	117	122	122
H2	91	99	108	108	118	128	128	144	164	164
LL	108	108	108	108	108	108	108	137	137	137
LM	92	92	92	92	92	92	92	118	118	118
M	100	100	100	100	100	100	100	130	130	130
N	80	80	80	80	80	80	80	110	110	110
P	94	94	94	94	94	94	94	135	135	135
S	M6	M6	M6	M6	M6	M6	M6	M8	M8	M8
S1	2 x M25 x 1.5 + 2 x M16 x 1.5						2 x M32 x 1.5 + 2 x M16 x 1.5			
T	3	3	3	3	3	3	3	4	4	4
Y	25	26	30	30	33	36	36	41	50	50
α	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°	4 x 90°
α_1	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
L	230	264	272	296	314	364	402	384	449	487
LB	204	238	246	270	288	338	376	348	413	451
LB0	173	196	205	229	242	285	323	290	359	397
LB1	248	287	304	328	361	422	460	435	531	569
LB2	-	358	381	405	437	500	538	511	614	652
LB3	322	347	365	389	422	476	514	493	598	636
LB4	392	417	435	459	485	532	570	549	650	688

Integral motor frame sizes 160 to 250



M



Description of the dimensions L, LB, LB0,... see page 500

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
D	$\geq \text{Ø } 28 \text{ mm}$	n6
N	$\leq \text{Ø } 250 \text{ mm}$	j6
	$> \text{Ø } 250 \text{ mm}$	h6

Dimension tolerances		
Dimension name	Dimensions	Permissible deviation
M	up to 200 mm	$\pm 0.25 \text{ mm}$
	more than 200 up to 500 mm	$\pm 0.5 \text{ mm}$
	more than 500 mm	$\pm 1.0 \text{ mm}$

Dimensions in mm. Motor dimensions are typical values. Subject to change.

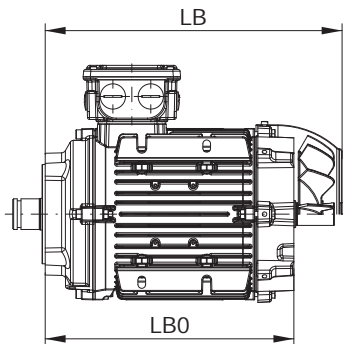
IEC frame size	160M					160L				
Motor flange	FR-200	FR-250	FR-300	FR-400	FR-550	FR-200	FR-250	FR-300	FR-400	FR-550
AC	329					329				
AD	266					266				
D	28					28				
E2	61	66	71	84	100	61	66	71	84	100
HH	270	265	260	257	241	270	265	260	257	241
H2	213					213				
LL	199					199				
LM	190					190				
M	165	215	265	300	400	165	215	265	300	400
N	130	180	230	300	450	130	180	230	300	450
P	200	250	300	400	550	200	250	300	400	550
S	12	15	15	19	19	12	15	15	19	19
S1	2 x M40 x 1,5 + 2 x M16 x 1,5					2 x M40 x 1,5 + 2 x M16 x 1,5				
T	3,5	4	4	5	5	3,5	4	4	5	5
Y	65					65				
α	4 x 90°					4 x 90°				
L	606					650				
LB	545	540	535	522	506	589	584	579	566	550
LB0	480	475	470	457	441	524	519	514	501	485
LB1	669	664	659	646	630	713	708	703	690	674
LB2	747	742	737	724	708	791	786	781	768	752
LB3	757	752	747	734	718	801	796	791	778	762
LB4	823	818	813	800	784	867	862	857	844	828

IEC frame size	180M				180L			
Motor flange	FR-250	FR-300	FR-400	FR-550	FR-250	FR-300	FR-400	FR-550
AC	347				347			
AD	281				281			
D	32				32			
E2	66	71	84	100	66	71	84	100
HH	303	298	285	269	303	298	285	269
H2	228				228			
LL	199				199			
LM	190				190			
M	215	265	300	400	215	265	300	400
N	180	230	300	450	180	230	300	450
P	250	300	400	550	250	300	400	550
S	15	15	19	19	15	15	19	19
S1	2 x M40 x 1,5 + 2 x M16 x 1,5				2 x M40 x 1,5 + 2 x M16 x 1,5			
T	4	4	5	5	4	4	5	5
Y	68				68			
α	4 x 90°				4 x 90°			
L	674				712			
LB	608	603	590	574	646	641	628	612
LB0	531	526	513	497	569	564	551	535
LB1	726	721	708	692	764	759	746	730
LB2	839	834	821	805	877	872	859	843
LB3	828	823	810	794	866	861	848	832
LB4	893	888	875	859	931	926	913	897

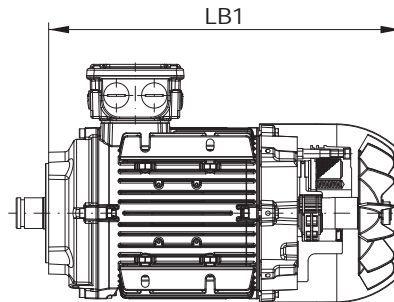
IEC frame size	200L			225S/M		250S/M
Motor flange	FR-300	FR-400	FR-550	FR-400	FR-550	FR-550
AC	386			453		482
AD	317			385		403
D	38			38		48
E2	71	84	100	84	100	100
HH	348	335	319	286	270	261
H2	260			304		321
LL	230			269		268
LM	218			286		286
M	265	300	400	300	400	400
N	230	300	450	300	450	450
P	300	400	550	400	550	550
S	15	19	19	19	19	19
S1	2 x M50 x 1,5 + 2 x M16 x 1,5			2 x M50 x 1,5 + 2 x M16 x 1,5		2 x M63 x 1,5 + 2 x M16 x 1,5
T	4	5	5	5	5	5
Y	78			85		85
α	4 x 90°			8 x 45°		8 x 45°
L	804			912		951
LB	733	720	704	828	812	851
LB0	629	616	600	714	698	737
LB1	859	846	830	946	930	969
LB2	977	964	948	1062	1046	1085
LB3	929	916	900	1100	1084	1123
LB4	1009	996	980	1100	1084	1123



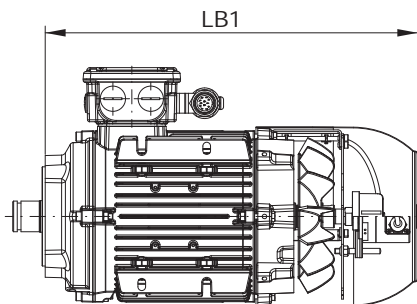
Length description motor modules



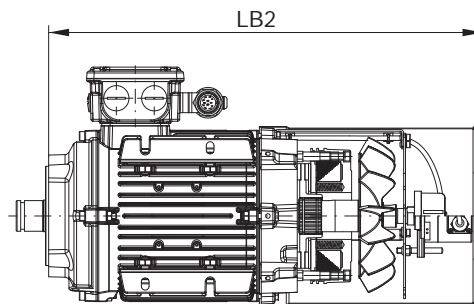
LB Self ventilated
LB0 Non-ventilated



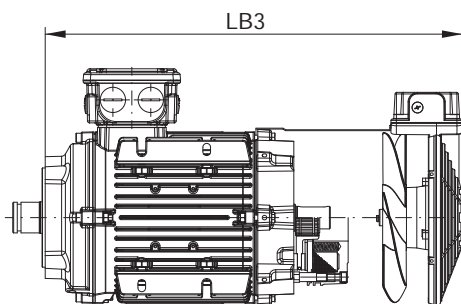
LB1 Self ventilated with brake
 or back stop type RSM



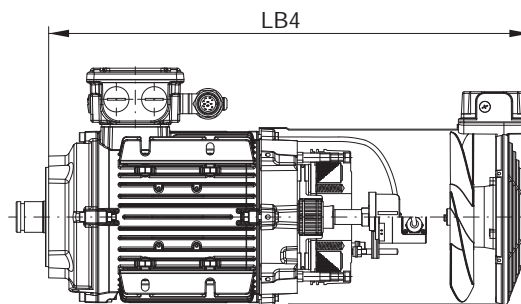
LB1 Self ventilated with standard encoder,
 SSI multiturn encoder or resolver



LB2 Self ventilated with brake and standard encoder,
 SSI multiturn encoder or resolver



LB3 Forced ventilation with or without brake



LB4 Forced ventilation with/without brake and standard encoder,
 SSI multiturn encoder or resolver

M

Motor modules

High / Low temperature execution

HT	High temperature execution
LT	Low temperature execution

To ensure steady operation even at increased or very low ambient temperatures, we offer specially adjusted motor executions with more resistant components.

Temperature control

TH	Bimetal switch for switch off
2TH	Bimetal switch for warning and switch off
TF	PTC thermistor for switch off
2TF	PTC thermistor for warning and switch off
KTY	Temperature sensor

In the standard version, the motors are designed with motor protection in the motor winding. In order to protect the winding of a three-phase induction motor against thermal overloads, resulting for example from overloading and operation with only two phases, one of the following devices can be provided:

TH - Bimetal switch „NC contact“ (+155°C)

The contact is normally closed (NC); the disc opens when the winding's temperature reaches limits dangerous for the insulation system. When a limit temperature is reached, these bimetal switches (NC contacts) can deactivate an auxiliary circuit. The circuit can only be reclosed following a considerable fall in temperature. When the motor current rises quickly (e.g. with a locked rotor), these switches are not suitable due to their large thermal time constants.

TF - PTC thermistor (+155°C)

The most comprehensive protection against thermal overloading caused in starting against heavy masses, heavy alternating load and high frequency starting resp. brake operation or high ambient temperatures of the motor is provided by PTC thermistors installed in the motor winding.

The sensors are temperature sensitive resistors (PTC) which change value almost instantaneously at their response temperature. The switch off level corresponds to the thermal class of the insulation. This characteristic is used in combination with tripping devices (on request) to monitor the temperature of the motor. For warning purposes additional bimetal switches or PTC thermistors with lower switch off temperature can be fitted. These correspond to the key **2TH** and **2TF**.

