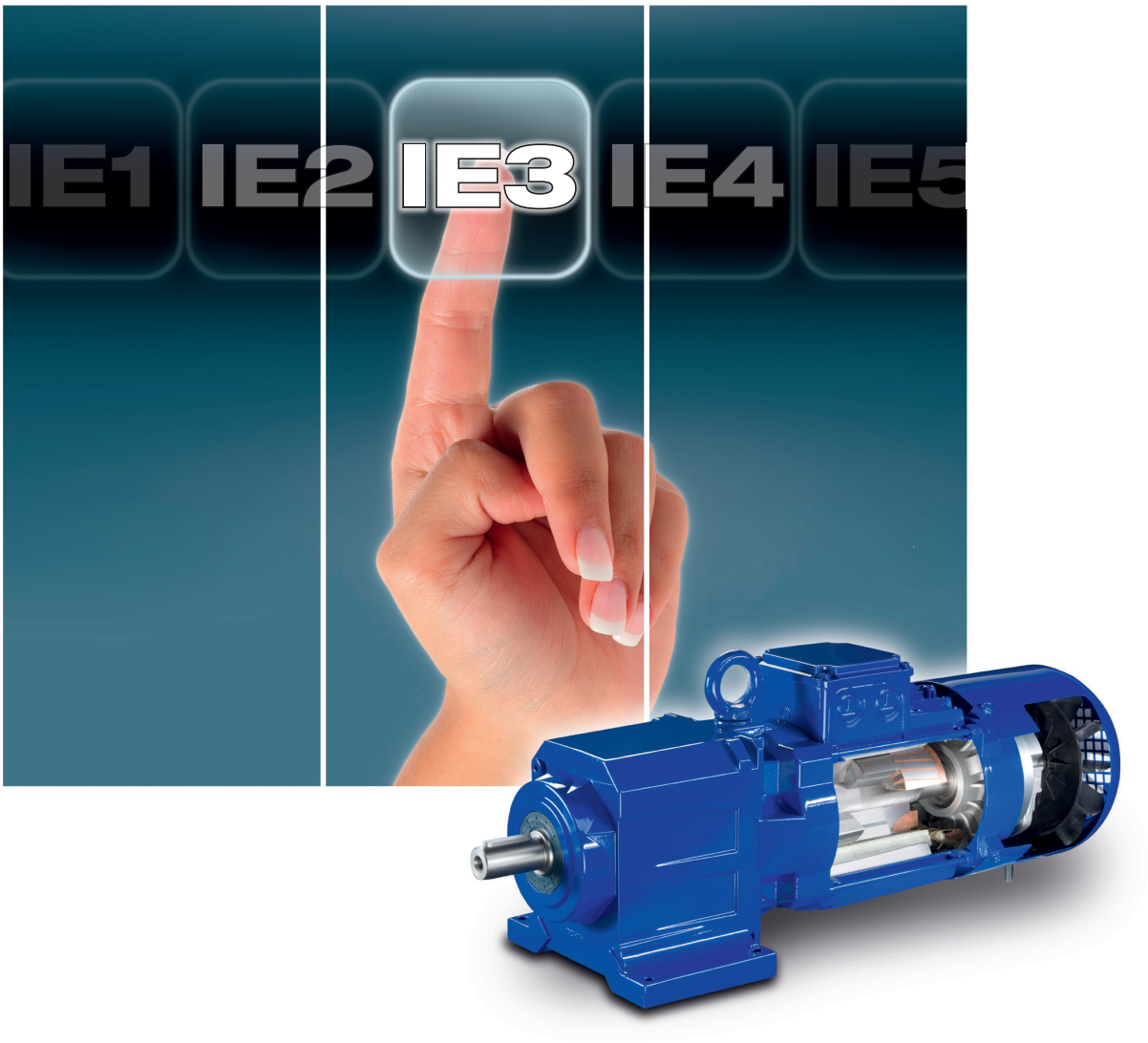
ALTRA INDUSTRIAL MOTION

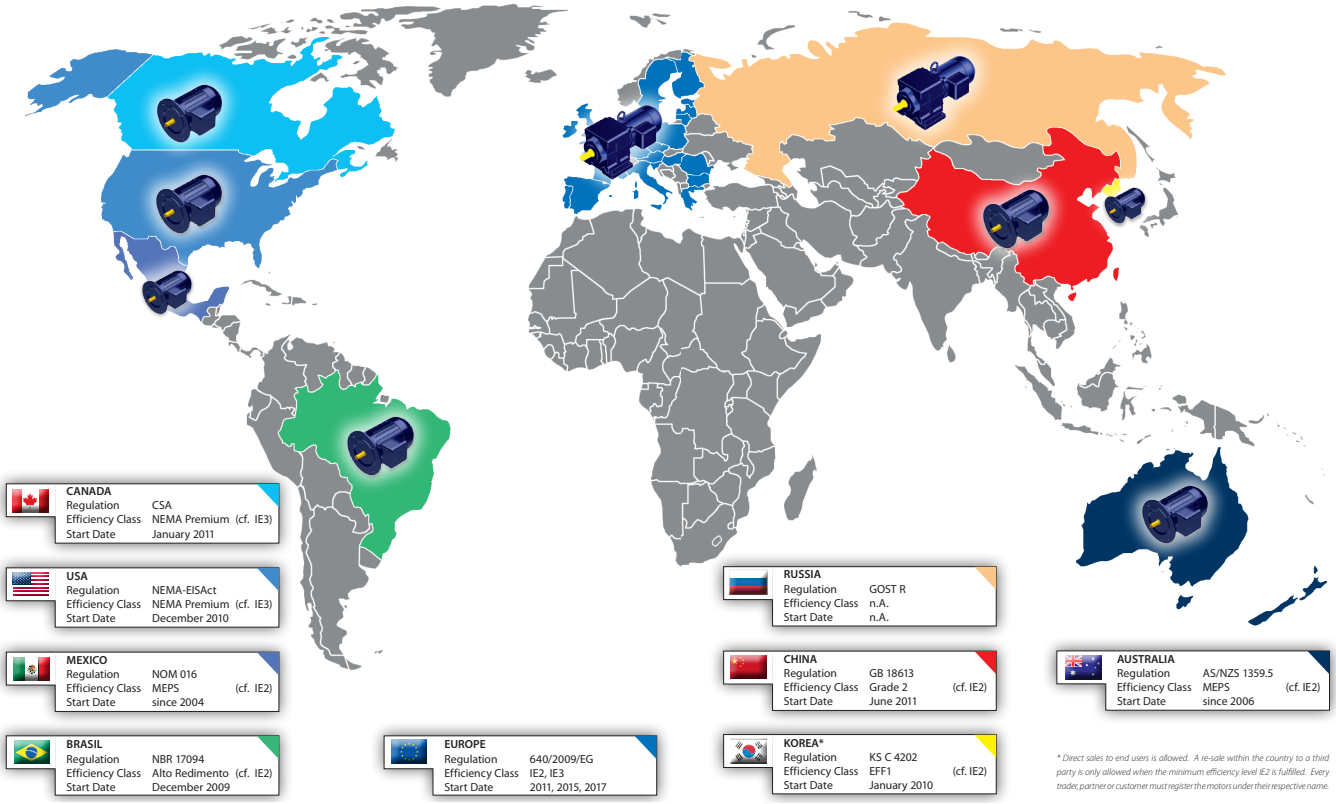
Premium Efficiency Geared Motors
Catalogue Edition 12/2014 EN



Bauer® Gear Motor

An Altra Industrial Motion Company

Worldwide Efficiency Regulations



CANADA
Regulation CSA
Efficiency Class NEMA Premium (cf. IE3)
Start Date January 2011

USA
Regulation NEMA-EISAct
Efficiency Class NEMA Premium (cf. IE3)
Start Date December 2010

MEXICO
Regulation NOM 016
Efficiency Class MEPS (cf. IE2)
Start Date since 2004

BRASIL
Regulation NBR 17094
Efficiency Class Alto Redimento (cf. IE2)
Start Date December 2009

EUROPE
Regulation 640/2009/EG
Efficiency Class IE2, IE3
Start Date 2011, 2015, 2017

RUSSIA
Regulation GOST R
Efficiency Class n.A.
Start Date n.A.

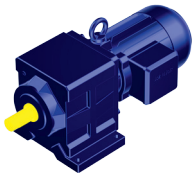
CHINA
Regulation GB 18613
Efficiency Class Grade 2 (cf. IE2)
Start Date June 2011

KOREA*
Regulation KS C 4202
Efficiency Class EFF1 (cf. IE2)
Start Date January 2010

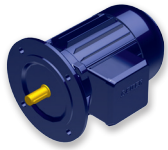
AUSTRALIA
Regulation AS/NZS 1359.5
Efficiency Class MEPS (cf. IE2)
Start Date since 2006

** Direct sales to end users is allowed. A re-sale within the country to a third party is only allowed when the minimum efficiency level IE2 is fulfilled. Every trader, partner or customer must register the motors under their respective name.*

Legend



Efficiency requirements are valid for geared motors and solo motors



Efficiency requirements are valid only for solo motors

Exceptions to regulation (EC) No 640/2009 and (EU) No 4/2014:

Operating conditions

- Motors designed to operate fully submerged in a liquid (IP68)

Construction

- motors that are completely integrated in a product (such as a transmission, pump, fan or compressor) whose energy efficiency cannot be determined independently of this product

Ambient conditions

- at heights above 4,000 metres above sea level
- at ambient temperatures above 60° C
- at maximum operating temperatures above 400 °C
- at ambient temperatures below -30° C (all motors) or ambient temperatures below 0° C (air cooled motors)
- with coolant temperatures at product intake below 5 °C or above 25 °C

Ambient conditions

- in areas with a potentially explosive atmosphere as mentioned in Directive 94/9/EC of the European Parliament and Council

Other

- Brake motors
- Pole changing motors
- 8,10,12 pole motors
- Single phase motors
- DC motors
- Duty cycles other than S1
- Motors exclusively designed for inverter duty

Type Designations

BK 50 Z - 1 1 U W A / D.. 09L A 4 - TF - S / ES 010 A 9 HN / C2

B K 50 Z X - 1 1 U W A

- A = SSV Cover
- W = Double Shaft Seals
- V H = Front and Rear
- V = Flange A or C or Torque Arm front
- H = Flange, A or C or screw-on Torque Arm rear
- U = Foot bottom or screw-on Torque Arm to bottom
- O = Foot top or Torque Arm angeschraubt in Richtung to top
- R = Foot right or Torque Arm angeschraubt in Richtung to right
- L = Foot left or Torque Arm angeschraubt in Richtung to left

- 0 = Splined Shaft acc. to DIN 5480
- 1 = Solid Shaft, front
- 2 = Solid Shaft, rear
- 3 = Solid Shaft, front and rear
- 4 = Hollow Shaft with Keyway
- 5 = Hollow Shaft for Shrink disk connection, rear (Standard)
- 6 = Hollow Shaft for Shrink disk connection, front (Special)
- 7 = Solid Shaft front, flush with Standard-Flange only BG10-BG90 and BS02+BS03
- 8 = Solid Shaft rear, flush with Standard-Flange only BS02+BS03
- 9 = Solid Shaft front and rear, flush with Standard-Flange only BS02+BS03

- 0 = Gear Housing, no surfaces except torque arm bore for BF
- 1 = Gear Housing, Foot
- 2 = Gear Housing, Standard flange diameter 1 small A-Flange
- 3 = Gear Housing, Standard flange diameter 2 Standard A-Flange
- 4 = Gear Housing, Standard flange diameter 3 large A-Flange
- 5 = Gear Housing, with Torque Arm for BK + BS as screw-on
- 6 = Gear Housing, Foot-threaded bores
- 7 = Gear Housing, C - Flange
- 8 = Gear Housing, completely machined
- 9 = Gear Housing, with Footplate only BG (Universal housing)

- \- = seperates gear type from gear design
- X = reinforced bearings (radial)
- Z = Gearbox with pre-stage
- •• = Gear Size (03, 04, 05, 06, 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100)
- B • = Gear type (BG, BF, BK, BS)

D .. 09 L A 4 - TF - S

- S = rectifier (see chapter 3)
- TF = Motor monitoring (see chapter 3)
- 4 = No. of pole for motor
- LA = Motor core length and design
- 09 = Motor size
- .. = A Aseptic motor
- .. = PE Three-Phase Motor with increased efficiency acc. to IE3
- .. = NF Motor without Gearbox, Motor in flange design
- D = Three-Phase Motor

ES 010 A 9 HN

- HA = Hand Release (lockable)
- HN = Hand Release (none lockable)
- 9 = Code for setting torque
- A = Design
- 010 = Brake size
- ES = Single disk brakes - HOLDING BRAKE
- ZS = Double disk brakes - HOLDING BRAKE
- ESX = Single disk brakes - WORKING BRAKE
- ZSX = Double disk brakes - WORKING BRAKE

EU-Directive 640/2009/EC

What does the EU directive mean?
EN 60034-30 is an international standard for energy-efficient motors and will in future years be used worldwide in this area.
Electric motors account for approximately 1.07 billion kWh of the total energy demand of the EU. Using energy efficient motors would achieve energy savings of 20 to 30 per cent, thereby reducing the total cost of ownership (TCO) and reducing global warming.

As things stand today
New IE (International Energy Efficiency) efficiency classes were introduced at the beginning of 2009:

IE1 = Standard Efficiency (~ EFF2)

IE2 = High Efficiency (~ EFF1)

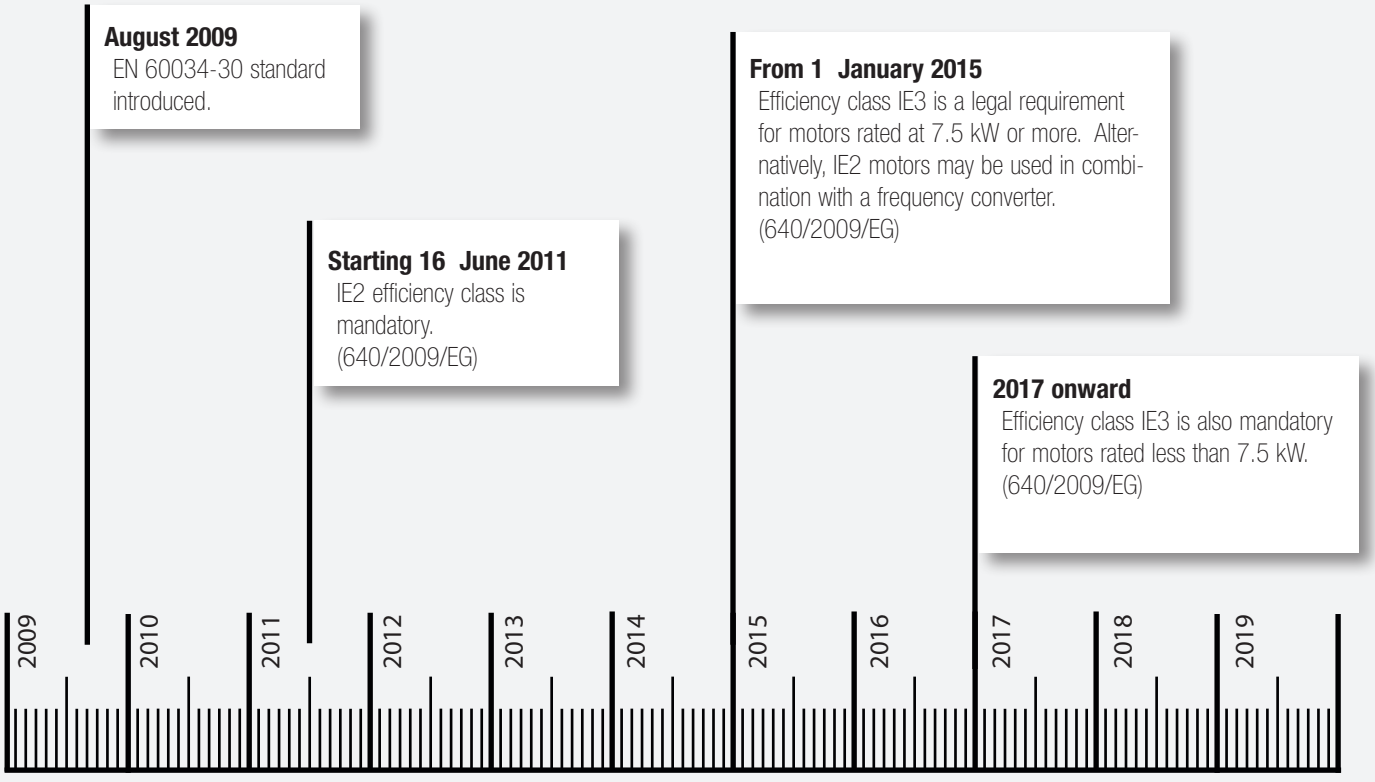
IE3 = Premium Efficiency (10–15 % higher efficiency than IE2)

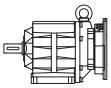
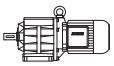
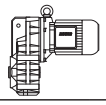
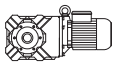
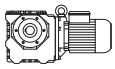
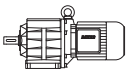
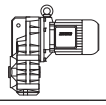
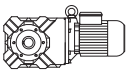
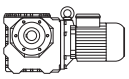
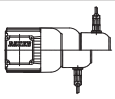
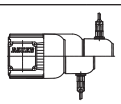
IE4 = Super Premium Efficiency

The IE classes cover the following:

Rated voltage
up to 1,000 V
Power
0.75 kW to 375 kW
Number of poles
2, 4 or 6 (50 and 60 Hz)
Operation
Mains Duty
Operating modes
S1
Remarks
Geared motors are considered

What happens when?



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Motor Mounted Components Dimensions		451-470
BAUER global		471-482

Fast - Flexible - Reliable

…As one of the leading manufacturers of intelligent drive technology, we have lived this motto for more than 80 years.
Innovative products, modern processes and responsible employees realise this motto with the target of conserving resources and the environment together with efficient energy use over our whole field of activity.
The success of our efforts assumes that we know and master our customers applications and the requirements on drive technology.
We do this perfectly - from engineering, design and calculation through procurement, production and logistic to special application knowledge in the most important branch sectors.

CD Rom:



Internet:

WWW.BAUERGEARS.COM

The most recent version of the Terms and Conditions can be found under „www.bauergears.com".

Catalogue geared motors IE3

General Product Overview

Helical-Geared Motor Series BG



Compact and economical inline helical geared motors for long lifetime under arduous conditions.

- Motor power from 0.03 kW to 75 kW
- 13 gearbox sizes for torques from 20 Nm to 18500 Nm
- New attachment possibilities with low design height
- High efficiency through 2 stage base design
- Enclosure IP 65 as standard

Shaft-Mounted Geared Motor Series BF



Shaft-mounted geared motors with integrated torque arm are easily integrated and economically applied.

- Motor power from 0.03 kW to 75 kW
- 10 gearbox sizes for torques from 90 Nm to 18500 Nm
- Gearbox housing with integral torque arm
- High efficiency through 2 stage base design
- Enclosure IP 65 as standard

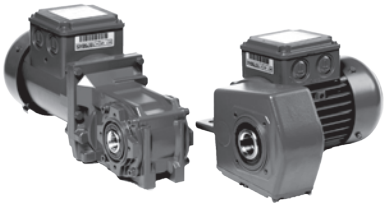
Bevel-Geared Motor Series BK



Power-dense, right-angle, bevel-geared motors ensure the highest efficiency especially when used with frequency inverters.

- Motor power from 0.03 kW to 75 kW
- 10 gearbox sizes for torques from 80 Nm to 18500 Nm
- The right angle gearbox with universal attachement possibilities
- High efficiency through 2 stage base design
- Enclosure IP 65 as standard

Small Industry Geared Motors KIG



Gearbox and motor build a compact unit. Small industrial gear motors are spacesaving and versatile and can be supplied for any mounting position.

- Available for three-phase and single-phase
- Lightweight, compact drives help to reduce the weight of the machine
- Saves space and reduces costs, especially for conveyor systems
- Motor connection via CAGE CLAMP® is vibration-proof and saves you money
- Motor parts for many installation situations and supply voltages
- In self- or non-ventilated design

AsepticDrive™



Geared motors for the food & beverage industry as well as for all applications with high cleaning intensity or ambient conditions such as dust, fluff etc.

- Motor without fan and cooling fins
- Motor power
  DA08 0.25 kW - 0.55 kW
  DA09 0.37 kW - 1.5 kW
  DA11 1.1 kW - 2.2 kW
- Available with helical, parallel shaft, bevel and worm gears
- Motor winding in Iso Class F with thermistors as standard
- Enclosure IP 67 and IP 69K with acid and alkali resistant coating as standard
- Motor connection through standard stainless steel plug connector

CleanDrive™



Geared motors for the Food & Beverage industry in enclosure IP 66 with acid and alkali resistant coating as standard.

- Motor without fan and cooling fins
- Motor power 0.12 kW
- Motor winding in Iso Class F with thermistors as standard
- Motor connection through standard terminal box or stainless steel cable gland

Worm-Geared Motor Series BS



Economical, right-angle, worm-geared motors install easily in the tightest applications.

- Motor power from 0.03 kW to 5.5 kW
- 8 gearbox sizes for torques from 25 Nm to 1000 Nm
- Hollow shaft version already available from 25 Nm
- High loadable worm gearing for long lifetime
- Enclosure IP 65 as standard

Overhead Monorail Geared Motor Series BM



A completely new range of monorail drives for light and heavy load monorail applications.

- Torques from 30 Nm up to 680 Nm
- Radial force up to 25.000 N
- Flexible mounting on the running gear
- Enclosure IP 65 as standard
- Improved efficiency – lower energy consumption – ideal as travelling drives
- Reverse motion of the gearbox is possible

Frequency Converter Geared Motor Series Eta-K



Eta-K solutions are combinations of geared motors and frequency converters. They provide compact drive solutions with infinite speed control.

- Saving space and costs
- No shielded motor cables required
- Mechatronic adaption of VLT drive and geared motor
- Motor power range 0.12 kW up to 7.5 kW
- Supply voltage 3 x 380 V - 480 V
- Compliance to all EMC standards
- Standard RS485-Interface, optional Profibus-Interface
- Ⓔx Zone 2 and 22 possible
- UL approved

CAGE CLAMP®



The use of Bauer geared motors up to 30 kW with CAGE CLAMP® connection technology reduce costs both during installation and in service cases.

- Cost reduction during connection
- Simple handling
- Cable core diameters up to 25 mm² without wire-end sleeves
- Cost saving in material and tooling
- Vibration and shock resistant
- Ⓔx approved

Explosion-proof BAUER Geared Motors

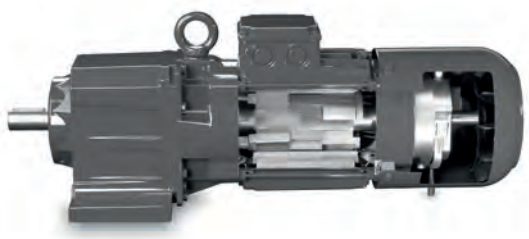
Geared motors suitable for use in explosive areas:

GAS	Zones 1, 2		
DUST	Zones 21, 22		
DXD	Zone 1,	II 2 G Ex d(e) IIC T3…T4 Gb	0,12… 75 kW
DXE	Zone 1,	II 2 G Ex e IIC T1…T4 Gb	0,12… 11 kW
SXE	Zone 1,	II 2 G Ex e IIC T1…T4 Gb	0,55 … 15 kW
DXN	Zone 2,	II 3 G Ex nA IIC T3 Gc	0,03… 30 kW
DXC	Zone 21,	II 2 D Ex tb IIIC T160°C IP66 Db	0,03… 30 kW
DXC	Zone 21,	II 2 D Ex tb IIIC T120°C IP66 Db	0,03… 22 kW
SXC	Zone 21,	II 2 D Ex tb IIIC T120°C…160°C IP66 Db	
DXS	Zone 22,	II 3 D Ex tc IIIC T120°C…160°C IP65 Dc	0,03… 30 kW
DXD	Zone 1/21,	II 2 G Ex d(e) IIC T3…T4 Gb	
		II 2 D Ex tb IIIC T120°C…160°C IP65 Db	0,12… 75 kW
DXE	Zone 1/21,	II 2 G Ex e IIC T1…T4 Gb	
		II 2 D Ex tb IIIC T120°C…160°C IP66 Db	0,12… 11 kW
SXE	Zone 1/21,	II 2 G Ex e IIC T1…T4 Gb	
		II 2 D Ex tb IIIC T120°C…160°C IP66 Db	0,55… 15 kW
DXS	Zone 2/22,	II 3 G Ex nA IIC T1…T3 Gc	
		II 3 D Ex tc IIIC T120°C…160°C IP65 Dc	0,03… 30 kW

Catalogue geared motors IE3

General Product Overview

Energy Saving Geared Motors



η	Advantages	Your benefits
Without	• Motor design according to duty • Small installation volume and minimum weight • Higher motor powers	• Economical • Small installation space • Efficient motor utilisation • Tailored to customer application • Smaller motor frame size
IE1	• Standard efficiency in continuous operation • Small installation volume and minimum weight	• Economical • Small installation space • For general-purpose use inside or outside Europe
IE2	• Higher efficiency in continuous operation • Higher start-up torque	• Economical • Small installation space • Up to 34% more energy savings compared to IE1 • Lower rated motor power than IE1 for dynamic load applications • Short amortisation period
IE3	• Premium efficiency in continuous operation • Higher start-up torque	• Up to 18% more energy savings compared to IE2 • Already meets minimum efficiency requirements for 2015/2017
IE4	• Super Premium efficiency • Speed control with highest possible efficiency • Small installation volume and minimum weight • Considerably better efficiency than IE2 motors, even under partial load conditions • High torque and power density • High overload capacity	• Up to 39% more energy savings compared to IE2 • Short amortisation period • Small installation space • Compact drive unit • More torque with same size motor frame • Requires smaller installation space with same power • Reduced number of variants thanks to higher efficiency over the entire torque range • Design security thanks to spare drive unit capacity • Technology leader • Already meets the efficiency requirements of future standards

Energy Saving Geared Motors Series S in IE4 for explosion hazardous areas



Permanent magnet synchronous motors (PMSM) Series S as variable-speed motors in efficiency class IE4 for use in explosion hazardous areas.

- Design torque M_N: 5 Nm – 48 Nm
- Rated power P_N: 0,75 kW – 15 kW
- Protection type: Increased Safety Zone 1

  Ex II 2 G Ex e IIC T1 - T3 Gb

S.XE.08MA4
S.XE.08LA4
S.XE.09SA4
S.XE.09XA4
S.XE.11SA6
S.XE.11MA6
S.XE.11LA6

- Dust explosion protection Zone 21

Ex II 2 D Ex tb IIIC T 160°C ... 120° Db

S.XC.08MA4
S.XC.08LA4
S.XC.09SA4
S.XC.09XA4
S.XC.11SA6
S.XC.11MA6
S.XC.11LA6

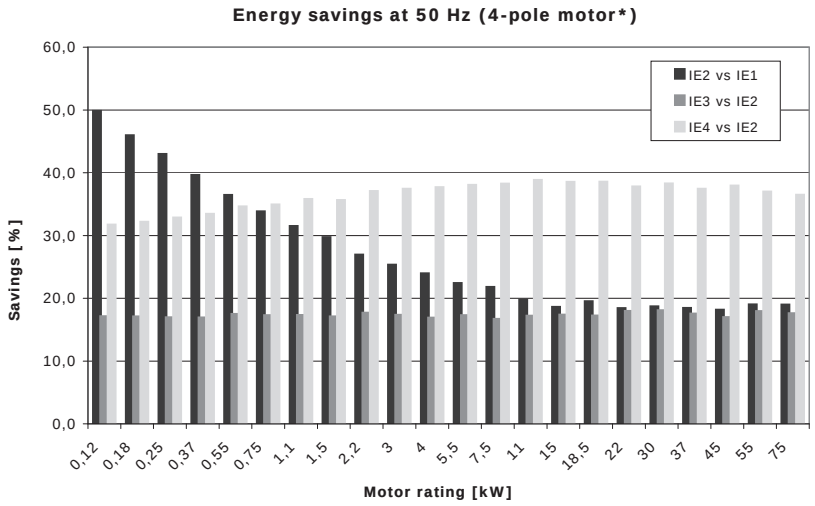
The highest energy efficiency that can be achieved with the current state of motor technology.

WORLD FIRST

Investment security for the future

Electrically driven machinery accounts for around 70% of overall energy demand for industrial consumption. If existing drives which have already been in service for decades were to be replaced by modern drive systems, energy savings of 135 billion kilowatt-hours per year would be possible within Europe. The Bauer Gear Motor range of motors offers trend-setting technologies for energy-efficient drives and for motor designs tailored to specific applications. The latter option enables highly efficient drive solutions without requiring additional space.

Potential for energy savings in drive technology



P_N [kW]	IE1*	IE2*	IE3*	IE3*	IE4*
0,55	DSE08MA4	DHE08LA4	DPE08XA4		SU08MA4
0,75	DSE08LA4	DHE08XA4	DPE09LA4		S08MA4
1,1	DSE09SA4	DHE09LA4	DPE09XA4		S08LA4
1,5	DSE09LA4	DHE09XA4	DPE09XA4C	S08LA4	S09SA4
2,2	DSE09XA4	DHE09XA4C	DPE11MA4	S09SA4	S09XA4
3	DSE11SA4	DHE11MA4	DPE11LA4	S09XA4	S11SA6
4	DSE11MA4	DHE11LA4	DPE11LA4C	S11SA6	S11MA6
5,5	DSE11LA4	DHE11LA4C	DPE13LA4	S11MA6	S11LA6
7,5	DSE13MA4	DHE13LA4	DPE13XA4	S11LA6	
9,5	DSE13LA4	DHE16MA4	DPE16LB4		
11	DSE16MA4	DHE16LA4	DPE16LB4		
15	DSE16LA4	DHE16XA4	DPE16XB4		
18,5	DSE16XA4	DHE18LA4	DPE18LB4		
22	DSE18LA4	DHE18XA4	DPE18XB4		
30	DSE18XA4	DHENF20LG4			

*at 1,500 rpm

1



Page

Advantages for Bauer Geared Motors 9-12

Bauer Geared Motors
Bauer Gearboxes
Bauer-Motors
Bauer-Brakes

Advantages of Bauer-Geared Motors

Bauer-Gearmotors

- Low operating costs due to a high total efficiency
- 2-stage gearbox concept gives a longer lifetime due to a reduced number of moving parts
- Lower servicing costs due to a modular system
- No additonal protective measures (e.g. dusty environment) through the IP65 enclosure as standard
- The electrical design of the motor is aligned to the gearbox
- Quick reaction time in emergency situations (Breakdowns etc.) through Fast Assembly Delivery (within 24 hours

Bauer Gearboxes

- Easy access to the fixation points reduces assembly times and installation costs
- Low servicing costs as the lubrication change results in normal duty with a lubrication temperature of approx. 80°C first after 15.000 operating hours when using CLP 220 or 25.000 operating hours when using PGLP 220 / PGLP 460.
- 2-stage gearbox concept reduces the spare part stocking
- A variety of attachment possibilities (Foot, Flange, Solid and Hollow shafts, Torque arms)
- Sealed housing design reduces the risk of oil leakage and increases the oil lifetime
- The large housing volume allows usage in very harsh environments

Bauer Motors

- Low operating costs due to high motor efficiencies (IE1, IE2, IE3 and IE4 as Standard)
- Low installation costs through CAGE CLAMP® instead of the classical terminal block connection
- A variety of additional designs (connectors, brakes, backstops, rain covers, forced cooling, encoders etc.)
- Cost reduction of connection cabling and avoidance of additional protective elements (chokes, filters etc.), through built-on inverters (ETA-K)
- Ideal for frequency inverter duty though insulation class F as standard

Bauer Brakes

- Low servicing costs through long lifetime of the brake discs (without adjustment)
- Brake-Motor correlation tailor made to the application by virtue of on average three brake sizes per motor size
- A variety of designs (lockable and non-lockable hand release, microswitch, heaters)
- Robust design for heavy duty applications
- Enclosure IP65 as Standard
- Very high wear resistance

2



Page

Selection of geared motors 13-18

Installed positions of geared motors
Notes on safety
Guards for rotating parts
Protection against accidental contact
Operating noise
Paint finish and corrosion protection
Modular system overview

Installed positions of geared motors

Bauer geared motors can be supplied for any type of fitting position. Vertical installation positions (motor-down) place a particularly severe strain on the shaft seal. It is advisable to avoid this arrangement especially at high motor speeds (e.g. above 1800 r/min) and continuous operation

Notes on safety

See the notes on safety regarding installation in Operationg Indstructions.

Guards for rotating parts

The shrink disk (SSV) guards required under the German law relating to technical materials (Law Concerning Industrial Equipment - Equipment safety law GPSG) or by the Accident Prevention Regulations (UVV) are not included in the standard scope of supply because they are fitted by the customer in most cases, or the risk of accident can be eliminated by suitable installation.

See the Operating Instruction.

Protection against accidental contact

In some instances, protection against accidental contact may have to be installed by the customer because for technical reasons, the surface temperatures of motors with smooth housings can be high, especially in continuous operation

Operating noise

The typical operating noise levels of BAUER geared motors are within the limits stipulated by VDI directive 2159 for gears and EN 60034-9, Table 2 for motors.

For physical reasons, low-ratio, high-speed gears produce more noise than medium- and high-ratio gears operating at low speeds.

See BAUER special imprint SD18.. for more information

Paint finish and corrosion protection

BAUER geared motors are spray-painted in RAL 7031 to DIN 1843 as standard. Other RAL colours are available at extra cost.

The output shafts are shipped in protective sleeves or with a protective coating to prevent corrosion.

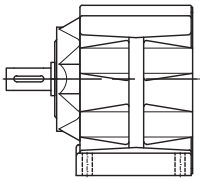
If high requirements for corrosion resistance are required, the drives are available with enhanced corrosion protection: CORO 1, CORO 2, CORO 3 or CORO 4.

Paint finishes up to 200 µm in thickness are available on request at extra cost. Thicker paint finishes for geared motors are impractical, because the paint tends to flake at the ribs and when the terminal box is opened.