KTY - Temperature sensor

This sensor is a semiconductor that changes its resistance depending on temperature in accordance with a defined characteristic. The evaluation is made by an extra tripping device (on request). The temperature sensor is embedded in the winding head of the motor in the same manner as a PTC thermistor. Evaluation is performed, for example, in the frequency inverter.

Anti-condensation heating

SH	Anti-condensation heating
-----------	---------------------------

Windings of motors, which are operating at conditions of extreme temperature changes or extreme climatic conditions, are endangered of condensation water. The built in anti-condensation heating warms up the motor windings after switching off and prevents the motor inside from condensation water.

During motor operation the anti-condensation heating must not be switched on. The limit temperature of the winding (+155°C in thermal class F) must not be exceeded! Temperature control is advisable!

IEC frame size	Heating performance [W]
71	13
80	25
90	
100	
112	50
132	
160	75
180	
200	
225	100
250	

The anti-condensation heating must be supplied with a separate voltage.

Supply voltage: 230 V (1~) - Voltage range for IEC frame sizes: 71 to 200: 220 - 240 V, 50/60 Hz

Climatic protection

K1	Humidity protection
K2	Corrosion protection

The following standardised climatic protection executions are available for motors exposed to extreme climatic conditions:

K1 - Humidity protection

Humid warm climate or humid variable climate with max. relative air humidity of 92 %, also for areas on the seaside

K2 - Corrosion protection

Relative air humidity of more than 92 % (extreme formation of condensation water), furthermore against chemically aggressive gases and vapours of increased concentration

Drain

KB	Drain
-----------	-------

In cases of increased air humidity, periodic duty, installation in the open air or when subject to extreme climatic conditions, the motors are endangered by the formation of condensation. The endshields have holes for drainage of water that may condense inside the frame. These holes are supplied with rubber drain plugs, which leave the factory in closed position and must be opened periodically to allow the exit of condensed water.

To determine the correct position of the hole the exact mounting position of the motor must be defined.

M

Terminal box designs

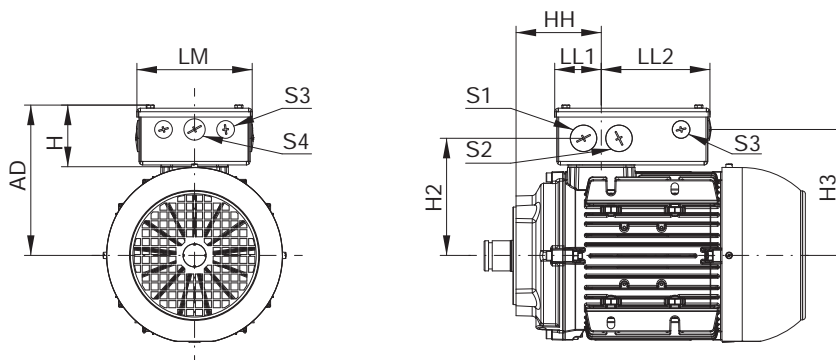
MIP	Multipin box
MIG..	MIG - connect systems

MIP - Multipin box

IEC frame sizes: 63 to 250

This extended terminal box was designed to permit additional options, such as brakes, incremental encoders, thermal elements, anti-condensation heating and the like, to be connected in an orderly fashion in the box.

The terminal box can be equipped with up to 22 sockets, including a brake rectifier. The terminal used are two-wire terminals fitted with cage clamp connectors. These are suitable for single-wire, multi-wire and fine-wire lines with diameters up to 4 mm².



IEC frame size	MIP box												
	AD	HH	HK	H2	H3	LM	LL1	LL2	S1	S2	S3	S4	
63	132	90	69	95	99	130	52	122	2xM25	2xM25	4xM16	1xM20	
71	140	99	69	103	107	130	52	122	2xM25	2xM25	4xM16	1xM20	
80	149	95	69	112	116	130	52	122	2xM25	2xM25	4xM16	1xM20	
90	159	96	69	122	126	130	52	122	2xM25	2xM25	4xM16	1xM20	
100	169	109	69	132	136	130	52	122	2xM25	2xM25	4xM16	1xM20	
112	182	130	70	144	154	140	68	138	2xM32	2xM32	4xM16	1xM25	
132	202	123	70	164	174	140	68	138	2xM32	2xM32	4xM16	1xM25	
160	FR-200	269	270	104	211	220	205	105	171	2xM50	2xM40	4xM16	1xM25
	FR-250		265										
	FR-300		260										
	FR-400		257										
	FR-550		241										
180	FR-250	284	303	104	231	240	205	105	171	2xM50	2xM40	4xM16	1xM25
	FR-300		298										
	FR-400		285										
	FR-550		269										
200	FR-300	300	348	104	250	256	205	105	177	2xM50	2xM40	4xM16	1xM25
	FR-400		335										
	FR-550		319										
225	FR-400	344	286	104	289	295	205	105	177	2xM50	2xM40	4xM16	1xM25
	FR-550		270										
250	FR-550	361	261	104	306	312	205	105	177	2xM50	2xM40	4xM16	1xM25

Dimensions in mm

MIG - connect system

Models: MIG10B, MIG16, MIG40, MIG10-FL
IEC frame sizes: 63 to 180 (MIG10-FL up to 250)

The MIG (Multiplug) - connect system is a standardised distributed connection system. It is used for the integration of power and control cabling into a single motor connector. The plug is assembled in-house and replaces the terminal box.

Most important advantages:

- Quick installation and service at site
- Avoiding wiring faults
- Motor replacement without electrical manipulation

For motor frame sizes 63 to 180 three MIG types of different power ratings are used. For each MIG model mating connectors are available:

MIG10B:

With 18 PINs and ground this most compact plug enables connection to motors up to a rated current of 10 A with voltages up to 400/690 V and protection degrees up to IP67. Beside the power wires a variety of auxiliary wires can be connected as well.

MIG16:

This MIG for mid-sized motors supports a maximum current of 16 A at 500 V with 10 PINs in total. In case a wider variety of auxiliary PINs is necessary a mixed holding can be offered (6 PINs - 16 A; 12 PINs - auxiliary).

MIG40:

To achieve all contacts to be connected with one plug a mixed holding of PINs has to be used in this case. 6 PINs for 40 A at 400/690 V together with 12 PINs auxiliary guarantees full contactability.

For motor frame sizes 63 to 250 with forced ventilation the following MIG type is available:

MIG10-FL:

On demand this MIG can replace the normal forced ventilation connection. Thereby this motor module has all advantages of a MIG - connect plug system. The plug is equipped with 3 PINs and grounding and can be mounted on every forced ventilation size.

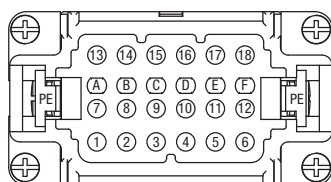


MIG40 execution

MIG - connect system overview table

IEC frame size		63	71	80	90	100	112	132	160	180
400 V, 50 Hz	4p	10B	10B	10B	10B	10B	16	16	40	40
	6p	10B	10B	10B	10B	10B	16	16	40	40
230 V, 50 Hz	4p	10B	10B	10B	10B	16	-	-	-	-
	6p	10B	10B	10B	10B	16	-	-	-	-
400 V, 100 Hz	4p	10B	10B	10B	10B	16	40	40	-	-
	6p	10B	10B	10B	10B	10B	16	40	-	-
460 V, 60 Hz	4p	10B	10B	10B	10B	10B	16	16	40	40
	6p	10B	10B	10B	10B	10B	16	16	40	40
460 V, 120 Hz	4p	10B	10B	10B	10B	16	16	40	-	-
	6p	10B	10B	10B	10B	10B	16	40	-	-

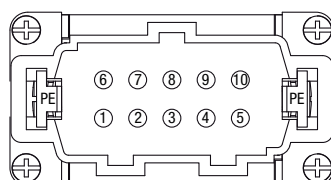
PIN assignment MIG10B



PIN	Assignment
PE	Grounding terminal
1	Winding connection U1
2	Winding connection V1
3	Winding connection W1
4*	Bimetal release 1 TH1
5	Brake heating tape
6	Anti-condensation heating
7	Winding connection W4
8	Winding connection U4
9	Winding connection V4
10*	Bimetal release 1 TH1
11	Brake heating tape
12	Anti-condensation heating

PIN	Assignment
13	Brake
14	Brake
15	Brake microswitch
16	Brake microswitch
17*	Bimetal release 2 TH2
18*	Bimetal release 2 TH2
*alternatively	
4	PTC thermistor 1 TF1
10	PTC thermistor 1 TF1
17	PTC thermistor 2 TF2
17	Resistance thermometer KTY1
18	PTC thermistor 2 TF2
18	Resistance thermometer KTY 1

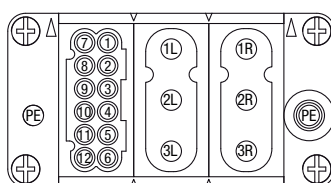
PIN assignment MIG16



PIN	Assignment
PE	Grounding terminal
1	Winding connection U1
2	Winding connection V1
3	Winding connection W1
4*	Brake
5*	Brake
6	Winding connection W4
7	Winding connection U4

PIN	Assignment
8	Winding connection V4
9*	Temperature sensor 1
10*	Temperature sensor 1
*alternatively	
9	Anti-condensation heating
10	Anti-condensation heating
4	Temperature sensor 2
5	Temperature sensor 2

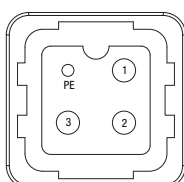
PIN assignment MIG40



PIN	Assignment
PE	Grounding terminal
1R	Winding connection U1
2R	Winding connection V1
3R	Winding connection W1
1L	Winding connection W4
2L	Winding connection U4
3L	Winding connection V4
1	Brake
2	Temperature sensor 1
3	Temperature sensor 2