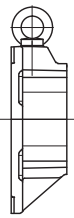
Gear design

Motor terminal box design

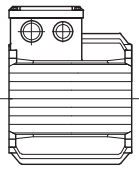
BG



Helical gear

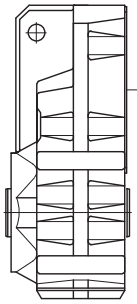


System cover

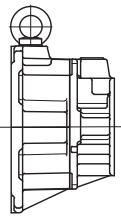


Motor with cast-in terminal box (KAG)

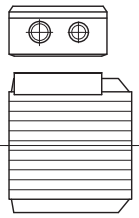
BF



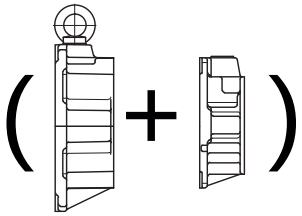
Shaft-mounted gear



Pre-stage

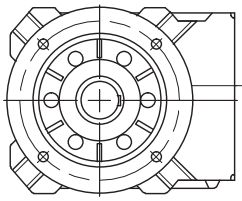


Motor with screw-on terminal box (TB)

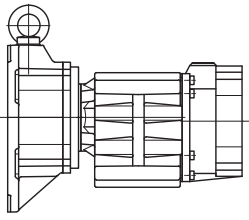


Pre-stage + System cover

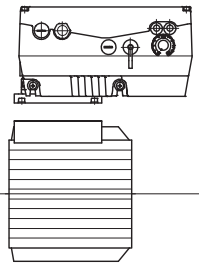
BK



Bevel gear

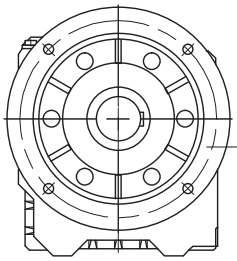


Intermediate gear

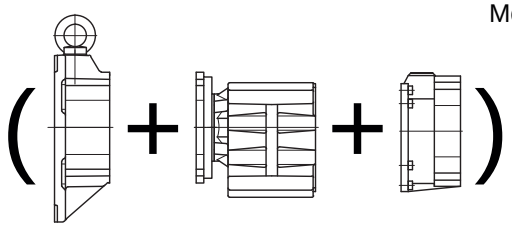


Motor with INVEOR-Inverter

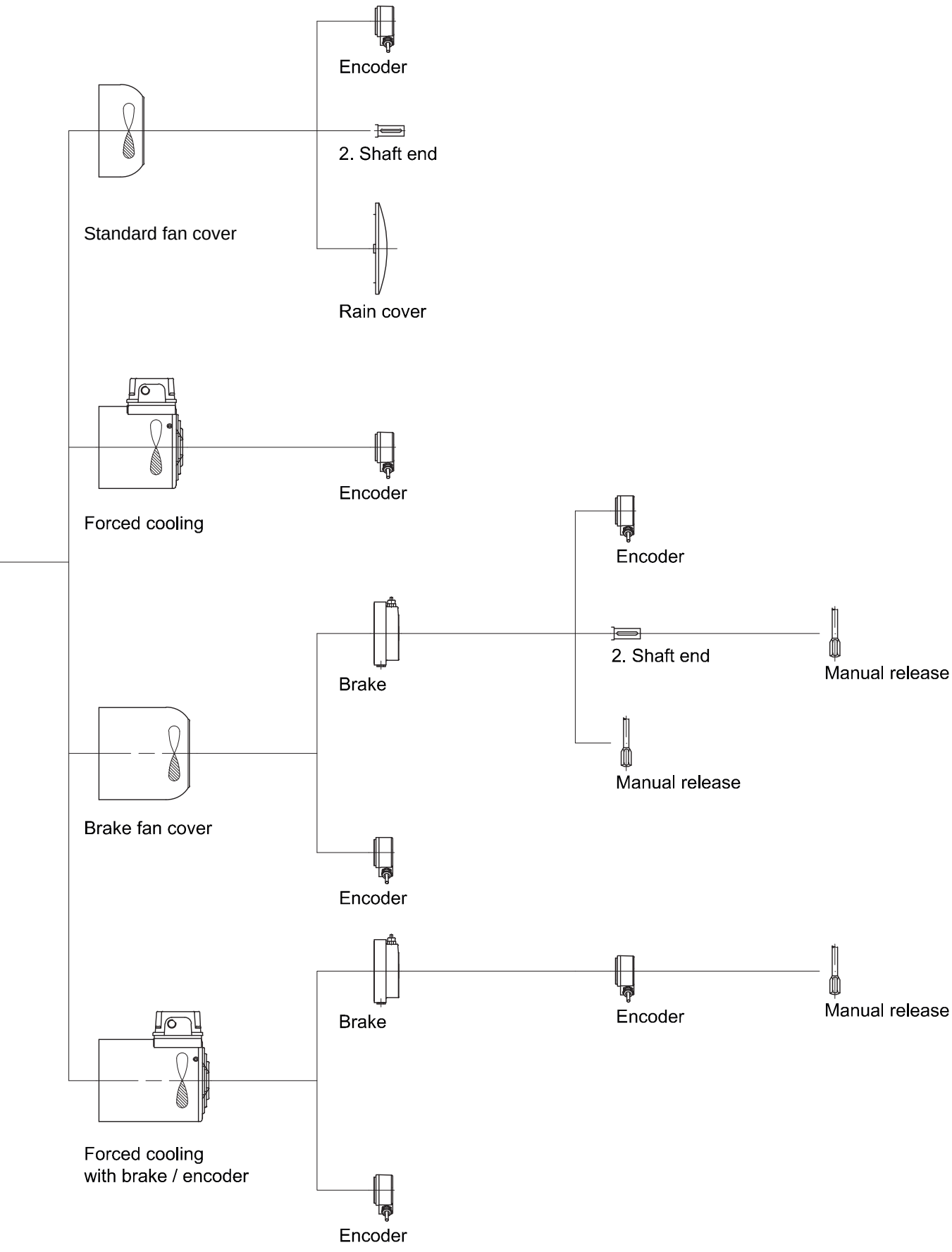
BS



Worm gear



(System cover + Intermediate gear + System cover)


Covers
B-side
Extensions
Standard motor
Extensions
Motor with brake
Encoder
2. Shaft end
Rain cover
Standard fan cover
Encoder
Forced cooling
Encoder
2. Shaft end
Manual release
Brake
Manual release
Brake fan cover
Encoder
Brake
Encoder
Manual release
Forced cooling
with brake / encoder
Encoder

3



	Page
Type Designations	**19-28**

Significance of type designation
BG-series helical-geared motor
BF-series shaft-mounted geared motor
BK-series bevel-geared motor
BS-series worm-geared motor
Description of the Designs
General Description

Significance of type designation

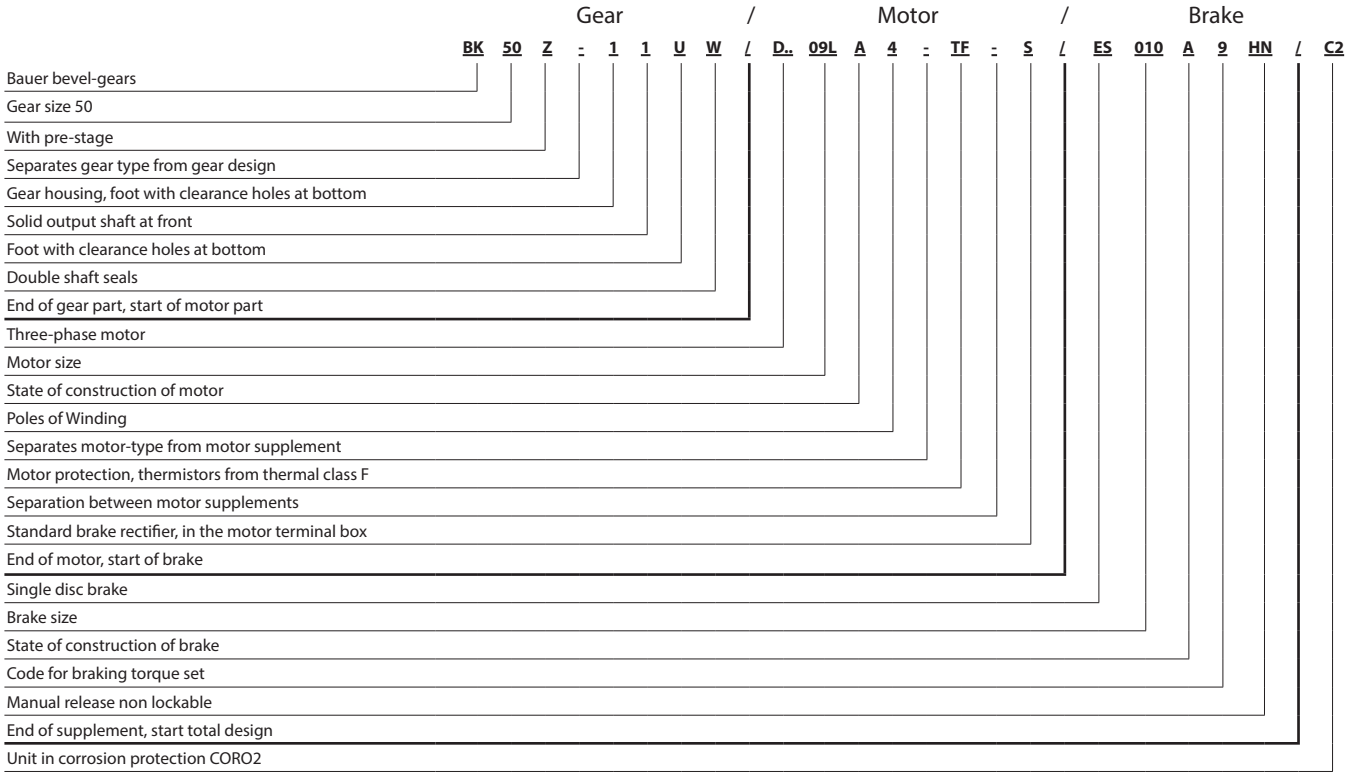
Bauer bevel-geared motor with brake and standard add-ons

Example: Bauer bevel-geared motor with brake and standard add-ons

Significance of type designation

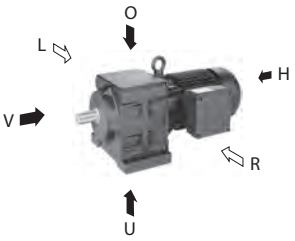
The type designation of a BAUER geared motor is a code designating all the features in the drive configuration.

The build-up of the type designation is explained with the help of the following example of a bevel geared motor with brake and series options.



Type Designations

BG-series helical-geared motor

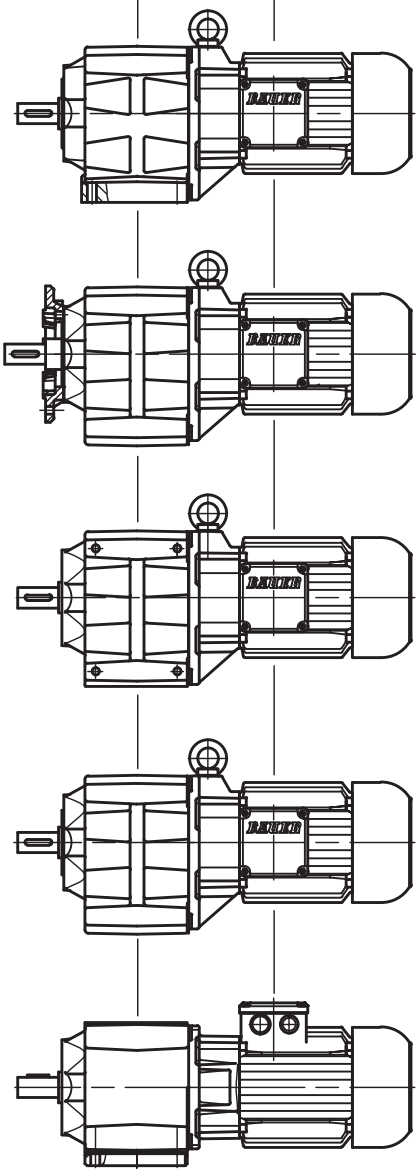


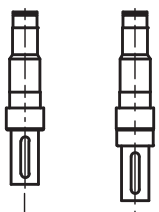
BG10 Z X-71 / D..08 LA4

- gear type
- gear size
- pre-stage
- re-inforced bearings (only BG10)
- code for gear design
- code for shaft design
- Three-phase motor
- motor size
- core length
- design edition
- number of poles

Z-. . — gear with pre-stage
G-. . — tandem gear

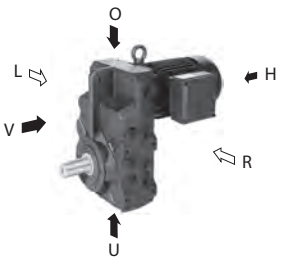
1 . — foot with through holes
2 . — small A-flange with through holes
3 . — standard A-flange with through holes
4 . — large A-flange with through holes
6 . L — foot with threaded holes, left
6 . R — foot with threaded holes, right
6 . LR — foot with threaded holes, left and right
7 . — C-flange with threaded holes
8 . — completely machined
9 . L — footplate, left
9 . R — footplate, right
9 . LR — footplate, left and right





. 1 solid shaft on gear side V
. 7 solid shaft on gear side V for flange as from BG10

. . W double shaft seals



gear type
gear size
pre-stage
re-inforced bearing (≥BF60)
code for gear design
code for shaft design
Three-phase motor
motor size
core length
design edition
number of poles

BF70 Z X-74 / D..11 LA4

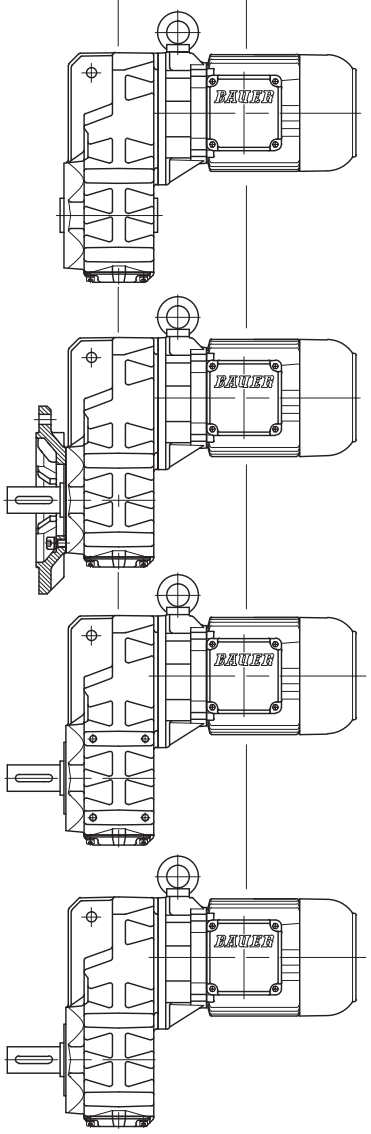
Z-.. — gear with pre-stage
X-.. — gear with reinforced bearings
G-.. — tandem gear

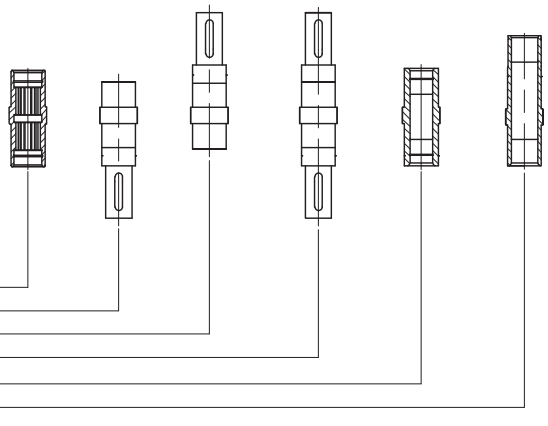
0 . — cast-in torque arm

2 . — small A-flange with through holes
3 . — standard A-flange with through holes
4 . — large A-flange with through holes

1 . LR — foot with through holes, right and left
6 . L — foot with threaded holes, left
6 . R — foot with threaded holes, right
6 . LR — foot with threaded holes, right and left

7 . — C-flange with threaded holes
8 . — completely machined



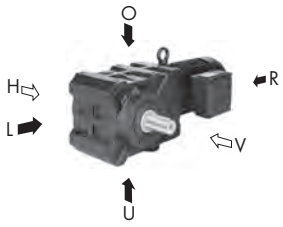


. 0 splined shaft acc. DIN 5480
. 1 solid shaft on gear side V
. 2 solid shaft on gear side H
. 3 solid shaft on gear side V and H
. 4 hollow shaft with keyway
. 5 hollow shaft with shrink disk SSV on side H

. . W double shaft seals
. . A cover for shrink disk SSV

Type Designations

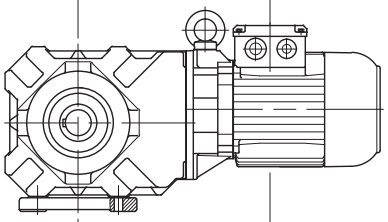
BK-series bevel-geared motor



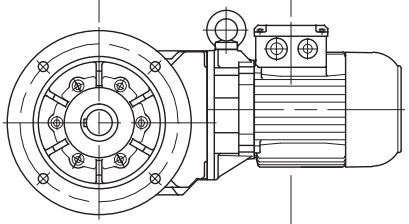
gear type
gear size
pre-stage
re-inforced bearing (≥BK20)
code for gear design
code for shaft design
Three-phase motor
motor size
core length
design edition
number of poles

BK20 Z X-64U / D06 LA4

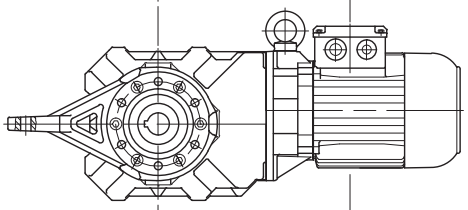
1 . U — foot with through holes, bottom
1 . L — foot with through holes, left
1 . O — foot with through holes, top



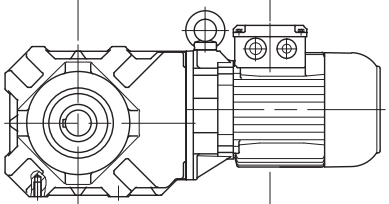
2 . V — small A-flange with through holes, front
3 . V — standard A-flange with through holes, front
4 . V — large A-flange with through holes, front
. . H — A-flange, rear
. . VH — A-flange, front and rear



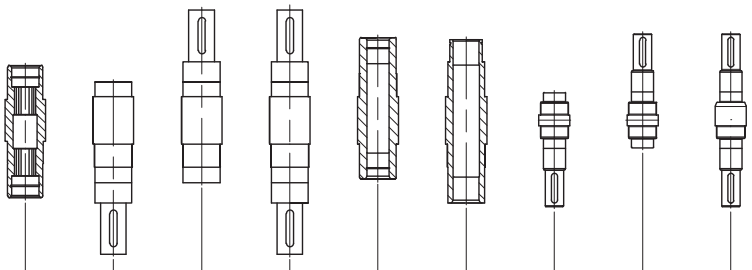
5 . V — torque arm, front
5 . VL — torque arm, front to left
5 . VO — torque arm, front to top
5 . VU — torque arm, front to bottom
5 . HL — torque arm, rear to left
5 . HO — torque arm, rear to top
5 . HU — torque arm, rear to bottom



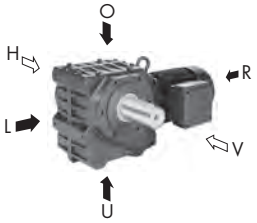
6 . U — foot with threaded holes, bottom
6 . L — foot with threaded holes, left
6 . O — foot with threaded holes, top



7 . V — C-flange with threaded holes, front
7 . H — C-flange with threaded holes, rear
7 . VH — C-flange with threaded holes, front and rear
8 . — completely machined



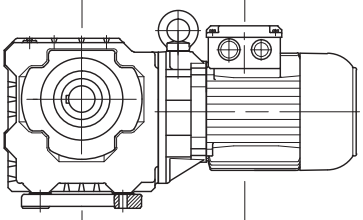
. 0 Splined shaft acc. DIN 5480
. 1 solid shaft on gear side V
. 2 solid shaft on gear side H
. 3 solid shaft on gear side V and H
. 4 hollow shaft with keyway
. 5 hollow shaft with shrink disk SSV on gear side H
. 7 solid shaft at gear side V for flange (only BK06)
. 8 solid shaft at gear side H for flange (only BK06)
. 9 solid shaft at gear side V and H for flange (only BK06)
. . W double shaft seals
. . A cover for shrink disk SSV



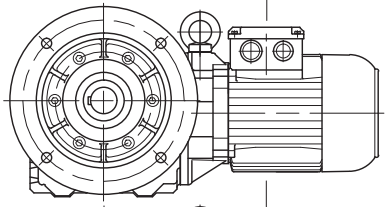
gear type
gear size
pre-stage
code for gear design
code for shaft design
Three-phase motor
motor size
core length
design edition
number of poles

BS40 Z-64U/ D..08 LA4

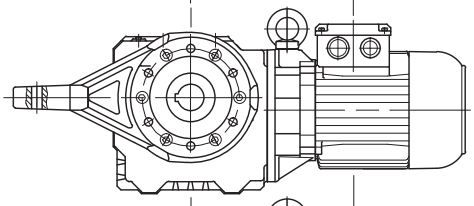
1 . U — foot with through holes, bottom
1 . L — foot with through holes, left
1 . O — foot with through holes, top



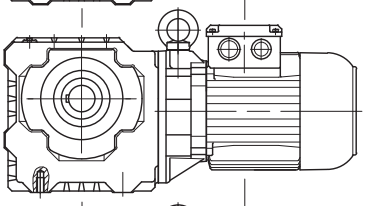
2 . V — small A-Flange with through holes, front
3 . V — standard A-Flange with through holes, front
4 . V — large A-Flange with through holes, front
. . H — A-flange, rear (standard flange)
. . VH — A-flange, front and rear (standard flange)



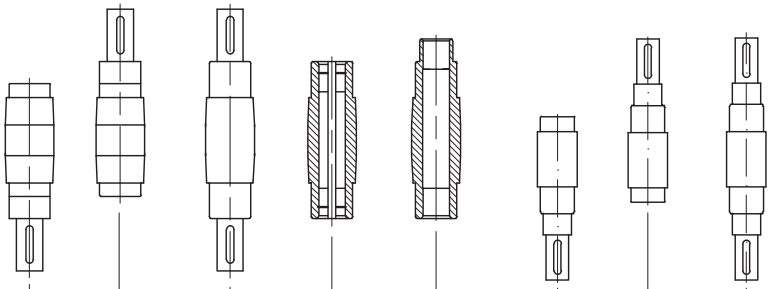
5 . V — torque arm, front
5 . VL — torque arm, front to left
5 . VO — torque arm, front to top
5 . VU — torque arm, front to bottom
5 . HL — torque arm, rear to left
5 . HO — torque arm, rear to top
5 . HU — torque arm, rear to bottom



6 . U — foot with threaded holes, bottom
6 . L — foot with threaded holes, left
6 . O — foot with threaded holes, top



7 . V — C-flange with threaded holes, front
7 . H — C-flange with threaded holes, rear
7 . VH — C-flange with threaded holes, front and rear
8 . — completely machined



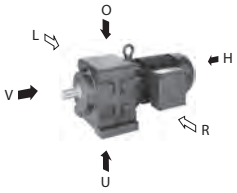
. 1 solid shaft at gear side V
. 2 solid shaft at gear side H
. 3 solid shaft at gear side V and H
. 4 hollow shaft with keyway
. 5 hollow shaft with shrink disk SSV on side H
. 7 solid shaft at gear side V for flange (only BS02 and BS03)
. 8 solid shaft at gear side H for flange (only BS02 and BS03)
. 9 solid shaft at gear side V and H for flange (only BS02 and BS03)
. . W double shaft seals as from BS10
. . A cover for shrink disk SSV as from BS10

Type Designations

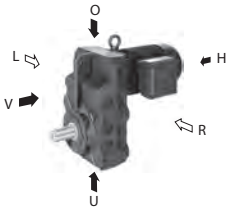
Versions and options

BG and BF series

BG series: type B3



BF series: type H4



V = Front
The side of the gear unit facing away from the motor or the source of motive power

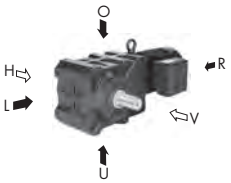
H = Rear
The side of the gear unit facing toward the motor or the source of motive power

L = Left
The left side of the gear unit as viewed from the output shaft side of type B3 for the BG series or type H4 for the BF series

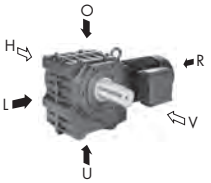
R = Right
The right side of the gear unit as viewed from the output shaft side of type B3 for the BG series or type H4 for the BF series

BK and BS series

BK series: type H1



BS series: type H1



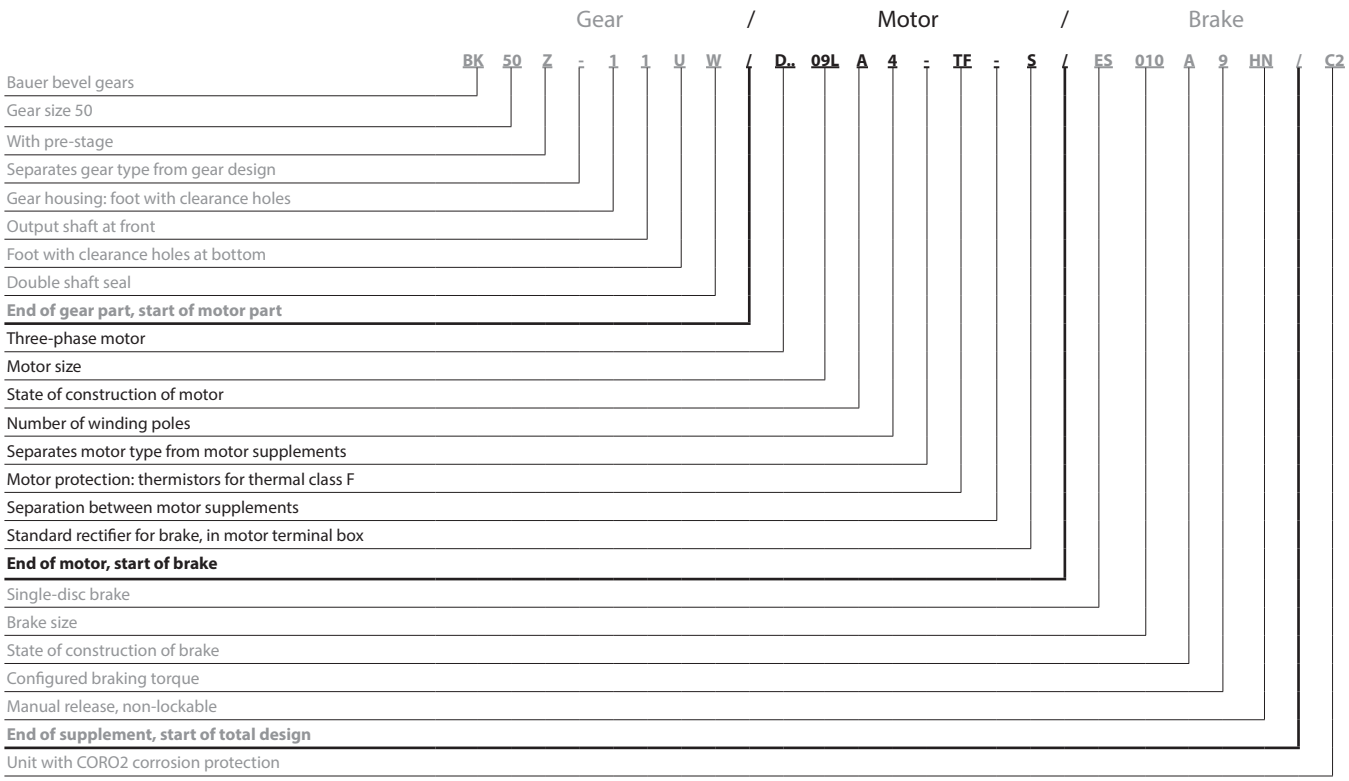
V = Front
The side of the gear unit facing toward the viewer looking toward the type H1 unit

H = Rear
The side of the gear unit facing away from the viewer looking toward the type H1 unit

L = Links
The left side of the gear unit as viewed from the output shaft side of type H1, or the torque brace oriented to the left

O = Top
The top side of the gear unit as viewed from the output shaft side of type H1, or the torque brace oriented upwards

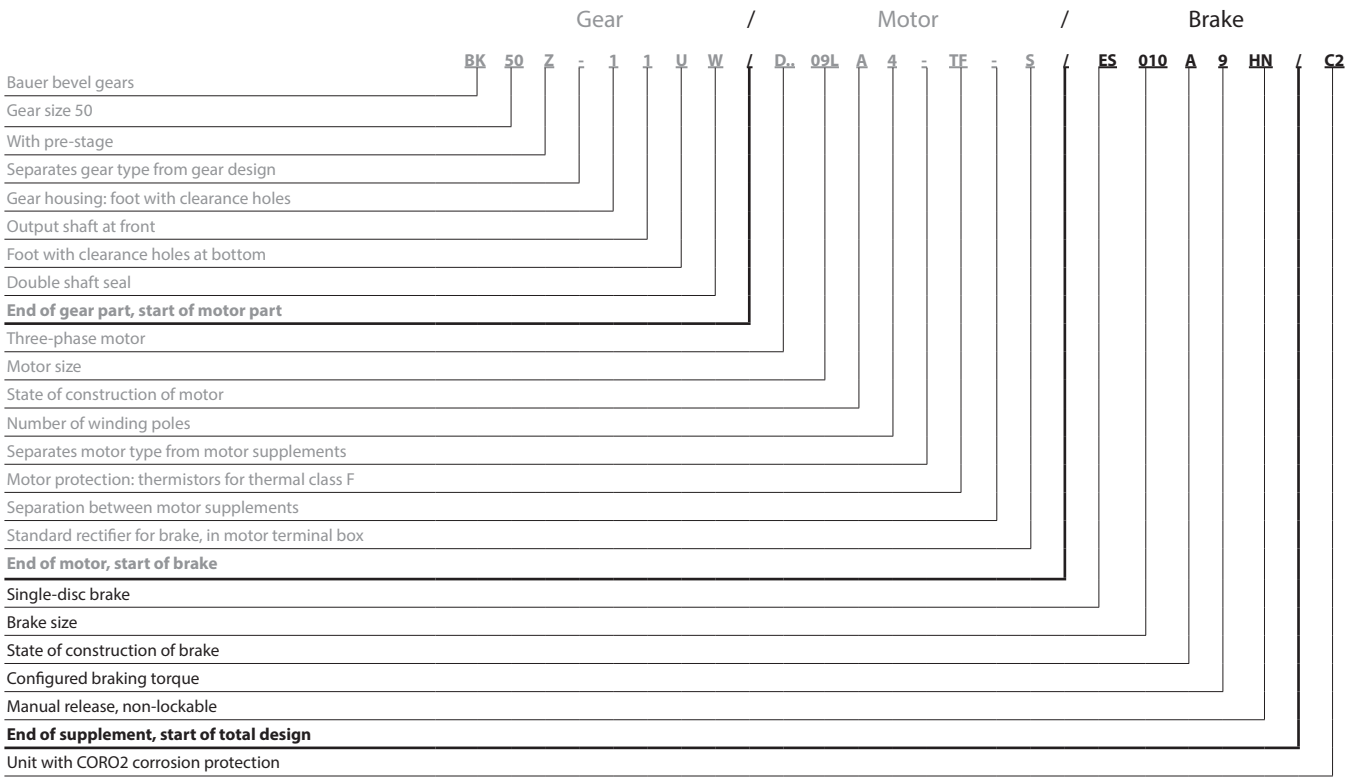
U = Bottom
The bottom side of the gear unit as viewed from the output shaft side of type H1, or the torque brace oriented downwards



Three-phase motor	D	=	Three-phase motor
	E	=	Single-phase motor (Steinmetz circuit)
	S	=	PM-Synchronous motor
	. A	=	Aseptic motor (germ-free drive)
	. SE	=	Three-phase motor with enhanced efficiency compliant with IE1
	. HE	=	Three-phase motor with enhanced efficiency compliant with IE2
	. PE	=	Three-phase motor with enhanced efficiency compliant with IE3
	. N	=	Motor without gear unit; foot-mount version
	. NF	=	Motor without gear unit; flange-mount version
	. R	=	Roller table motor
	. XE	=	Explosion-proof motor with increased safety
	. XD	=	Explosion-proof motors
	. W	=	Torque motor
	. L	=	Special rotor for traction and slewing gear motors
	. C	=	With main and auxiliary windings; only with single-phase motors (EC....)
	. V	=	Multiple voltage ranges (wide voltage range)
	. U	=	Unventilated (no forced ventilation)
Motor protection	TB	=	Thermistor 140°
	TF	=	Thermistor 160°
	TH	=	Thermistor 180°
	TEB	=	Thermistor warning/shutdown 120°/140°
	TBF	=	Thermistor warning/shutdown 140°/160°
	TFH	=	Thermistor warning/shutdown 160°/180°
	TOB	=	Thermostatic switch, NC 140°
	TOF	=	Thermostatic switch, NC 160°
	TOH	=	Thermostatic switch, NC 180°
	TSB	=	Thermostatic switch, NO 125°
	TSF	=	Thermostatic switch, NO 160°
	TSH	=	Thermostatic switch, NO 180°
	TX	=	Other
Brake rectifier in motor terminal box	S	=	Standard rectifier SG
	E	=	Special rectifier ESG
	M	=	Special rectifier MSG
Plug connector	ST	=	Harting (other)
Heavy-duty fan	SL		
Protective cover	D		
CleanDrive™	CD	=	Aseptic drive with cable

Type Designations

Supplement types



3

Brake

E		= Single-disc brake
ES		= Single-disc holding brake
EH		= Single-disc holding brake in heavy duty
ZS		= Two-disc holding brake
ESX		= Single-disc service brake
EHX		= Single-disc service brake in heavy duty version
ZSX		= Two-disc service brake
… 010		= Brake size
… …	A	= Construction state
… …	. 9	= Code for configured braking torque
… …	. . HN	= Manual release (not lockable)
… …	. . HA	= Manual release (lockable)

Reverse rotation block

RR	= Blocking direction clockwise
RL	= Blocking direction anticlockwise

Digital and analogue encoder

G

Second shaft end

ZW	= With key
ZV	= With square shaft

Forced ventilation

FV

Overall design

AV	= USA/Canada version with shaft dimensions in inches
AM	= USA/Canada version with metric shaft dimensions
UL	= US version
CS	= Canadian version
C1	= Coro1 corrosion protection
C2	= Coro2 corrosion protection
C3	= Coro3 corrosion protection
SP	= Non-catalogue version

4

Bauer® Gear Motor

	Page
Gear Motor Selection	**29-50**

Selection of geared motors
Drive configuration
Motor configuration
Radial and axial forces on the output shaft
Sizing based on efficiency
Shock loads of machinery

Information for inquiries and orders

Bauer Gear Motor GmbH
Fax: + 49 (0)711 3518 381

Application: _____
(e.g. traction drive, hoist/lift drive, roller conveyor, feedscrew, etc.)

Gearbox type



BG ☐ BF ☐ BK ☐ BS ☐

Number of items _____

Type _____
Power _____ kW or motor torque _____ Nm
Output speed _____ 1/min
Output torque _____ Nm Service factor f_B= _____
Mounting arrangement
Type of installation _____ Terminal box position _____
☐ **RAL 7031** or ☐ special RAL shade _____
Korrosionsschutz ☐ **Standard** or ☐ CORO1 ☐ CORO2 ☐ CORO3
Nominal frequency of the motor _____ Hz
Ambient temperature _____ °C Altitude [m] _____
Ambient conditions & installation site _____
Transmission component (direct, chain, gearwheel, belt, etc.) _____
Radial force on output shaft _____ N at a distance x from the shaft junction _____ mm
Axial force on output shaft _____ N

Operating on field-oriented inverter suitable for operation of permanent magnet synchronous motors

Speeds of _____ 1/min to _____ 1/min

Gear unit design

☐ Foot with clearance holes
☐ A-Flange with clearance holes D = _____ mm
☐ C-Flange with tapped holes
☐ Torque restraining arms with rubber buffers in ☐ L ☐ T ☐ B direction
☐ Foot with tapped holes on
☐ L ☐ R ☐ LR ☐ T ☐ B side

Output shaft

☐ Solid shaft on ☐ F ☐ B ☐ FB end
☐ Hollow shaft
☐ Hollow shaft for shrink-on disk ☐ with shrink disc ☐ with cover
☐ Hollow shaft with spline acc. to DIN 5480

Motor-mounted components

☐ Brake
Type _____ Braking torque = _____ Nm
Supply voltage = _____ VAC _____ Hz or _____ V DC
Manual release yes ☐ no ☐
Microswitch Function monitoring ☐ Wear monitoring ☐

☐ Encoder

☐ Absolute Multiturn ☐ with Profibus
☐ Resolver
☐ Sin/Cos
☐ Forced ventilation

Special design features

_____

_____

Drive configuration

Motions are necessary in production plants and equipment for the manufacture of goods and products. Geared motors are used to implement these motions in stationary production equipment. The objective of drive configuration is to obtain the optimal motor for each type of motion.

Motions in machines and equipment vary considerably. Experienced design engineers reduce the necessary motions to a few standard types:

These are:

- continuous linear motion
- reciprocating linear motion
- horizontal linear motion
- vertical or oblique linear motion for lifting and lowering loads
- continuous rotary motion and reciprocating rotary motion

All motions can be divided into:

- an acceleration phase
- a constant-velocity phase
- a braking (deceleration) phase

These motion phases must be examined separately when sizing a drive, in order to determine the phase with the highest load. After the maximum load has been determined, the drive system can be selected.
See our separate "Design Guide" publication for assistance with various use cases.

Required data for drive configuration

In addition to the data on (Specification of geared motors), the following data is necessary for drive configuration:

Designation	Description	Unit
t_d	Operating time per day	[h]
t_a	Deceleration time	[s]
n_2	Output speed	[rpm]
n	Rated rotor shaft speed	[rpm]
J	Moment of inertia	[kgm^2]
J_{ext}	External moment of inertia	[kgm^2]
J_{ext}	External moment of inertia referred to the rotor shaft	[kgm^2]
J_{rot}	Rotor moment of inertia	[kgm^2]
F	Force	[N]
m	Mass	[kg]
v	Velocity	[m/s]
a	Acceleration	[m/s^2]
g	Earth gravitational constant	[m/s^2]
P_{dyn}	Dynamic power	[kW]
P_s	Static power	[kW]
P	Power	[kW]
M_2	Output torque	[Nm]
M_N	Rated torque at rotor shaft	[Nm]
M_a	Deceleration torque	[Nm]
M_L	Braking or driving load torque	[Nm]
M_{grenz}	Specific limiting torque of gearbox at gear ratio i	[Nm]
M_{Br}	Rated braking torque	[Nm]
i	Gear reduction ratio	
FI	Inertia ratio	

Drive configuration process

Motor configuration

Determining the motor power

The required power can generally be calculated as follows:

$$P = \frac{F \times v}{\eta}$$

As previously described, all motions are divided into an acceleration phase (dynamic power), a constant-velocity phase (static power), and a braking (deceleration) phase. Depending on the type of motion, the force F necessary to overcome all opposing forces such as rolling friction, linear friction, gravitational force, acceleration and so on arising from the drive train has a strong influence on the required power and must be determined explicitly for each use case.

Determining the required torque

After the motor power has been determined, the required gearbox output torque can be calculated with:

$$M_2 = \frac{P \times 9550}{n_2}$$

Determining the gear reduction ratio

The gear reduction ratio is the ratio of the rated speed of the motor (see the motor data in Section 13) to the desired output speed of the geared motor.

$$i = \frac{n}{n_2}$$

Gearbox size selection

Determining the factor of inertia

The inertia ratio is the ratio of the sum of the moments of inertia of all masses driven by the motor and converted to the motor speed, including the moment of inertia of the motor rotor, to the moment of inertia of the rotor:

$$FI = \frac{J_{ext'} + J_{rot}}{J_{rot}} \quad \text{where} \quad J_{ext'} = \frac{J_{ext}}{i^2}$$

Determining the shock load

The shock load (see Sections 6, 7, 8 and 9) is determined from the inertia factor, the type of transmission component and the relative moment of acceleration.

Determining the minimum service factor f_{Bmin}

Based on the operating time per day, the cycle rate and the ascertained shock load, the service factor f_{Bmin} can be taken from the tables in Sections 6, 7, 8 and 9.

Based on this minimum service factor f_{Bmin}, select a geared motor from the tables that has a higher service factor as well as the required output speed, output torque and motor power.

Note: The service factor relates solely to the required torque for static operation needed by the application, which should be covered by the output torque of the selected geared motor.
The dynamic portion is not taken into consideration here.

The actual service factor of the geared motor with regard to required torque for static operation can therefore be calculated as follows:

$$f_B = \frac{M_{gr}}{M_{2erf}}$$

The final step is to specify the accessory options for the geared motor.

Brake specification

Essentially it is necessary to determine, based on the amount of friction energy to be dissipated by the brake, whether the brake is a holding brake or a service brake.
See Section 14 for the definitions of holding brakes and service brakes.

Once all the necessary data and requirements are known, the required braking torque can be calculated as follows:

$$M_{br} = M_a \pm M_L$$

$$M_a = \frac{J \times n}{9{,}55 \times t_a}$$

If the specific application data is not known, for horizontally driven equipment we recommend selecting a braking torque that is 1.0 to 1.5 times the rated torque of the motor.

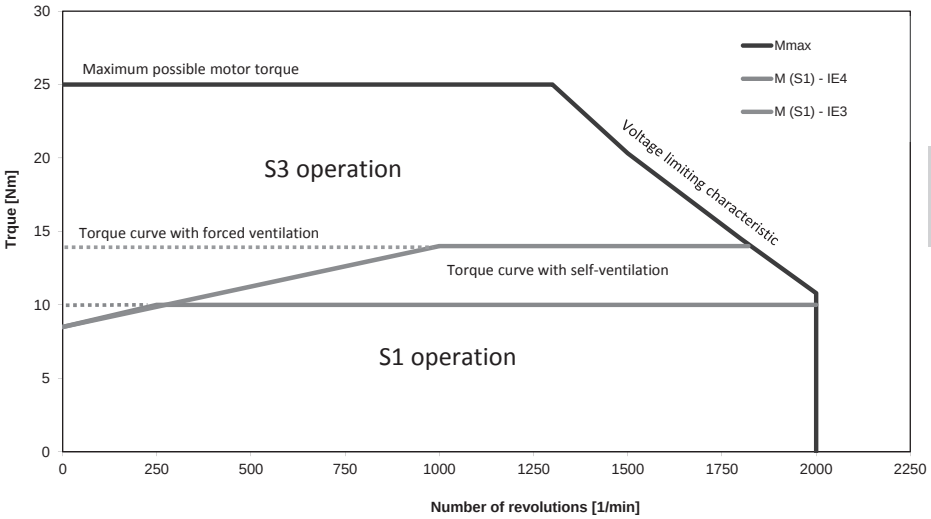
In the case of applications with significant external moments of inertia (FI greater than 2) and with operating cycles per hour, the brake size must always be selected on the basis of the thermally allowable braking energy. See Section 14 for detailed information on brake configuration.

In the case of lifting equipment, for safety reasons a braking torque twice as large as the rated torque of the motor should always be selected.

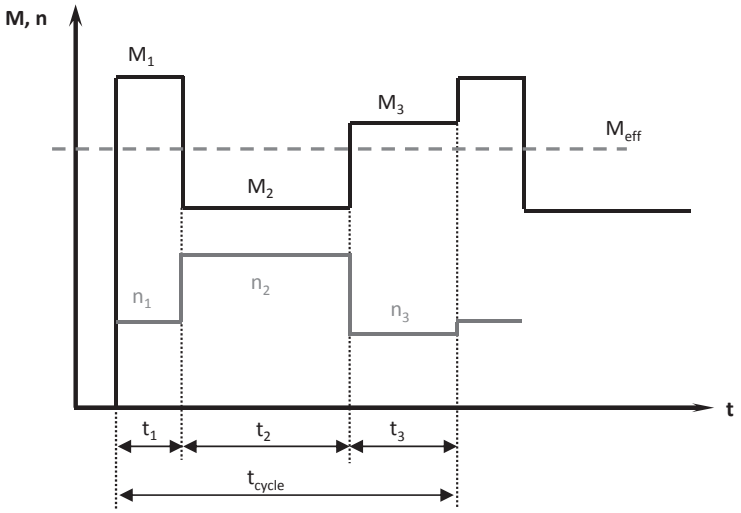
Torque–speed characteristic

The torque versus speed curve shows the operating characteristics of the PMSM.
The reference points shown schematically on the torque versus speed curve are significant criteria for motor selection.

Torque vs. Speed Curve



The motor is determined by the effective motor torque and the average motor speed. Both values Meff and neff must be below the S1 limit characteristic curve of the motor to be selected.



Dynamic power

The dynamic power is the power that accelerates the entire system, which consists of the load, transmission components, gearbox and motor.

$$P_{dyn} = \frac{m \times a \times v}{\eta}$$

P_{dyn}	Dynamic power [W]
m	Mass [kg]
a	Acceleration [m/s²]
v	Velocity [m/s]
η	Efficiency

Static power

The static power includes all forces present under zero-acceleration conditions. This includes rolling friction, linear friction, lifting force (with lifting) and wind force, among others.

$$P_S = \frac{F_F \times v}{\eta}$$

P_S	Static power [W]
F_F	Travel resistance [N]

Total power P_G

$$P_G = P_{dyn} + P_S$$

$$P_G = \frac{m \times a \times v}{\eta} + \frac{F_F \times v}{\eta}$$

Horizontal motion, rotary motion and vertical motion upwards	
Start-up time [s]	$t_A = \frac{\left(J_M + \frac{J_{ext}}{\eta}\right) \times n_M}{9{,}55 \times \left(M_A - \frac{M_L}{\eta}\right)}$
Cycle rate [c/h]	$Z = Z_0 \times \frac{1 - \left(\frac{M_L}{M_A \times \eta}\right)}{\left(\frac{J_S + \frac{J_{ext}}{\eta} + J_M}{J_M}\right)} \times K_L$
Vertical motion downwards	
Start-up time [s]	$t_A = \frac{\left(J_M + \frac{J_{ext}}{\eta}\right) \times n_M}{9{,}55 \times \left(M_A - (M_L \times \eta)\right)}$
Cycle rate [c/h]	$Z = Z_0 \times \frac{1 - \left(\frac{M_L \times \eta}{M_A}\right)}{\left(\frac{J_S + J_M + (J_{ext} \times \eta)}{J_M}\right)} \times K_L$

Motor selection

Example:

Required dynamic torque at motor (for acceleration):	126 Nm
Required static torque at motor	70.0 Nm
Total torque at motor:	196 Nm

IE3

P_N [kW]	Type	n_N [rpm]	M_N [Nm]	I_N 400 V [A]	circuit	cosφ	ŋ (100% - load) [%]	ŋ 75% - load) [%]	ŋ (50% - load) [%]	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J_{rot} [kgm²]
5,5	DPE13LA4	1460	35,5	11,3	D	0,78	89,6	89,4	87,7	8,0	3,9	3,5	4,2	0,0345
7,5	DPE13XA4	1460	49	14,8	D	0,81	90,4	90,0	89,3	8,5	3,3	2,9	3,5	0,04
9,5	DPE16LB4	1470	61	19	D	0,79	91,6	91,8	90,9	8,3	3,5	2,8	3,7	0,0755
11	DPE16LB4	1470	71,5	22	D	0,79	91,4	91,6	90,8	7,8	3,3	2,7	3,5	0,0755
15	DPE16XB4	1470	97	28,8	D	0,82	92,1	92,7	92,6	7,6	3,2	2,5	3,2	0,097
18,5	DPE18LB4	1470	120	36	D	0,80	92,8	93,1	92,6	8,8	4,3	3,5	3,9	0,17
22	DPE18XB4	1470	142	41,5	D	0,82	93,0	93,4	93,1	8,5	4,0	3,2	3,6	0,195

IE2

P_N [kW]	Type	n_N [rpm]	M_N [Nm]	I_N 400 V [A]	cos φ	ŋ (100% load) [%]	ŋ (75% load) [%]	ŋ (50% load) [%]	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J_{rot} [kgm²]
7,5	DHE13LA4	1460	49	15,1	0,81	88,9	89,2	87,9	7,0	3,3	3,0	3,5	0,0345
9,5	DHE16MA4	1470	62	19,7	0,78	89,4	89,4	86,5	6,8	2,9	2,5	3,2	0,057
11	DHE16LA4	1470	71	22,5	0,78	90,3	90,0	88,3	7,9	3,5	2,9	3,8	0,076
15	DHE16XA4	1470	97	31	0,77	90,6	90,8	88,8	7,2	3,2	2,8	3,5	0,087
18,5	DHE18LA4	1470	120	35	0,83	91,5	91,7	90,0	7,9	3,6	3,0	3,3	0,160

Due to the significantly higher starting torque (M_A) of IE2 motors (M_A/M_N 3.5) compared to IE1 motors (M_A/M_N 2.5), an 11 kW with an IE2 (DHE16LA4) motor can be used in this case. Otherwise the 15 kW IE1 (DSE16LA) should be selected.

No-load cycle rate Z_0

If the cycle rate is greater than normal (typically around 60 cycles per hour), the additional thermal load and, depending on the type of power transmission, the additional mechanical load must be taken into account in motor selection.
The no-load cycle rate Z_0 is the number of start cycles per hour with the motor running under no load (no external moments of inertia) in which the allowable winding temperature for the insulating material class F is reached.

No-load cycle rate Z_0:

P_N [kW]	Type	Z_0 [c/h]
0,12	DPE05LA4	65000
0,12	DPE06LA4	65000
0,18	DPE07LA4	47000
0,25	DPE08MA4	36000
0,37	DPE08LA4	27000
0,55	DPE08XA4	19000
0,75	DPE09LA4	15000
1,1	DPE09XA4	11000
1,5	DPE09XA4C	8700
2,2	DPE11MA4	6400
3	DPE11LA4	5000
4	DPE11LA4C	4000
5,5	DPE13LA4	3100
7,5	DPE13XA4	2400
9,5	DPE16LB4	2000
11	DPE16LB4	1800
15	DPE16XB4	1400
18,5	DPE18LB4	1200
22	DPE18XB4	1000

As a result of external loads, the no-load cycle rate is reduced to the allowable service cycle rate. The effect of the load is expressed by the inertia ratio FI and the load factor K_L.

Load factor K_L

The load factor reflects the relative load *P/PN* and the duty cycle of the motor in operation between the cycles.
The relative load has a quadratic effect on the allowable cycle rate. The effect of the duty cycle depends on the circumstances. With little or no load, the stress on the motor decreases due to the relatively long cooling periods, while at rated load or heavy loading the stress on the motor increases due to load losses.

The load factor K_L for 4-pole motors is determined as follows:

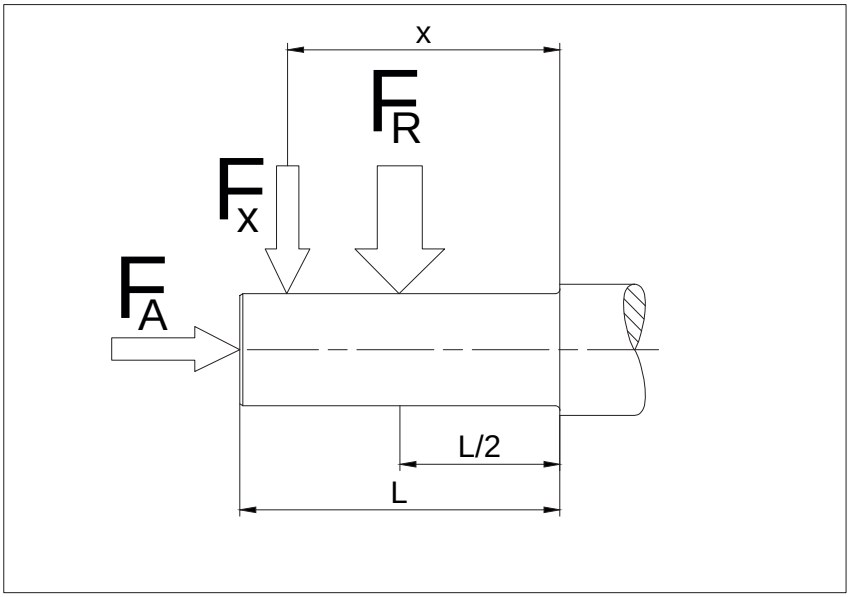
$$K_{L100} = 1 - \left(\frac{P}{P_n} \right)^{1,5}$$

$$K_L = 0,35 + (K_{L100} - 0,25) \times ED$$

Radial and axial forces on the output shaft

For each geared motor with a solid shaft, the allowable radial force $F_{R\,(N,V)}$ referred to the centre of the output shaft, x = l/2, is listed in the selection tables. The listed data applies to both foot-mounted and flange-mounted versions. If the force application point F_X is off centre, the allowable radial force must be recalculated taking into account the bearing lifetime and the shaft strength.

Maximum allowable radial force at force application point X



$F_{R(N,V)}$	Allowable radial force (x = l/2) according to the selection tables [N]
X	Distance from shaft junction to the force application point [mm]
F_A	Axial force [N]

To evaluate the radial force present at the force application point X, the allowable radial forces at position X must be determined with respect to the load limits of the bearings and the shaft strength.

If the calculated allowable radial forces at the force application point X are greater than the radial force that is present, the gearbox may be selected for the application.
If the calculated values are not sufficient or the force application point X is not within the stub shaft length l, please consult us.

Bearing load limit

$$F_{XL1} = F_q \times \frac{0{,}5 + b}{\left(\frac{X}{l} + b\right)}$$

$$F_{XL2} = F_q \times \frac{0{,}5 + a}{\left(\frac{X}{l} + a\right)}$$

Shaft strength

$$F_{XW1} = F_{qmax} \times \frac{0,5}{\left(\frac{X}{l}\right)}$$

$$F_{XW2} = F_{qmax} \times \frac{0,5 + c}{\left(\frac{X}{l} + c\right)}$$

For the selected gear ratio and bearing type (normal or reinforced), F_q is the allowable perpendicular force F_{RN} or F_{RV} from the geared motor selection tables.

F_{qmax} is the maximum allowable perpendicular force for the selected gearbox size as listed in the geared motor selection tables, independent of the bearing type (normal or reinforced).

The factors a, b and c for the individual gearbox types are listed in the following tables.

Helical gear unit BG series

Frame size	Bearings	Output shaft code	l	a	b	c
BG04	Normal	-.1	24	0,5625	1,5	-
BG05	Normal	-.1	28	0,5893	1,3929	-
BG06	Normal	-.1	30	0,6667	1,4167	-
BG10	Normal	-.1	40	0,7125	1,6750	-
		-.7		1,1000	2,0625	-
BG20	Normal	-.1	50	0,6100	2,2500	-
		-.7		0,9400	2,5800	-
BG30	Normal	-.1	60	0,5917	2,1750	-
		-.7		0,9417	2,5250	-
BG40	Normal	-.1	60	0,6917	2,3667	-
		-.7		1,0083	2,6833	-
BG50	Normal	-.1	80	0,5625	2,0000	-
		-.7		0,8563	2,2938	-
BG60	Normal	-.1	100	0,5300	2,0200	-
		-.7		0,7650	2,2550	-
BG70	Normal	-.1	120	0,4750	1,7292	-
		-.7		0,7292	1,9833	-
BG80	Normal	-.1	140	0,4286	1,7000	-
		-.7		0,6000	1,8714	-
BG90	Normal	-.1	200	0,3675	1,5300	-
		-.7		0,5825	1,7450	-
BG100	Normal	-.1	220	0,3477	1,4341	-
		-.7		0,5386	1,625	-

Shaft-mounted gear unit BF series

Frame size	Bearings	Output shaft code	l	a	b	c
BF06	Normal	-.1	50	0,4500	1,4100	-
BF10	Normal	-.1	60	0,5083	1,4833	-
		-.2		0,6500	1,6250	-
BF20	Normal	-.1	70	0,4286	1,3571	-
		-.2		0,5571	1,4857	-
BF30	Normal	-.1	80	0,3875	1,2563	-
		-.2		0,5688	1,4375	-
BF40	Normal	-.1	100	0,4050	1,2250	-
		-.2		0,5250	1,3450	-
BF50	Normal	-.1	120	0,3125	1,0625	-
		-.2		0,3959	1,1458	-
BF60	Normal	-.1	140	0,3286	1,0821	-
		-.2		0,4036	1,1571	-
	Reinforced	-.1		-	-	0,2750
		-.2		-	-	0,3643
BF70	Normal	-.1	180	0,2722	1,0566	-
		-.2		0,3056	1,0889	-
	Reinforced	-.1		-	-	0,2194
		-.2		-	-	0,2639
BF80	Normal	-.1	220	0,2878	1,3536	-
		-.2		0,2873	1,3518	-
	Reinforced	-.1		-	-	0,2364
		-.2		-	-	0,2268

Radial and axial forces on the output shaft

Bevel gear unit BK series

Frame size	Bearings	Output shaft code	l	a	b	c
BK06	Normal	-.1	40	0,4375	1,9875	-
		-.2		0,4375	1,9875	-
		-.7		0,9125	2,4625	-
		-.8		0,9125	2,4625	-
BK10	Normal	-.1	60	0,5917	2,2417	-
		-.2		0,5917	2,2417	-
BK20	Normal	-.1	70	0,5071	2,2357	-
		-.2		0,5071	2,2357	-
	Reinforced	-.1		-	-	0,3929
		-.2		-	-	0,3929
BK30	Normal	-.1	80	0,5250	2,2750	-
		-.2		0,5250	2,2750	-
	Reinforced	-.1		-	-	0,4125
		-.2		-	-	0,4125
BK40	Normal	-.1	100	0,4300	2,1700	-
		-.2		0,4300	2,1700	-
	Reinforced	-.1		-	-	0,3400
		-.2		-	-	0,3400
BK50	Normal	-.1	120	0,4083	1,9417	-
		-.2		0,4083	1,417	-
	Reinforced	-.1		-	-	0,3250
		-.2		-	-	0,3250
BK60	Normal	-.1	140	0,3536	1,8036	-
		-.2		0,3536	1,0836	-
	Reinforced	-.1		-	-	0,3121
		-.2		-	-	0,2979
BK70	Normal	-.1	180	0,2861	1,6694	-
		-.2		0,2861	1,6694	-
	Reinforced	-.1		-	-	0,2428
		-.2		-	-	0,2317
BK80	Normal	-.1	220	0,2818	1,5545	-
		-.2		0,2818	1,5545	-
	Reinforced	-.1		-	-	0,2305
		-.2		-	-	0,2214
BK90	Normal	-.1		0,2519	1,6096	-
		-.2		0,2519	1,6096	-
	Reinforced	-.1		-	-	0,1989
		-.2		-	-	0,1912

Worm gear unit BS series

Frame size	Bearings	Output shaft code	l	a	b	c
BS02	Normal	-.1	30	0,6	2,1	-
		-.2		-	-	-
		-.7		1,3333	2,8333	-
		-.8		-	-	-
BS03	Normal	-.1	40	0,4375	1,9875	-
		-.2		-	-	-
		-.7		0,9125	2,4625	-
		-.8		-	-	-
BS04	Normal	-.1	40	0,5375	1,7875	-
		-.2		-	-	-
BS06	Normal	-.1	50	0,4800	1,9400	-
		-.2		-	-	-
BS10	Normal	-.1	60	0,5917	2,3083	-
		-.2		-	-	-
BS20	Normal	-.1	70	0,5500	2,4357	-
		-.2		-	-	-
BS30	Normal	-.1	80	0,5312	2,4313	-
		-.2		-	-	-
BS40	Normal	-.1	120	0,4292	1,7042	-
		-.2		-	-	-

Transmission components

If a transmission component is used (gearwheels, chainwheels, V-belt, etc.), the resulting radial forces can be determined as follows.

$$F_R = \frac{2000 \times M}{D_T} \times f_Z \leq F_{R(N,V)}$$

F_R Radial force [N]
M Torque [Nm]
D_T Pitch radius of the transmission component [mm]
f_Z Safety factor

A safety factor f_Z depending on the type of transmission component attached to the output shaft must be included when determining the value of the radial force FR that is present.

Gear Motor Selection

Sizing based on efficiency

Drive configuration based on efficiency

With the introduction of the IEC 60034-30 standard and the ErP 2009/125/EC EU directive, utilisation of the potential energy savings in industrial environments has been given increased urgency and made legally mandatory.
In the industrial applications area, electric motors consume the vast majority of electrical energy (approximately 70%). They are used in all areas and in many applications, such as fans, pumps, grinders, rolling mills, lifts, transport and conveying equipment, household appliances, and office machines.
Due to this broad range of applications, electrical drive systems are a primary target for energy saving policies. As electric motors consume a large amount of electrical energy, even small improvements in efficiency lead to significant savings.
In many cases, especially in transport and conveying equipment, it is necessary to reduce the speed of a three-phase squirrel-cage motor. This can be done by using external traction gearboxes or by using external or integrated reduction gearboxes. With regard to energy savings, the efficiency of the gear unit and transmission components must not be ignored.

The overall efficiency of a system is calculated as follows:

$$\eta_{System} = \eta_{Motor} \times \eta_{Getriebe} \times \eta_{Anlage}$$

Savings potential Motor: η_{motor}

In accordance with the Motor Regulation 16640/2009/EC, the legally binding EU ErP directive 2009/125/EC specifies IE2 (High Efficiency) as the minimum efficiency for new motors operating in continuous running duty (S1), effective 16 June 2011.

The right motor frame size and motor type should be selected based on environmental and economical aspects based on the new motor regulations for the IE2 series.

Environmental analysis

Motor capacity utilisation is a particularly important factor in the energy utilisation of motors.

Unlike what is often incorrectly assumed, energy consumption cannot be reduced by simply replacing a motor operating at only 50% of its capacity with a smaller motor operating at 100% of its capacity. Partially loaded motors dissipate less heat and therefore achieve higher efficiency.

The following table shows the comparative technical data of 2.2-kW motors with copper and aluminium rotors and a 1.1-kW motor with an aluminium squirrel-cage rotor.

P_N [kW]	Type	n_N [rpm]	M_N [Nm]	I_N 400 V [A]	cos φ	η (100% load) [%]	η (75% load) [%]	η (50% load) [%]	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J_{rot} [kgm²]
1.1	DHE09LA4	1440	7.3	2.5	0.75	82.7	82.3	79.8	5.9	2.9	2.7	3.4	0.0032
2.2	DHE09XA4C	1440	14.5	4.75	0.79	84.5	85.0	83.5	5.2	1.8	1.7	2.7	0.0053
2.2	DHE11SA4	1440	14.5	4.6	0.80	86.2	86.0	84.7	7.0	3.1	2.8	3.6	0.0081

Even with 50% capacity utilisation, the two 2.2-kW motors have higher efficiency than the fully utilised (100% load) 1.1-kW motor.
Thanks to the large thermal margins of IE2 motors, there is no need for additional safety margins in design parameters.
However, with very high cycle rates the higher starting torque of IE2 motors, and the associated higher gear acceleration loads, should be taken into account. See separate publication EP34 for additional information.

Calculation of the efficiency under partial load

The motor data sheets list motor efficiency figures according to Motor Regulation 640/2009/EC for operation at several load levels (50%, 75% and 100%).
The efficiency at any partial load point can be calculated approximately from the efficiency figures for 75% and 100% load, and the energy balance of the application can be evaluated accordingly.

$$R_{VL} = \frac{\left(\frac{100}{\eta_{100}} - 1\right) - 0{,}75 \times \left(\frac{100}{\eta_{75}} - 1\right)}{0{,}4375}$$

$$R_{VO} = \left(\frac{100}{\eta_{100}} - 1\right) - R_{VL}$$

$$\eta_P = \frac{100}{\left(1 + \frac{R_{VO}}{p}\right) + R_{VL} \times p}$$

with

η_{100}	Efficiency at 100% load
η_{75}	Efficiency at 75% load
RVL, RVO	Intermediate results
p	Partial load (value range: 0 to 1 or overload)
η_P	Efficiency at partial load point p

Economic analysis

As described above, the economic analysis does not permit especially large safety factors. The energy savings required by the ErP Directive 2009/125/EC can be achieved very easily with electric motors, but there is a price attached.
With the change from IE1 to IE2 efficiency class (effective 16 June 2011) for mains-powered motors operating in S1 duty, users of electric motors are faced with power-dependent additional costs when purchasing these products.
The drive should essentially be selected based on the investment payback time as a function of the period under consideration.
Operating a 2.2-kW motor constantly at 50% load (as described above) does not make sense from an economic perspective. In this case, an additional amount must be paid for changing to a different frame size or package length and for material expenditures with IE2 motors. As a result, the investment payback time of the motor will extend longer into the lifetime of the system.

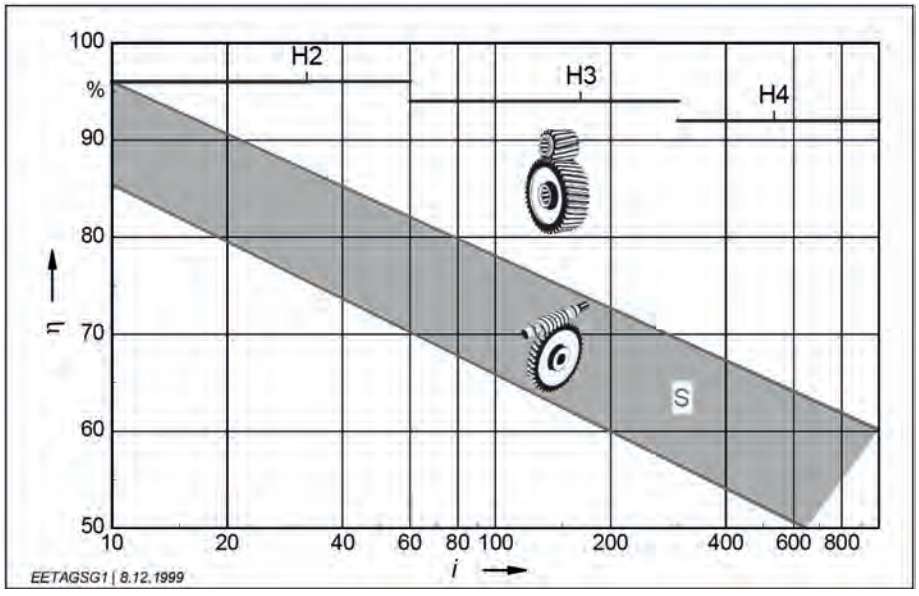
Consequently, the most cost-effective motor selection must be based on the following factors.

- Duty type
  Evaluate the application, since most applications do not operate with S1 duty type.
- Operating time
  The longer the operating time, the shorter the payback time.
- Motor capacity utilisation
  Motor utilisation 75% or higher load.
- Additional financial expenditure
  Safety factors increase the economic overhead.
- Payback time

Gear efficiency η_{gear}

Comparison of the general savings potential of gearboxes and motors in continuous running duty (S1) shows that the energy savings potential of gearboxes is significantly higher than that of motors. The efficiency of gearboxes is predominantly dependent on the tooth geometry and the friction values of the bearings and seals. At high input speeds and with vertical designs in which the first stage rotates fully immersed in oil, splash losses cannot be neglected. Vertical designs should generally be avoided.

The efficiency of worm gear drives is highly speed dependent (see illustration). Bauer worm gear units are available as two-stage worm gear units for frame sizes BS04 and larger. This enables very high reduction ratios and significantly higher efficiency than with pure worm gear units. A loss of 2% per stage can be assumed for two-stage worm gear units.



Comparison of typical efficiency (ŋ) versus reduction ratio (i) for helical spur gear units (H) with two, three or four stages and two-stage worm gear units (S), relative to the rated power of the gear unit.

System efficiency η_{system}

The drive system provides the highest savings potential in the analysis of the overall efficiency. Designers and plant engineers should always strive to optimise the transmission components.

Transmission component	Conditions	Efficiency
Wire rope	Per full turn on the wire drum (with journal or roller bearings)	0.91–0.95
V-belt	Per full turn on the belt pulley (with normal belt tension)	0.88–0.93
Synthetic belts	For each full turn or roll, with roller bearings (normal belt tension)	0.81–0.85
Rubber belts	For each full turn or roll, with roller bearings (normal belt tension)	0.81–0.85
Toothed belts	For each full turn or roll, with roller bearings (normal belt tension)	0.90–0.96
Chains	For each full turn or chainwheel, with roller bearings (depending on chain size)	0.90–0.96
Spindles	Trapezoid-thread spindle Ballscrew spindle	0.30 – 0.70 0.70 – 0.95
Gear unit	With spur gears or bevel gears: 2% per stage, with worm gears and other types of toothing, according to manufacturer's data	0.94–0.98

Shock loads of machinery

Shock loads for various types of machinery are listed in standards and guidelines as well as industry-specific documents and manufacturer's documents. If for example a crusher or a press is listed here with an shock load class of III, this is justified. On the other hand, under favourable conditions a belt conveyor could have an shock load class of I, but this could quickly change to III with on/off operation, high speed and overdrive due to a loose chain. Consequently, the classifications in the following table should by no means be taken blindly. They provide a rough point of reference, but the ultimate classification of the shock load should always take into account the factors specified by Bauer, in particular the inertia ratio, the cycle rate and the transmission component(s).