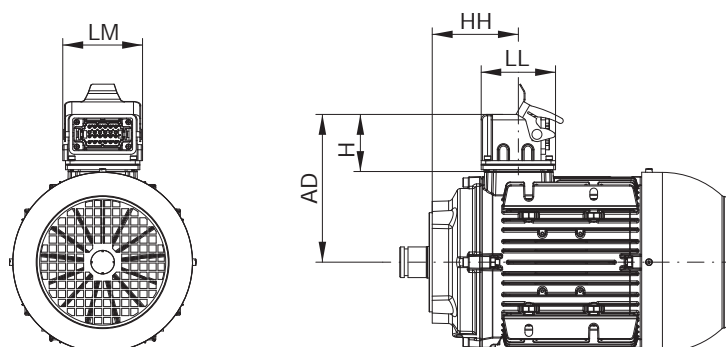
PIN	Assignment
4	Temperature sensor 3
5	Anti-condensation heating
6	
7	Brake
8	Temperature sensor 1
9	Temperature sensor 2
10	Temperature sensor 3
11	Anti-condensation heating
12	

PIN assignment MIG10-FL



PIN	Assignment
PE	Grounding terminal
1	Power connection L1
2	Power connection L2
3	Power connection L3

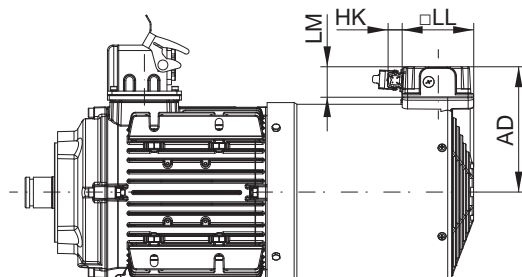
Dimension sheet MIG10B, MIG16, MIG40



IEC frame size	MIG - connect system						
	MIG Type	AD	HH	HK	LL	LM	
63	10B	124	90	61	82	86	
71	10B	132	99	61	82	86	
80	10B	141	95	61	82	86	
90	10B	151	96	61	82	86	
100	10B / 16	161	109	61	82	86	
112	16 / 40	173	130	61	82	86	
132	16 / 40	193	123	61	82	86	
160	FR-200	40	226	270	61	82	86
	FR-250			265			
	FR-300			260			
	FR-400			257			
	FR-550			241			
180	FR-250	40	241	303	61	82	86
	FR-300			298			
	FR-400			285			
	FR-550			269			

Dimensions in mm

Dimension sheet MIG10-FL



IEC frame size	MIG10-FL			
	AD	HK	□LL	LM
63	118	28	107	32
71	124			
80	134			
90	143			
100	152			
112	164			
132	185			
160	211			
180	211			
200	211			
225	211			
250	211			

Dimensions in mm



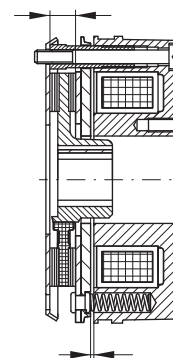
Brake system and Back stop

- BR..** Spring loaded brake
- BBRHGD..** Double spring loaded brake
- BRGH..** Totally closed spring loaded brake (Heavy Duty)
- KKM** Back stop (frame sizes 63 to 90)
- RSM** Back stop (frame sizes 100 to 250)

The mounted spring loaded brake is a single-disc brake with two friction surfaces. It is released electromagnetically and brakes by spring pressure, when the brake is de-energised. The DC-brake coil is supplied from a rectifier which is located in the motor terminal box and will be delivered as standard for AC-side connection.

Product information

- Voltages: Standard: 190 V DC (BR4, 8, 16, 32) or 195 V DC (BR2, 5, 10, 20, 40, 60, 100, 150, 250, 400, 1000)
Optional: 24 V DC
Special execution: 102/103 V DC
- All bare parts corrosion protected
- Short switching times
- Large reserve for abrasion
- Designed for 100 % duty cycle and max. admissible temperature limit of +145 °C
- Degree of protection IP55 (standard)



a air gap
b brake lining thickness

On motors with brake-endshield on the non-driven side subsequent installation of brakes is possible (brake-motor-set available).

Function and adjustment (see illustration below)

When the brake is de-energised, the springs are pressing the armature disc (9) against the brake disc (7) and the friction plate (5). The motor shaft (3) is braked via the brake disc (7) and the gear hub (6). When the brake is energised, a magnetic field is built up and the armature disc (9) is pulled against the magnetic case with the coil (10). When the motor is running, the brake disc (7) can rotate freely from the brake surfaces. In the case of power failure, the brake functions automatically by spring force. A manual release (11) is optionally available (subsequent assembling is also possible).

Braking torque adjustment

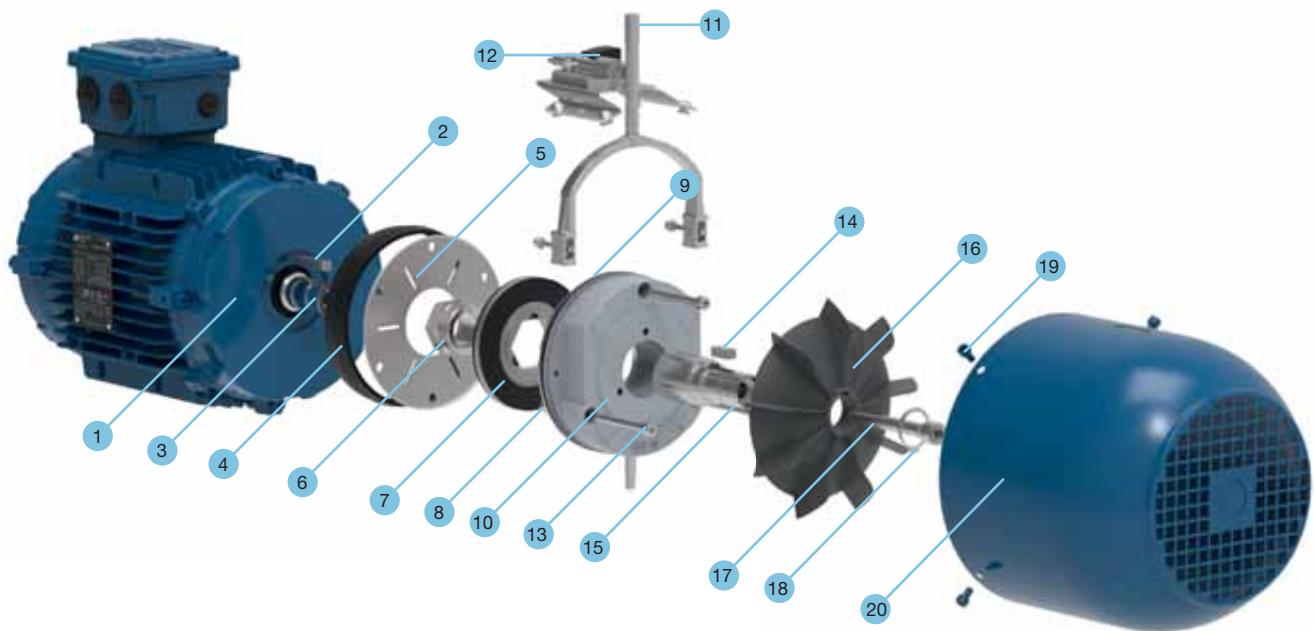
At delivering, the brakes and the brake motors are adjusted to the brake torque M_B . Brake torque reduction is done by removing of springs. Reduced brake torque on request.

Maintenance

Due to abrasion of the friction linings (7) the air gap "a" (see page 389) between magnetic case (10) and armature disc (9) expands. It is necessary to check and readjust the air gap in certain intervals or replace the brake disc (7).

Readjustment of the air gap

First of all the three fixing screws (13) must be loosened half a turn. Now the sleeve screws (8) can be screwed into the magnetic case (10) by turning counter-clockwise. By turning the three fixing screws (13) clockwise, the magnetic case (10) can be moved in direction to the armature disc (9), as long as the nominal air gap a_{normal} (see table on page 508) is obtained. Now the three sleeve screws (8) will be unscrewed clockwise from the magnetic case (10) and the fixing screws (13) will be fixed. Please check the air gap "a" with a feeler gauge, if it is symmetrical and adjust it if necessary.



- | | |
|------------------------------------|------------------------------------|
| 1 Brake endshield | 11 Manual release lever (optional) |
| 2 Key | 12 Locking device |
| 3 Motor shaft | 13 Socket cap screw |
| 4 Dust protection ring | 14 Key |
| 5 Friction plate | 15 Brake shaft extension |
| 6 Gear hub | 16 Fan |
| 7 Brake disc with friction linings | 17 Socket cap screw |
| 8 Sleeve screws | 18 Retaining ring |
| 9 Armature disc | 19 Fan cover screws |
| 10 Magnetic case | 20 Fan cover (brake execution) |

Exploded view: Brake with manual release and locking device, frame size 100

Brake selection

As shown in the following selection table, it is possible to supply brake motors with different brake torques to correspond to the most possible applications. It is also possible to achieve an optimal adaption, by means of the mode of connection of the brake. If exact values about the application are available, we recommend to calculate the braking torque according to the following formulas on page 512, otherwise the proportion between motor rated torque (M_N) and braking torque (M_B) can be taken as an indication for the dimensioning of the brake and check, if the safety factor is sufficient.

For normal applications we recommend sizing the brake 1.5 - 2 times the motor rated torque (M_N), for special applications (lifting gears, switching operation, etc.) 2 - 3 times the motor torque and as holding brake approx. 1 time the rated torque.

Reduced brake torques on request.