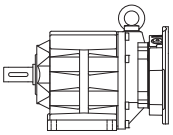
Drive	Shock load		
Construction machinery			
Construction lifts		II	
Concrete mixers		II	
Road construction machinery		II	
Chemical industry			
Cooling drums		II	
Mixers		II	
Stirrers (light media)	I		
Stirrers (viscous media)		II	
Drying drums		II	
Centrifuges (light)	I		
Centrifuges (heavy)		II	
Transport and conveying systems			
Hauling winches		II	
Conveying machines			III
Apron conveyors		II	
Belt conveyors (bulk material)	I		
Belt conveyors (piece goods)		II	
Bucket belt conveyors		II	
Chain conveyors		II	
Circular conveyors		II	
Freight lifts		II	
Flour bucket conveyors	I		
Passenger lifts		II	
Flat belts		II	
Screw conveyors		II	
Gravel bucket conveyors		II	
Inclined lifts			III
Steel belt conveyors		II	
Chain conveyors		II	
Blowers and fans			
Roots blowers		II	
Blowers (axial and radial)	I		
Cooling tower fans		II	
Suction blowers		II	

Drive	Shock load		
Rubber			
Extruders			III
Calenders		II	
Kneaders			III
Mixers		II	
Rolling mills			III
Timber processing and woodworking			
Debarking drums			III
Planers		II	
Woodworking machinery	I		
Saw frames			III
Crane systems			
Luffing mechanisms	I		
Traversing mechanisms			III
Hoisting mechanisms	I		
Slewing mechanisms		II	
Jib mechanisms		II	
Plastics			
Extruders		II	
Calenders		II	
Mixers		II	
Grinders and pulverisers		II	
Metalworking			
Plate bending machines		II	
Plate straightening machines			III
Hammers			III
Planers			III
Presses			III
Shears		II	
Forging presses			III
Punches			III
Countershafts and driveshafts	I		
Machine tools (principal)		II	
Machine tools (ancillary)	I		

Drive	Shock load		
Food processing			
Filling machines	I		
Kneading machines		II	
Mashing machines		II	
Packaging machines	I		
Sugar cane cutters		II	
Sugar cane mills			III
Sugar beet cutters		II	
Sugar beet washers		II	
Paper			
Couching			III
Smoothing rolls			III
Hollander		II	
Pulp grinder			III
Calender		II	
Wet presses			III
Shredders			III
Suction presses			III
Suction rolls			III
Drying rolls			III
Stone and soil			
Crushers			III
Rotary kilns			III
Hammer mills			III
Tube mills			III
Beating mills			III
Tile and block presses			III
Fabrics			
Winders		II	
Printing and dying machines		II	
Tanning vats		II	
Shredders		II	
Looms		II	

Drive	Shock load		
Rolling mills			
Plate shears			III
Plate turners		II	
Billet presses			III
Billet and slab lines			III
Billet conveyors			III
Wire drawing machines		II	
Descaling machines			III
Sheet metal mills			III
Plate mills			III
Winders (strip and wire)		II	
Cold rolling mills			III
Chain transports		II	
Billet shears			III
Cooling beds		II	
Cross transports		II	
Roller tables (light)		II	
Roller tables (heavy)			III
Roll straighteners		II	
Tube welders			III
Trimming shears		II	
Cropping shears			III
Continuous casting machines			III
Roll adjustment devices		II	
Manipulators			III
Laundry			
Drum dryers		II	
Washing machines		II	
Water treatment			
Centrifugal aerators		II	
Archimedes screw		II	

5



Page

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Standard mounting
- BG and BF
- BK and BS

Position of the terminal box and the cable entry
- BG and BF
- BK and BS

Radial and axial forces at the output shaft
Dimensions and fits of output shafts and keyways
Installing transmission elements
Gear with solid shaft
Gear with hollow shaft
Shrink disc coupling
Torque restraint
Notes for installing shaft mount gears with hollow shaft and keyway
Gear ventilation
Output shaft seals

Lubricants

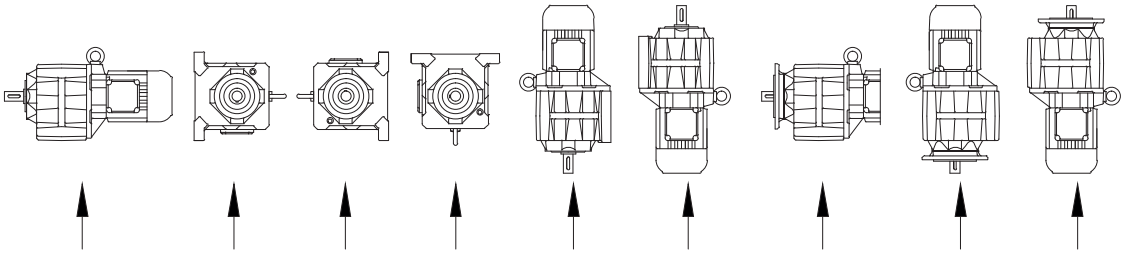
Lubricant quantities
- Lubricant quantities, BG-series gears
- Lubricant quantities, BG-20-01R
- Lubricant quantities, BF-series gears
- Lubricant quantities, BK-series gears
- Lubricant quantities, BS-series gears
- Lubricant quantities, pre-stage gears (Z)
- Lubricant quantities, intermediate gears

Position of threaded plugs
- BG-series gears
- BG-20-01R
- BF-series gears
- BK-series gears
- BS-series gears
- pre-stage gears (Z)

Position of the drain plugs in the System Cover

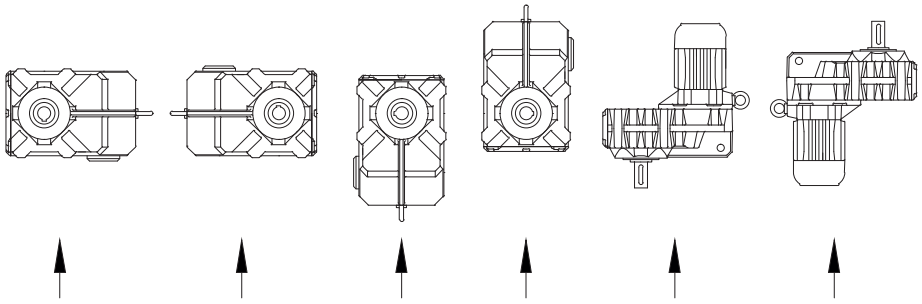
Standard mounting positions

BG Series



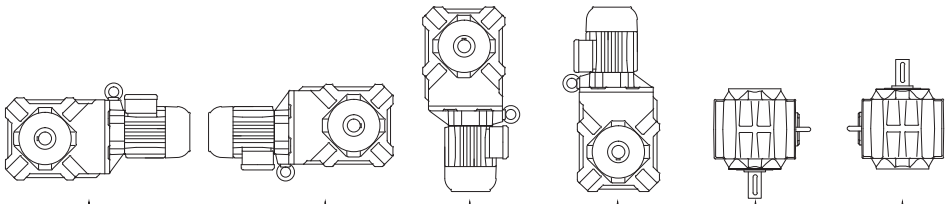
Gear side	(U)	(R)	(L)	(O)	(V)	(H)	(U)	(V)	(H)
Mounting position (foot housing) cast foot with clearance holes (Code -1.)	B3	B6	B7	B8	V5	V6			
Mounting position (attachment housing with flange or foot mounting) flange with threaded holes (Code -2./Code -3./Code -4./Code -7.) / foot with threaded holes (Code -6.) foot with clearance holes (Code -9.)	H4	H1	H2	H3	H5	H6	B5	V1	V3

BF series



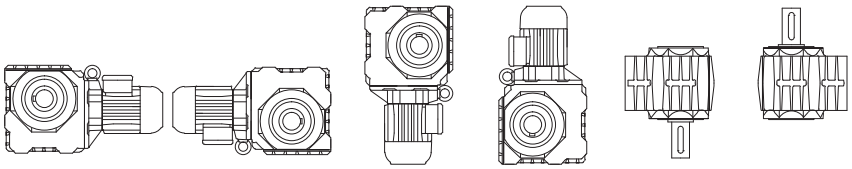
Gear side	(R)	(L)	(O)	(U)	(V)	(H)
Mounting position	H1	H2	H3	H4	V1	V2

BK series



Gear side	(U)	(O)	(R)	(L)	(V)	(H)
Mounting position	H1	H2	H3	H4	V1	V2

BS series

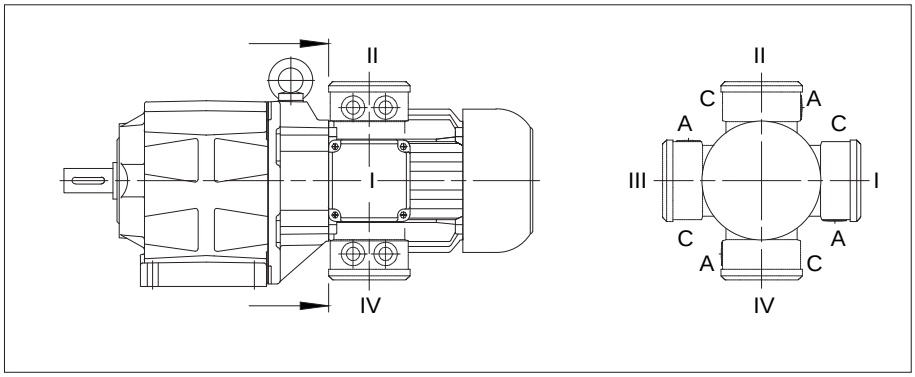


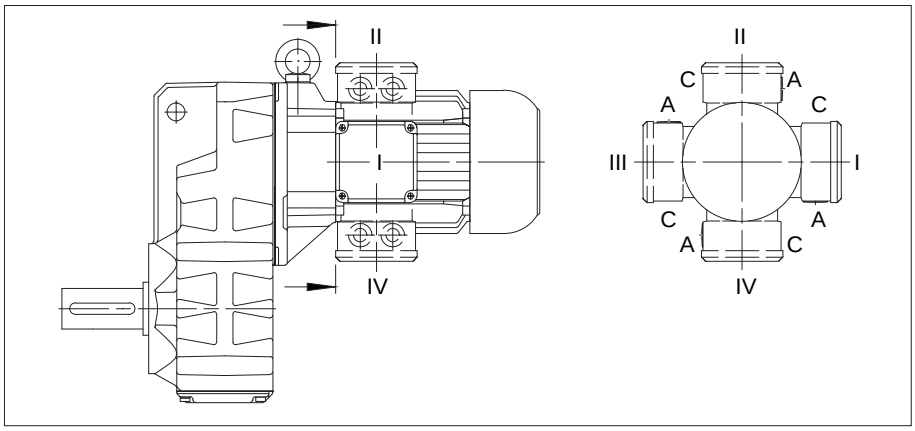
Gear side	(U)	(O)	(R)	(L)	(V)	(H)
Mounting position	H1	H2	H3	H4	V1	V2

Postion of the terminal box

Position of the terminal box and the cable entry points (BG and BF)

The standard position of the terminal box for helical-gear and shaft- mounted geared motors is position I. Cables may be introduced from side A or C.



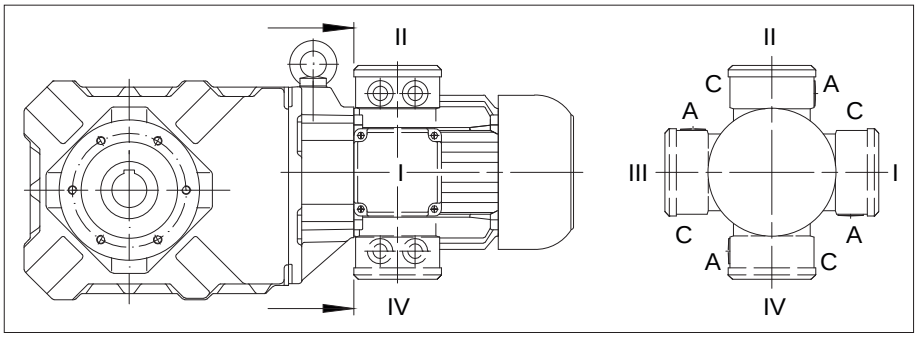


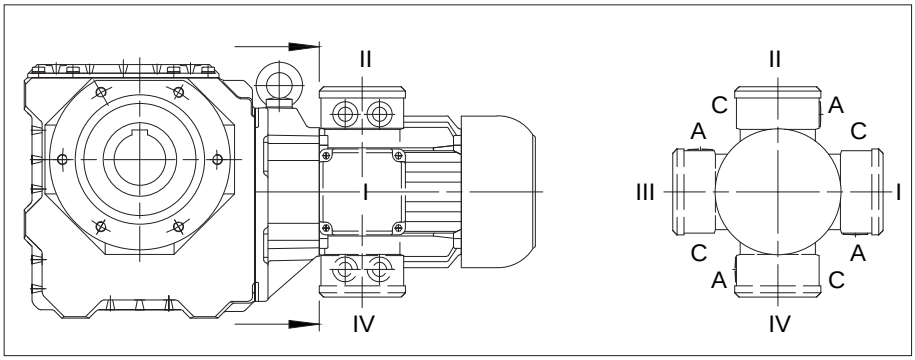
Turning or rotating the gearbox in space in the different mounting positions according to DIN 42950 does not influence the marking as shown. The details of the terminal box always show the position of the terminal box and the cable entry in relation to the gearbox and not in space. The mounting according to DIN 42950 is to be given separately.

Position of the terminal box and the cable entry points (BK and BS)

The standard position of the terminal box for bevel-geared and worm- geared motors is position II.

Cable entry through side A or side C is possible





Turning or rotating the gearbox in space in the different mounting positions according to DIN 42950 does not influence the marking as shown. The details of the terminal box always show the position of the terminal box and the cable entry in relation to the gearbox and not in space. The mounting according to DIN 42950 is to be given separately.

Gearboxes

Radial and axial forces at the output shaft

The output shafts and output-shaft bearings are matched to the motor torques. It is advisable to locate the drive-transmission element's point of application as close as possible to the shaft collar to ensure that the load imposed by external radial forces is not unnecessarily high. Permissible values for radial forces referred to the output shaft centreline are listed in the selection tables. Please consult us if your application involves extra-high axial loading.

Dimensions and fits of output shafts and keyways

Output shaft and second shaft stub, keyway and key are in compliance with the DIN standards and ISO fits listed below:

Solid shaft

Shaft diameter	to D = 50 mm in ISO k6 (DIN 748 Page1)
	as of D = 50 mm in ISO m6 (DIN 748 Page 1)
Keyway	ISO P9 (DIN 6885 Page 1)
Key, height	ISO h9 (DIN 6885 Page 1 and DIN 6880)
Bore - customer	ISO H7

Hollow shaft with keyway

Bore diameter	ISO H7 (DIN 748)
Keyway	ISO JS9 (DIN 6885 Page 1)
Key, height	ISO h9 (DIN 6885 Page 1 and DIN 6880)
Customer shaft	ISO h6

Hollow shaft for shrink-on disc coupling (SSV)

Outside diameter	ISO f7
Inside diameter	ISO H7
Customer shaft	ISO h6

Installing transmission elements

Note:
Gearboxes using torque reaction by means of a flange (Code 2.; 3; 4.; 7.; 8.) or torque arm (Code 5.), must have the side for the torque reaction the same as where the radial force on the output shaft occurs (see rubber buffers for torque arms)! Please consult the factory for other designs.

Gear with solid shaft

Always exercise meticulous care when fitting transmission elements onto output shafts and, whenever possible, use the DIN 332 tapped bore provided for this purpose. Fitting is usually easier if the transmission element can be heated to approximately 100° C for installation. Dimension the locating bore to ISO H7.

Gears with solid shaft at each end (gear code -.3/): alignment of the two keys is subject to the DIN 7168 tolerances, the degree of accuracy is "fine**".**

Gear with hollow shaft

Hollow shafts usually engage solid shafts of the driven machinery. The gear unit must be mounted such as to be free of constraint and be fixed axially (e.g. by means of assembly help acc. following description "notes for installing shaft mount gears with hollow shaft and keyway"). Special contract provision must be made if the hollow shaft has to guide the solid shaft or, for any other reason, close out-of-round tolerance referenced to a point on the gear housing (such as a flange, for instance) is required.

Shrink disc coupling

A shrink disc coupling (SSV) can transmit high torque from the non- grooved hub to the smooth shaft. The SSV is easily secured and released, using commercially available bolts. SSVs are the ideal supplement for shaft mount gears. The maximum transmittable torque for the selected shrink discs when fitted and mounted according to instructions is above the breakaway torque of the respective motors classified as standard (for classification of shrink disc sizes see chapter 11, 12, 13 "Additional dimensional drawings for Shrink disc coupling)

Torque restraint

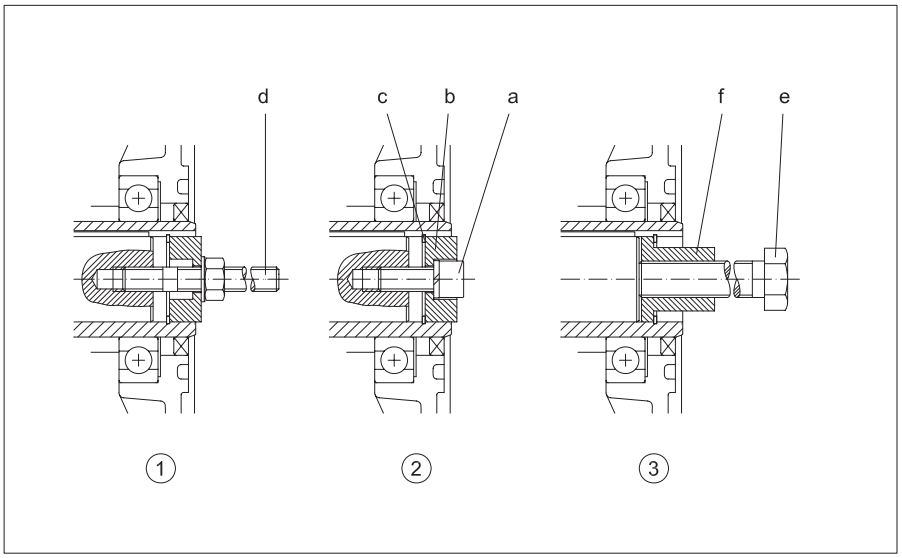
Shaft-mounted geared motors require a suitable torque restraint to resist the reaction torque. Shaft-mounted gears have cast torque arms as standard. Bevel gears and worm gears are available with bolt-on torque arms on request. The torque arm is screwed onto the front "V" on the side of the gear unit. It is always important to ensure that the torque arm does not create excessive constraining forces due to the driven shaft running untrue, for example. Excessive play can result in excessive shock torques in switching or reversing operations. Consequently, we recommend the use of pre-tensioned rubber damping elements. These rubber buffers are part of the scope of supply for designs with a torque arm (see chaper 11, 12., 13 dimensional drawings "Rubber buffer for torque restraint")

Notes for installing shaft mount gears with hollow shaft and keyway

(1) Attaching the hollow shaft to the customer shaft
Threaded bolt (d) is screwed into the end thread of the shaft to be driven. By tightening the nut, apply force to thrust plate (b) and locating ring (c) to draw the gear unit onto the shaft.

(2) Axial fastening
Pressure piece (b) is rotated and fitted against retaining ring (c) using fixing screw (a).

(3) Removing
Extractor (f) is fitted between the end face of the shaft and retainer ring (c). Tighten press-off screw (e) against the end of the shaft and pull the gear unit off the shaft. Manufacturing drawings for the required parts are available on request. These parts are not included in the scope of supply.



Detailed information on shaft-mounted gear units, bevel-gear units and worm-gear units is available (see chaper 11, 12., 13 dimensional drawings "Tools for fitting shaft-mounted gear with hollow shaft and keyway").

Gear ventilation

The lifetime of the gearbox lubricant increases the better it is protected from negative environmental influences. Should the oil level or the gearbox ratio cause a very high lubricant temperature, the gearbox will be supplied as standard with a breather plug. Either on request or for corresponding high ambient temperatures, all gearboxes from size 10 can be supplied with a breather plug.

For the position of the threaded plugs see chapter 5 theraded plugs.

Output shaft seals

All size 10 and larger gears are available with double seals for the output shaft on request and at extra cost. Double seals are particularly effective if the output shaft points down and as protection against external influences

Lubricants

Lubricants

The drives are shipped ready-filled with gear lubricant. Lubricated in this way, the gear units are suitable for ambient temperatures in the range -20°C to + 40°C. The quantity of lubricant is optimised for the desired installed position as is stated on the nameplate. The type of lubricant is stated in the Operating Instructions. Lubricants for other temperature ranges or special applications available on request.

Wear-protective EP gear oils as indicated in the following table have proven particularly effective:

	Lubricant type					
	Mineral Oil	**Synthetic Oil**				**USDA H1 Oil**
	ISO VG 220	ISO VG 68		ISO VG 220	ISO VG 460	ISO VG 220
Disposal No.	ASN13 02 05	ASN 13 02 06*	ASN 13 02 06	ASN 13 02 06	ASN 13 02 06	ASN 13 02 06*
Lubricant Manufacturer	Standard oil for gearboxes in the series **BF06-BF90 BG04-BG100 BK60-BK90**	Low temperature oil for gearboxes in the series **BF06-BF90 BG04-BG100**	**BK06-BK90 BM09-BM40 BS02-BS40**	Standard oil for gearboxes in the series **BS02-BS10 BK06-BK10 BM09-BM40** High temperature oil for gearboxes in the series **BS02-BS10 BK06-BK10 BF06-BF90 BG04-BG100 BK60-BK90 BM09-BM10**	Standard oil for gearboxes in the series **BS20-BS40 BK20-BK50 BM20-BM40** High temperature oil for gearboxes in the series **BS20-BS40 BK20-BK50 BM20-BM40**	Food and Beverage Industry Oil for gearboxes in the series **BF06-BF90 BG04-BG100 BK06-BK90 BM09-BM40 BS02-BS40**
AGIP	**BLASIA 220**					
ARAL	**DEGOL BMB220 DEGOL BG220**			**DEGOL GS220**	**DEGOL GS460**	
BECHEM RHUS	**STAROIL SMO220**					
BP	**ENERGOL GR-XP220**			**ENERSYN SG-XP 220**	**ENERSYN SG-XP 460**	
CASTROL	**ALPHA SP 220 ALPHA BMB 220 OPTIGEAR BM 220 TRIBOL 1100/220**	**Alphasyn T68**		**ALPHASYN PG 220 TRIBOL 800/220 ALPHASYN GS 220**	**ALPHASYN PG 460 TRIBOL 800/460 ALPHASYN 460**	**CASTROL OPTILEB GT 220 CASTOL TRIBOL FOOD-FROOF 1800/220**
CHEVRON	**GEARTEX EP-A SAE 85W-90 Meropa 220**		**Synlube WS 68**	**Synlube WS 220**	**Synlube WS 460**	**Chevron lubricating oils FM 220 (USA)**
FUCHS	**RENOLIN CLP 220 RENOLIN CLPF 220 SUPER**	**RENOLIN UNISYN CLP 68**	**RENOLIN PG 68**	**RENOLIN PG 220**	**RENOLIN PG 460**	
KLÜBER	**KLÜBEROIL GEM 1-220 N**		**KLÜBER-SYNTH GH6-80**	**KLÜBERSYNTH GH6-220**	**KLÜBERSYNTH GH6-460**	**KLÜBEROIL 4UH1-220N KLÜBERSYNTH UH1 6-220**
MOBIL	**MOBILGEAR 600 XP 220 MOBILUBE HD PLUS 80W-90**	**MOBIL SHC 626**		**GLYGOYLE 220 GLYGOYLE 30**	**GLYGOYLE 460**	
OEST	**Gearol C-LP 220**					
SHELL	**OMALA S2 G220 FALCON CLP 220**			**OMALA S4 WE 220**	**OMALA S4 WE 460**	**CASSIDA FLUID GL 220**
TOTAL	**CARTER EP 220**					**NEVASTANE SL220**
WINTERSHALL	**SRS ERSOLAN 220**					

Important:
Synthetic gear oils of a Polyglykol base (e.g. PGLP…) must be disposed of separately to mineral oil as **Special Waste** .

So long as the ambient temperature does not fall below – 20 °C the international definition of the viscosity class at 40 °C according to ISO 3448 and DIN 51519 ISO the viscosity class VG220 (SAE90) is recommended according, in North America AGMA 5EP.

For lower temperatures it is recommended to use oils of a lower nominal viscosity with a corresponding better starting characteristic, for instance a PGLP with a nominal viscosity VG68 (SAE80) or AGMA 2EP respectively. These types of oil can already be necessary at a temperature around the freezing point, if the break away torque of a drive is reduced by some smooth starting device or if the motor has a relatively low power

Lubricant quantities

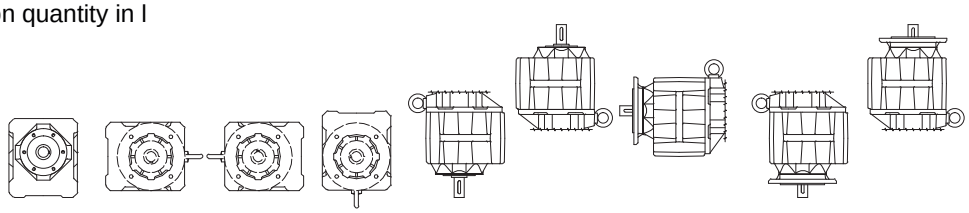
The preferred quantity of lubricant for the planned type of installation is stated on the motor's rating plate (symbol "oil can"). When topping up care should be taken to ensure that, depending on the fitting position, gearwheels and rolling contact bearings positioned at the top are also properly oiled. In special versions the oil level mark should be noted. Information about the quantity of lubricant required for other types of installation can be obtained from the factory

Lubricants

Lubricant quantities, BG-series gears

Lubrication quantity in l

Gearbox type

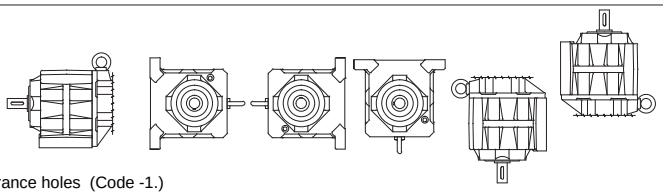


BG06-BG100 (gear-housing with flange or foot)

Flange (Code-2./Code-3./Code-4./Code-7.)
Foot with threads (Code-6.)

Foot with clearance holes (Code-9.)
[Completely machined (Code -8.)]

BG06-BG100 (Gearbox housing)

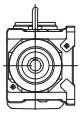
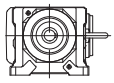
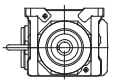
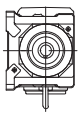
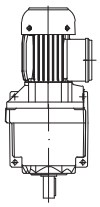
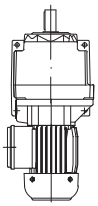


cast-on-foot with clearance holes (Code -1.)

	H4	H1	H2	H3	H5	H6	B5	V1	V3
	B3	B6	B7	B8	V5	V6			
BG04 ✳	-	0.03	0.03	0.03	-	-	0.03	0.05	0.05
BG04 ✳✳	0.05	0.05	0.05	0.05	0.1	0.05	-	-	-
BG05 ✳	-	0.05	0.05	0.05	-	-	0.05	0.08	0.08
BG05 ✳✳	0.08	0.08	0.08	0.08	0.16	0.08	-	-	-
BG06 ✳	-	0.08	0.08	0.08	-	-	0.08	0.15	0.15
BG06 ✳✳	0.12	0.12	0.12	0.12	0.24	0.15	-	-	-
BG10 ✳	0.65	0.65	0.65	0.85	1.05	0.85	0.65	1.05	0.85
BG10 ✳✳	0.45	0.45	0.45	0.6	0.75	0.6	-	-	-
BG15 ✳✳	0.4	0.4	0.4	0.35	0.62	0.55	-	-	-
BG20 ✳	0.8	0.8	0.8	1.1	1.4	1.1	0.8	1.4	1.1
BG20 ✳✳	0.6	0.6	0.6	1.0	1.15	0.9	-	-	-
BG30 ✳	1.0	1.0	1.0	1.7	2.4	1.6	1.0	2.4	1.6
BG30 ✳✳	1.0	1.0	1.0	1.7	2.3	1.7	-	-	-
BG40 ✳	1.7	1.7	1.7	2.5	3.5	2.1	1.7	3.5	2.1
BG40 ✳✳	1.7	1.7	1.7	2.5	3.5	2.1	-	-	-
BG50 ✳	3.0	3.0	3.0	4.5	5.5	3.3	3.0	5.5	3.3
BG50 ✳✳	3.0	3.0	3.0	4.5	5.5	3.3	-	-	-
BG60 ✳	5.5	5.5	5.5	7.0	10.9	6.4	5.5	10.9	6.4
BG60 ✳✳	5.5	5.5	5.5	7.0	10.9	6.4	-	-	-
BG70	6.5	6.5	6.5	8.0	13.5	9.0	6.5	13.5	9.0
BG80	11.0	11.0	11.0	11.0	22.5	15.0	11.0	22.5	15.0
BG90	19.0	19.0	19.0	19.0	40.0	26.0	19.0	40.0	26.0
BG100	35.0	35.0	55.0	50.0	66.0	50.0	35.0	66.0	50.0

✳ Attachment housing ✳✳ Gearbox housing

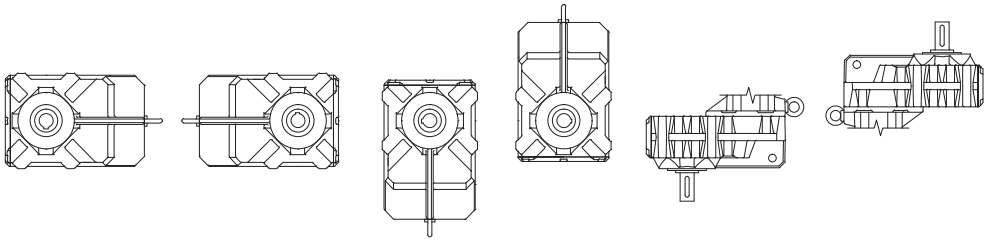
Lubricant quantities, BG20-01R

Gear type	Lubrication quantity in l					
	 H4	 H1	 H2	 H3	 V5	 V6
BG20R	0.8	1.0	0.8	1.4	1.65	1.0

Lubricants

Lubricant quantities, BF-series gears

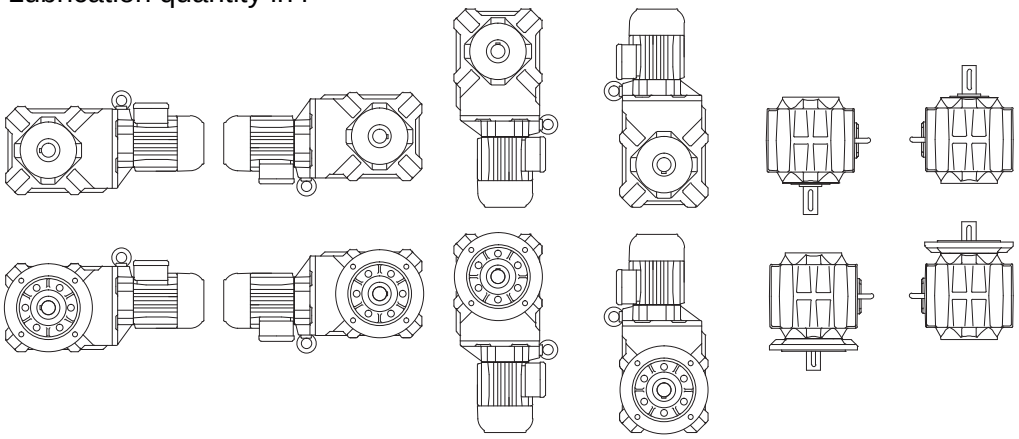
Lubrication quantity in l



Gear type	H1	H2	H3	H4	V1	V2
BF06	0.25	0.25	0.25	0.37	0.35	0.3
BF10	0.85	0.85	0.85	1.1	1.45	1.5
BF20	1.3	1.3	1.3	1.7	2.2	2.25
BF30	1.7	1.7	1.7	2.2	3.2	3.0
BF40	2.7	2.7	2.7	3.5	4.9	4.8
BF50	3.8	3.8	3.8	5.0	6.7	6.7
BF60	6.7	6.7	6.7	9.0	12.3	12.0
BF70	12.2	12.2	12.2	16.0	24.2	21.8
BF80	17.0	17.0	17.0	21.0	32.2	27.5
BF90	32.0	32.0	32.0	41.0	62.0	53.0

Lubricant quantities, BK-series gears

Lubrication quantity in l

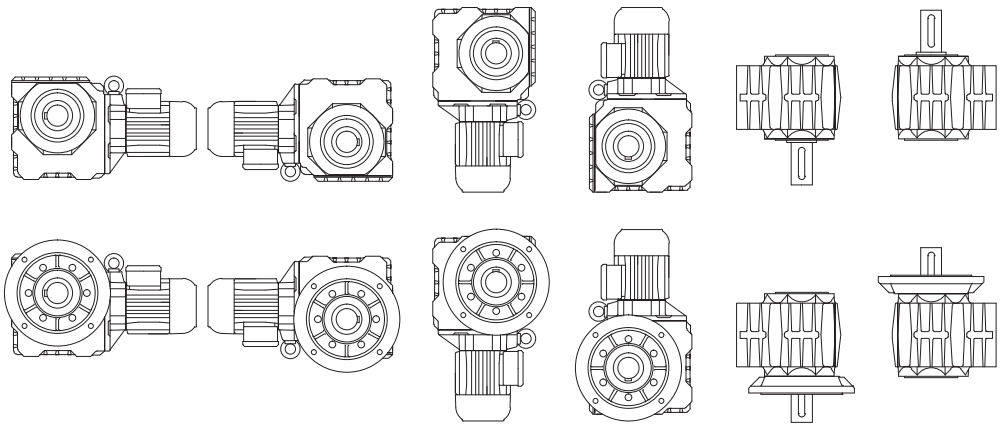


Gear box type	H1	H2	H3	H4	V1	V2
BK06	0.15	0.23	0.29	0.31	0.18	0.23
BK10	0.83	0.83	0.92	1.75	0.92	0.92
BK20	1.5	1.5	1.6	2.9	1.65	1.65
BK30	2.2	2.2	2.3	4.4	2.4	2.4
BK40	3.5	3.5	3.5	6.7	3.7	3.7
BK50	5.8	5.8	5.8	11.5	6.0	6.0
BK60	6.0	8.7	6.9	12.0	8.6	8.6
BK70	10.2	15.0	11.5	20.5	13.5	14.5
BK80	18.0	25.5	19.0	37.0	23.5	25.5
BK90	33.0	48.0	36.0	69.0	45.0	48.0

Lubricants

Lubricant quantities, BS-series gears

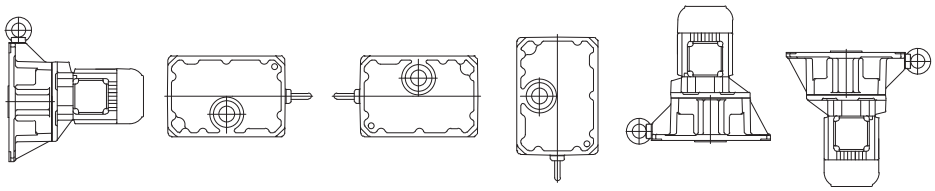
Lubrication quantity in l



Gear type	H1	H2	H3	H4	V1	V2
BS03	0.17	0.17	0.17	0.17	0.17	0.17
BS06	0.24	0.36	0.24	0.45	0.24	0.24
BS10	0.9	1.3	0.9	1.6	0.9	0.9
BS20	1.5	2.1	1.5	2.7	1.5	1.5
BS30	2.2	3.0	2.2	3.8	2.2	2.2
BS40	3.5	4.7	3.5	6.0	3.5	3.5

Lubricant quantities, pre-stage gears (Z)

Lubrication quantity in l



BF	H4	H1	H2	H3	V1	V2
BG	H4 B3/B5	H1 B6	H2 B7	H3 B8	V1 V5/H5	V3 V6/H6
BK und BS	H1	V1	V2	H2	H4	H3

Gear type						
BG10Z BF10Z BK10Z BS10Z	0.10	0.05	0.12	0.07	0.16	0.07
BG20Z BF20Z BK20Z BS20Z	0.15	0.07	0.19	0.17	0.27	0.10
BG30Z BF30Z BK30Z BS30Z BM30Z	0.2*	0.10	0.35	0.22	0.35	0.19
BG40Z BF40Z BK40Z BS40Z BM40Z	0.32*	0.17	0.50	0.37	0.6	0.32
BG50Z BF50Z BK50Z	0.5	0.3	0.92	0.7	1.15	0.5
BG60Z BF60Z BK60Z	0.9	0.5	1.55	1.1	2.0	0.7
BG70Z BF70Z BK70Z BF80Z	1.2	0.6	1.8	1.6	2.4	1.4
BG80Z BF90Z BK80Z BG100Z	3.1	1.3	4.0	2.6	5.2	2.0
BG90Z BK90Z	4.2	1.5	5.4	3.5	7.7	3.0

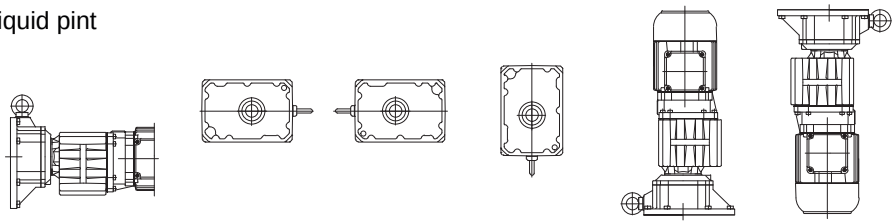
Threaded plugs

Lubrication quantity for intermediate gear

Definition of the terminal box position

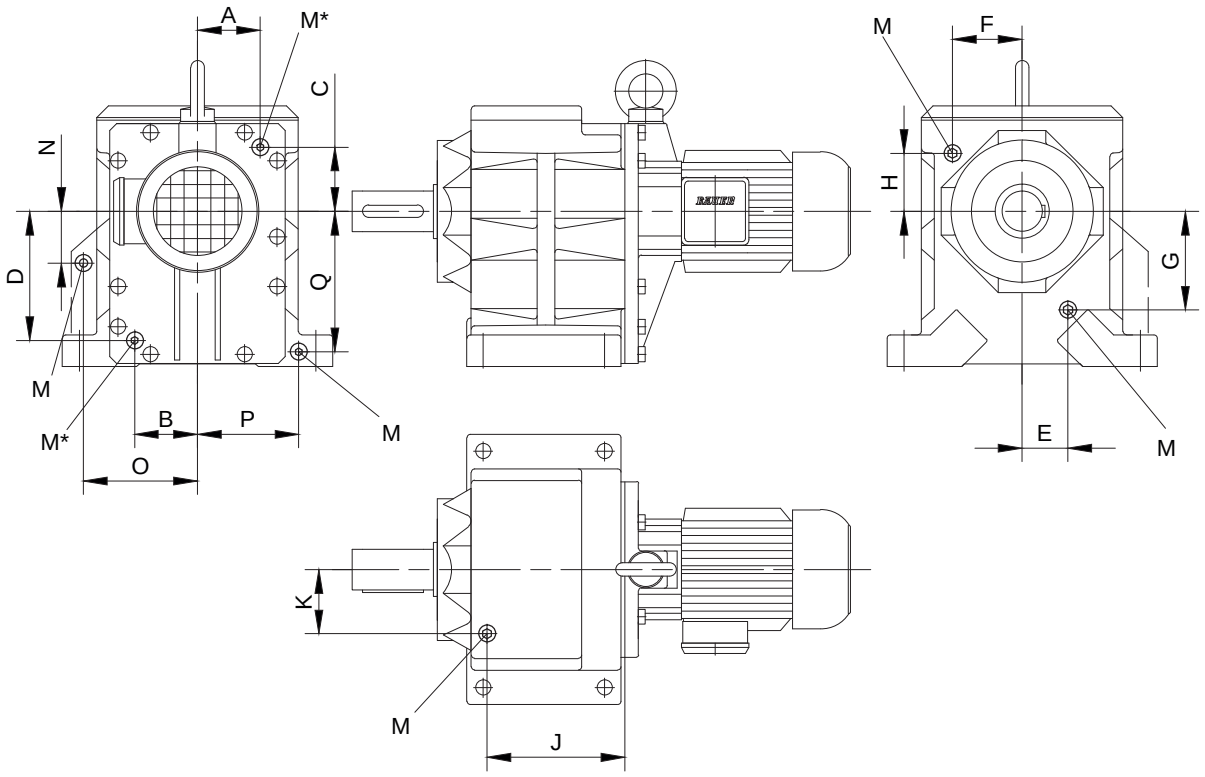
Terminal box position for intermediate gear
is similar to the main gearbox that means
Main gearbox BG,BF terminal box pos. I
-> intermediate gearbox terminal box pos. I
Main gearbox BK,BS terminal box pos. II
-> intermediate gearbox terminal box pos. II

Lubrication quantity in liquid pint



Mounting position of main gearbox								
	BF BG	H4 H4 B3/B5	H1 H1 B6	H2 H2 B7	H3 H3 B8	V1 V1 V5/H5	V2 V3 V6/H6	
	BK und BS	H1	V1	V2	H2	H4	H3	
Standard position of KLK mounting position H1,H2,H3, B5,V1,V3 for mounting with screwed resp. casted flange		B5	H1	H2	H3	V1	V3	
Type designation of double gearbox combination								
BG10G06 BF10G06 BK10G06 BS10G06		0.08	0.08	0.08	0.08	0.15	0.15	
BG20G06 BF20G06 BK20G06 BS20G06		0.08	0.08	0.08	0.08	0.15	0.15	
BG30G06 BF30G06 BK30G06 BS30G06		0.08	0.08	0.08	0.08	0.15	0.15	
BG40G10 BF40G10 BK40G10 BS40G10		0.65	0.65	0.65	0.85	1.05	0.85	
BG50G10 BF50G10 BK50G10		0.65	0.65	0.65	0.85	1.05	0.85	
BG60G20 BF60G20 BK60G20		0.8	0.8	0.8	1.1	1.4	1.1	
BG70G20 BF70G20 BK70G20		0.8	0.8	0.8	1.1	1.4	1.1	
BG80G40 BF80G40 BK80G40		1.7	1.7	1.7	2.5	3.3	2.1	
BG90G50 BF90G50 BK90G50 BG100G50		3.0	3.0	3.0	4.5	5.5	3.3	

Position of threaded plugs, BG-series gears



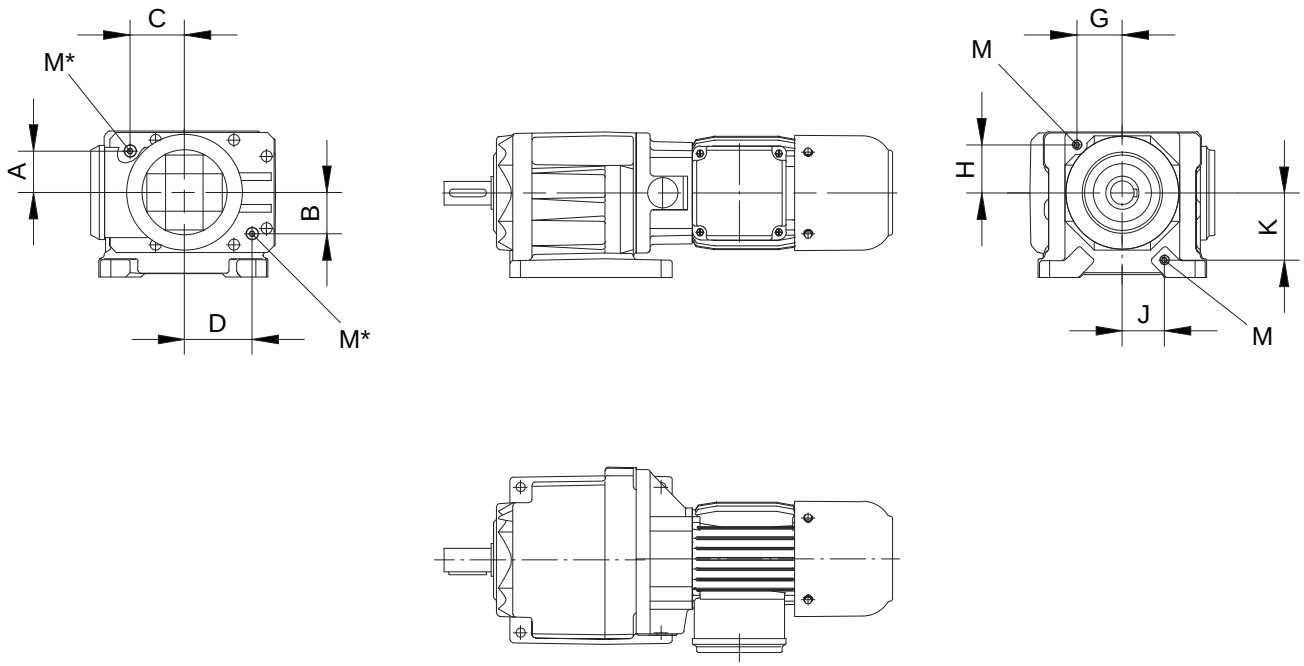
M = Plug according to DIN 908

Type	A	B	C	D	E	F	G	H	J	K	N	O	P	Q	M
BG10 Foot housing	see osition of the oil drain and filler plugs on the system cover	Tab.I-Tab.III size B10			33	42	48	41.5	-	-	-	-	-	-	M10x1
BG10 Attachment housing		Tab.I-Tab.III size B10			27	-	73	-	-	-	-	-	-	-	M10x1
BG15 Foot housing		Tab.I-Tab.III size B10			-	-	-	-	-	-	-	-	-	-	-
BG20 Foot housing		Tab.I-Tab.III size B20			-	47	-	52.5	-	-	-	-	-	-	M10x1
BG20 Attachment housing		Tab.I-Tab.III size B20			-	28	-	68	-	-	-	-	-	-	M10x1
BG30 Foot housing		Tab.I-Tab.III size B30			-	54	-	58	-	-	-	-	-	-	M10x1
BG30 Attachment housing		Tab.I-Tab.III size B30			-	58	-	48	-	-	-	-	-	-	M10x1
BG40 Foot housing		Tab.I-Tab.III size B40			-	75	-	48	-	-	-	-	-	-	M14x1.5
BG40 Attachment housing		Tab.I-Tab.III size B40			-	75	-	48	-	-	-	-	-	-	M14x1.5
BG50 Foot housing		Tab.I-Tab.III size B50			-	53	-	100	-	-	-	-	-	-	M14x1.5
BG50 Attachment housing		Tab.I-Tab.III size B50			-	53	-	100	-	-	-	-	-	-	M14x1.5
BG60 Foot housing		Tab.I-Tab.III size B60			-	70	-	119	-	-	-	-	-	-	M20x1.5
BG60 Attachment housing		Tab.I-Tab.III size B60			-	70	-	119	-	-	-	-	-	-	M20x1.5
BG70		Tab.I-Tab.III size B70			-	103	-	86	204	95	-	-	-	-	M20x1.5
BG80		Tab.I-Tab.III size B80			-	133	-	110	237	111	-	-	-	-	M20x1.5
BG90		Tab.I-Tab.III size B90			-	165	-	124	297	140	-	-	-	-	M24x1.5
BG100		Tab.I-Tab.III size B80			-	202	-	128	420	165	135	263	202	293	M24x1.5

M* =Factor and position of the drain plug see page 73.

Threaded plugs

Position of threaded plugs, BG-20-01R

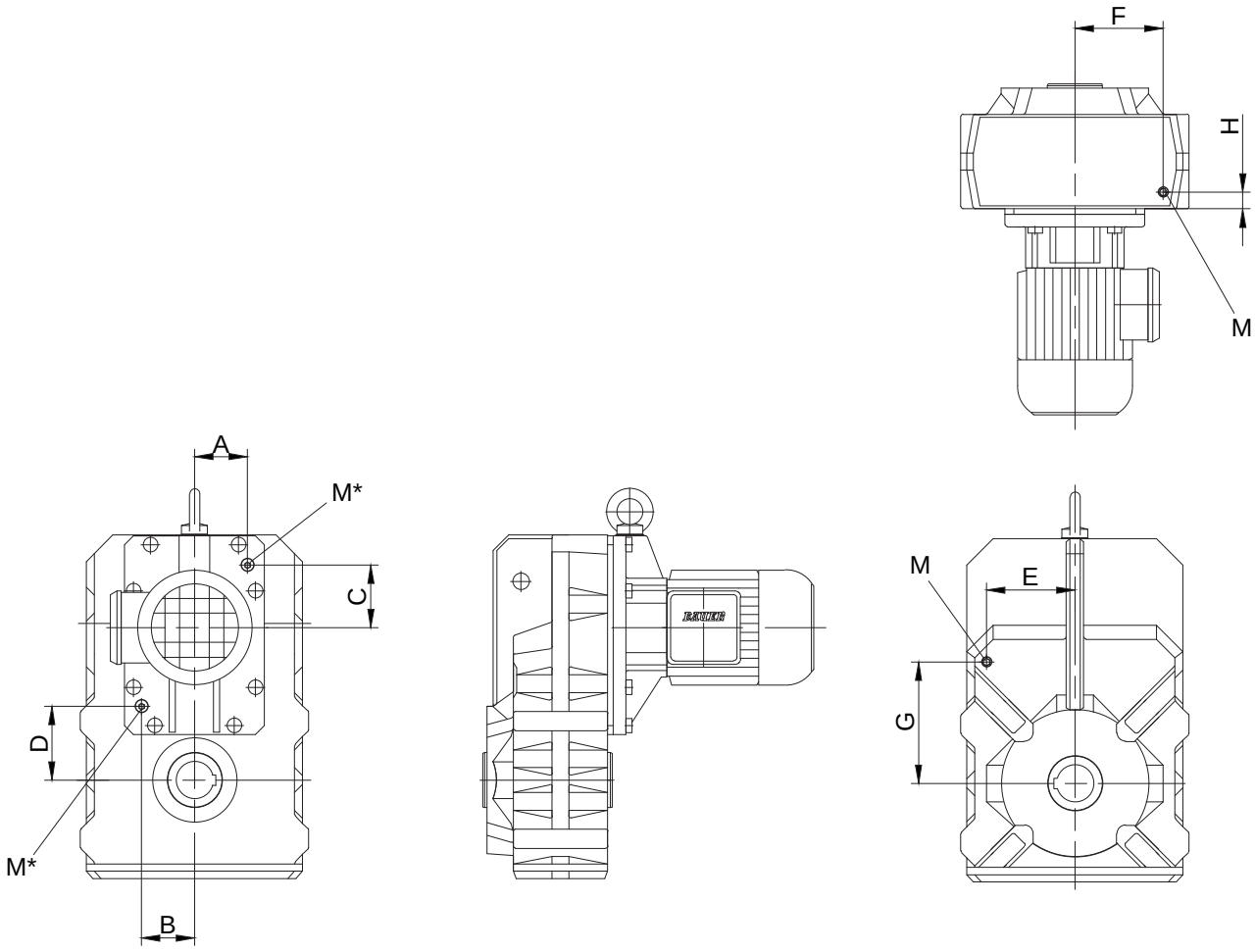


M = Plug according to DIN 908

Type	A	B	C	D	G	H	J	K	M
BG20-01R Rollerbed	see Position of the oil drain and filler plugs on the system cover Tab.I-Tab.III size B20				48.5	51.5	45	71.5	M10x1

M* =Factor and position of the drain plug see page 73.

Position of threaded plugs, BF-series gears



M = Plug according to DIN 908

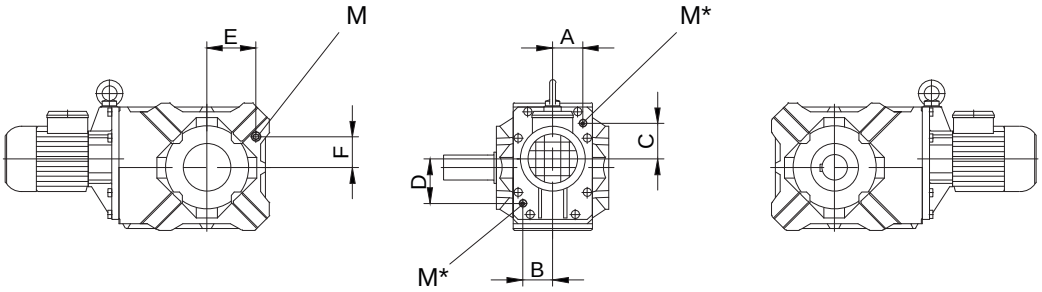
Type	A	B	C	D	E	F	G	H	M
BF06	see position of the oil drain and filler plugs on the system cover		on request						
BF10			Tab.I - Tab.III size B.10		64	65	97	28	M10x1
BF20			Tab.I - Tab.III size B.20		77	70	115	30.5	M10x1
BF30			Tab.I - Tab.III size B.30		88	82	125	36.5	M10x1
BF40			Tab.I - Tab.III size B.40		100	86	141	33	M14x1.5
BF50			Tab.I - Tab.III size B.50		120	105	165	42.5	M14x1.5
BF60			Tab.I - Tab.III size B.60		140	145	200	50.5	M20x1.5
BF70			Tab.I - Tab.III size B.70		165	177	235	52.5	M20x1.5
BF80			Tab.I - Tab.III size B.70		145	148	255	123	M20x1.5
BF90			Tab.I - Tab.III size B.80		155	176	347.5	260	M24x1.5

M* =Factor and position of the drain plug see page 73.

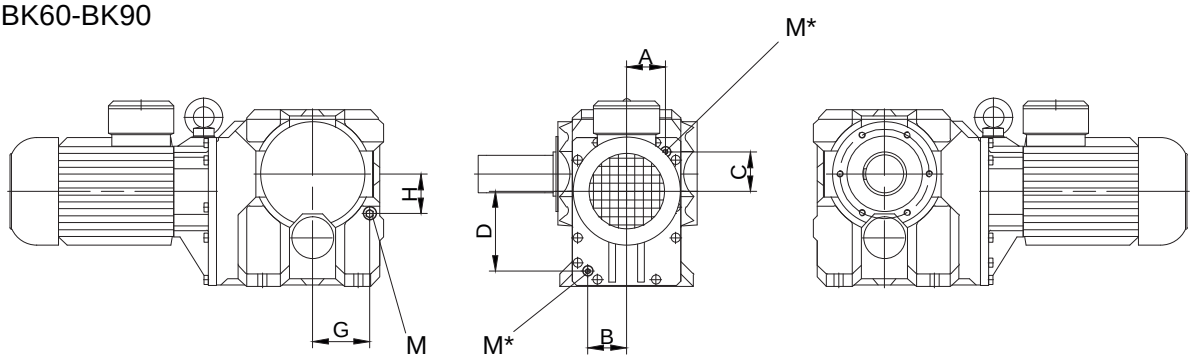
Threaded plugs

Position of threaded plugs, BK-series gears

BK10-BK50



BK60-BK90



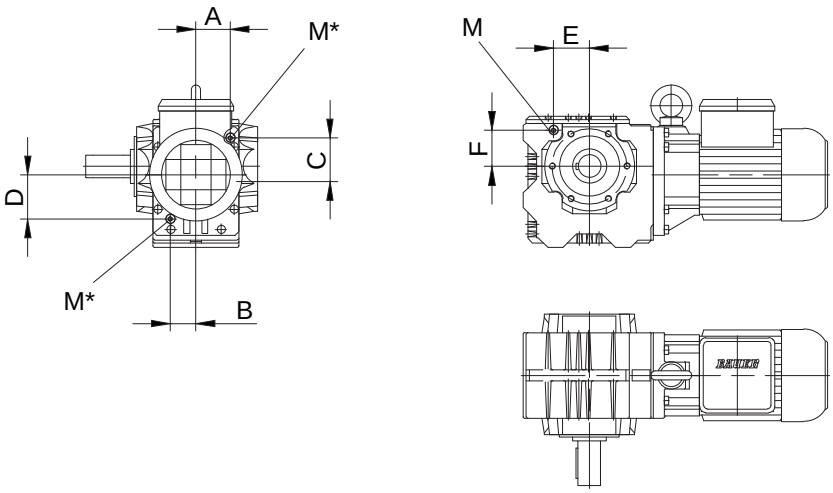
M = Plug according to DIN 908

Type	A	B	C	D	E	F	G	H	M
BK06	see position of the oil drain and filler plugs on the system cover		on request						
BK10			Tab.I- Tab.III size B.10		62	32.5	-	-	M10x1
BK20			Tab.I- Tab.III size B.20		73.5	37.5	-	-	M10x1
BK30			Tab.I- Tab.III size B.30		80	43	-	-	M10x1
BK40			Tab.I- Tab.III size B.40		88	49	-	-	M14x1.5
BK50			Tab.I- Tab.III size B.50		118	74	-	-	M14x1.5
BK60			Tab.I- Tab.III size B.60		-	-	93	87	M20x1.5
BK70			Tab.I- Tab.III size B.70		-	-	137	95	M20x1.5
BK80			Tab.I- Tab.III size B.80		-	-	150	117	M20x1.5
BK90			Tab.I- Tab.III size B.90		-	-	208	135	M24x1.5

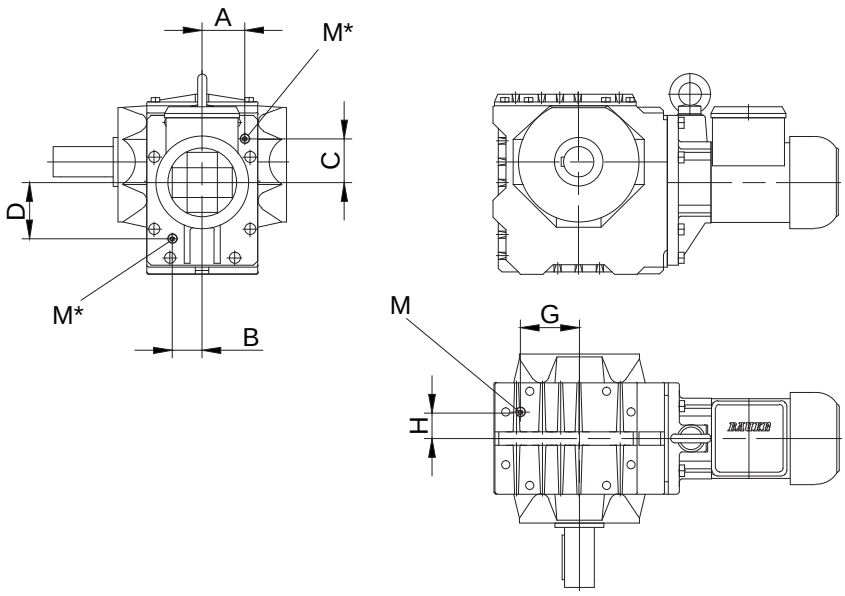
M* =Factor and position of the drain plug see page 73.

Position of threaded plugs, BS-series gears

BS10 - BS20



BS30 - BS40



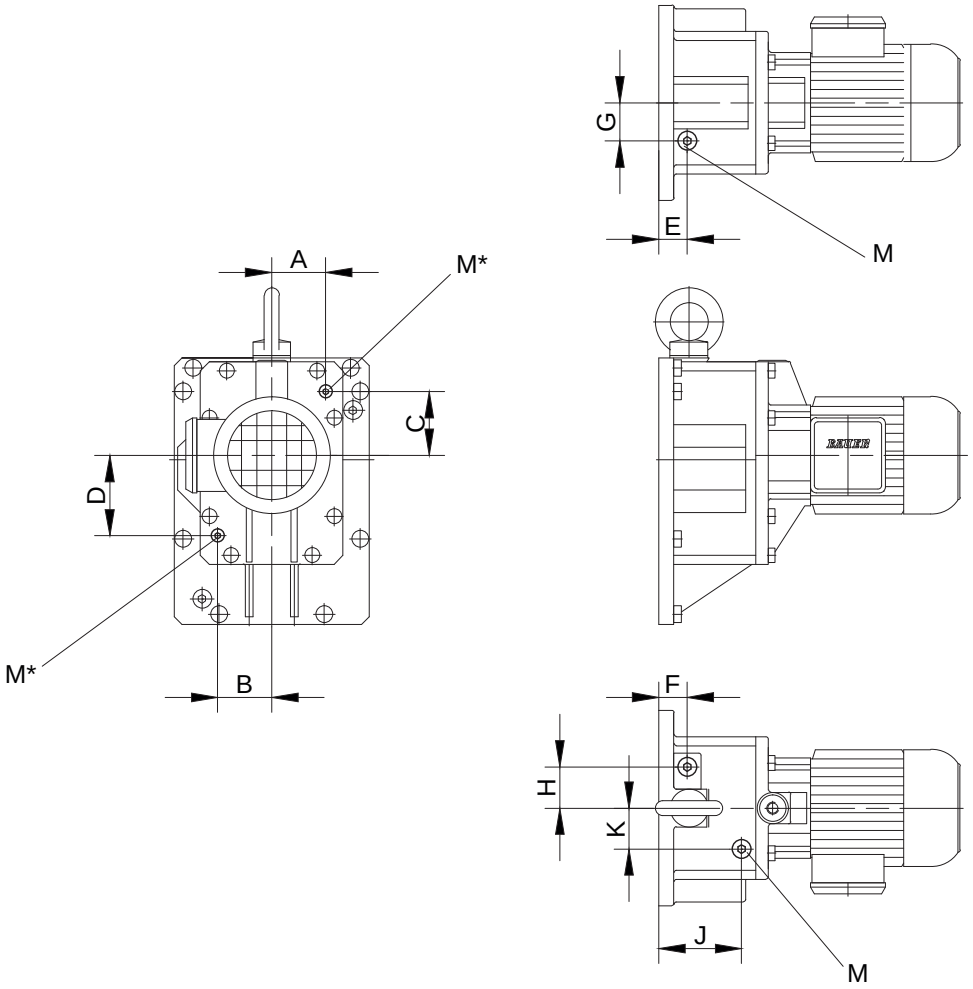
M = Plug according to DIN 908

Type	A	B	C	D	E	F	G	H	M
BS10	see position of the		Tab.I-Tab.III size B.10		48	50	-	-	M10x1
BS20	oil drain and		Tab.I-Tab.III size B.20		59	63	-	-	M10x1
BS30	filler plugs on the		Tab.I-Tab.III size B.30		-	-	79	35	M10x1
BS40	system cover		Tab.I-Tab.III size B.40		-	-	93.5	41.5	M14x1.5

M* =Factor and position of the drain plug see page 73.

Threaded plugs

Position of threaded plugs, pre-stage gears (Z)

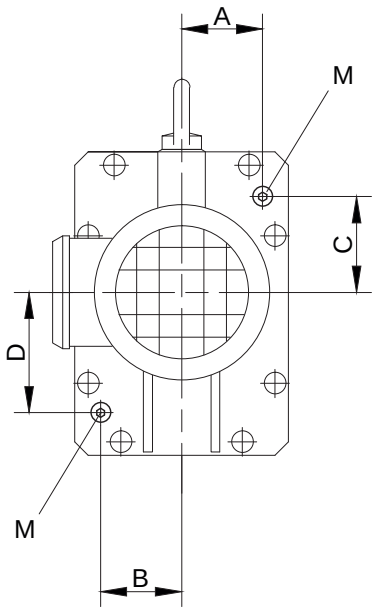


M = Plug according to DIN 908

Gear	A	B	C	D	E	F	G	H	J	K	M
BG10(Z);BK10(Z); BF10(Z);BS10(Z)	-	-	-	-	25	-	17.5	-	44	25	M10x1
BG20(Z);BK20(Z); BF20(Z);BS20(Z)	-	-	-	-	49	-	28.5	-	23.5	28	M10x1
BG30(Z);BK30(Z); BF30(Z): BS30(Z)	see position of the oil drain and filler plugs on the system cover	Tab.I u. II size B.10			-	24	-	30	-	-	M10x1
BG40(Z);BK40(Z); BF40(Z); BS40(Z)		Tab.I u. II size B.20			-	27.5	-	36.5	-	-	M14x1.5
BG50(Z);BK50(Z); BF50(Z)		Tab.I u. II size B.30			-		-	-	29	43	M14x1.5
BG60(Z);BK60(Z); BF60(Z)		Tab.I u. II size B.40			-	33	-	48	-	-	M20x1.5
BG70(Z);BK70(Z); BF70(Z);BF80(Z)		Tab.I u. II size B.50			-	38	-	55	-	-	M20x1.5
BG80(Z);BK80(Z); BF90(Z);BG100(Z)		Tab.I u. II size B.60			-	45	-	73	-	-	M20x1.5
BG90(Z);BK90(Z)		Tab.I u. II size B.70			-	45	-	62	-	-	M24x1.5

M* =Factor and position of the drain plug see page 73.

Position of the drain plugs in the System Cover Design with Standard Geared Motor



M = Plug according to DIN 908

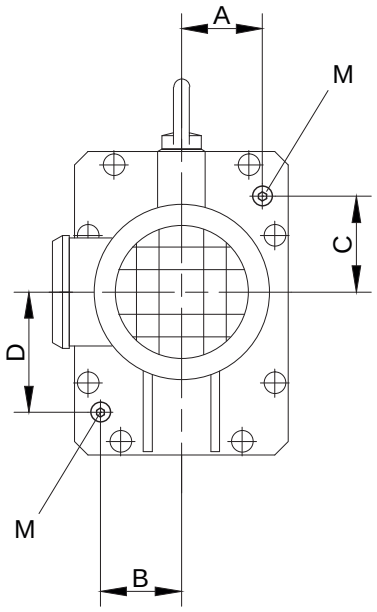
Table I: Design with standard geared motor

Gear	Size	A	B	C	D	M
BG10(Z); BK10(Z); BF10(Z); BS10(Z)	D05-D..09	36	34	43.5	59	M10x1
BG15	D05-D..09	36	34	43.5	59	M10x1
BG20(Z); BK20(Z); BF20(Z); BS20(Z)	D05-D..09	44	44	58	72.5	M10x1
BG30(Z); BK30(Z); BF30(Z); BS30(Z)	D05-D..09	56.5	40	58.2	75	M10x1
BG40(Z); BK40(Z); BF40(Z); BS40(Z)	D..08-D..11	66	71	71	94	M14x1.5
BG50(Z); BK50(Z); BF50(Z)	D..08-D..11	72	74	85	109	M14x1.5
	D..13-D..16	78	74	82	109	M14x1.5
BG60(Z); BK60(Z); BF60(Z)	D..09-D..13	84	81	120	155	M20x1.5
	D..16	86	81	120	155	M20x1.5
BG70(Z); BK70(Z); BF70(Z); BF80(Z)	D..09-D..18	95	85	97	193	M20x1.5
BG80(Z); BK80(Z); BF90(Z); BG100(Z)	D..11-D..18	118	118	110	245	M20x1.5
BG90(Z); BK90(Z)	D..13-D..18	145	145	116	294	M24x1.5

Position of the drain plugs for BG, BK, BS and BF gear ranges and pre-stages.

Threaded plugs

Position of the drain plugs in the System Cover
Design with pre-stage Z



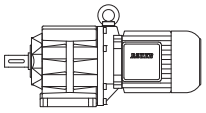
M = Plug according to DIN 908

Table III: Design with pre-stage Z

Gear	A	B	C	D	M
B.10	38	39.5	44	61.5	M10x1
B.20	44	44	58	72	M10x1
B.30	59	42	58.2	77	M10x1
B.40	66	71	71	96	M14x1.5
B.50	72	73	85	111	M14x1.5
B.60	85	81	120	192	M20x1.5
B.70	95	95	97	193	M20x1.5
B.80	118	118	110	245	M20x1.5

Position of the drain plugs for BG, BK, BS and BF gear ranges and pre-stages.

6



Page

BG-series helical-geared motors Selection 75-114

Description of helical-geared units
- Sizes
- Bauer service factors (f_B) for helical-geared motors
- Continuous operation without switching frequency Z ≤1/h
- Switching duty
- Bauer service factor
- Explanation of shock classification
- Key to abbreviations
- Selection tables, helical-geared motors

Sizes

Bauer BG-series helical-geared motors are available in 13 standard sizes with torques from 20 Nm to 18,500 Nm. Higher torques are available on request. The geared unit is accommodated in a sturdy cast housing.

Bauer service factors (f_B) for helical- geared motors

Of the numerous factors influencing the total loading of a geared unit, the most important include:

- Mean torque (rated torque)
- Daily operating hours
- Severity of torque peaks (shock classification)
- Frequency of torque peaks (switching duty)

These factors can be represented in a simplified and practical manner by *service factors*. The tables and explanations below aim to provide an objective description of the *shock classification*, rather than a classification of the driven machinery. Experience has shown that, in addition to the torque shocks caused by the driven machinery (M_x/M_N), above all the power transmission components (clutches, chains etc.) plus the mass ratios play a decisive role in this.

See Bauer special imprint SD32 for more information (available on request).

Continuous operation without switchingfrequency Z ≤1/h

Factor f_1 for shock classification and operating time

Shock classification	Operating hours per day t_d	>4 h	>8 h	>16 h
		≤8 h	≤16 h	≤24 h
I		0,8	1,0	1,2
II		1,05	1,25	1,45
III		1,45	1,55	1,7

Switching duty

Factor f_2 for shock classification and switching frequency

Switching frequency in single-shift operation t_d ≤8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	0,95	1,1	1,15
II	1,2	1,35	1,4
III	1,55	1,6	1,6

Switching frequency in multiple-shift operation t_d >8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	1,3	1,45	1,5
II	1,5	1,6	1,65
III	1,75	1,8	1,8

Bauer service factor

Bauer service factor $f_B = f_1$ or $f_B = f_2$

For example: Shock classification II for Z = 100 switching operations per hour and multiple-shift operation yields a service factor $f_B = f_2 = 1.5$

Explanation of shock classification

Shock classification I:
Uniform without shock loads. All the following requirements must be satisfied:
- FI ≤1,3
- M_x/M_N ≤1,0
- Shock-absorbing power transmission components (e.g. highly resilient, zero-play coupling, φ N≥ 5°)

Shock classification II:
Moderate shock loads. At least one of the following conditions applies:
- 1,3 <FI ≤4
- 1 <M_x/M_N ≤1,6
- Shock-neutral power transmission components (e.g. gear wheels, zero- play rigid coupling or resilient coupling with φ N <5°)

Shock classification III:
Heavy shock loads. At least one of the following conditions applies:
- FI >4
- 1,6 <M_x/M_N ≤2,0
- Shock-amplifying power transmission components (e.g. coupling with play or chain drive)

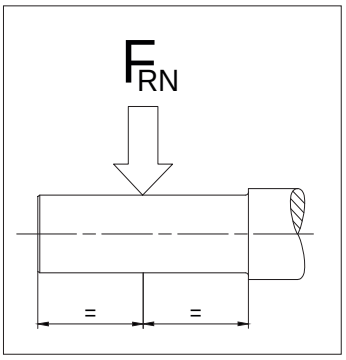
Key to abbreviations

Z	Switching duty number of switching operations per hour
t_d	Daily operating time in hours (h/d)
FI	Factor of inertia FI = $(J_{ext} + J_{rot})/J_{rot}$
J_{ext}	Mass moment of inertia of the machine to be driven, in relation to the motor's rotor shaft (kgm^2)
J_{rot}	Mass moment of inertia of the motor rotor (kgm^2)
M_x	Highest impact torque above the static torque which can occur during normal operation or in emergency situations
M_N	Required static load torque for the application
M_x/M_N	Relative torque - Factor
φ_N	Torsional offset of the resilient coupling under rated torque

Selection tables, helical-geared motors

Key to abbreviations

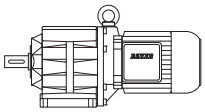
P	Rated output Power
n_2	Rated speed of the output shaft
i	Gear reduction ratio
M_2	Rated torque at the output shaft
f_B	Bauer service factor
F_{RN}	Maximum permissible radial force with a standard solid shaft (Code -.1 and -.7)
F_{RV}	Maximum permissible radial force with reinforced bearings in each case with standard solid shaft (Code -.1 and -.7)



Use the selection tables to determine the size of geared motor required. The codes clearly define the Type of gear (see chapter 10 "dimensional drawings, helical-geared motors").

Motor power overload protection
Motor-power ratings, particularly in conjunction with four-stage and multi-stage gear units, are more than ample in some instances. Consequently, and in much the same way as with low-power motors, rated current is not a measure of gear loading and cannot be used to protect the gear unit against overloading. It is advisable to provide gears at risk from excessive load or blockage with a protective mechanism (e. g., slip clutch, slip hub, shear pin or an alternative).