- **Execution A - working brake**

M_B approx. 1.5 - 2 times M_N , or applications with medium masses to be accelerated and medium number of starts

- **Execution B - holding brake**

M_B approx. 1 time M_N for drives with small masses to be accelerated and number of starts resp. for keeping the drive stopped

Brake selection table

IEC frame size	BR.. Standard brake		BBRHGD.. Double brake		BRGH.. Totally closed brake	
	Standard Execution A M_B	Execution B M_B	Standard Execution A M_B	Execution B M_B	Standard Execution A M_B	Execution B M_B
63	2 Nm	4 Nm	-	-	-	-
71	4 Nm	2 Nm	2 x 6 Nm	-	5 Nm	-
80	8 Nm	4 Nm	2 x 12,5 Nm	2 x 6 Nm	10 Nm	5 Nm
90	16 Nm	8 Nm	2 x 25 Nm	2 x 12,5 Nm	20 Nm	10 Nm
100	32 Nm	16 Nm	2 x 50 Nm	2 x 25 Nm	40 Nm	20 Nm
112	60 Nm	32 Nm	2 x 75 Nm	2 x 50 Nm	60 Nm	40 Nm
132	100 Nm	60 Nm	2 x 125 Nm	2 x 75 Nm	100 Nm	60 Nm
160	150 Nm	100 Nm	2 x 187 Nm	2 x 125 Nm	150 Nm	100 Nm
180	250 Nm	150 Nm	2 x 300 Nm	2 x 187 Nm	250 Nm	150 Nm
200	400 Nm	250 Nm	2 x 500 Nm	2 x 300 Nm	400 Nm	250 Nm
225	400 Nm	250 Nm	2 x 500 Nm	2 x 300 Nm	400 Nm	250 Nm
250	1000 Nm	-	2 x 1200 Nm	-	1000 Nm	-

Spring loaded brake: electrical characteristics																		
U_{2nenn}	U_2	Brake size		2**	4*	5**	8*	10**	16*	20**	32*	40**	60**	100**	150**	250**	400**	1000**
[V]	[V]	M_B	[Nm]	2	4	5	8	10	16	20	32	40	60	100	150	250	400	1000
190* 195**	170-210 162-236	Coil current	[A]	0.13	0.11	0.13	0.13	0.18	0.16	0.20	0.21	0.26	0.32	0.42	0.50	0.65	0.85	0.83
		Power	[W]	26	20	26	25	36	30	38	40	50	63	82	99	127	165	162
		Resistance	[Ω]	1475	1805	1475	1444	1070	1203	990	903	754	600	464	385	300	230	235
24	19-28	Coil current	[A]	1.14	0.83	1.14	1.04	1.44	1.25	1.70	1.66	2.10	2.70	3.30	4.00	5.20	7.30	-
		Power	[W]	27	20	27	25	34	30	41	40	50	65	80	96	125	175	-
		Resistance	[Ω]	21	29	21	23	17	19	14	14	12	8.9	7.2	6.0	4.6	3.3	-
102 ¹⁾ ** 103 ¹⁾ *	85-133 93-113	Coil current	[A]	0.30	0.19	0.30	0.24	0.38	0.31	0.45	0.39	0.53	0.60	0.85	0.94	1.23	1.76	-
		Power	[W]	31	20	31	25	38	32	46	40	54	60	87	95	125	179	-
		Resistance	[Ω]	340	531	340	424	271	332	228	265	192	174	120	109	83	58	-

 standard brake

¹⁾ special execution (on demand)

Spring loaded brake: mechanical characteristics																
Brake size		2	4	5	8	10	16	20	32	40	60	100	150	250	400	1000
M_B	[Nm]	2	4	5	8	10	16	20	32	40	60	100	150	250	400	1000
M_{BS}	[Nm]	-	6	7.5	12	15	24	30	48	60	90	150	225	375	600	1500
P_{20}	[W]	26	20	26	25	36	30	38	40	50	63	82	100	127	165	162
J_B	[kgm ² x10 ⁻³]	0.015	0.015	0.015	0.061	0.045	0.20	0.172	0.45	0.45	0.86	1.22	2.85	6.65	19.5	45
P_R	[J/s]	80	*	80	*	100	*	130	*	160	200	250	300	350	400	450
W_{Rmax}	[Jx10 ³]	3	3	3	7.5	6	12	12	24	25	35	50	75	105	150	200
W_{RN}	[Jx10 ⁷]	5	8.5	5	15.8	12	26.4	20	53	35	60	125	200	340	420	450
a_{normal}	[mm]	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6
a_{max}	[mm]	0.6	0.5	0.6	0.5	0.7	0.5	0.8	0.75	0.9	1.0	1.1	1.1	1.2	1.2	1.7
b_{min}	[mm]	4.5	4.5	4.5	5.5	5.5	7.5	7.5	8.0	9.5	11.5	12.5	14.5	16.5	16.5	21
m	[kg]	1.1	1.0	1.1	1.6	1.9	3.1	3.1	4.2	4.6	6.3	10	14.7	21.5	35	73
$t_{2=}$	[ms]	35	45	35	57	45	76	60	115	80	120	160	200	220	300	320
$t_{1≈}$	[ms]	70	*	70	*	95	*	140	*	175	210	280	350	500	800	3000
$t_{1=}$	[ms]	30	28	30	31	45	47	60	53	75	90	120	150	180	200	160
Fits on IEC motor frame size		63, 71	63, 71, 80	63, 71, 80	80, 90	80, 90	90, 100	90, 100	100, 112	100, 112	112, 132	132, 160	160, 180	180, 200, 225	200, 225	250

* on request

	Designation	Unit
Rated torque of spring loaded brake	M_B	[Nm]
Holding torque of the spring loaded brake	M_{BS}	[Nm]
Brake coil power consumption	P_{20}	[W]
Brake moment of inertia	J_B	[kgm ²]
Friction performance	P_R	[J/s]
Friction per switch cycle	W_{Rmax}	[J]
Friction until readjustment	W_{RN}	[J]
Air gap	a	[mm]

	Designation	Unit
Minimum brake rotor thickness	b	[mm]
Mass of moved machine parts	m	[kg]
Engaging time	t_1	[ms]
Release time of brake	t_2	[ms]
Output voltage DC rectifier	$U_{2=}$	[V]
For DC switching	$=$	-
For AC switching	$≈$	-

BR.. - Spring loaded brake

Degree of protection IP55.

<p>BR.. Spring loaded brake without additional options</p> <p>Possible options:</p> <p>BRH.. With manual release</p> <p>BRHA.. With manual release and locking device</p> <p>BRR.. With corrosion protection IP55</p> <p>BRS.. With dust protection IP65</p> <p>BRSR.. With dust and corrosion protection IP65</p> <p>BRGD.. Low noise execution</p>		<p>Ordering examples:</p> <p>BR5 Brake 4 Nm</p> <p>BRHASRGD32 Brake 32 Nm with manual release, locking device, dust and corrosion protection and low noise execution</p>
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BRM - Micro switch

When brake release monitoring is necessary, a micro switch (5) can be fitted to indicate brake release. This signal can be used to start the electric motor. When air gap "a" (see page 505) is at its maximum and the armature is no longer attracted to the magnet body the motor will not start and air gap "a" must be adjusted.

The installation of the micro switch is possible for brake sizes 5, 10, 20, 40, 60, 100, 150, 250, 400 and 1000.

BRH.. - Manual release

The installation of the manual release is possible for brakes > 4 Nm. The manual release (1) is necessary for manually releasing the brake in cases of power failure. Brakes will be supplied with manual releases fitted by factory. The adjustment of the manual release may not be changed, not even when air gap "a" (see page 505) is readjusted, as safety can be adversely affected.

BRHA.. - Manual release with locking device

In case of service the manual release can be fastened with a locking device. Take care that in rated condition the brake is released (see illustration on page 510). The 0° position of the manual release with locking device is **only possible** with motor frame sizes 225 and 250.

BRR.. - Corrosion protection

Protection class IP55. Consists of painted brake endshield and friction plate (3), which is made of non-corrosive material.

BRS.. - Dust protection

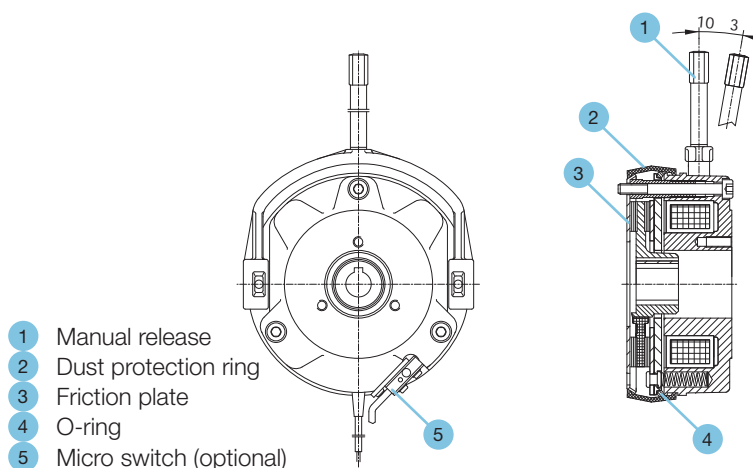
Protection class IP65. Consists of friction plate (3), which is made of non-corrosive material, dust protection ring (2) and shaft seal.

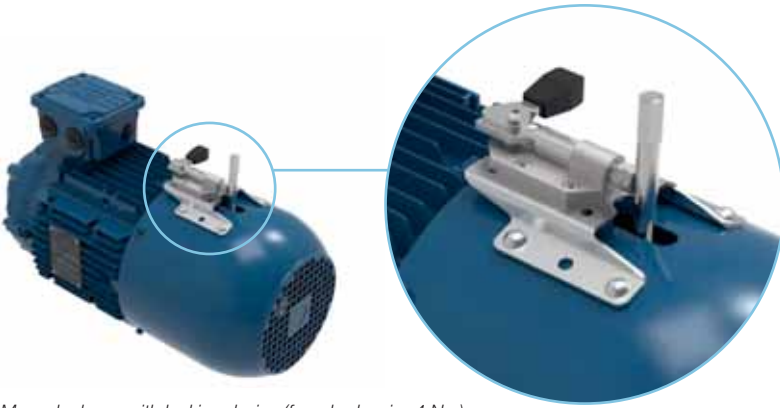
BRSR.. - Corrosion and dust protection

Protection class IP65. Consists of painted brake endshield, friction plate (3), which is made of a non-corrosive material, dust protection ring (2) and shaft seal.

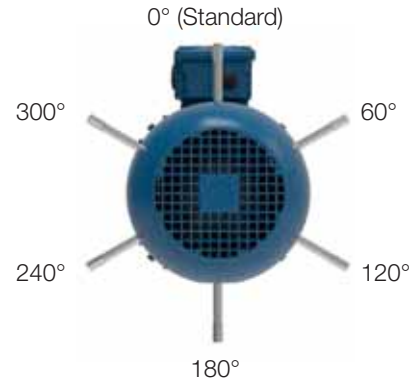
BRGD.. - Low noise execution

To reduce the switching noises of the spring loaded brake, the o-ring (4) can be inserted between armature plate and brake body.





Manual release with locking device (from brake size 4 Nm)



Possible positions of the manual release at the view of the motor fan cover. (The 0° position of the manual release with locking device is only possible with motor frame sizes 225 and 250.)

BBRHGD.. - Double spring loaded brake

Double brakes (from motor frame size 71) are two specially designed low noise brakes working independently of each other meeting high demands on safety.

As option a micro switch (5) is monitoring the function of the brakes. The brakes are executed per default in low noise execution and with manual release.

BBRHGD.. Double brake in low noise execution with manual release (standard)

Possible options:

BBRHSGD.. With dust protection IP65

BBRGD.. Without manual release

Ordering examples:

BBRHGD6 Double brake 2 x 6 Nm in low noise execution with manual release

BBRHSGD187 Double brake 2 x 187 Nm in low noise exec. with man. release and dust protection

BBRM - Micro switch

When brake release monitoring is necessary, a micro switch (5) can be fitted to indicate brake release. This signal can be used to start the electric motor. When air gap "a" (see page 505) is at its maximum and the armature is no longer attracted to the magnet body the motor will not start and air gap "a" must be re-adjusted.

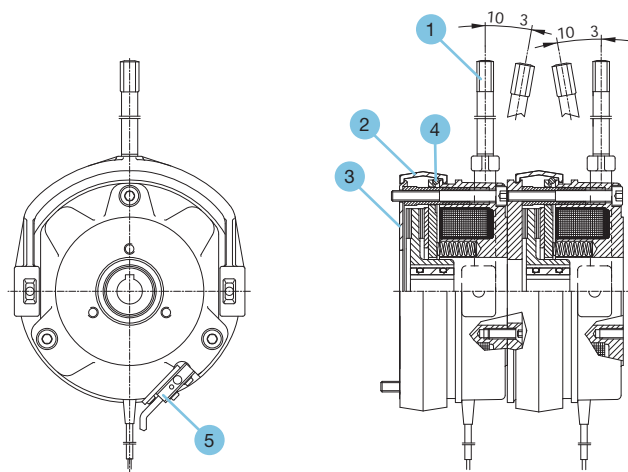
BBRHSGD.. - Dust protection

Protection class IP65. Consists of friction plate (3), which is made of non-corrosive material, dust protection ring (2) and shaft seal.

BBRHGD.. - Manual release

The manual release (1) for manually releasing of the brake in cases of power failure. Brakes will be supplied in standard with manual release fitted by factory. The adjustment of the manual release may not be changed, not even when air gap "a" (see page 505) is readjusted, as security can be adversely affected.

Possible positions of the manual release see on page 510.



- 1 Manual release
- 2 Dust protection ring
- 3 Friction plate

- 4 O-ring
- 5 Micro switch (optional)

BRGH - Totally closed spring loaded brake „heavy duty“

The fully capsulated brake design with dust and waterproof cable glands is in accordance with protection degree IP66. On ventilated motor executions IC411 the shaft passage is sealed by sealings. The brake is executed with manual release in standard. On the brake disc a lining for high loads is fitted. Brake selection table see page 507.

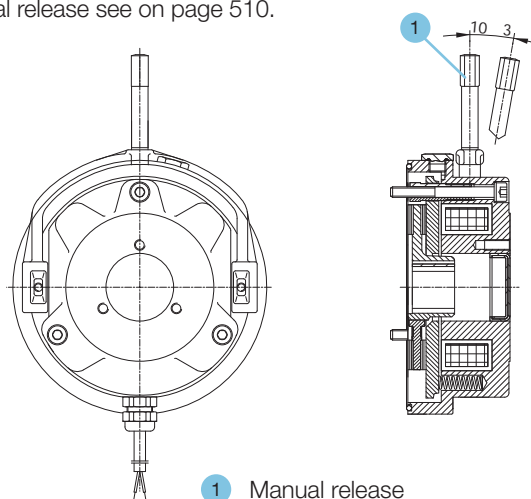
BRGH.. Totally closed spring loaded brake with manual release Possible options: BRGHA.. With manual release and locking device BRG.. Without manual release		Ordering examples: BRGH10 Brake 10 Nm with manual release BRGHA150 Brake 150 Nm with manual release and locking device
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BRGH.. - Manual release

The manual release (1) is necessary for manually releasing the brake in cases of power failure. Brakes will be supplied in standard with manual release fitted by factory.

The adjustment of the manual release may not be changed, not even when air gap "a" (see page 505) is readjusted, as safety can be adversely affected.

Possible positions of the manual release see on page 510.



1 Manual release

Anti-condensation heating for brakes

When operating at conditions of extreme temperature changes or extreme climatic conditions, the windings are endangered of condensation water. The built in anti-condensation heater warms up the magnet windings after switching off and prevents the brakes inside from condensation water.

The anti-condensation heating must be supplied with a separate voltage.

Supply voltage 230 V (1~)

Voltage range: 220 - 230 V, 50/60 Hz

Brake size* [Nm]	Performance [W]
10	16
20	29
40	33
60	35
100	48
150	53
250	70
400	128
1000	131

* The anti-condensation heating for brakes is only available for the brake sizes indicated in the table.

Calculation of the brake torque

If the mass moment of inertia, the rotation speed and the permissible braking time of the machine are known, the torque of the spring loaded brake can be calculated.

	Formula	Unit
Load moment (static load)	$M_L = F \cdot r$	[Nm]
Braking torque (dynamic load) There is a pure dynamic load if fly-wheels, rolls, etc. have to be slowed down and when the static load is very insignificant.	$M_a = 1,046 \cdot 10^2 \cdot J_{ZUS} \cdot \frac{n}{t - t_1}$ $M_{aerf} = M_a \cdot K \leq M_B$	[Nm]
Braking torque (dynamic and static load) In most applications there is also dynamic load in addition to static load.	$M_{aerf} = (M_a \pm M_L) \cdot K$ $M_{aerf} = (1,046 \cdot 10^2 \cdot J_{ZUS} \cdot \frac{n}{t_b} \pm M_L) \cdot K$ $M_{aerf} \leq M_B$	[Nm]
Estimated determination of braking torque	$M_{aerf} = 9,55 \cdot 10^3 \cdot \frac{P}{n} \cdot K$ $M_{aerf} \leq M_B$	[Nm]
Deceleration time	$t = t_B + t_1$	[ms]
Acceleration time	$t_A = \frac{J_{ges} \cdot n_1}{9,55 \cdot (M_A \pm M_L)} + t_2$ $J_{ges} = J_E + J_{ZUS}$	[s] [kgm ²]
Braking time	$t_B = \frac{J_{ges} \cdot n_1}{9,55 \cdot (M_A \pm M_L)}$ $J_{ges} = J_E + J_{ZUS}$	[s] [kgm ²]
The conversion of several mass moments of inertia with different rotation speeds in a mass moment of inertia reduced to the motor shaft	$J_{ZUS} = \frac{J_2 \cdot n_2^2 + J_3 \cdot n_3^2 \dots}{n_1^2}$	[kgm ²]
Conversion of straight-line moved machine parts into a corresponding J on the motor shaft	$J = 91,2 \cdot m \cdot \frac{v^2}{n_1^2}$	[kgm ²]
Friction per switch cycle	$W_R = \frac{J_{ZUS} \cdot n^2}{182,5} \cdot \frac{M_B}{M_B \pm M_L}$ $W_R < W_{Rmax}$	[J]
Friction performance	$P_R = W_R \cdot S$ $P_R < P_{Rmax}$	[J/s]

Designation	Unit	Description
M_L	[Nm]	Load moment Sign + : when the load moment acts decelerating (lifts when going up) Sign - : when the load moment acts accelerating (lifts when going down)
M_{aerf}	[Nm]	Necessary braking torque
M_a	[Nm]	Braking torque
M_A	[Nm]	Starting torque of motor
M_B	[Nm]	Rated torque of spring loaded brake
K	-	Safety factor according to the operating conditions (1...3)
F	[N]	Force
F_I	-	Factor of inertia
r	[m]	Lever arm
m	[kg]	Mass of moved machine parts
J, J ₁ , J ₂	[kgm ²]	Mass moment of inertia
J _E	[kgm ²]	Proper mass moment of inertia
J _{ges}	[kgm ²]	Total mass moment of inertia
J _{mot}	[kgm ²]	Mass moment of inertia of the motor

Designation	Unit	Description
J _{ZUS}	[kgm ²]	Additional mass moment of inertia
K	-	Safety factor $K \geq 2$
P	[kW]	Power
P _R	[J/s]	Friction performance
P _{Rmax}	[J/s]	Maximum friction performance
n	[min ⁻¹]	Rotation speed
n ₁	[min ⁻¹]	Rotation speed of motor
n ₂ , n ₃	[min ⁻¹]	Rotation speeds
t	[ms]	Deceleration time
t _A	[s]	Acceleration time
t _B	[s]	Braking time
t ₁	[ms]	Engaging time
t ₂	[ms]	Release time of brake
v	[m/s]	Speed
W _R	[J]	Friction work per switch cycle
W _{Rmax}	[J]	Permissible friction per switch cycle
S	[s ⁻¹]	Number of switch cycle per second

Rectifier

Power supply

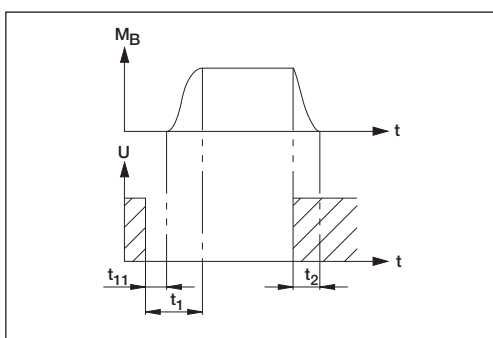
The DC-brake coil is normally supplied by a half wave rectifier incorporated in the motor terminal box and is also available for coil voltages 162-236 V DC, 85-133 V DC or 24 V DC (24 V with block terminal for external power supply!) Corresponding rectifiers and coil voltages are optionally available for all special voltages. The rectifiers are equipped with varistors to protect them against over-voltages.