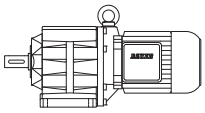
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
530	**2.15**	**4.2**	2.64	**BG05-../DPE05LA4**	7.0	420	-	640	1.79	5.0
410	**2.75**	**3.6**	3.38	"	"	460	-	495	2.3	4.3
305	**3.75**	**3.2**	4.59	"	"	490	-	365	3.1	3.9
255	**4.45**	**3.1**	5.46	"	"	490	-	310	3.65	3.8
230	**4.95**	**3.4**	6.09	"	"	480	-	275	4.15	4.1
210	**5.4**	**3.1**	6.64	"	"	500	-	255	4.45	3.8
177	**6.4**	**2.8**	7.80	"	"	530	-	215	5.3	3.4
170	**6.7**	**2.7**	8.15	"	"	510	-	205	5.5	3.3
163	**7.0**	**2.7**	8.51	"	"	550	-	197	5.8	3.3
131	**8.7**	**2.3**	10.59	"	"	590	-	158	7.2	2.8
120	**9.5**	**2.2**	11.55	"	"	600	-	145	7.9	2.7
115	**9.9**	**2.1**	12.05	"	"	510	-	139	8.2	2.6
110	**10.4**	**2.1**	12.60	"	"	610	-	133	8.6	2.6
101	**11.3**	**2.0**	13.75	"	"	630	-	122	9.3	2.5
91	**12.5**	**1.9**	15.23	"	"	640	-	110	10.4	2.3
84	**13.6**	**1.85**	16.62	"	"	660	-	101	11.3	2.2
74	**15.4**	**1.7**	18.82	"	"	680	-	89	12.8	2.0
68	**16.8**	**1.6**	20.53	"	"	700	-	82	13.9	1.95
58	**19.7**	**1.4**	24.00	"	"	740	-	70	16.3	1.7
53	**21.5**	**1.35**	26.18	"	"	760	-	64	17.9	1.6
50	**22.5**	**1.35**	27.82	"	"	770	-	61	18.7	1.6
45.5	**25**	**1.2**	30.35	"	"	760	-	56	20	1.5
39.5	**29**	**1.05**	35.00	"	"	810	-	48	23.5	1.3
36.5	**31**	**0.97**	38.18	"	"	850	-	44	26	1.15
35	**32.5**	**0.92**	39.94	"	"	860	-	42	27	1.1
32	**35.5**	**0.85**	43.57	"	"	900	-	38.5	29.5	1.0
113	**10.1**	**3.3**	12.30	**BG06-../DPE05LA4**	8.0	670	-	136	8.4	3.9
107	**10.7**	**3.1**	12.98	"	"	600	-	129	8.8	3.8
94	**12.1**	**2.8**	14.78	"	"	730	-	113	10.1	3.4
86	**13.3**	**2.6**	16.13	"	"	740	-	104	11	3.2
80	**14.3**	**2.7**	17.40	"	"	760	-	96	11.9	3.2
73	**15.6**	**2.6**	18.98	"	"	770	-	88	13	3.1
67	**17.1**	**2.3**	20.82	"	"	800	-	81	14.1	2.8
61	**18.7**	**2.3**	22.71	"	"	810	-	74	15.4	2.8
55	**20.5**	**2.2**	25.48	"	"	850	-	66	17.3	2.6
50	**22.5**	**2.0**	27.80	"	"	840	-	61	18.7	2.4
43	**26.5**	**1.7**	32.22	"	"	890	-	52	22	2.0
39.5	**29**	**1.55**	35.15	"	"	880	-	48	23.5	1.9
37.5	**30.5**	**1.5**	36.91	"	"	890	-	45.5	25	1.8
34.5	**33**	**1.35**	40.26	"	"	890	-	41.5	27.5	1.65
30	**38**	**1.2**	46.19	"	"	890	-	36.5	31	1.45
27.5	**41.5**	**1.1**	50.38	"	"	940	-	33.5	34	1.3
26.5	**43**	**1.05**	52.56	"	"	950	-	32	35.5	1.25
24.5	**46.5**	**0.97**	57.34	"	"	1000	-	29.5	38.5	1.15
23	**49.5**	**0.91**	61.22	"	"	1020	-	27.5	41.5	1.1
21	**54**	**0.83**	66.79	"	"	1070	-	25.5	44.5	1.0
31.5	**36**	**3.3**	43.99	**BG10-../DPE06LA4**	13	1880	2600	38	30	4.0
30	**38**	**3.2**	46.55	"	"	1920	2650	36	31.5	3.8
27	**42**	**2.9**	51.57	"	"	2000	2800	32.5	35	3.4
24.5	**46.5**	**2.6**	57.48	"	"	2000	2800	29.5	38.5	3.1
22	**52**	**2.3**	63.69	"	"	2000	2800	26.5	43	2.8
21	**54**	**2.2**	66.00	"	"	2000	2800	25.5	44.5	2.7
19	**60**	**2.0**	73.13	"	"	2000	2800	23	49.5	2.4

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

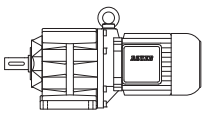
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
18	**63**	**1.9**	77.40	**BG10Z-../DPE06LA4**	14	2000	2800	22	52	2.3
16.5	**69**	**1.75**	85.76	"	"	2000	2800	19.5	58	2.1
15	**76**	**1.6**	92.19	"	"	2000	2800	18.5	61	1.95
14	**81**	**1.5**	102.1	"	"	2000	2800	16.5	69	1.75
13	**88**	**1.35**	109.8	"	"	2000	2800	15.5	73	1.65
11.5	**99**	**1.2**	121.7	"	"	2000	2800	14	81	1.5
10.5	**109**	**1.1**	131.8	"	"	2000	2800	13	88	1.35
9.5	**120**	**1.0**	146.0	"	"	2000	2800	11.5	99	1.2
8.4	**136**	**0.88**	166.0	"	"	2000	2800	10.5	109	1.1
8.3	**120**	**1.1**	166.3	**BG10G06-../DPE06LA4**	18	2000	2800	10.5	91	1.45
7.1	**140**	**0.93**	194.9	"	"	2000	2800	8.6	112	1.15
5.8	**130**	**1.0**	240.7	"	"	2000	2800	7.0	130	1.0
5.0	**130**	**1.0**	276.4	"	"	2000	2800	6.1	130	1.0
4.2	**130**	**1.0**	332.0	"	"	2000	2800	5.1	130	1.0
3.7	**130**	**1.0**	379.6	"	"	2000	2800	4.4	130	1.0
3.2	**130**	**1.0**	435.9	"	"	2000	2800	3.9	130	1.0
2.7	**130**	**1.0**	512.6	"	"	2000	2800	3.3	130	1.0
2.3	**130**	**1.0**	613.6	"	"	2000	2800	2.8	130	1.0
1.9	**130**	**1.0**	748.9	"	"	2000	2800	2.3	130	1.0
1.6	**130**	**1.0**	899.5	"	"	2000	2800	1.9	130	1.0
1.3	**130**	**1.0**	1081	"	"	2000	2800	1.6	130	1.0
1.1	**130**	**1.0**	1272	"	"	2000	2800	1.4	130	1.0
0.95	**130**	**1.0**	1523	"	"	2000	2800	1.1	130	1.0
0.75	**130**	**1.0**	1863	"	"	2000	2800	0.9	130	1.0
0.6	**130**	**1.0**	2356	"	"	2000	2800	0.75	130	1.0
0.55	**130**	**1.0**	2699	"	"	2000	2800	0.65	130	1.0
0.47	**130**	**1.0**	2944	"	"	2000	2800	0.6	130	1.0
0.41	**130**	**1.0**	3378	"	"	2000	2800	0.5	130	1.0
0.38	**130**	**1.0**	3684	"	"	2000	2800	0.46	130	1.0
0.31	**130**	**1.0**	4477	"	"	2000	2800	0.38	130	1.0
0.29	**130**	**1.0**	4884	"	"	2000	2800	0.35	130	1.0
18	**63**	**3.2**	78.60	**BG20Z-../DPE06LA4**	16	5000	-	21.5	53	3.8
16	**71**	**2.8**	87.30	"	"	5000	-	19.5	58	3.4
15	**76**	**2.6**	94.27	"	"	5000	-	18	63	3.2
13.5	**84**	**2.4**	104.7	"	"	5000	-	16	71	2.8
12.5	**91**	**2.2**	112.8	"	"	5000	-	15	76	2.6
11.5	**99**	**2.0**	125.3	"	"	5000	-	13.5	84	2.4
9.8	**116**	**1.7**	141.3	"	"	5000	-	12	95	2.1
8.6	**133**	**1.5**	162.2	"	"	5000	-	10.5	109	1.85
7.7	**148**	**1.35**	180.1	"	"	5000	-	9.3	123	1.65
7.0	**163**	**1.25**	199.9	"	"	5000	-	8.4	136	1.45
6.3	**181**	**1.1**	222.1	"	"	5000	-	7.6	150	1.35
5.6	**178**	**1.25**	248.0	**BG20G06-../DPE06LA4**	20	5000	2100	6.8	142	1.55
4.7	**210**	**1.05**	297.9	"	"	5000	2100	5.7	172	1.3
4.0	**255**	**0.86**	352.1	"	"	5000	2100	4.8	210	1.05
3.6	**220**	**1.0**	391.1	"	"	5000	2100	4.3	220	1.0
3.0	**220**	**1.0**	460.0	"	"	5000	2100	3.7	220	1.0
2.6	**220**	**1.0**	550.6	"	"	5000	2100	3.1	220	1.0
2.1	**220**	**1.0**	671.9	"	"	5000	2100	2.5	220	1.0
1.8	**220**	**1.0**	807.1	"	"	5000	2100	2.1	220	1.0
1.5	**220**	**1.0**	969.9	"	"	5000	2100	1.8	220	1.0
1.3	**220**	**1.0**	1142	"	"	5000	2100	1.5	220	1.0
1.1	**220**	**1.0**	1366	"	"	5000	2100	1.3	220	1.0
0.85	**220**	**1.0**	1672	"	"	5000	2100	1.0	220	1.0
0.8	**220**	**1.0**	1824	"	"	5000	2100	0.95	220	1.0
0.7	**220**	**1.0**	2114	"	"	5000	2100	0.8	220	1.0
0.6	**220**	**1.0**	2422	"	"	5000	2100	0.7	220	1.0
0.55	**220**	**1.0**	2642	"	"	5000	2100	0.65	220	1.0
0.46	**220**	**1.0**	3031	"	"	5000	2100	0.6	220	1.0
0.42	**220**	**1.0**	3306	"	"	5000	2100	0.55	220	1.0
0.35	**220**	**1.0**	4017	"	"	5000	2100	0.42	220	1.0
0.32	**220**	**1.0**	4383	"	"	5000	2100	0.39	220	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

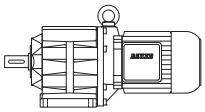
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
11.5	**99**	**3.0**	121.6	**BG30Z-../DPE06LA4**	22	6000	-	14	81	3.7
11	**104**	**2.9**	128.5	"	"	6000	-	13	88	3.4
9.7	**118**	**2.5**	142.5	"	"	6000	-	12	95	3.2
9.2	**124**	**2.4**	151.5	"	"	6000	-	11.5	99	3.0
8.3	**138**	**2.2**	168.1	"	"	6000	-	10	114	2.6
7.6	**150**	**2.0**	182.9	"	"	6000	-	9.2	124	2.4
6.9	**166**	**1.8**	202.9	"	"	6000	-	8.3	138	2.2
6.2	**184**	**1.65**	225.9	"	"	6000	-	7.4	154	1.95
5.6	**200**	**1.5**	250.6	"	"	6000	-	6.7	171	1.75
5.3	**215**	**1.4**	261.9	"	"	6000	-	6.4	179	1.7
4.8	**235**	**1.3**	290.5	"	"	6000	-	5.8	197	1.5
4.6	**215**	**1.5**	306.2	**BG30G06-../DPE06LA4**	25	6000	-	5.5	178	1.85
4.0	**255**	**1.25**	346.8	"	"	6000	-	4.9	205	1.6
3.5	**295**	**1.1**	401.9	"	"	6000	-	4.2	240	1.35
3.0	**345**	**0.94**	472.8	"	"	6000	-	3.6	280	1.15
2.5	**325**	**1.0**	565.8	"	"	6000	-	3.0	325	1.0
2.0	**325**	**1.0**	690.6	"	"	6000	-	2.5	325	1.0
1.9	**325**	**1.0**	760.7	"	"	6000	-	2.2	325	1.0
1.7	**325**	**1.0**	829.5	"	"	6000	-	2.1	325	1.0
1.4	**325**	**1.0**	996.8	"	"	6000	-	1.7	325	1.0
1.3	**325**	**1.0**	1088	"	"	6000	-	1.6	325	1.0
1.1	**325**	**1.0**	1280	"	"	6000	-	1.4	325	1.0
1.0	**325**	**1.0**	1404	"	"	6000	-	1.2	325	1.0
0.85	**325**	**1.0**	1718	"	"	6000	-	1.0	325	1.0
0.75	**325**	**1.0**	1875	"	"	6000	-	0.9	325	1.0
0.65	**325**	**1.0**	2173	"	"	6000	-	0.8	325	1.0
0.55	**325**	**1.0**	2715	"	"	6000	-	0.65	325	1.0
0.45	**325**	**1.0**	3115	"	"	6000	-	0.55	325	1.0
0.41	**325**	**1.0**	3398	"	"	6000	-	0.5	325	1.0
0.36	**325**	**1.0**	3867	"	"	6000	-	0.44	325	1.0
0.31	**325**	**1.0**	4504	"	"	6000	-	0.38	325	1.0
8.8	**130**	**3.3**	156.9	**BG40Z-../DPE06LA4**	38	7000	-	11	104	4.1
8.4	**136**	**3.1**	166.1	"	"	7000	-	10.5	109	3.9
7.5	**152**	**2.8**	184.4	"	"	7000	-	9.1	125	3.4
7.0	**163**	**2.6**	199.9	"	"	7000	-	8.4	136	3.1
6.3	**181**	**2.3**	221.9	"	"	7000	-	7.6	150	2.8
5.6	**200**	**2.1**	246.5	"	"	7000	-	6.8	168	2.5
5.1	**220**	**1.95**	273.6	"	"	7000	-	6.2	184	2.3
4.8	**148**	**3.1**	288.6	**BG40G10-../DPE06LA4**	43	7000	-	5.8	107	4.3
4.0	**187**	**2.5**	353.5	"	"	7000	-	4.8	139	3.3
3.1	**260**	**1.8**	448.8	"	"	7000	-	3.8	194	2.4
2.6	**320**	**1.45**	534.2	"	"	7000	-	3.2	240	1.95
2.2	**405**	**1.15**	640.0	"	"	7000	-	2.7	310	1.5
2.0	**445**	**1.05**	710.9	"	"	7000	-	2.4	350	1.35
1.8	**495**	**0.94**	789.1	"	"	7000	-	2.2	380	1.2
1.5	**465***	**1.0**	965.2	"	"	7000	-	1.8	465	1.0
1.2	**465***	**1.0**	1225	"	"	7000	-	1.4	465	1.0
0.95	**465***	**1.0**	1459	"	"	7000	-	1.2	465	1.0
0.8	**465***	**1.0**	1738	"	"	7000	-	1.0	465	1.0
0.7	**465***	**1.0**	2087	"	"	7000	-	0.85	465	1.0
0.55	**465***	**1.0**	2628	"	"	7000	-	0.65	465	1.0
0.45	**465***	**1.0**	3082	"	"	7000	-	0.55	465	1.0
0.37	**465***	**1.0**	3805	"	"	7000	-	0.44	465	1.0
0.33	**465***	**1.0**	4216	"	"	7000	-	0.4	465	1.0
0.29	**465***	**1.0**	4841	"	"	7000	-	0.35	465	1.0
5.4	**210**	**3.0**	258.6	**BG50Z-../DPE06LA4**	47	10000	-	6.5	176	3.6
4.9	**230**	**2.7**	286.7	"	"	10000	-	5.9	194	3.2

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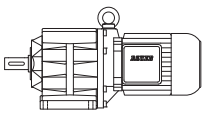
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
3.1	**260**	**2.7**	446.5	**BG50G10-../DPE06LA4**	51	10000	-	3.8	194	3.6
2.6	**320**	**2.2**	531.5	"	"	10000	-	3.2	240	2.9
2.3	**385**	**1.8**	621.3	"	"	10000	-	2.7	310	2.2
2.0	**445**	**1.55**	708.3	"	"	10000	-	2.4	350	1.95
1.8	**495**	**1.4**	785.1	"	"	10000	-	2.2	380	1.8
1.5	**610**	**1.15**	960.2	"	"	10000	-	1.8	485	1.4
1.2	**790**	**0.87**	1219	"	"	10000	-	1.4	660	1.05
1.0	**690**	**1.0**	1452	"	"	10000	-	1.2	690	1.0
0.8	**690**	**1.0**	1729	"	"	10000	-	1.0	690	1.0
0.7	**690**	**1.0**	2076	"	"	10000	-	0.85	690	1.0
0.55	**690**	**1.0**	2615	"	"	10000	-	0.65	690	1.0
0.46	**690**	**1.0**	3066	"	"	10000	-	0.55	690	1.0
0.37	**690**	**1.0**	3786	"	"	10000	-	0.45	690	1.0
0.33	**690**	**1.0**	4195	"	"	10000	-	0.4	690	1.0
0.29	**690**	**1.0**	4816	"	"	10000	-	0.35	690	1.0
1.8	**430**	**3.0**	804.5	**BG60G20-../DPE06LA4**	100	16000	-	2.1	340	3.8
1.6	**490**	**2.7**	891.5	"	"	16000	-	1.9	375	3.5
1.4	**570**	**2.3**	1051	"	"	16000	-	1.6	475	2.7
1.2	**700**	**1.85**	1168	"	"	16000	-	1.5	510	2.5
1.1	**770**	**1.7**	1346	"	"	16000	-	1.3	610	2.1
0.95	**930**	**1.4**	1496	"	"	16000	-	1.2	680	1.9
0.8	**1160**	**1.1**	1741	"	"	16000	-	1.0	870	1.5
0.75	**1250**	**1.05**	1880	"	"	16000	-	0.9	1000	1.3
0.65	**1300**	**1.0**	2249	"	"	16000	-	0.75	1300	1.0
0.49	**1300**	**1.0**	2818	"	"	16000	-	0.6	1300	1.0
0.43	**1300**	**1.0**	3234	"	"	16000	-	0.55	1300	1.0
0.39	**1300**	**1.0**	3592	"	"	16000	-	0.47	1300	1.0
0.32	**1300**	**1.0**	4429	"	"	16000	-	0.38	1300	1.0
1.0	**900**	**2.8**	1389	**BG70G20-../DPE06LA4**	130	20000	-	1.3	640	3.9
0.9	**1030**	**2.4**	1543	"	"	20000	-	1.1	800	3.1
0.85	**1100**	**2.3**	1666	"	"	20000	-	1.1	800	3.1
0.7	**1390**	**1.8**	1994	"	"	20000	-	0.85	1100	2.3
0.65	**1520**	**1.65**	2215	"	"	20000	-	0.8	1190	2.1
0.5	**2050**	**1.2**	2774	"	"	20000	-	0.65	1520	1.65
0.44	**2350**	**1.05**	3184	"	"	20000	-	0.55	1840	1.35
0.36	**2500**	**1.0**	3925	"	"	20000	-	0.43	2500	1.0

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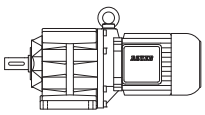
P = 0.18 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
530	**3.2**	**2.8**	2.64	**BG05-../DPE07LA4**	11	420	-	640	2.65	3.4
410	**4.15**	**2.4**	3.38	"	"	460	-	495	3.45	2.9
305	**5.6**	**2.1**	4.59	"	"	490	-	365	4.7	2.6
255	**6.7**	**2.1**	5.46	"	"	490	-	310	5.5	2.5
230	**7.4**	**2.3**	6.09	"	"	480	-	275	6.2	2.7
210	**8.1**	**2.1**	6.64	"	"	500	-	255	6.7	2.5
177	**9.7**	**1.85**	7.80	"	"	530	-	215	7.9	2.3
170	**10.1**	**1.8**	8.15	"	"	510	-	205	8.3	2.2
163	**10.5**	**1.8**	8.51	"	"	550	-	197	8.7	2.2
131	**13.1**	**1.55**	10.59	"	"	590	-	158	10.8	1.85
120	**14.3**	**1.45**	11.55	"	"	600	-	145	11.8	1.8
115	**14.9**	**1.4**	12.05	"	"	510	-	139	12.3	1.7
110	**15.6**	**1.4**	12.60	"	"	610	-	133	12.9	1.7
101	**17**	**1.35**	13.75	"	"	630	-	122	14	1.65
91	**18.8**	**1.3**	15.23	"	"	640	-	110	15.6	1.55
84	**20**	**1.25**	16.62	"	"	660	-	101	17	1.45
74	**23**	**1.15**	18.82	"	"	680	-	89	19.3	1.35
68	**25**	**1.1**	20.53	"	"	700	-	82	20.5	1.3
58	**29.5**	**0.95**	24.00	"	"	740	-	70	24.5	1.15
53	**32**	**0.91**	26.18	"	"	760	-	64	26.5	1.1
50	**34**	**0.88**	27.82	"	"	770	-	61	28	1.05
45.5	**37.5**	**0.8**	30.35	"	"	760	-	56	30.5	0.98
235	**7.3**	**3.3**	5.96	**BG06-../DPE07LA4**	12	570	-	285	6.0	4.0
197	**8.7**	**3.0**	7.01	"	"	580	-	240	7.1	3.7
165	**10.4**	**2.7**	8.39	"	"	600	-	200	8.5	3.3
148	**11.6**	**2.6**	9.38	"	"	640	-	179	9.6	3.1
135	**12.7**	**2.4**	10.24	"	"	640	-	164	10.4	3.0
123	**13.9**	**2.3**	11.28	"	"	670	-	149	11.5	2.8
113	**15.2**	**2.2**	12.30	"	"	670	-	136	12.6	2.6
107	**16**	**2.1**	12.98	"	"	600	-	129	13.3	2.5
94	**18.2**	**1.85**	14.78	"	"	730	-	113	15.2	2.2
86	**19.9**	**1.75**	16.13	"	"	740	-	104	16.5	2.1
80	**21**	**1.8**	17.40	"	"	760	-	96	17.9	2.1
73	**23.5**	**1.7**	18.98	"	"	770	-	88	19.5	2.1
67	**25.5**	**1.55**	20.82	"	"	800	-	81	21	1.9
61	**28**	**1.55**	22.71	"	"	810	-	74	23	1.85
55	**31**	**1.45**	25.48	"	"	850	-	66	26	1.75
50	**34**	**1.3**	27.80	"	"	840	-	61	28	1.6
43	**39.5**	**1.15**	32.22	"	"	890	-	52	33	1.35
39.5	**43.5**	**1.05**	35.15	"	"	880	-	48	35.5	1.25
37.5	**45.5**	**0.99**	36.91	"	"	890	-	45.5	37.5	1.2
34.5	**49.5**	**0.91**	40.26	"	"	890	-	41.5	41	1.1
47.5	**36**	**3.3**	29.09	**BG10-../DPE07LA4**	15	1540	2150	58	29.5	4.1
44	**39**	**3.1**	31.52	"	"	1600	2200	53	32	3.8
40	**42.5**	**2.8**	34.92	"	"	1690	2350	48	35.5	3.4
35	**49**	**2.4**	39.70	"	"	1780	2450	42.5	40	3.0
31.5	**54**	**2.2**	43.99	"	"	1880	2600	38	45	2.7
30	**57**	**2.1**	46.55	"	"	1920	2650	36	47.5	2.5
27	**63**	**1.9**	51.57	"	"	2000	2800	32.5	52	2.3
24.5	**70**	**1.7**	57.48	"	"	2000	2800	29.5	58	2.1
22	**78**	**1.55**	63.69	"	"	2000	2800	26.5	64	1.9
21	**81**	**1.5**	66.00	"	"	2000	2800	25.5	67	1.8
19	**90**	**1.35**	73.13	"	"	2000	2800	23	74	1.6
18	**95**	**1.25**	77.40	**BG10Z-../DPE07LA4**	16	2000	2800	22	78	1.55
16.5	**104**	**1.15**	85.76	"	"	2000	2800	19.5	88	1.35
15	**114**	**1.05**	92.19	"	"	2000	2800	18.5	92	1.3
14	**122**	**0.98**	102.1	"	"	2000	2800	16.5	104	1.15
13	**132**	**0.91**	109.8	"	"	2000	2800	15.5	110	1.1
11.5	**149**	**0.81**	121.7	"	"	2000	2800	14	122	0.98

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

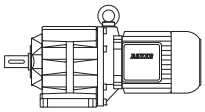
P = 0.18 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
36.5	**47**	**3.2**	37.90	**BG15-../DPE07LA4**	15	3000	6000	44.5	38.5	3.9
26	**66**	**3.0**	53.22	**BG20-../DPE07LA4**	18	4950	-	31.5	54	3.7
23.5	**73**	**2.7**	59.07	"	"	5000	-	28.5	60	3.3
21.5	**79**	**2.5**	65.62	"	"	5000	-	25.5	67	3.0
20.5	**83**	**2.4**	67.53	**BG20Z-../DPE07LA4**	19	5000	-	25	68	2.9
18	**95**	**2.1**	78.60	"	"	5000	-	21.5	79	2.5
16	**107**	**1.85**	87.30	"	"	5000	-	19.5	88	2.3
15	**114**	**1.75**	94.27	"	"	5000	-	18	95	2.1
13.5	**127**	**1.55**	104.7	"	"	5000	-	16	107	1.85
12.5	**137**	**1.45**	112.8	"	"	5000	-	15	114	1.75
11.5	**149**	**1.35**	125.3	"	"	5000	-	13.5	127	1.55
9.8	**175**	**1.15**	141.3	"	"	5000	-	12	143	1.4
8.6	**199**	**1.0**	162.2	"	"	5000	-	10.5	163	1.25
7.7	**220**	**0.91**	180.1	"	"	5000	-	9.3	184	1.1
7.0	**245**	**0.82**	199.9	"	"	5000	-	8.4	200	1.0
21	**81**	**3.3**	65.79	**BG30Z-../DPE07LA4**	25	6000	-	25.5	67	4.0
19	**90**	**3.3**	73.51	"	"	6000	-	23	74	4.1
17	**101**	**3.0**	81.55	"	"	6000	-	20.5	83	3.6
16.5	**104**	**2.9**	86.13	"	"	6000	-	19.5	88	3.4
14.5	**118**	**2.5**	95.55	"	"	6000	-	17.5	98	3.1
13	**132**	**2.3**	109.6	"	"	6000	-	15.5	110	2.7
11.5	**149**	**2.0**	121.6	"	"	6000	-	14	122	2.5
11	**156**	**1.9**	128.5	"	"	6000	-	13	132	2.3
9.7	**177**	**1.7**	142.5	"	"	6000	-	12	143	2.1
9.2	**186**	**1.6**	151.5	"	"	6000	-	11.5	149	2.0
8.3	**205**	**1.45**	168.1	"	"	6000	-	10	171	1.75
7.6	**225**	**1.35**	182.9	"	"	6000	-	9.2	186	1.6
6.9	**245**	**1.2**	202.9	"	"	6000	-	8.3	205	1.45
6.2	**275**	**1.1**	225.9	"	"	6000	-	7.4	230	1.3
5.6	**305**	**0.98**	250.6	"	"	6000	-	6.7	255	1.2
5.3	**320**	**0.94**	261.9	"	"	6000	-	6.4	265	1.15
4.8	**355**	**0.85**	290.5	"	"	6000	-	5.8	295	1.0
4.6	**340**	**0.96**	306.2	**BG30G06-../DPE07LA4**	27	6000	-	5.5	280	1.15
4.0	**400**	**0.81**	346.8	"	"	6000	-	4.9	320	1.0
13	**132**	**3.2**	107.5	**BG40Z-../DPE07LA4**	40	7000	-	16	107	4.0
11.5	**149**	**2.9**	121.3	"	"	7000	-	14	122	3.5
10.5	**163**	**2.6**	134.6	"	"	7000	-	12.5	137	3.1
9.8	**175**	**2.4**	141.4	"	"	7000	-	12	143	3.0
8.8	**195**	**2.2**	156.9	"	"	7000	-	11	156	2.7
8.4	**200**	**2.1**	166.1	"	"	7000	-	10.5	163	2.6
7.5	**225**	**1.9**	184.4	"	"	7000	-	9.1	188	2.3
7.0	**245**	**1.75**	199.9	"	"	7000	-	8.4	200	2.1
6.3	**270**	**1.55**	221.9	"	"	7000	-	7.6	225	1.9
5.6	**305**	**1.4**	246.5	"	"	7000	-	6.8	250	1.7
5.1	**335**	**1.25**	273.6	"	"	7000	-	6.2	275	1.55
4.8	**265**	**1.75**	288.6	**BG40G10-../DPE07LA4**	46	7000	-	5.8	205	2.3
4.0	**330**	**1.4**	353.5	"	"	7000	-	4.8	255	1.8
3.1	**445**	**1.05**	448.8	"	"	7000	-	3.8	345	1.35
2.6	**540**	**0.86**	534.2	"	"	7000	-	3.2	420	1.1
8.4	**200**	**3.2**	164.9	**BG50Z-../DPE07LA4**	50	10000	-	10.5	163	3.9
7.6	**225**	**2.8**	182.8	"	"	10000	-	9.2	186	3.4
6.8	**250**	**2.5**	204.7	"	"	10000	-	8.2	205	3.1
6.1	**280**	**2.3**	226.9	"	"	10000	-	7.4	230	2.7
5.4	**315**	**2.0**	258.6	"	"	10000	-	6.5	260	2.4
4.9	**350**	**1.8**	286.7	"	"	10000	-	5.9	290	2.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.18 kW



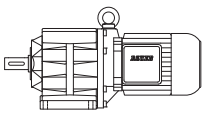
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
4.0	**330**	**2.1**	351.7	**BG50G10-../DPE07LA4**	54	10000	-	4.8	255	2.7
3.1	**445**	**1.55**	446.5	"	"	10000	-	3.8	345	2.0
2.6	**540**	**1.3**	531.5	"	"	10000	-	3.2	420	1.65
2.3	**630**	**1.1**	621.3	"	"	10000	-	2.7	520	1.35
2.0	**730**	**0.95**	708.3	"	"	10000	-	2.4	590	1.15
1.8	**810**	**0.85**	785.1	"	"	10000	-	2.2	640	1.1
2.8	**465**	**2.8**	504.9	**BG60G20-../DPE07LA4**	102	16000	-	3.4	355	3.7
2.5	**520**	**2.5**	559.5	"	"	16000	-	3.0	405	3.2
2.2	**610**	**2.1**	651.3	"	"	16000	-	2.6	495	2.6
1.8	**750**	**1.75**	804.5	"	"	16000	-	2.1	610	2.1
1.6	**840**	**1.55**	891.5	"	"	16000	-	1.9	670	1.95
1.4	**980**	**1.35**	1051	"	"	16000	-	1.6	830	1.55
1.2	**1180**	**1.1**	1168	"	"	16000	-	1.5	890	1.45
1.1	**1290**	**1.0**	1346	"	"	16000	-	1.3	1050	1.25
1.8	**750**	**3.3**	790.2	**BG70G20-../DPE07LA4**	132	20000	-	2.2	580	4.3
1.6	**860**	**2.9**	877.6	"	"	20000	-	2.0	650	3.8
1.4	**1000**	**2.5**	1035	"	"	20000	-	1.7	790	3.2
1.2	**1190**	**2.1**	1193	"	"	20000	-	1.4	990	2.5
1.0	**1470**	**1.7**	1389	"	"	20000	-	1.3	1080	2.3
0.9	**1670**	**1.5**	1543	"	"	20000	-	1.1	1320	1.9
0.85	**1780**	**1.4**	1666	"	"	20000	-	1.1	1320	1.9
0.7	**2200**	**1.15**	1994	"	"	20000	-	0.85	1780	1.4
0.65	**2400**	**1.05**	2215	"	"	20000	-	0.8	1900	1.3

P = 0.25 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
510	**4.65**	**3.9**	2.82	**BG06-../DPE08MA4**	16	470	-	610	3.9	4.6
380	**6.2**	**3.2**	3.78	"	"	520	-	455	5.2	3.8
315	**7.5**	**2.9**	4.54	"	"	530	-	380	6.2	3.5
240	**9.9**	**2.4**	5.96	"	"	570	-	290	8.2	2.9
205	**11.6**	**2.2**	7.01	"	"	580	-	245	9.7	2.7
186	**12.8**	**2.2**	7.65	"	"	580	-	225	10.6	2.6
170	**14**	**2.0**	8.39	"	"	600	-	205	11.6	2.4
152	**15.7**	**1.9**	9.38	"	"	640	-	183	13	2.3
139	**17.1**	**1.8**	10.24	"	"	640	-	167	14.2	2.2
126	**18.9**	**1.7**	11.28	"	"	670	-	152	15.7	2.0
116	**20.5**	**1.6**	12.30	"	"	670	-	140	17	1.95
110	**21.5**	**1.55**	12.98	"	"	600	-	132	18	1.85
97	**24.5**	**1.4**	14.78	"	"	730	-	116	20.5	1.65
89	**26.5**	**1.3**	16.13	"	"	740	-	107	22	1.6
82	**29**	**1.3**	17.40	"	"	760	-	99	24	1.6
75	**31.5**	**1.25**	18.98	"	"	770	-	91	26	1.55
69	**34.5**	**1.15**	20.82	"	"	800	-	83	28.5	1.4
63	**37.5**	**1.15**	22.71	"	"	810	-	76	31	1.4
56	**42.5**	**1.05**	25.48	"	"	850	-	68	35	1.3
52	**45.5**	**0.99**	27.80	"	"	840	-	62	38.5	1.15
44.5	**53**	**0.85**	32.22	"	"	890	-	54	44	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

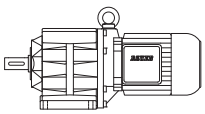
P = 0.25 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
65	**36.5**	**3.3**	22.04	**BG10-../DPE08MA4**	16	1330	1860	78	30.5	3.9
59	**40**	**3.0**	24.42	"	"	1410	1970	71	33.5	3.6
55	**43**	**2.8**	26.26	"	"	1460	2000	66	36	3.3
49	**48.5**	**2.5**	29.09	"	"	1540	2150	59	40	3.0
45.5	**52**	**2.3**	31.52	"	"	1600	2200	55	43	2.8
41	**58**	**2.1**	34.92	"	"	1690	2350	49	48.5	2.5
36	**66**	**1.8**	39.70	"	"	1780	2450	43.5	54	2.2
32.5	**73**	**1.65**	43.99	"	"	1880	2600	39	61	1.95
31	**77**	**1.55**	46.55	"	"	1920	2650	37	64	1.9
28	**85**	**1.4**	51.57	"	"	2000	2800	33.5	71	1.7
25	**95**	**1.25**	57.48	"	"	2000	2800	30	79	1.5
22.5	**106**	**1.15**	63.69	"	"	2000	2800	27	88	1.35
21.5	**111**	**0.93**	67.54	**BG10Z-../DPE08MA4**	18	2000	2800	25.5	93	1.1
18.5	**129**	**0.93**	77.40	"	"	2000	2800	22.5	106	1.15
17	**140**	**0.86**	85.76	"	"	2000	2800	20	119	1.0
53	**45**	**3.3**	27.08	**BG15-../DPE08MA4**	16	3000	6000	64	37	4.1
47.5	**50**	**3.0**	30.08	"	"	3000	6000	57	41.5	3.6
42	**56**	**2.7**	34.20	"	"	3000	6000	50	47.5	3.2
37.5	**63**	**2.4**	37.90	"	"	3000	6000	45.5	52	2.9
38.5	**62**	**3.2**	37.02	**BG20-../DPE08MA4**	19	4300	-	46.5	51	3.9
34.5	**69**	**2.9**	41.76	"	"	4500	-	41	58	3.4
31	**77**	**2.6**	46.38	"	"	4700	-	37	64	3.1
30	**79**	**2.5**	47.92	"	"	4750	-	36	66	3.0
27	**88**	**2.3**	53.22	"	"	4950	-	32.5	73	2.7
24.5	**97**	**2.1**	59.07	"	"	5000	-	29	82	2.4
22	**108**	**1.85**	65.62	"	"	5000	-	26.5	90	2.2
21.5	**111**	**1.8**	67.53	**BG20Z-../DPE08MA4**	20	5000	-	25.5	93	2.2
18.5	**129**	**1.55**	78.60	"	"	5000	-	22	108	1.85
16.5	**144**	**1.4**	87.30	"	"	5000	-	20	119	1.7
15.5	**154**	**1.3**	94.27	"	"	5000	-	18.5	129	1.55
14	**170**	**1.2**	104.7	"	"	5000	-	16.5	144	1.4
13	**183**	**1.1**	112.8	"	"	5000	-	15.5	154	1.3
11.5	**205**	**0.98**	125.3	"	"	5000	-	14	170	1.2
10.5	**225**	**0.89**	141.3	"	"	5000	-	12.5	191	1.05
24.5	**97**	**3.1**	58.18	**BG30-../DPE08MA4**	23	6000	-	29.5	80	3.8
23.5	**101**	**3.0**	60.79	"	"	6000	-	28.5	83	3.6
21.5	**111**	**2.7**	67.44	"	"	6000	-	25.5	93	3.2
19.5	**122**	**2.5**	73.51	**BG30Z-../DPE08MA4**	26	6000	-	23.5	101	3.0
17.5	**136**	**2.2**	81.55	"	"	6000	-	21	113	2.7
16.5	**144**	**2.1**	86.13	"	"	6000	-	20	119	2.5
15	**159**	**1.9**	95.55	"	"	6000	-	18	132	2.3
13	**183**	**1.65**	109.6	"	"	6000	-	16	149	2.0
12	**198**	**1.5**	121.6	"	"	6000	-	14.5	164	1.85
11.5	**205**	**1.45**	128.5	"	"	6000	-	13.5	176	1.7
10	**235**	**1.3**	142.5	"	"	6000	-	12	198	1.5
9.4	**250**	**1.2**	151.5	"	"	6000	-	11.5	205	1.45
8.5	**280**	**1.05**	168.1	"	"	6000	-	10.5	225	1.35
7.8	**305**	**0.98**	182.9	"	"	6000	-	9.4	250	1.2
7.0	**340**	**0.88**	202.9	"	"	6000	-	8.5	280	1.05
6.3	**375**	**0.8**	225.9	"	"	6000	-	7.6	310	0.97
5.6	**395**	**0.82**	254.9	**BG30G06-../DPE08MA4**	32	6000	-	6.8	320	1.0
17.5	**136**	**3.1**	82.00	**BG40Z-../DPE08MA4**	42	7000	-	21	113	3.8
16	**149**	**2.9**	91.02	"	"	7000	-	19	125	3.4
15	**159**	**2.7**	96.86	"	"	7000	-	18	132	3.2
13.5	**176**	**2.4**	107.5	"	"	7000	-	16	149	2.9
12	**198**	**2.1**	121.3	"	"	7000	-	14.5	164	2.6
11	**215**	**2.0**	134.6	"	"	7000	-	13	183	2.3
10.5	**225**	**1.9**	141.4	"	"	7000	-	12.5	191	2.2
9.1	**260**	**1.65**	156.9	"	"	7000	-	11	215	2.0
8.6	**275**	**1.55**	166.1	"	"	7000	-	10.5	225	1.9