At number of starts more than 1/s, please contact us for rectifier loading capacity.

Switching modes

By default brake motors will be delivered with connected rectifier for AC-side switching. For DC-side switching the bridge between terminals 5 and 6 must be removed and a switching contact must be connected. Start-up of motor only with connecting brake.

- **AC-side switching** is executed before the rectifier on AC-side. Here the magnetic field is de-energised slowly, the brake interrupts softly with delay. (Release time $t_1 \approx$)
- **DC-side switching** is executed between rectifier and coil. Thereby an extremely low degree of overrunning is achieved. For all gear units, which require exact braking, especially for lifting gears, a DC-side switching of the brake is absolutely required. (Release time $t_1 =$)



	Designation	Unit
Braking torque	M_B	[Nm]
Voltage	U	[V DC]
Engaging time	t_1	[ms]
Response delay (time from switching power off until braking torque increases)	t_{11}	[ms]
Release time (time from switching power on until braking torque begins to decrease)	t_2	[ms]

Rectifier selection

- *Half-wave and bridge rectifier*

The half wave rectifier which halves the supply voltage is the most cost effective. The bridge rectifier produces 90 % DC voltage from the AC supply voltage. Both rectifiers are available for switching on AC or DC side. Varistors in the input and output protect the rectifiers against surge voltages.

Half-wave rectifier: $U_{2=} = 0.45 \times U_{1\sim}$ $I_{max} = 1 \text{ A}$

Bridge rectifier: $U_{2=} = 0.9 \times U_{1\sim}$ $I_{max} = 2 \text{ A}$

- *Fast excitation rectifier*

For motor frame sizes 63-132 this rectifier can't be installed in the standard terminal box.

The high-speed rectifier uses special connections to make different direct voltages available on the terminals. This means that the following brake operating modes can be selected:

1. Rapid response: Brake voltage level equal to the holding voltage of the fast excitation rectifier: The ventilation time of the brake is reduced.
2. Power reduction: Brake voltage level equal to overexcitation voltage of the fast excitation rectifier: reduced performance losses in the brake coil, engage time of the brake is reduced.

Max. connection voltage: $U_{1\sim} = 500 \text{ V AC}$

Max. permissible connections: 600 connections/h

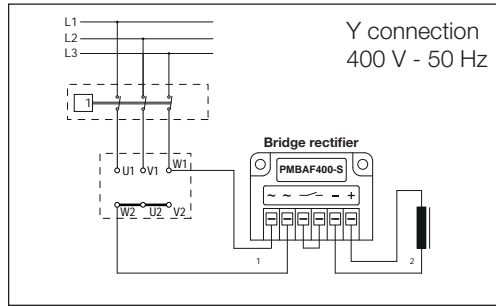
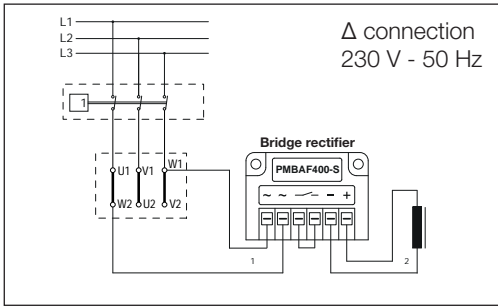
Max. permissible switching capacity: 210 W

Rectifier type	System	U_N [V]	I_N [A]
PMEAF500-S	Half-wave rectifier	500	1
PMBAF400-S	Bridge rectifier	400	2
PMG480-S	Fast excitation rectifier	500	2

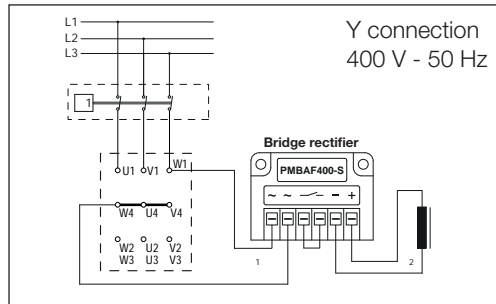
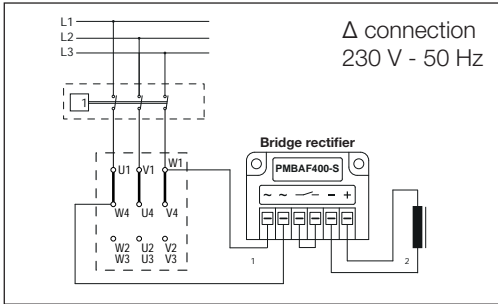
Overexcitation phase (voltage)	$T = 0 - 500 \text{ ms } (\pm 200 \text{ ms})$	$U_{2=} = 0.9 \times U_{1\sim}$	$I_N = 4 \text{ A}$
Holding phase (voltage)	$T > 500 \text{ ms}$	$U_{2=} = 0.45 \times U_{1\sim}$	$I_N = 2 \text{ A}$

Switching diagram for braking motors

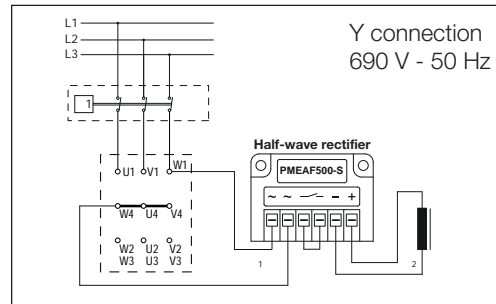
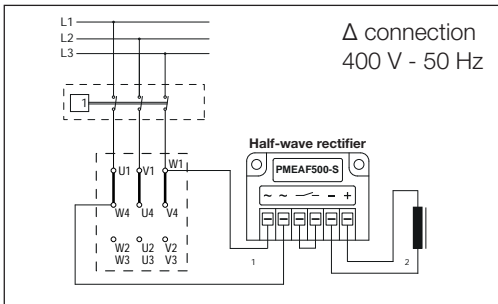
- AC switching - Motor frame sizes 63-80 (Multi-Voltage-Motor)



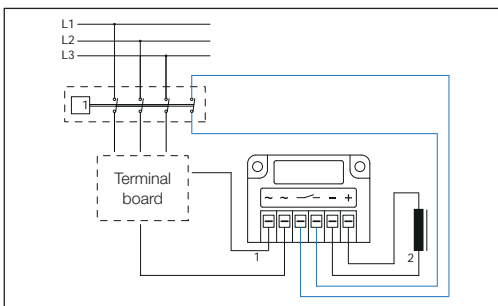
- AC switching - Motor frame sizes 80-100 (EUSAS-Motor)



- AC switching - Motor frame sizes 112-250 (EUSAS-Motor)



- DC switching



Connection examples

Multi-Voltage-Motor									
Motor frame size	Connection	50 Hz			60 Hz			Rectifier model	Brake coil voltage [V]
		3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]	3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]		
63-80		230	230	207	265	265	239	PMBAF400-S	265
		400	230	207	460	265	239	PMBAF400-S	265

EUSAS-Motor									
Motor frame size	Connection	50 Hz			60 Hz			Rectifier model	Brake coil voltage [V]
		3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]	3~ U _N [V]	U _{1~} [V]	U ₂₌ [V]		
80-100		230	230	207	265	265	239	PMBAF400-S	265
		400	230	207	460	265	239	PMBAF400-S	265
112-250		400	400	180	460	460	207	PMBAF500-S	265
		690	400	180	-	-	-	PMBAF500-S	265

	Designation	Unit
Maximum rated output current DC rectifier	I _N	[A]
Maximum rated input voltage AC rectifier	U _N	[V]

	Designation	Unit
3~ rated motor voltage	3~ U _N	[V]
Supply voltage AC rectifier	U _{1~}	[V]
Output voltage DC rectifier	U ₂₌	[V]

Back stop

Installing a back stop guarantees that the motor

- can start only in one direction
- can't be turned in wrong direction from counteract torques

KKM Back stop (IEC frame size 63 to 90)

RSM Back stop (IEC frame size 100 to 250)

The applied free wheels of the clamping bodies are mounted on the motor endshield (NDE) in such a manner, that the standard motor dimension LB up to motor size 90 will not be lengthened. From motor size 100 the motor dimension LB1 is valid. The back stop has been largely dimensioned and corresponds approx. to the motor starting torque (M_Δ) to prevent a damage in case of short-time-starting against the back stop at switchings made by error. Nevertheless, the free direction of rotation must be determined first, especially at big motor powers and we recommend for the first starting the star connection and only then the delta connection at correct rotation.

Back stop overview

IEC frame size	Back stop type	Torque [Nm]	Motor length dimension (see page 496)
63	KKM	7.4	LB
71	KKM	13.5	LB
80	KKM	40	LB
90	KKM	68	LB
100	RSM	150	LB1
112	RSM	150	LB1
132	RSM	390	LB1
160	RSM	580	LB1
180	RSM	580	LB1
200	RSM	1050	LB1
225	RSM	1050	LB1
250	RSM	2100	LB1

Fields of application:

- Drives for elevators and inclined lifts
- Pumps and fans with backpressure ratchet
- Gearmotors for conveyors with non-reverse characteristic

KKM - Back stop (ball bearing free-wheelings)

The elements have bearing characteristics and are used instead of the bearing on the fan side. The outer dimensions are identical to the deep-groove ball bearings.

▪ *Function*

Rolling elements and spring loaded clamping bodies are built in between inner and outer ring. The rolling elements and ratchet elements are fixed in a plastic cage. Torque transmitting is made by tight fits on the inner and outer ring. The elements are grease prelubricated. They are maintenance-free for 10,000 to 20,000 hours under normal working conditions.

▪ *Mounting*

The KKM back stop will be mounted instead of the bearing on the non-driven side.

RSM - Back stop (with centrifugal mechanism)

Because the mounted back stops have no bearing properties, they are mounted directly near the non-drive bearing. Above the lifting speed the centrifugal elements are working contactless and so they are maintenance free under normal conditions.

▪ *Mounting*

The centrifugal elements are mounted directly near the non-driven side bearing between bearing and fan under the fan cover. The inner ring of the back stop is connected with the shaft with a key DIN 6885-1.

▪ *Direction of rotation*

The direction of rotation has to be given with the ordering.

▪ *Back stop direction*

Back stop direction at a view on output shaft right or left. By turning the entire back stop system by 180°, the back stop direction can be reversed (applies only for RSM!).



M

Encoder systems

- I. Encoder outside the fan cover
- S. Encoder inside the fan cover



Encoder outside the fan cover



Standard position connector (M23)



Encoder inside the fan cover

Modular design

We are using encoders with hollow shaft (ø 12 mm) open at one end. The modular motor shafts are fit to attach an encoder set. The mounting of encoders therefore is easy and immediately possible. Add-on kits are easy to retrofit.

Mounting of encoders

The encoders are equipped with an integral bearing and connected directly on the non-driven motor shaft side. During angular acceleration of the shaft the stator coupling must absorb only the torque resulting from friction in the bearing.

IG, SG - Standard encoder

Available for IEC motor frame sizes 63 to 250 (IG) / 71 to 250 (SG)

Type: Kübler Sendix 5020

Pulses per revolution: 1024

Output signal: HTL or TTL

Voltage supply: 10-30 V at HTL, 5 V at TTL

Degree of protection: IP66

IG standard: with PIN connector (M23) on the encoder

SG standard: with PIN connector (M23) on the terminal box (mating connector not included in delivery)

Other numbers of pulses per revolution on request.

IC, SC - SINCOS encoder

Available for IEC motor frame sizes 80 to 225 (IC) / 80 to 250 (SC)

Pulses per revolution: 1024

Output signal: Sinus 1VSS

Voltage supply: 10-30 V or 5 V

IC standard: with PIN connector (M23) on the encoder

SC standard: with PIN connector (M23) on the terminal box (mating connector not included in delivery)

Other numbers of pulses per revolution on request.

Encoders in standard mechanical designs can also be implemented as electric SINCOS versions. In this case, signals A and B are available on the output as sinusoidal voltage signals with a signal level of 1 VSS or one 0 pulse once per rotation. These can be used in many different ways in the downstream electronics. Via interpolation of the two signals shifted by 90°, very high resolutions are achieved and can therefore also be used with very slow movements for speed control.

IR, SR - Resolver

Available for IEC motor frame sizes 71 to 200

Degree of protection: IP54 (IP66 on request)

IR standard: with 0.6 m cable (open one way, 6 strands)

SR standard: with 0.6 m cable (open one way, 6 strands)

Resolvers are primarily 2-pole, electromagnetic measuring transducers for converting the angle position of a rotor into an electrical value. Resolvers are wear-free and robust, as the most important elements for acquiring the information consist only of iron core and copper coils. Contamination therefore plays a lesser role.

The configuration consists of 2 stator coils positioned at an offset of 90° (S1/S3 and S2/S4) and a rotating rotor coil (R1/R2).

In this process, the rotor coil supply is inductive, in other words, brushless. The R1/R2 rotor coil is excited using a sinusoidal alternating voltage. The amplitudes of the voltages induced in stator coils S1/S3 and S2/S4 depend on the rotor angle.

Input voltage: $E_{(R1/R2)} = E \times \sin(\omega t)$

Output: $E_{(S1/S3)} = T_r \times E_{(R1/R2)} \times \cos(\varphi)$
 $E_{(S2/S4)} = T_r \times E_{(R1/R2)} \times \sin(\varphi)$

Standard input voltage: $E_{(R1/R2)} = 7 \text{ V}$

Standard transformation ratio: $T_r = 0.5$

SS - SSI multi turn encoder

Available for IEC motor frame sizes 71 to 250

Digits per revolution: 8192 at 4096 possible rotations

Output signal: TTL

Voltage supply: 5 V

Degree of protection: IP66

SS standard execution: with PIN connector on the terminal box

The SSI multiturn absolute encoder signals a single exactly defined position to the drive frequency controller. Maximum permissible number of motor revolutions can be 4096. The resolution is 8192 steps per revolution. The serial communication is corresponding to the specification of the SSI-protocol. SSI means Synchronous Serial Interface.

The permissible cable length is 100 m at least if EMC-compatible wiring is guaranteed.

SV - Heavy Duty encoder

Available for IEC motor frame sizes 90 to 250
 Pulses per revolution: 1024
 Output signal: HTL or TTL
 Voltage supply: 10 - 30 V at HTL, 5 V at TTL
 Degree of protection: IP65
 Optional insulation inserts available to protect against shaft currents.

The Heavy Duty encoder boasts a high degree of ruggedness in a very compact design. Its special construction makes it perfect for all applications in very harsh environments.

IA, SA - Special encoder

The mounting of special encoders is possible on request.

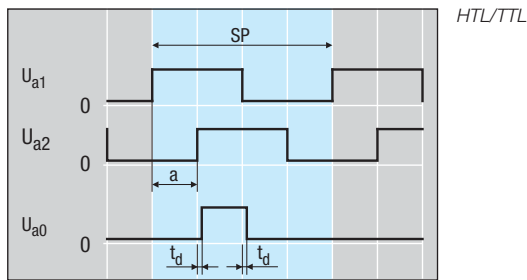
Type of signal

HTL-/TTL - output signal

Encoders with HTL/TTL square-wave output signals incorporate a circuit that digitises scanning signals, providing two 90° (el.) phase-shifted HTL-/TTL square-wave pulse trains U_{a1} and U_{a2} and a reference pulse U_{a0} , which is gated with the incremental signals U_{a1} and U_{a2} .

The integrated electronics also generate the inverse signals of all square-wave pulse trains. The distance between two successive edges of the combined pulse trains U_{a1} and U_{a2} is one measuring step. HTL/TTL square-wave signals can be transmitted to the subsequent electronics (without inverting; max. cable length 100 m; with inverting; 250 m), provided that the specified $5\text{ V} \pm 5\%$ supply voltage is maintained at the encoder.

Extended cable length is possible with fiber-optic cable.



HTL signal levels

$U_H \geq 2.1\text{ V}$ at $I_H = 20\text{ mA}$
 $U_L \leq 2.8\text{ V}$ at $I_L = 20\text{ mA}$
 with power supply +24 V, without cable

TTL signal levels

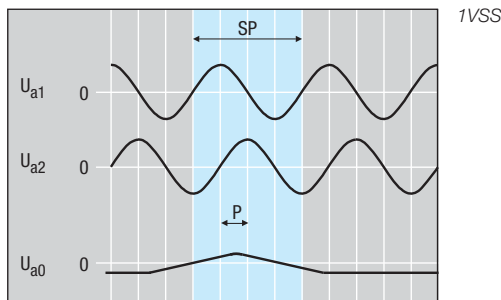
$U_H \geq 2.5\text{ V}$ at $I_H = 20\text{ mA}$
 $U_L \leq 0.5\text{ V}$ at $I_L = 20\text{ mA}$

1VPP - output signals

The sinusoidal incremental signals U_{a1} and U_{a2} are phase-shifted by 90° and have signal levels of approximately 1VPP. The signal peaks from the reference mark signal have a usable component of approximately 0.5 V.

Signal interpolation and digitalisation can be performed by electronics, which output TTL-compatible signals.

Voltage signals can be transmitted to the subsequent electronics unit over cables as long as 50 m, provided that the specified $5\text{ V} \pm 5\%$ supply voltage is maintained at the encoder. Encoders that produce voltage signals have sensor line connections for detection of the supply voltage at the encoder; corresponding control systems in the subsequent electronics can then maintain the voltage tolerance.



	Designation
Encoder signals	U_{a1}, U_{a2}
Reference pulse	U_{a0}
Signal level HIGH	U_H
Signal level LOW	U_L
Edge separation	a
Phase shift	P
Current at signal level HIGH	I_H
Current at signal level LOW	I_L
Signal period	SP
Delay time	t_d

Ventilation systems

FL	Forced ventilation
ZL	Fly wheel fan
ZM	Metal fan
U	Non-ventilated without NDE shaft end
UW	Non-ventilated with NDE shaft end

FL - Forced ventilation (TEFV, IC416)

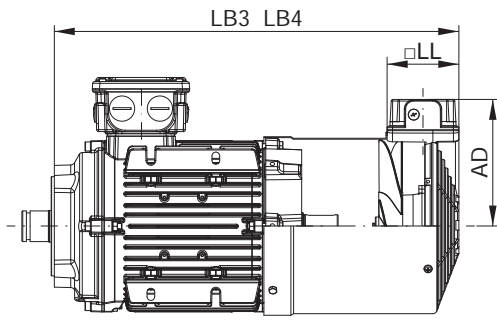
IEC frame sizes: 63 to 250

At applications with high starting frequencies, startings against heavy masses, heavy alternating load and operations with frequency inverters, self ventilation of the motor sometimes will not be sufficient and forced ventilation is necessary. At frequencies under 30 Hz forced ventilation is recommended in order not to thermally overstrain the motor.