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

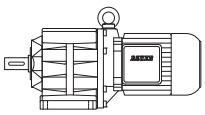
P = 0.25 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
7.8	**305**	**1.4**	184.4	**BG40Z-../DPE08MA4**	42	7000	-	9.3	255	1.65
7.2	**330**	**1.3**	199.9	"	"	7000	-	8.6	275	1.55
6.4	**370**	**1.15**	221.9	"	"	7000	-	7.8	305	1.4
5.8	**410**	**1.05**	246.5	"	"	7000	-	7.0	340	1.25
5.2	**455**	**0.93**	273.6	"	"	7000	-	6.3	375	1.15
5.0	**385**	**1.2**	288.6	**BG40G10-../DPE08MA4**	47	7000	-	6.0	305	1.5
4.1	**480**	**0.97**	353.5	"	"	7000	-	4.9	385	1.2
11.5	**205**	**3.1**	128.9	**BG50Z-../DPE08MA4**	51	10000	-	13.5	176	3.6
10	**235**	**2.7**	142.9	"	"	10000	-	12	198	3.2
8.7	**270**	**2.3**	164.9	"	"	10000	-	10.5	225	2.8
7.8	**305**	**2.1**	182.8	"	"	10000	-	9.4	250	2.5
7.0	**340**	**1.85**	204.7	"	"	10000	-	8.4	280	2.3
6.3	**375**	**1.7**	226.9	"	"	10000	-	7.6	310	2.0
5.5	**430**	**1.45**	258.6	"	"	10000	-	6.7	355	1.75
5.0	**475**	**1.35**	286.7	"	"	10000	-	6.0	395	1.6
4.1	**480**	**1.45**	351.7	**BG50G10-../DPE08MA4**	55	10000	-	4.9	385	1.8
3.2	**630**	**1.1**	446.5	"	"	10000	-	3.9	500	1.4
2.7	**760**	**0.91**	531.5	"	"	10000	-	3.3	600	1.15
6.3	**375**	**3.2**	226.7	**BG60Z-../DPE08MA4**	96	16000	-	7.6	310	3.9
5.8	**410**	**2.9**	247.7	"	"	16000	-	7.0	340	3.5
5.2	**455**	**2.6**	274.5	"	"	16000	-	6.3	375	3.2
4.3	**415**	**3.1**	334.3	**BG60G20-../DPE08MA4**	103	16000	-	5.2	315	4.1
3.9	**455**	**2.9**	370.5	"	"	16000	-	4.7	350	3.7
3.3	**550**	**2.4**	437.3	"	"	16000	-	4.0	430	3.0
2.9	**670**	**1.95**	504.9	"	"	16000	-	3.4	550	2.4
2.6	**750**	**1.75**	559.5	"	"	16000	-	3.1	600	2.2
2.2	**920**	**1.4**	651.3	"	"	16000	-	2.7	710	1.85
1.8	**1120**	**1.15**	804.5	"	"	16000	-	2.2	880	1.5
1.6	**1260**	**1.05**	891.5	"	"	16000	-	2.0	960	1.35
1.4	**1460**	**0.89**	1051	"	"	16000	-	1.7	1160	1.1
1.3	**1580**	**0.82**	1168	"	"	16000	-	1.5	1340	0.97
2.5	**800**	**3.1**	577.3	**BG70G20-../DPE08MA4**	133	20000	-	3.0	640	3.9
2.2	**910**	**2.7**	665.8	"	"	20000	-	2.6	740	3.4
1.8	**1120**	**2.2**	790.2	"	"	20000	-	2.2	880	2.8
1.7	**1190**	**2.1**	877.6	"	"	20000	-	2.0	980	2.6
1.4	**1480**	**1.7**	1035	"	"	20000	-	1.7	1180	2.1
1.2	**1750**	**1.45**	1193	"	"	20000	-	1.5	1350	1.85
1.1	**1930**	**1.3**	1389	"	"	20000	-	1.3	1590	1.55
0.95	**2250**	**1.1**	1543	"	"	20000	-	1.2	1750	1.45
0.9	**2400**	**1.05**	1666	"	"	20000	-	1.1	1930	1.3
1.2	**1440**	**3.2**	1261	**BG80G40-../DPE08MA4**	215	26000	-	1.4	1160	4.0
1.1	**1630**	**2.8**	1400	"	"	26000	-	1.3	1290	3.6
0.9	**2100**	**2.2**	1653	"	"	26000	-	1.1	1630	2.8
0.7	**2850**	**1.6**	2070	"	"	26000	-	0.85	2250	2.0
0.6	**3400**	**1.35**	2413	"	"	26000	-	0.75	2600	1.75
0.55	**3800**	**1.2**	2836	"	"	26000	-	0.65	3100	1.5
0.6	**3300**	**2.8**	2514	**BG90G50-../DPE08MA4**	324	65000	-	0.7	2700	3.4
0.55	**3650**	**2.5**	2786	"	"	65000	-	0.65	2950	3.1
0.45	**4600**	**2.0**	3177	"	"	65000	-	0.55	3650	2.5
0.41	**5100**	**1.8**	3521	"	"	65000	-	0.49	4150	2.2
0.25	**7000**	**2.6**	5888	**BG100G50-../DPE08MA4**	512	90000	-	0.3	5400	3.4
0.22	**8300**	**2.2**	6529	"	"	90000	-	0.27	6300	2.9
0.19	**10000**	**1.85**	7533	"	"	90000	-	0.23	7800	2.4
0.18	**10700**	**1.75**	8350	"	"	90000	-	0.21	8800	2.1
0.16	**12400**	**1.5**	9348	"	"	90000	-	0.19	10000	1.85

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

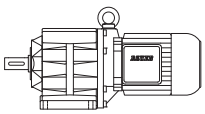
P = 0.37 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
510	**6.9**	**2.6**	2.82	**BG06-../DPE08LA4**	18	470	-	610	5.7	3.2
380	**9.2**	**2.2**	3.78	"	"	520	-	455	7.7	2.6
315	**11.2**	**1.95**	4.54	"	"	530	-	380	9.2	2.4
240	**14.7**	**1.65**	5.96	"	"	570	-	290	12.1	2.0
205	**17.2**	**1.5**	7.01	"	"	580	-	245	14.4	1.8
186	**18.9**	**1.5**	7.65	"	"	580	-	225	15.7	1.8
170	**20.5**	**1.35**	8.39	"	"	600	-	205	17.2	1.65
152	**23**	**1.3**	9.38	"	"	640	-	183	19.3	1.55
139	**25**	**1.25**	10.24	"	"	640	-	167	21	1.5
126	**28**	**1.15**	11.28	"	"	670	-	152	23	1.4
116	**30**	**1.1**	12.30	"	"	670	-	140	25	1.3
110	**32**	**1.05**	12.98	"	"	600	-	132	26.5	1.25
97	**36**	**0.94**	14.78	"	"	730	-	116	30	1.15
89	**39.5**	**0.89**	16.13	"	"	740	-	107	33	1.05
82	**43**	**0.88**	17.40	"	"	760	-	99	35.5	1.05
75	**47**	**0.85**	18.98	"	"	770	-	91	38.5	1.05
98	**36**	**3.2**	14.58	**BG10-../DPE08LA4**	18	1100	1540	118	29.5	3.9
88	**40**	**2.9**	16.15	"	"	1140	1590	106	33	3.5
77	**45.5**	**2.6**	18.51	"	"	1210	1690	93	37.5	3.2
70	**50**	**2.4**	20.51	"	"	1290	1800	84	42	2.9
65	**54**	**2.2**	22.04	"	"	1330	1860	78	45	2.7
59	**59**	**2.0**	24.42	"	"	1410	1970	71	49.5	2.4
55	**64**	**1.9**	26.26	"	"	1460	2000	66	53	2.3
49	**72**	**1.65**	29.09	"	"	1540	2150	59	59	2.0
45.5	**77**	**1.55**	31.52	"	"	1600	2200	55	64	1.9
41	**86**	**1.4**	34.92	"	"	1690	2350	49	72	1.65
36	**98**	**1.2**	39.70	"	"	1780	2450	43.5	81	1.5
32.5	**108**	**1.1**	43.99	"	"	1880	2600	39	90	1.35
31	**113**	**1.05**	46.55	"	"	1920	2650	37	95	1.25
28	**126**	**0.95**	51.57	"	"	2000	2800	33.5	105	1.15
25	**141**	**0.85**	57.48	"	"	2000	2800	30	117	1.05
53	**66**	**2.3**	27.08	**BG15-../DPE08LA4**	18	3000	6000	64	55	2.7
47.5	**74**	**2.0**	30.08	"	"	3000	6000	57	61	2.5
42	**84**	**1.8**	34.20	"	"	3000	6000	50	70	2.1
37.5	**94**	**1.6**	37.90	"	"	3000	6000	45.5	77	1.95
56	**63**	**3.2**	25.79	**BG20-../DPE08LA4**	20	3700	-	67	52	3.8
51	**69**	**2.9**	27.85	"	"	3800	-	62	56	3.6
46	**76**	**2.6**	30.94	"	"	4000	-	56	63	3.2
43	**82**	**2.4**	33.33	"	"	4100	-	52	67	3.0
38.5	**91**	**2.2**	37.02	"	"	4300	-	46.5	75	2.7
34.5	**102**	**1.95**	41.76	"	"	4500	-	41	86	2.3
31	**113**	**1.75**	46.38	"	"	4700	-	37	95	2.1
30	**117**	**1.7**	47.92	"	"	4750	-	36	98	2.0
27	**130**	**1.55**	53.22	"	"	4950	-	32.5	108	1.85
24.5	**144**	**1.4**	59.07	"	"	5000	-	29	121	1.65
22	**160**	**1.25**	65.62	"	"	5000	-	26.5	133	1.5
21.5	**164**	**1.2**	67.53	**BG20Z-../DPE08LA4**	22	5000	-	25.5	138	1.45
18.5	**191**	**1.05**	78.60	"	"	5000	-	22	160	1.25
16.5	**210**	**0.95**	87.30	"	"	5000	-	20	176	1.15
15.5	**225**	**0.89**	94.27	"	"	5000	-	18.5	191	1.05
14	**250**	**0.8**	104.7	"	"	5000	-	16.5	210	0.95
36.5	**96**	**3.1**	39.02	**BG30-../DPE08LA4**	25	5800	-	44	80	3.8
33.5	**105**	**2.9**	42.46	"	"	5900	-	40.5	87	3.4
30.5	**115**	**2.6**	47.11	"	"	6000	-	36.5	96	3.1
27.5	**128**	**2.3**	52.44	"	"	6000	-	33	107	2.8
24.5	**144**	**2.1**	58.18	"	"	6000	-	29.5	119	2.5
23.5	**150**	**2.0**	60.79	"	"	6000	-	28.5	123	2.4
21.5	**164**	**1.85**	67.44	"	"	6000	-	25.5	138	2.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

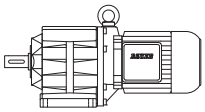
P = 0.37 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
19.5	**181**	**1.65**	73.51	**BG30Z-../DPE08LA4**	28	6000	-	23.5	150	2.0
17.5	**200**	**1.5**	81.55	"	"	6000	-	21	168	1.8
16.5	**210**	**1.45**	86.13	"	"	6000	-	20	176	1.7
15	**235**	**1.3**	95.55	"	"	6000	-	18	196	1.55
13	**270**	**1.1**	109.6	"	"	6000	-	16	220	1.35
12	**290**	**1.05**	121.6	"	"	6000	-	14.5	240	1.25
11.5	**305**	**0.98**	128.5	"	"	6000	-	13.5	260	1.15
10	**350**	**0.86**	142.5	"	"	6000	-	12	290	1.05
9.4	**375**	**0.8**	151.5	"	"	6000	-	11.5	305	0.98
26.5	**133**	**3.2**	53.69	**BG40-../DPE08LA4**	40	7000	-	32	110	3.9
24	**147**	**2.9**	59.64	"	"	7000	-	29	121	3.5
21.5	**164**	**2.6**	66.20	"	"	7000	-	26	135	3.1
21	**168**	**2.5**	67.74	**BG40Z-../DPE08LA4**	43	7000	-	25.5	138	3.1
19	**185**	**2.3**	75.19	"	"	7000	-	23	153	2.8
17.5	**200**	**2.1**	82.00	"	"	7000	-	21	168	2.5
16	**220**	**1.95**	91.02	"	"	7000	-	19	185	2.3
15	**235**	**1.8**	96.86	"	"	7000	-	18	196	2.2
13.5	**260**	**1.65**	107.5	"	"	7000	-	16	220	1.95
12	**290**	**1.45**	121.3	"	"	7000	-	14.5	240	1.75
11	**320**	**1.35**	134.6	"	"	7000	-	13	270	1.55
10.5	**335**	**1.25**	141.4	"	"	7000	-	12.5	280	1.5
9.1	**385**	**1.1**	156.9	"	"	7000	-	11	320	1.35
8.6	**410**	**1.05**	166.1	"	"	7000	-	10.5	335	1.25
7.8	**450**	**0.94**	184.4	"	"	7000	-	9.3	375	1.15
7.2	**490**	**0.87**	199.9	"	"	7000	-	8.6	410	1.05
18	**196**	**3.2**	79.78	**BG50Z-../DPE08LA4**	52	10000	-	21.5	164	3.8
15	**235**	**2.7**	95.58	"	"	10000	-	18	196	3.2
13.5	**260**	**2.4**	106.0	"	"	10000	-	16.5	210	3.0
11.5	**305**	**2.1**	128.9	"	"	10000	-	13.5	260	2.4
10	**350**	**1.8**	142.9	"	"	10000	-	12	290	2.2
8.7	**405**	**1.55**	164.9	"	"	10000	-	10.5	335	1.9
7.8	**450**	**1.4**	182.8	"	"	10000	-	9.4	375	1.7
7.0	**500**	**1.25**	204.7	"	"	10000	-	8.4	420	1.5
6.3	**560**	**1.15**	226.9	"	"	10000	-	7.6	460	1.35
5.5	**640**	**0.98**	258.6	"	"	10000	-	6.7	520	1.2
5.0	**700**	**0.9**	286.7	"	"	10000	-	6.0	580	1.1
4.1	**760**	**0.91**	351.7	**BG50G10-../DPE08LA4**	56	10000	-	4.9	620	1.1
9.0	**390**	**3.1**	158.0	**BG60Z-../DPE08LA4**	97	16000	-	11	320	3.8
8.2	**430**	**2.8**	175.1	"	"	16000	-	9.8	360	3.3
7.0	**500**	**2.4**	204.6	"	"	16000	-	8.4	420	2.9
6.3	**560**	**2.1**	226.7	"	"	16000	-	7.6	460	2.6
5.8	**600**	**2.0**	247.7	"	"	16000	-	7.0	500	2.4
5.2	**670**	**1.8**	274.5	"	"	16000	-	6.3	560	2.1
4.7	**620**	**2.1**	306.1	**BG60G20-../DPE08LA4**	105	16000	-	5.6	500	2.6
4.3	**680**	**1.9**	334.3	"	"	16000	-	5.2	530	2.5
3.9	**750**	**1.75**	370.5	"	"	16000	-	4.7	590	2.2
3.3	**900**	**1.45**	437.3	"	"	16000	-	4.0	710	1.85
2.9	**1060**	**1.25**	504.9	"	"	16000	-	3.4	890	1.45
2.6	**1190**	**1.1**	559.5	"	"	16000	-	3.1	970	1.35
2.2	**1440**	**0.9**	651.3	"	"	16000	-	2.7	1140	1.15
3.7	**800**	**3.1**	387.6	**BG70G20-../DPE08LA4**	135	20000	-	4.5	630	4.0
3.4	**910**	**2.7**	417.8	"	"	20000	-	4.1	730	3.4
2.9	**1070**	**2.3**	495.9	"	"	20000	-	3.5	860	2.9
2.5	**1260**	**2.0**	577.3	"	"	20000	-	3.0	1030	2.4
2.2	**1430**	**1.75**	665.8	"	"	20000	-	2.6	1190	2.1
1.8	**1760**	**1.4**	790.2	"	"	20000	-	2.2	1400	1.8
1.7	**1870**	**1.35**	877.6	"	"	20000	-	2.0	1560	1.6
1.4	**2300**	**1.1**	1035	"	"	20000	-	1.7	1850	1.35
1.2	**2700**	**0.93**	1193	"	"	20000	-	1.5	2100	1.2
1.1	**2950**	**0.85**	1389	"	"	20000	-	1.3	2450	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.37 kW



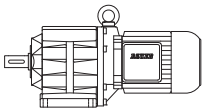
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
1.8	**1440**	**3.2**	817.4	**BG80G40-../DPE08LA4**	216	26000	-	2.1	1160	4.0
1.6	**1670**	**2.8**	907.6	"	"	26000	-	1.9	1320	3.5
1.4	**1980**	**2.3**	1042	"	"	26000	-	1.7	1530	3.0
1.2	**2400**	**1.9**	1261	"	"	26000	-	1.4	1980	2.3
1.1	**2650**	**1.75**	1400	"	"	26000	-	1.3	2150	2.1
0.9	**3350**	**1.35**	1653	"	"	26000	-	1.1	2650	1.75
0.7	**4500**	**1.0**	2070	"	"	26000	-	0.85	3600	1.3
0.9	**3250**	**2.8**	1583	**BG90G50-../DPE08LA4**	326	65000	-	1.1	2500	3.7
0.85	**3450**	**2.7**	1756	"	"	65000	-	1.0	2850	3.2
0.75	**4000**	**2.3**	2026	"	"	65000	-	0.85	3450	2.7
0.6	**5200**	**1.75**	2514	"	"	65000	-	0.7	4350	2.1
0.55	**5700**	**1.6**	2786	"	"	65000	-	0.65	4750	1.95
0.45	**7100**	**1.3**	3177	"	"	65000	-	0.55	5700	1.6
0.41	**7900**	**1.15**	3521	"	"	65000	-	0.49	6500	1.4
0.39	**6500**	**2.8**	3644	**BG100G50-../DPE08LA4**	513	90000	-	0.47	5000	3.7
0.33	**8200**	**2.3**	4366	"	"	90000	-	0.4	6300	2.9
0.3	**9200**	**2.0**	4839	"	"	90000	-	0.36	7300	2.5
0.25	**11600**	**1.6**	5888	"	"	90000	-	0.3	9200	2.0
0.22	**13500**	**1.35**	6529	"	"	90000	-	0.27	10500	1.75
0.19	**16000**	**1.15**	7533	"	"	90000	-	0.23	12800	1.45
0.18	**17100**	**1.1**	8350	"	"	90000	-	0.21	14300	1.3

P = 0.55 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
510	**10.2**	**1.75**	2.82	**BG06-../DPE08XA4**	19	470	-	610	8.6	2.1
380	**13.8**	**1.45**	3.78	"	"	520	-	455	11.5	1.75
315	**16.6**	**1.35**	4.54	"	"	530	-	380	13.8	1.6
240	**21.5**	**1.1**	5.96	"	"	570	-	290	18.1	1.35
205	**25.5**	**1.0**	7.01	"	"	580	-	245	21	1.25
186	**28**	**1.0**	7.65	"	"	580	-	225	23	1.2
170	**30.5**	**0.92**	8.39	"	"	600	-	205	25.5	1.1
152	**34.5**	**0.87**	9.38	"	"	640	-	183	28.5	1.05
139	**37.5**	**0.83**	10.24	"	"	640	-	167	31	1.0
210	**25**	**3.2**	6.78	**BG10-../DPE08XA4**	19	660	920	255	20.5	4.0
187	**28**	**3.2**	7.63	"	"	900	1250	225	23	3.9
176	**29.5**	**3.0**	8.07	"	"	660	920	215	24	3.7
153	**34**	**2.9**	9.33	"	"	950	1330	184	28.5	3.4
138	**38**	**2.6**	10.34	"	"	1000	1400	166	31.5	3.1
120	**43.5**	**2.4**	11.92	"	"	1030	1440	144	36	2.9
108	**48.5**	**2.3**	13.21	"	"	1070	1490	130	40	2.8
98	**53**	**2.2**	14.58	"	"	1100	1540	118	44.5	2.6
88	**59**	**2.0**	16.15	"	"	1140	1590	106	49.5	2.4
77	**68**	**1.75**	18.51	"	"	1210	1690	93	56	2.1
70	**75**	**1.6**	20.51	"	"	1290	1800	84	62	1.95
65	**80**	**1.5**	22.04	"	"	1330	1860	78	67	1.8
59	**89**	**1.35**	24.42	"	"	1410	1970	71	73	1.65
55	**95**	**1.25**	26.26	"	"	1460	2000	66	79	1.5
49	**107**	**1.1**	29.09	"	"	1540	2150	59	89	1.35
45.5	**115**	**1.05**	31.52	"	"	1600	2200	55	95	1.25
41	**128**	**0.94**	34.92	"	"	1690	2350	49	107	1.1
36	**145**	**0.83**	39.70	"	"	1780	2450	43.5	120	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

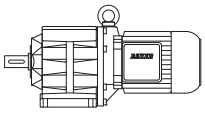
P = 0.55 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
53	**99**	**1.5**	27.08	**BG15-../DPE08XA4**	19	3000	6000	64	82	1.85
47.5	**110**	**1.35**	30.08	"	"	3000	6000	57	92	1.65
42	**125**	**1.2**	34.20	"	"	3000	6000	50	105	1.45
37.5	**140**	**1.05**	37.90	"	"	3000	6000	45.5	115	1.3
97	**54**	**3.2**	14.67	**BG20-../DPE08XA4**	22	3050	-	117	44.5	3.9
92	**57**	**3.1**	15.58	"	"	3100	-	110	47.5	3.7
83	**63**	**2.9**	17.31	"	"	3200	-	99	53	3.5
72	**72**	**2.7**	19.95	"	"	3350	-	86	61	3.2
65	**80**	**2.5**	22.16	"	"	3500	-	78	67	3.0
62	**84**	**2.4**	23.22	"	"	3550	-	74	70	2.9
56	**93**	**2.2**	25.79	"	"	3700	-	67	78	2.6
51	**102**	**1.95**	27.85	"	"	3800	-	62	84	2.4
46	**114**	**1.75**	30.94	"	"	4000	-	56	93	2.2
43	**122**	**1.65**	33.33	"	"	4100	-	52	101	2.0
38.5	**136**	**1.45**	37.02	"	"	4300	-	46.5	112	1.8
34.5	**152**	**1.3**	41.76	"	"	4500	-	41	128	1.55
31	**169**	**1.2**	46.38	"	"	4700	-	37	141	1.4
30	**175**	**1.15**	47.92	"	"	4750	-	36	145	1.4
27	**194**	**1.05**	53.22	"	"	4950	-	32.5	161	1.25
24.5	**210**	**0.95**	59.07	"	"	5000	-	29	181	1.1
22	**235**	**0.85**	65.62	"	"	5000	-	26.5	198	1.0
21.5	**240**	**0.83**	67.53	**BG20Z-../DPE08XA4**	23	5000	-	25.5	205	0.98
56	**93**	**3.2**	25.45	**BG30-../DPE08XA4**	26	4850	-	68	77	3.9
51	**102**	**2.9**	28.24	"	"	5100	-	61	86	3.5
48	**109**	**2.8**	29.83	"	"	5200	-	58	90	3.3
43	**122**	**2.5**	33.09	"	"	5400	-	52	101	3.0
40.5	**129**	**2.3**	35.17	"	"	5500	-	49	107	2.8
36.5	**143**	**2.1**	39.02	"	"	5800	-	44	119	2.5
33.5	**156**	**1.9**	42.46	"	"	5900	-	40.5	129	2.3
30.5	**172**	**1.75**	47.11	"	"	6000	-	36.5	143	2.1
27.5	**191**	**1.55**	52.44	"	"	6000	-	33	159	1.9
24.5	**210**	**1.45**	58.18	"	"	6000	-	29.5	178	1.7
23.5	**220**	**1.35**	60.79	"	"	6000	-	28.5	184	1.65
21.5	**240**	**1.25**	67.44	"	"	6000	-	25.5	205	1.45
19.5	**265**	**1.15**	73.51	**BG30Z-../DPE08XA4**	28	6000	-	23.5	220	1.35
17.5	**300**	**1.0**	81.55	"	"	6000	-	21	250	1.2
16.5	**315**	**0.95**	86.13	"	"	6000	-	20	260	1.15
15	**350**	**0.86**	95.55	"	"	6000	-	18	290	1.05
37.5	**140**	**3.0**	37.96	**BG40-../DPE08XA4**	41	7000	-	45.5	115	3.7
35.5	**147**	**2.9**	40.19	"	"	7000	-	43	122	3.5
32	**164**	**2.6**	44.62	"	"	7000	-	38.5	136	3.1
29.5	**178**	**2.4**	48.36	"	"	7000	-	35.5	147	2.9
26.5	**198**	**2.1**	53.69	"	"	7000	-	32	164	2.6
24	**215**	**2.0**	59.64	"	"	7000	-	29	181	2.3
21.5	**240**	**1.75**	66.20	"	"	7000	-	26	200	2.1
21	**250**	**1.7**	67.74	**BG40Z-../DPE08XA4**	44	7000	-	25.5	205	2.1
19	**275**	**1.55**	75.19	"	"	7000	-	23	225	1.9
17.5	**300**	**1.4**	82.00	"	"	7000	-	21	250	1.7
16	**325**	**1.3**	91.02	"	"	7000	-	19	275	1.55
15	**350**	**1.2**	96.86	"	"	7000	-	18	290	1.45
13.5	**385**	**1.1**	107.5	"	"	7000	-	16	325	1.3
12	**435**	**0.98**	121.3	"	"	7000	-	14.5	360	1.2
11	**475**	**0.89**	134.6	"	"	7000	-	13	400	1.05
10.5	**500**	**0.85**	141.4	"	"	7000	-	12.5	420	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

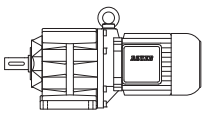
P = 0.55 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
27.5	**191**	**3.3**	52.12	**BG50-../DPE08XA4**	48	10000	-	33	159	4.0
24	**215**	**2.9**	59.42	"	"	10000	-	29	181	3.5
22	**235**	**2.7**	65.86	"	"	10000	-	26	200	3.2
20	**260**	**2.4**	71.97	**BG50Z-../DPE08XA4**	53	10000	-	24	215	2.9
18	**290**	**2.2**	79.78	"	"	10000	-	21.5	240	2.6
15	**350**	**1.8**	95.58	"	"	10000	-	18	290	2.2
13.5	**385**	**1.65**	106.0	"	"	10000	-	16.5	315	2.0
11.5	**455**	**1.4**	128.9	"	"	10000	-	13.5	385	1.65
10	**520**	**1.2**	142.9	"	"	10000	-	12	435	1.45
8.7	**600**	**1.05**	164.9	"	"	10000	-	10.5	500	1.25
7.8	**670**	**0.94**	182.8	"	"	10000	-	9.4	550	1.15
7.0	**750**	**0.84**	204.7	"	"	10000	-	8.4	620	1.0
14.5	**360**	**3.3**	101.0	**BG60Z-../DPE08XA4**	98	16000	-	17	305	3.9
12	**435**	**2.8**	119.2	"	"	16000	-	14.5	360	3.3
11	**475**	**2.5**	132.1	"	"	16000	-	13	400	3.0
9.0	**580**	**2.1**	158.0	"	"	16000	-	11	475	2.5
8.2	**640**	**1.9**	175.1	"	"	16000	-	9.8	530	2.3
7.0	**750**	**1.6**	204.6	"	"	16000	-	8.4	620	1.95
6.3	**830**	**1.45**	226.7	"	"	16000	-	7.6	690	1.75
5.8	**900**	**1.35**	247.7	"	"	16000	-	7.0	750	1.6
5.2	**1010**	**1.2**	274.5	"	"	16000	-	6.3	830	1.45
4.7	**980**	**1.35**	306.1	**BG60G20-../DPE08XA4**	106	16000	-	5.6	800	1.65
4.3	**1080**	**1.2**	334.3	"	"	16000	-	5.2	870	1.5
3.9	**1190**	**1.1**	370.5	"	"	16000	-	4.7	960	1.35
3.3	**1420**	**0.92**	437.3	"	"	16000	-	4.0	1140	1.15
7.4	**700**	**3.3**	194.4	**BG70Z-../DPE08XA4**	138	20000	-	8.8	590	3.9
6.8	**770**	**3.0**	210.5	"	"	20000	-	8.2	640	3.6
5.7	**920**	**2.5**	249.8	"	"	20000	-	6.9	760	3.0
5.6	**830**	**3.0**	255.5	**BG70G20-../DPE08XA4**	136	20000	-	6.7	670	3.7
5.2	**890**	**2.8**	276.7	"	"	20000	-	6.2	730	3.4
4.4	**1050**	**2.4**	328.4	"	"	20000	-	5.3	850	2.9
3.7	**1270**	**1.95**	387.6	"	"	20000	-	4.5	1020	2.5
3.4	**1420**	**1.75**	417.8	"	"	20000	-	4.1	1150	2.2
2.9	**1660**	**1.5**	495.9	"	"	20000	-	3.5	1350	1.85
2.5	**1950**	**1.3**	577.3	"	"	20000	-	3.0	1600	1.55
2.2	**2200**	**1.15**	665.8	"	"	20000	-	2.6	1850	1.35
1.8	**2700**	**0.93**	790.2	"	"	20000	-	2.2	2150	1.15
1.7	**2850**	**0.88**	877.6	"	"	20000	-	2.0	2400	1.05
2.5	**1720**	**2.7**	572.0	**BG80G40-../DPE08XA4**	217	26000	-	3.0	1370	3.4
2.2	**1900**	**2.4**	657.8	"	"	26000	-	2.6	1540	3.0
2.0	**2100**	**2.2**	730.3	"	"	26000	-	2.4	1690	2.7
1.8	**2350**	**1.95**	817.4	"	"	26000	-	2.1	1970	2.3
1.6	**2700**	**1.7**	907.6	"	"	26000	-	1.9	2200	2.1
1.4	**3200**	**1.45**	1042	"	"	26000	-	1.7	2500	1.85
1.2	**3800**	**1.2**	1261	"	"	26000	-	1.4	3200	1.45
1.1	**4200**	**1.1**	1400	"	"	26000	-	1.3	3500	1.3
1.3	**3350**	**2.7**	1174	**BG90G50-../DPE08XA4**	327	65000	-	1.5	2800	3.3
1.1	**4100**	**2.2**	1301	"	"	65000	-	1.4	3050	3.0
0.9	**5100**	**1.8**	1583	"	"	65000	-	1.1	4100	2.2
0.85	**5500**	**1.65**	1756	"	"	65000	-	1.0	4550	2.0
0.75	**6300**	**1.45**	2026	"	"	65000	-	0.85	5500	1.65
0.6	**8000**	**1.15**	2514	"	"	65000	-	0.7	6800	1.35
0.55	**8800**	**1.05**	2786	"	"	65000	-	0.65	7400	1.25
0.55	**7100**	**2.6**	2656	**BG100G50-../DPE08XA4**	514	90000	-	0.65	5700	3.2
0.49	**8400**	**2.2**	2952	"	"	90000	-	0.6	6500	2.8
0.44	**9400**	**1.95**	3286	"	"	90000	-	0.55	7000	2.6
0.39	**10900**	**1.7**	3644	"	"	90000	-	0.47	8600	2.2
0.33	**13400**	**1.4**	4366	"	"	90000	-	0.4	10600	1.75
0.3	**15000**	**1.25**	4839	"	"	90000	-	0.36	12000	1.55