Forced ventilation currents (2 pole ventilation motor)

IEC frame size	Phases Connection	Capacitor μF	50 Hz					60 Hz				
			Voltage range V	Current A ¹⁾	Power W ¹⁾	Air current capacity m³/h	Noise level dB(A)	Voltage range V	Current A ¹⁾	Power W ¹⁾	Air current capacity m³/h	Noise level dB(A)
63	3~Y	-	346-525	0.09	28	54	47	380-575	0.08	29	69	52
	3~Δ	-	200-303	0.15	28			220-332	0.14	29		
	1~⊥Δ	1.5	230-277	0.18	46			230-277	0.21	54		
71	3~Y	-	346-525	0.09	29	78	51	380-575	0.07	28	99	56
	3~Δ	-	200-303	0.15	29			220-332	0.13	28		
	1~⊥Δ	1.5	230-277	0.18	48			230-277	0.21	56		
80	3~Y	-	346-525	0.09	33	128	54	380-575	0.07	36	151	58
	3~Δ	-	200-303	0.16	33			220-332	0.13	36		
	1~⊥Δ	1.5	230-277	0.19	48			230-277	0.22	59		
90	3~Y	-	346-525	0.22	78	216	59	380-575	0.18	71	258	63
	3~Δ	-	200-303	0.39	78			220-332	0.32	71		
	1~⊥Δ	3.0	220-277	0.29	59			220-277	0.23	61		
100	3~Y	-	346-525	0.21	80	278	60	380-575	0.18	80	328	65
	3~Δ	-	200-303	0.37	80			220-332	0.30	80		
	1~⊥Δ	3.0	220-277	0.29	62			220-277	0.28	73		
112	3~Y	-	346-525	0.20	87	355	62	380-575	0.17	93	418	66
	3~Δ	-	200-303	0.35	87			220-332	0.29	93		
	1~⊥Δ	3.0	220-277	0.27	64			220-277	0.36	88		
132	3~Y	-	346-525	0.37	160	550	67	380-575	0.32	180	650	71
	3~Δ	-	200-303	0.64	160			220-332	0.55	180		
	1~⊥Δ	6.0	230-277	0.52	125			230-277	0.61	163		
160	3~Y	-	346-525	0.74	314	980	73	380-575	0.62	391	1160	77
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
180	3~Y	-	346-525	0.74	314	1200	74	380-575	0.62	391	1379	80
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
200	3~Y	-	346-525	0.74	314	1324	74	380-575	0.62	391	1575	81
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
225	3~Y	-	346-525	0.74	314	1324	74	380-575	0.62	391	1575	81
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		
250	3~Y	-	346-525	0.74	314	1324	74	380-575	0.62	391	1575	81
	3~Δ	-	200-303	1.28	314			220-332	1.08	391		
	1~⊥Δ	12	230-277	1.05	246			230-277	1.52	390		

1) maximum permissible values



IEC frame size	AD	□LL
63	118	107
71	124	107
80	134	107
90	143	107
100	152	107
112	164	107
132	185	107
160	211	107
180	211	107
200	211	107
225	211	107
250	211	107

Dimensions in mm. Dimensions LB3 and LB4 see drawings from page 496

ZL - Fly wheel fan

IEC frame sizes: 71 to 132 (special execution)

Fly wheel fans increase the inertial moment of the standard motors by a multiple and help to decrease the start up time of the motors. Motors with fly wheel fan often are used at crane drives or machine-systems where a soft start up is required. Available for motor sizes 71 to 132 on request, exchangeable without modification with standard fan, pay attention to the reduced starting frequency! Braking by reversal and driving up against a buffer stop is not permissible.

Motor without brake: $J_{ges} = J_{mot} + J_{ZL}$

Brake motor: $J_{ges} = J_{mot} + J_{ZL} + J_B$

IEC frame size	J_{ZL} [kgm ²] x 10 ⁻³	m [kg]
71	2	1.3
80	2	1.3
90	3	1.6
100	10	3.3
112	10	3.3
132	14	3.8

	Designation	Unit
Total mass moment of inertia	J_{ges}	[kgm ²]
Mass moment of motor	J_{mot}	[kgm ²]
Mass moment of brake	J_B	[kgm ²]
Mass moment of fly wheel fan	J_{ZL}	[kgm ²]
Weight of fly wheel fan	m	[kg]

ZM - Metal fan

IEC frame size: 63 to 250

For ambient temperatures which are lesser than or greater than the operation temperatures of the standard plastic fan wheels, the ventilation can be provided via metal fan wheels. These can be manufactured from aluminium, steel plate or cast iron. Using a metal fan can be appropriate in the event of difficult climatic conditions.

U - Non-ventilated without NDE shaft end (TENV)

IEC frame size: 63 to 250

In this version, there is no fan or fan cover. The NDE is completely enclosed. A cover plate is used as the sealing component. This prevents dirt, water, etc. from entering the motor.

UW - Non-ventilated with NDE shaft end (TENV)

IEC frame size: 63 to 250

This design is realised by omitting the fan. The standard fan cover is used as contact protection for the remaining NDE rotating shaft. Motors of these designs are intended for use in systems where fans or fan covers integrated into the motor are not appropriate due to the environmental conditions, for design reasons or at the customer's request.

The motors are therefore designed without integrated fans or fan covers.

In the non-ventilated version, the resulting reduction in nominal motor output must be observed!



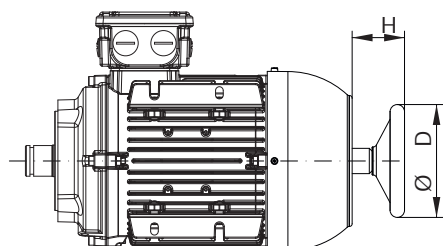
Additional modules

HR	Hand wheel
SD	Protection cap
ID	Protection cap for encoders
ZWM	Second shaft end - module shaft
ZWV	Second shaft end - solid shaft

HR - Hand wheel

IEC frame sizes: 71 to 250

By using a second shaft end it is possible to fit a hand wheel.



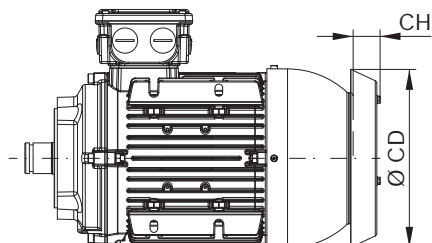
IEC frame size	ØWD	WH
71	125	51
80	125	51
90	125	51
100	125	51
112	125	51
132	200	60
160	200	60
180	200	60
200	200	60
225	200	60
250	200	60

Dimensions in mm.

SD - Protection cap

IEC frame sizes: 63 to 250

When installed vertically with the shaft downward, e.g. IM V1, the air intake opening can be protected against water and foreign substance by means of a protective cap.



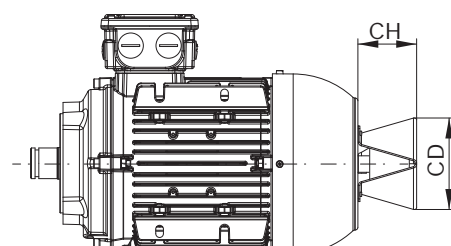
IEC frame size	ØCD	CH
63	124	20
71	139	20
80	157	20
90	176	20
100	197	32
112	219	35
132	254	35
160	266	52
180	310	57
200	380	67
225	427	72
250	427	72

Dimensions in mm.

ID - Protection cap for encoders

IEC frame sizes: 90 to 250

If mounted outside the fan cover, the encoder may be protected against foreign matter and other external influence by a separate protection cap.



Protection cap for	CD	CH
IG standard encoder	74	116
IV Heavy Duty encoder	115	183

Dimensions in mm.

ZW. - Second shaft end

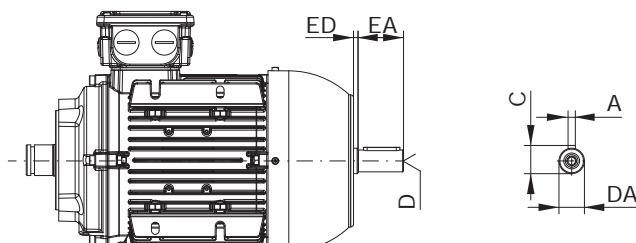
Motors with or without brake can be supplied with a second free shaft end.

ZWM: Module shaft

IEC frame sizes: 71 to 250. This shaft end can be used to transfer half the rated output of the motor.

ZWV: Solid shaft

IEC frame sizes: 63 to 200. Available on request.



IEC frame size	DA	DZ ²⁾	EA	ED	FA	GC
63 ¹⁾	11	M4	23	-	4	12.5
71	14	M5	30	5	5	16
80	14	M5	30	5	5	16
90	19	M6	40	5	6	21.5
100	24	M8	50	5	8	27
112	24	M8	50	5	8	27
132	28	M10	60	5	8	31
160	38	M12	80	5	10	41
180	38	M12	80	5	10	41
200	38	M12	80	5	10	41
225 ²⁾	38	M12	80	5	10	41
250 ²⁾	38	M12	80	5	10	41

Tolerances		
Dimension name	ISO tolerance DIN EN ISO 286-2	
DA	≤ Ø 30 mm	j6
	> Ø 30 mm up to Ø 50 mm	k6

Dimensions in mm. ¹⁾ ZWV only ²⁾ ZWM only ³⁾ centre hole with thread according to DIN 332-1

Standards

The motors comply with the competent standards and specifications, especially with the following:

Title	IEC	DIN / EN / VDE
Rotating electrical machines Rating and performance	IEC 60034-1 IEC 60085	DIN EN 60034-1
Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	IEC 60034-2-1	DIN EN 60034-2-1
Degrees of protection provided by integral design of rotating electrical machines (IP Code)	IEC 60034-5	DIN EN 60034-5
Methods of cooling (IC Code)	IEC 60034-6	DIN EN 60034-6
Classification of types of construction, mounting arrangements and terminal box position (IM Code)	IEC 60034-7	DIN EN 60034-7
Terminal markings and direction of rotation	IEC 60034-8	DIN EN 60034-8
Noise limits	IEC 60034-9	DIN EN 60034-9
Starting performance of single-speed three-phase cage induction motors	IEC 60034-12	DIN EN 60034-12
Mechanical vibration of certain machines with shaft heights 56 mm and higher - measurement, evaluation and limits of vibration severity	IEC 60034-14	DIN EN 60034-14
Dimensions and output series for rotating electrical machines	IEC 60072-1	DIN EN 50347
Thermal protection	IEC 60034-11	DIN EN 60034-11
CENELEC standard voltages	IEC 60038	DIN EN 60038

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