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

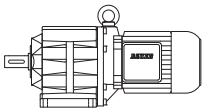
P = 0.75 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
580	**12.3**	**4.6**	2.52	**BG10-../DPE09LA4**	26	570	790	700	10.2	5.5
425	**16.8**	**3.7**	3.42	"	"	630	880	510	14	4.4
335	**21**	**3.2**	4.36	"	"	650	910	400	17.9	3.8
275	**26**	**2.9**	5.34	"	"	620	910	330	21.5	3.5
215	**33**	**2.7**	6.89	"	"	850	1200	255	28	3.1
191	**37.5**	**2.4**	7.63	"	"	900	1250	230	31	2.9
180	**39.5**	**2.2**	8.07	"	"	660	920	220	32.5	2.7
156	**45.5**	**2.1**	9.33	"	"	950	1330	187	38	2.6
141	**50**	**2.0**	10.34	"	"	1000	1400	169	42	2.4
122	**58**	**1.8**	11.92	"	"	1030	1440	146	49	2.1
110	**65**	**1.7**	13.21	"	"	1070	1490	132	54	2.0
100	**71**	**1.6**	14.58	"	"	1100	1540	120	59	1.95
90	**79**	**1.5**	16.15	"	"	1140	1590	108	66	1.75
79	**90**	**1.35**	18.51	"	"	1210	1690	95	75	1.6
71	**100**	**1.2**	20.51	"	"	1290	1800	85	84	1.45
66	**108**	**1.1**	22.04	"	"	1330	1860	79	90	1.35
60	**119**	**1.0**	24.42	"	"	1410	1970	72	99	1.2
56	**127**	**0.94**	26.26	"	"	1460	2000	67	106	1.15
50	**143**	**0.84**	29.09	"	"	1540	2150	60	119	1.0
54	**132**	**1.15**	27.08	**BG15-../DPE09LA4**	26	3000	6000	65	110	1.35
48.5	**147**	**1.0**	30.08	"	"	3000	6000	58	123	1.2
42.5	**168**	**0.89**	34.20	"	"	3000	6000	51	140	1.05
38.5	**186**	**0.81**	37.90	"	"	3000	6000	46	155	0.97
175	**40.5**	**3.0**	8.29	**BG20-../DPE09LA4**	28	2250	-	210	34	3.6
163	**43.5**	**3.3**	8.91	"	"	2600	-	196	36.5	3.9
151	**47**	**2.6**	9.65	"	"	2250	-	181	39.5	3.1
138	**51**	**3.0**	10.54	"	"	2700	-	166	43	3.6
124	**57**	**2.8**	11.71	"	"	2800	-	149	48	3.3
110	**65**	**2.6**	13.21	"	"	2900	-	132	54	3.1
99	**72**	**2.4**	14.67	"	"	3050	-	119	60	2.9
94	**76**	**2.3**	15.58	"	"	3100	-	112	63	2.8
84	**85**	**2.2**	17.31	"	"	3200	-	101	70	2.6
73	**98**	**2.0**	19.95	"	"	3350	-	88	81	2.4
66	**108**	**1.85**	22.16	"	"	3500	-	79	90	2.2
63	**113**	**1.75**	23.22	"	"	3550	-	75	95	2.1
57	**125**	**1.6**	25.79	"	"	3700	-	68	105	1.9
53	**135**	**1.5**	27.85	"	"	3800	-	63	113	1.75
47	**152**	**1.3**	30.94	"	"	4000	-	57	125	1.6
44	**162**	**1.25**	33.33	"	"	4100	-	53	135	1.5
39.5	**181**	**1.1**	37.02	"	"	4300	-	47.5	150	1.35
35	**200**	**1.0**	41.76	"	"	4500	-	42	170	1.2
31.5	**225**	**0.89**	46.38	"	"	4700	-	38	188	1.05
30.5	**230**	**0.87**	47.92	"	"	4750	-	36.5	196	1.0
77	**93**	**3.2**	18.93	**BG30-../DPE09LA4**	33	4100	-	92	77	3.9
73	**98**	**3.1**	19.99	"	"	4200	-	88	81	3.7
66	**108**	**2.8**	22.18	"	"	4600	-	79	90	3.3
57	**125**	**2.4**	25.45	"	"	4850	-	69	103	2.9
52	**137**	**2.2**	28.24	"	"	5100	-	62	115	2.6
49	**146**	**2.1**	29.83	"	"	5200	-	59	121	2.5
44	**162**	**1.85**	33.09	"	"	5400	-	53	135	2.2
41.5	**172**	**1.75**	35.17	"	"	5500	-	49.5	144	2.1
37.5	**191**	**1.55**	39.02	"	"	5800	-	45	159	1.9
34.5	**205**	**1.45**	42.46	"	"	5900	-	41	174	1.7
31	**230**	**1.3**	47.11	"	"	6000	-	37	193	1.55
28	**255**	**1.2**	52.44	"	"	6000	-	33.5	210	1.45
25	**285**	**1.05**	58.18	"	"	6000	-	30	235	1.3
24	**295**	**1.0**	60.79	"	"	6000	-	29	245	1.2
22	**325**	**0.92**	67.44	"	"	6000	-	26	275	1.1
20	**355**	**0.85**	73.51	**BG30Z-../DPE09LA4**	35	6000	-	24	295	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

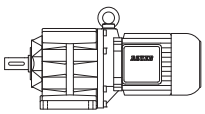
P = 0.75 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
56	**127**	**3.3**	26.01	**BG40-../DPE09LA4**	47	6500	-	67	106	4.0
49.5	**144**	**3.0**	29.34	"	"	6800	-	60	119	3.6
45	**159**	**2.7**	32.57	"	"	7000	-	54	132	3.2
42.5	**168**	**2.5**	34.20	"	"	7000	-	51	140	3.0
38.5	**186**	**2.3**	37.96	"	"	7000	-	46	155	2.7
36.5	**196**	**2.2**	40.19	"	"	7000	-	43.5	164	2.6
32.5	**220**	**1.95**	44.62	"	"	7000	-	39	183	2.3
30	**235**	**1.8**	48.36	"	"	7000	-	36	198	2.1
27.5	**260**	**1.65**	53.69	"	"	7000	-	32.5	220	1.95
24.5	**290**	**1.45**	59.64	"	"	7000	-	29.5	240	1.75
22	**325**	**1.3**	66.20	"	"	7000	-	26.5	270	1.55
21.5	**330**	**1.3**	67.74	**BG40Z-../DPE09LA4**	51	7000	-	26	275	1.55
19.5	**365**	**1.15**	75.19	"	"	7000	-	23.5	300	1.4
18	**395**	**1.1**	82.00	"	"	7000	-	21.5	330	1.3
16	**445**	**0.96**	91.02	"	"	7000	-	19.5	365	1.15
15	**475**	**0.89**	96.86	"	"	7000	-	18	395	1.1
13.5	**530**	**0.8**	107.5	"	"	7000	-	16.5	430	0.99
35	**200**	**3.2**	42.00	**BG50-../DPE09LA4**	55	10000	-	41.5	172	3.7
31	**230**	**2.7**	47.02	"	"	10000	-	37.5	191	3.3
28	**255**	**2.5**	52.12	"	"	10000	-	33.5	210	3.0
24.5	**290**	**2.2**	59.42	"	"	10000	-	29.5	240	2.6
22.5	**315**	**2.0**	65.86	"	"	10000	-	26.5	270	2.3
20.5	**345**	**1.85**	71.97	**BG50Z-../DPE09LA4**	60	10000	-	24.5	290	2.2
18.5	**385**	**1.65**	79.78	"	"	10000	-	22	325	1.95
15.5	**460**	**1.35**	95.58	"	"	10000	-	18.5	385	1.65
14	**510**	**1.25**	106.0	"	"	10000	-	16.5	430	1.45
11.5	**620**	**1.0**	128.9	"	"	10000	-	13.5	530	1.2
10.5	**680**	**0.93**	142.9	"	"	10000	-	12.5	570	1.1
19.5	**365**	**3.3**	75.71	**BG60Z-../DPE09LA4**	105	16000	-	23	310	3.9
16	**445**	**2.7**	91.09	"	"	16000	-	19.5	365	3.3
14.5	**490**	**2.4**	101.0	"	"	16000	-	17.5	405	3.0
12.5	**570**	**2.1**	119.2	"	"	16000	-	15	475	2.5
11	**650**	**1.85**	132.1	"	"	16000	-	13.5	530	2.3
9.2	**770**	**1.55**	158.0	"	"	16000	-	11.5	620	1.95
8.3	**860**	**1.4**	175.1	"	"	16000	-	10	710	1.7
7.1	**1000**	**1.2**	204.6	"	"	16000	-	8.6	830	1.45
6.4	**1110**	**1.1**	226.7	"	"	16000	-	7.7	930	1.3
5.9	**1210**	**0.99**	247.7	"	"	16000	-	7.1	1000	1.2
5.3	**1350**	**0.89**	274.5	"	"	16000	-	6.4	1110	1.1
4.8	**1360**	**0.96**	306.1	**BG60G20-../DPE09LA4**	112	16000	-	5.7	1120	1.15
4.4	**1480**	**0.88**	334.3	"	"	16000	-	5.3	1210	1.05
4.0	**1630**	**0.8**	370.5	"	"	16000	-	4.7	1360	0.96
9.9	**720**	**3.2**	147.2	**BG70Z-../DPE09LA4**	145	20000	-	12	590	3.9
8.9	**800**	**2.9**	163.8	"	"	20000	-	11	650	3.5
7.5	**950**	**2.4**	194.4	"	"	20000	-	9.0	790	2.9
6.9	**1030**	**2.2**	210.5	"	"	20000	-	8.3	860	2.7
5.9	**1210**	**1.9**	249.8	"	"	20000	-	7.0	1020	2.3
5.7	**1140**	**2.2**	255.5	**BG70G20-../DPE09LA4**	142	20000	-	6.9	930	2.7
5.3	**1230**	**2.0**	276.7	"	"	20000	-	6.3	1020	2.5
4.5	**1450**	**1.7**	328.4	"	"	20000	-	5.3	1210	2.1
3.8	**1730**	**1.45**	387.6	"	"	20000	-	4.5	1440	1.75
3.5	**1920**	**1.3**	417.8	"	"	20000	-	4.2	1580	1.6
3.0	**2200**	**1.15**	495.9	"	"	20000	-	3.6	1840	1.35
2.6	**2600**	**0.96**	577.3	"	"	20000	-	3.1	2150	1.15
2.2	**3050**	**0.82**	665.8	"	"	20000	-	2.7	2450	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.75 kW



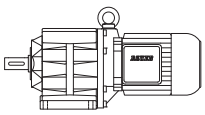
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
4.1	**1400**	**3.3**	360.0	**BG80G40-../DPE09LA4**	224	26000	-	4.9	1120	4.1
3.7	**1560**	**2.9**	399.8	"	"	26000	-	4.4	1250	3.7
3.4	**1760**	**2.6**	436.2	"	"	26000	-	4.0	1450	3.2
3.0	**2000**	**2.3**	484.3	"	"	26000	-	3.6	1610	2.9
2.6	**2350**	**1.95**	572.0	"	"	26000	-	3.1	1930	2.4
2.3	**2600**	**1.75**	657.8	"	"	26000	-	2.7	2150	2.1
2.0	**3050**	**1.5**	730.3	"	"	26000	-	2.4	2450	1.9
1.8	**3450**	**1.35**	817.4	"	"	26000	-	2.2	2700	1.7
1.6	**3900**	**1.2**	907.6	"	"	26000	-	2.0	3000	1.55
1.4	**4550**	**1.0**	1042	"	"	26000	-	1.7	3650	1.25
1.2	**5400**	**0.85**	1261	"	"	26000	-	1.4	4550	1.0
2.1	**2750**	**3.3**	714.2	**BG90G50-../DPE09LA4**	334	65000	-	2.5	2200	4.2
1.7	**3500**	**2.6**	883.7	"	"	65000	-	2.0	2900	3.2
1.3	**4800**	**1.9**	1174	"	"	65000	-	1.5	4100	2.2
1.2	**5200**	**1.75**	1301	"	"	65000	-	1.4	4400	2.1
0.95	**6800**	**1.35**	1583	"	"	65000	-	1.1	5800	1.6
0.85	**7700**	**1.2**	1756	"	"	65000	-	1.0	6400	1.45
0.75	**8800**	**1.05**	2026	"	"	65000	-	0.9	7200	1.3
0.9	**6300**	**2.9**	1678	**BG100G50-../DPE09LA4**	521	90000	-	1.1	4900	3.8
0.8	**7100**	**2.6**	1867	"	"	90000	-	0.95	5700	3.2
0.7	**8100**	**2.3**	2154	"	"	90000	-	0.85	6300	2.9
0.55	**10600**	**1.75**	2656	"	"	90000	-	0.7	7800	2.4
0.5	**12000**	**1.55**	2952	"	"	90000	-	0.6	9600	1.95
0.45	**13400**	**1.4**	3286	"	"	90000	-	0.55	10500	1.75
0.4	**15400**	**1.2**	3644	"	"	90000	-	0.48	12400	1.5

P = 1.1 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
580	**18.1**	**3.1**	2.52	**BG10-../DPE09XA4**	30	570	790	700	15	3.7
425	**24.5**	**2.5**	3.42	"	"	630	880	510	20.5	3.0
335	**31**	**2.2**	4.36	"	"	650	910	400	26	2.6
275	**38**	**1.95**	5.34	"	"	620	910	330	31.5	2.4
215	**48.5**	**1.8**	6.89	"	"	850	1200	255	41	2.1
191	**55**	**1.6**	7.63	"	"	900	1250	230	45.5	1.95
180	**58**	**1.5**	8.07	"	"	660	920	220	47.5	1.85
156	**67**	**1.45**	9.33	"	"	950	1330	187	56	1.75
141	**74**	**1.35**	10.34	"	"	1000	1400	169	62	1.6
122	**86**	**1.2**	11.92	"	"	1030	1440	146	71	1.5
110	**95**	**1.15**	13.21	"	"	1070	1490	132	79	1.4
100	**105**	**1.1**	14.58	"	"	1100	1540	120	87	1.3
90	**116**	**1.0**	16.15	"	"	1140	1590	108	97	1.2
79	**132**	**0.91**	18.51	"	"	1210	1690	95	110	1.1
71	**147**	**0.82**	20.51	"	"	1290	1800	85	123	0.98
265	**39.5**	**2.9**	5.49	**BG20-../DPE09XA4**	32	2100	-	320	32.5	3.5
240	**43.5**	**2.9**	6.06	"	"	2250	-	290	36	3.5
225	**46.5**	**2.6**	6.48	"	"	2250	-	270	38.5	3.2
220	**47.5**	**2.7**	6.73	"	"	2350	2100	260	40	3.3
181	**58**	**2.4**	8.02	"	"	2500	-	220	47.5	2.9
175	**60**	**2.0**	8.29	"	"	2250	-	210	50	2.4
163	**64**	**2.2**	8.91	"	"	2600	-	196	53	2.7
151	**69**	**1.75**	9.65	"	"	2250	-	181	58	2.1
138	**76**	**2.0**	10.54	"	"	2700	-	166	63	2.4
124	**84**	**1.9**	11.71	"	"	2800	-	149	70	2.3
110	**95**	**1.75**	13.21	"	"	2900	-	132	79	2.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

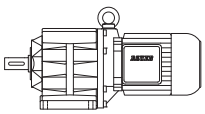
P = 1.1 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
99	**106**	**1.6**	14.67	**BG20-../DPE09XA4**	32	3050	-	119	88	1.95
94	**111**	**1.6**	15.58	"	"	3100	-	112	93	1.9
84	**125**	**1.45**	17.31	"	"	3200	-	101	104	1.75
73	**143**	**1.35**	19.95	"	"	3350	-	88	119	1.65
66	**159**	**1.25**	22.16	"	"	3500	-	79	132	1.5
63	**166**	**1.2**	23.22	"	"	3550	-	75	140	1.45
57	**184**	**1.1**	25.79	"	"	3700	-	68	154	1.3
53	**198**	**1.0**	27.85	"	"	3800	-	63	166	1.2
47	**220**	**0.91**	30.94	"	"	4000	-	57	184	1.1
44	**235**	**0.85**	33.33	"	"	4100	-	53	198	1.0
123	**85**	**3.2**	11.82	**BG30-../DPE09XA4**	37	3200	-	148	70	3.9
106	**99**	**3.0**	13.77	"	"	3150	-	127	82	3.6
95	**110**	**2.7**	15.27	"	"	3450	-	114	92	3.3
85	**123**	**2.4**	17.06	"	"	3700	-	102	102	2.9
77	**136**	**2.2**	18.93	"	"	4100	-	92	114	2.6
73	**143**	**2.1**	19.99	"	"	4200	-	88	119	2.5
66	**159**	**1.9**	22.18	"	"	4600	-	79	132	2.3
57	**184**	**1.65**	25.45	"	"	4850	-	69	152	1.95
52	**200**	**1.5**	28.24	"	"	5100	-	62	169	1.8
49	**210**	**1.45**	29.83	"	"	5200	-	59	178	1.7
44	**235**	**1.3**	33.09	"	"	5400	-	53	198	1.5
41.5	**250**	**1.2**	35.17	"	"	5500	-	49.5	210	1.45
37.5	**280**	**1.05**	39.02	"	"	5800	-	45	230	1.3
34.5	**300**	**1.0**	42.46	"	"	5900	-	41	255	1.2
31	**335**	**0.9**	47.11	"	"	6000	-	37	280	1.05
28	**375**	**0.8**	52.44	"	"	6000	-	33.5	310	0.97
80	**131**	**3.2**	18.19	**BG40-../DPE09XA4**	51	5600	-	96	109	3.9
74	**141**	**3.0**	19.84	"	"	5800	-	88	119	3.6
66	**159**	**2.7**	22.02	"	"	6000	-	80	131	3.2
62	**169**	**2.5**	23.43	"	"	6200	-	75	140	3.0
56	**187**	**2.3**	26.01	"	"	6500	-	67	156	2.7
49.5	**210**	**2.0**	29.34	"	"	6800	-	60	175	2.4
45	**230**	**1.85**	32.57	"	"	7000	-	54	194	2.2
42.5	**245**	**1.75**	34.20	"	"	7000	-	51	205	2.1
38.5	**270**	**1.55**	37.96	"	"	7000	-	46	225	1.9
36.5	**285**	**1.5**	40.19	"	"	7000	-	43.5	240	1.75
32.5	**320**	**1.35**	44.62	"	"	7000	-	39	265	1.6
30	**350**	**1.2**	48.36	"	"	7000	-	36	290	1.45
27.5	**380**	**1.1**	53.69	"	"	7000	-	32.5	320	1.35
24.5	**425**	**1.0**	59.64	"	"	7000	-	29.5	355	1.2
22	**475**	**0.89**	66.20	"	"	7000	-	26.5	395	1.1
21.5	**485**	**0.88**	67.74	**BG40Z-../DPE09XA4**	55	7000	-	26	400	1.05
19.5	**530**	**0.8**	75.19	"	"	7000	-	23.5	445	0.96
49	**210**	**3.0**	29.62	**BG50-../DPE09XA4**	59	8000	-	59	178	3.5
44.5	**235**	**2.7**	32.84	"	"	8700	-	53	198	3.2
38.5	**270**	**2.3**	37.89	"	"	10000	-	46	225	2.8
35	**300**	**2.1**	42.00	"	"	10000	-	41.5	250	2.5
31	**335**	**1.9**	47.02	"	"	10000	-	37.5	280	2.3
28	**375**	**1.7**	52.12	"	"	10000	-	33.5	310	2.0
24.5	**425**	**1.5**	59.42	"	"	10000	-	29.5	355	1.75
22.5	**465**	**1.35**	65.86	"	"	10000	-	26.5	395	1.6
20.5	**510**	**1.25**	71.97	**BG50Z-../DPE09XA4**	64	10000	-	24.5	425	1.5
18.5	**560**	**1.15**	79.78	"	"	10000	-	22	475	1.35
15.5	**670**	**0.94**	95.58	"	"	10000	-	18.5	560	1.15
14	**750**	**0.84**	106.0	"	"	10000	-	16.5	630	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

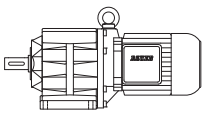
P = 1.1 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
29	**360**	**3.3**	50.31	**BG60-../DPE09XA4**	90	16000	-	35	300	4.0
26.5	**395**	**3.0**	55.76	"	"	16000	-	31.5	330	3.6
24	**435**	**2.8**	60.90	"	"	16000	-	29	360	3.3
21.5	**485**	**2.5**	67.49	"	"	16000	-	26	400	3.0
19.5	**530**	**2.3**	75.71	**BG60Z-../DPE09XA4**	109	16000	-	23	455	2.6
16	**650**	**1.85**	91.09	"	"	16000	-	19.5	530	2.3
14.5	**720**	**1.65**	101.0	"	"	16000	-	17.5	600	2.0
12.5	**840**	**1.45**	119.2	"	"	16000	-	15	700	1.7
11	**950**	**1.25**	132.1	"	"	16000	-	13.5	770	1.55
9.2	**1140**	**1.05**	158.0	"	"	16000	-	11.5	910	1.3
8.3	**1260**	**0.95**	175.1	"	"	16000	-	10	1050	1.15
7.1	**1470**	**0.82**	204.6	"	"	16000	-	8.6	1220	0.98
13	**800**	**2.9**	113.6	**BG70Z-../DPE09XA4**	149	20000	-	15.5	670	3.4
12	**870**	**2.6**	124.0	"	"	20000	-	14.5	720	3.2
9.9	**1060**	**2.2**	147.2	"	"	20000	-	12	870	2.6
8.9	**1180**	**1.95**	163.8	"	"	20000	-	11	950	2.4
7.5	**1400**	**1.65**	194.4	"	"	20000	-	9.0	1160	2.0
6.9	**1520**	**1.5**	210.5	"	"	20000	-	8.3	1260	1.85
5.9	**1780**	**1.3**	249.8	"	"	20000	-	7.0	1500	1.55
5.7	**1730**	**1.45**	255.5	**BG70G20-../DPE09XA4**	146	20000	-	6.9	1410	1.75
5.3	**1860**	**1.35**	276.7	"	"	20000	-	6.3	1550	1.6
4.5	**2150**	**1.15**	328.4	"	"	20000	-	5.3	1840	1.35
3.8	**2600**	**0.96**	387.6	"	"	20000	-	4.5	2150	1.15
3.5	**2850**	**0.88**	417.8	"	"	20000	-	4.2	2350	1.05
7.8	**1340**	**3.1**	186.8	**BG80Z-../DPE09XA4**	217	26000	-	9.4	1110	3.8
7.0	**1500**	**2.8**	207.4	"	"	26000	-	8.4	1250	3.4
5.8	**1500**	**3.1**	252.3	**BG80G40-../DPE09XA4**	228	26000	-	6.9	1210	3.8
5.2	**1710**	**2.7**	282.8	"	"	26000	-	6.2	1380	3.3
4.7	**1890**	**2.4**	314.0	"	"	26000	-	5.6	1530	3.0
4.1	**2200**	**2.1**	360.0	"	"	26000	-	4.9	1800	2.6
3.7	**2450**	**1.9**	399.8	"	"	26000	-	4.4	2000	2.3
3.4	**2750**	**1.65**	436.2	"	"	26000	-	4.0	2250	2.0
3.0	**3100**	**1.5**	484.3	"	"	26000	-	3.6	2500	1.85
2.6	**3650**	**1.25**	572.0	"	"	26000	-	3.1	3000	1.55
2.3	**4050**	**1.15**	657.8	"	"	26000	-	2.7	3400	1.35
2.0	**4750**	**0.97**	730.3	"	"	26000	-	2.4	3850	1.2
1.8	**5300**	**0.87**	817.4	"	"	26000	-	2.2	4250	1.1
2.9	**3100**	**3.0**	504.7	**BG90G50-../DPE09XA4**	338	65000	-	3.5	2500	3.7
2.5	**3600**	**2.6**	588.8	"	"	65000	-	3.0	2900	3.2
2.3	**3950**	**2.3**	644.7	"	"	65000	-	2.7	3250	2.8
2.1	**4350**	**2.1**	714.2	"	"	65000	-	2.5	3550	2.6
1.7	**5500**	**1.65**	883.7	"	"	65000	-	2.0	4550	2.0
1.3	**7400**	**1.25**	1174	"	"	65000	-	1.5	6300	1.45
1.2	**8000**	**1.15**	1301	"	"	65000	-	1.4	6800	1.35
1.8	**5800**	**3.2**	845.1	**BG100Z-../DPE09XA4**	526	90000	-	2.1	5000	3.7
1.4	**6100**	**3.0**	1043	**BG100G50-../DPE09XA4**	525	90000	-	1.7	4750	3.9
1.3	**6400**	**2.9**	1204	"	"	90000	-	1.5	5300	3.5
1.1	**8100**	**2.3**	1444	"	"	90000	-	1.3	6700	2.8
0.9	**10000**	**1.85**	1678	"	"	90000	-	1.1	7900	2.3
0.8	**11300**	**1.65**	1867	"	"	90000	-	0.95	9200	2.0
0.7	**12900**	**1.45**	2154	"	"	90000	-	0.85	10300	1.8
0.55	**16700**	**1.1**	2656	"	"	90000	-	0.7	12600	1.45

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

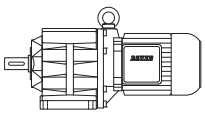
P = 1.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
580	**24.5**	**2.3**	2.52	**BG10-../DPE09XA4C**	32	570	790	700	20	2.8
425	**33.5**	**1.85**	3.42	"	"	630	880	510	28	2.2
335	**42.5**	**1.6**	4.36	"	"	650	910	400	35.5	1.9
275	**52**	**1.45**	5.34	"	"	620	910	330	43	1.75
215	**66**	**1.35**	6.89	"	"	850	1200	255	56	1.55
191	**75**	**1.2**	7.63	"	"	900	1250	230	62	1.45
180	**79**	**1.1**	8.07	"	"	660	920	220	65	1.35
156	**91**	**1.05**	9.33	"	"	950	1330	187	76	1.3
141	**101**	**0.98**	10.34	"	"	1000	1400	169	84	1.2
122	**117**	**0.9**	11.92	"	"	1030	1440	146	98	1.05
110	**130**	**0.85**	13.21	"	"	1070	1490	132	108	1.0
100	**143**	**0.8**	14.58	"	"	1100	1540	120	119	0.96
440	**32.5**	**2.8**	3.33	**BG20-../DPE09XA4C**	35	1830	-	530	27	3.4
335	**42.5**	**2.4**	4.38	"	"	1990	-	400	35.5	2.9
265	**54**	**2.1**	5.49	"	"	2100	-	320	44.5	2.6
240	**59**	**2.1**	6.06	"	"	2250	-	290	49	2.6
225	**63**	**1.95**	6.48	"	"	2250	-	270	53	2.3
220	**65**	**2.0**	6.73	"	"	2350	2100	260	55	2.4
181	**79**	**1.75**	8.02	"	"	2500	-	220	65	2.1
175	**81**	**1.5**	8.29	"	"	2250	-	210	68	1.8
163	**87**	**1.65**	8.91	"	"	2600	-	196	73	1.95
151	**94**	**1.3**	9.65	"	"	2250	-	181	79	1.55
138	**103**	**1.5**	10.54	"	"	2700	-	166	86	1.8
124	**115**	**1.35**	11.71	"	"	2800	-	149	96	1.65
110	**130**	**1.3**	13.21	"	"	2900	-	132	108	1.55
99	**144**	**1.2**	14.67	"	"	3050	-	119	120	1.45
94	**152**	**1.15**	15.58	"	"	3100	-	112	127	1.4
84	**170**	**1.1**	17.31	"	"	3200	-	101	141	1.3
73	**196**	**0.99**	19.95	"	"	3350	-	88	162	1.2
66	**215**	**0.93**	22.16	"	"	3500	-	79	181	1.1
63	**225**	**0.89**	23.22	"	"	3550	-	75	191	1.05
57	**250**	**0.8**	25.79	"	"	3700	-	68	210	0.95
215	**66**	**3.3**	6.75	**BG30-../DPE09XA4C**	39	1760	-	260	55	3.9
194	**73**	**3.2**	7.50	"	"	2750	-	235	60	3.9
184	**77**	**2.8**	7.91	"	"	1760	-	220	65	3.3
169	**84**	**2.9**	8.60	"	"	2800	-	205	69	3.6
152	**94**	**2.7**	9.55	"	"	3000	-	183	78	3.3
137	**104**	**2.6**	10.65	"	"	2950	-	164	87	3.1
123	**116**	**2.4**	11.82	"	"	3200	-	148	96	2.9
106	**135**	**2.2**	13.77	"	"	3150	-	127	112	2.6
95	**150**	**2.0**	15.27	"	"	3450	-	114	125	2.4
85	**168**	**1.8**	17.06	"	"	3700	-	102	140	2.1
77	**186**	**1.6**	18.93	"	"	4100	-	92	155	1.95
73	**196**	**1.55**	19.99	"	"	4200	-	88	162	1.85
66	**215**	**1.4**	22.18	"	"	4600	-	79	181	1.65
57	**250**	**1.2**	25.45	"	"	4850	-	69	205	1.45
52	**275**	**1.1**	28.24	"	"	5100	-	62	230	1.3
49	**290**	**1.05**	29.83	"	"	5200	-	59	240	1.25
44	**325**	**0.92**	33.09	"	"	5400	-	53	270	1.1
41.5	**345**	**0.87**	35.17	"	"	5500	-	49.5	285	1.05
113	**126**	**3.3**	12.86	**BG40-../DPE09XA4C**	54	4500	-	136	105	3.9
102	**140**	**3.0**	14.28	"	"	4900	-	122	117	3.6
89	**160**	**2.7**	16.39	"	"	5300	-	107	133	3.2
80	**179**	**2.4**	18.19	"	"	5600	-	96	149	2.9
74	**193**	**2.2**	19.84	"	"	5800	-	88	162	2.6
66	**215**	**2.0**	22.02	"	"	6000	-	80	179	2.4
62	**230**	**1.85**	23.43	"	"	6200	-	75	191	2.2
56	**255**	**1.65**	26.01	"	"	6500	-	67	210	2.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

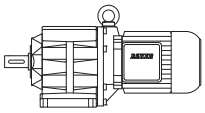
P = 1.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
49.5	**285**	**1.5**	29.34	**BG40-../DPE09XA4C**	54	6800	-	60	235	1.8
45	**315**	**1.35**	32.57	"	"	7000	-	54	265	1.6
42.5	**335**	**1.25**	34.20	"	"	7000	-	51	280	1.5
38.5	**370**	**1.15**	37.96	"	"	7000	-	46	310	1.35
36.5	**390**	**1.1**	40.19	"	"	7000	-	43.5	325	1.3
32.5	**440**	**0.97**	44.62	"	"	7000	-	39	365	1.15
30	**475**	**0.89**	48.36	"	"	7000	-	36	395	1.1
27.5	**520**	**0.82**	53.69	"	"	7000	-	32.5	440	0.97
67	**210**	**3.0**	21.96	**BG50-../DPE09XA4C**	62	8000	-	80	179	3.5
60	**235**	**2.7**	24.34	"	"	8700	-	72	198	3.2
49	**290**	**2.2**	29.62	"	"	8000	-	59	240	2.6
44.5	**320**	**1.95**	32.84	"	"	8700	-	53	270	2.3
38.5	**370**	**1.7**	37.89	"	"	10000	-	46	310	2.0
35	**405**	**1.55**	42.00	"	"	10000	-	41.5	345	1.85
31	**460**	**1.35**	47.02	"	"	10000	-	37.5	380	1.65
28	**510**	**1.25**	52.12	"	"	10000	-	33.5	425	1.5
24.5	**580**	**1.1**	59.42	"	"	10000	-	29.5	485	1.3
22.5	**630**	**1.0**	65.86	"	"	10000	-	26.5	540	1.15
20.5	**690**	**0.91**	71.97	**BG50Z-../DPE09XA4C**	67	10000	-	24.5	580	1.1
18.5	**770**	**0.82**	79.78	"	"	10000	-	22	650	0.97
37.5	**380**	**3.2**	38.85	**BG60-../DPE09XA4C**	92	16000	-	45	315	3.8
34	**420**	**2.9**	43.05	"	"	16000	-	40.5	350	3.4
29	**490**	**2.4**	50.31	"	"	16000	-	35	405	3.0
26.5	**540**	**2.2**	55.76	"	"	16000	-	31.5	450	2.7
24	**590**	**2.0**	60.90	"	"	16000	-	29	490	2.4
21.5	**660**	**1.8**	67.49	"	"	16000	-	26	550	2.2
19.5	**730**	**1.65**	75.71	**BG60Z-../DPE09XA4C**	112	16000	-	23	620	1.95
16	**890**	**1.35**	91.09	"	"	16000	-	19.5	730	1.65
14.5	**980**	**1.2**	101.0	"	"	16000	-	17.5	810	1.5
12.5	**1140**	**1.05**	119.2	"	"	16000	-	15	950	1.25
11	**1300**	**0.92**	132.1	"	"	16000	-	13.5	1060	1.15
20	**710**	**3.2**	73.82	**BG70Z-../DPE09XA4C**	151	20000	-	24	590	3.9
17	**840**	**2.7**	87.61	"	"	20000	-	20	710	3.2
15.5	**920**	**2.5**	95.74	"	"	20000	-	18.5	770	3.0
13	**1100**	**2.1**	113.6	"	"	20000	-	15.5	920	2.5
12	**1190**	**1.95**	124.0	"	"	20000	-	14.5	980	2.3
9.9	**1440**	**1.6**	147.2	"	"	20000	-	12	1190	1.95
8.9	**1600**	**1.45**	163.8	"	"	20000	-	11	1300	1.75
7.5	**1910**	**1.2**	194.4	"	"	20000	-	9.0	1590	1.45
6.9	**2050**	**1.1**	210.5	"	"	20000	-	8.3	1720	1.35
5.9	**2400**	**0.96**	249.8	"	"	20000	-	7.0	2000	1.15
5.7	**2400**	**1.05**	255.5	**BG70G20-../DPE09XA4C**	149	20000	-	6.9	1960	1.3
5.3	**2550**	**0.98**	276.7	"	"	20000	-	6.3	2150	1.15
4.5	**3000**	**0.83**	328.4	"	"	20000	-	5.3	2550	0.98
10	**1430**	**2.9**	145.4	**BG80Z-../DPE09XA4C**	219	26000	-	12	1190	3.5
9.0	**1590**	**2.6**	161.5	"	"	26000	-	11	1300	3.2
7.8	**1830**	**2.3**	186.8	"	"	26000	-	9.4	1520	2.8
7.0	**2000**	**2.1**	207.4	"	"	26000	-	8.4	1700	2.5
6.4	**1950**	**2.4**	227.2	**BG80G40-../DPE09XA4C**	231	26000	-	7.7	1580	2.9
5.8	**2150**	**2.1**	252.3	"	"	26000	-	6.9	1760	2.6
5.2	**2400**	**1.9**	282.8	"	"	26000	-	6.2	2000	2.3
4.7	**2700**	**1.7**	314.0	"	"	26000	-	5.6	2200	2.1
4.1	**3150**	**1.45**	360.0	"	"	26000	-	4.9	2550	1.8
3.7	**3450**	**1.35**	399.8	"	"	26000	-	4.4	2850	1.6
3.4	**3850**	**1.2**	436.2	"	"	26000	-	4.0	3200	1.45
3.0	**4350**	**1.05**	484.3	"	"	26000	-	3.6	3600	1.3
2.6	**5100**	**0.9**	572.0	"	"	26000	-	3.1	4200	1.1
2.3	**5700**	**0.81**	657.8	"	"	26000	-	2.7	4800	0.96

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 1.5 kW



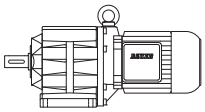
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
4.1	**3000**	**3.1**	360.3	**BG90G50-../DPE09XA4C**	340	65000	-	4.9	2400	3.8
3.4	**3800**	**2.4**	435.8	"	"	65000	-	4.0	3150	2.9
2.9	**4450**	**2.1**	504.7	"	"	65000	-	3.5	3600	2.6
2.5	**5100**	**1.8**	588.8	"	"	65000	-	3.0	4200	2.2
2.3	**5600**	**1.65**	644.7	"	"	65000	-	2.7	4650	2.0
2.1	**6100**	**1.5**	714.2	"	"	65000	-	2.5	5000	1.85
1.7	**7700**	**1.2**	883.7	"	"	65000	-	2.0	6400	1.45
1.3	**10300**	**0.89**	1174	"	"	65000	-	1.5	8800	1.05
1.2	**11200**	**0.82**	1301	"	"	65000	-	1.4	9500	0.97
2.5	**5700**	**3.2**	591.1	**BG100Z-../DPE09XA4C**	528	90000	-	3.0	4750	3.9
2.3	**6200**	**3.0**	658.1	"	"	90000	-	2.7	5300	3.5
2.0	**7100**	**2.6**	759.0	"	"	90000	-	2.3	6200	3.0
1.8	**7900**	**2.3**	845.1	"	"	90000	-	2.1	6800	2.7
1.5	**7900**	**2.3**	976.1	**BG100G50-../DPE09XA4C**	527	90000	-	1.8	6300	2.9
1.4	**8800**	**2.1**	1043	"	"	90000	-	1.7	7000	2.6
1.3	**9400**	**1.95**	1204	"	"	90000	-	1.5	7900	2.3
1.1	**11600**	**1.6**	1444	"	"	90000	-	1.3	9600	1.95
0.9	**14300**	**1.3**	1678	"	"	90000	-	1.1	11400	1.6
0.8	**16100**	**1.15**	1867	"	"	90000	-	0.95	13200	1.4
0.7	**18400**	**1.0**	2154	"	"	90000	-	0.85	14700	1.25

P = 2.2 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
550	**38**	**3.4**	2.67	**BG30-../DPE11MA4**	46	1450	-	660	31.5	4.1
430	**48.5**	**2.9**	3.40	"	"	1580	-	520	40	3.5
345	**60**	**2.9**	4.21	"	"	1630	-	415	50	3.4
270	**77**	**2.6**	5.44	"	"	1670	-	320	65	3.1
215	**97**	**2.3**	6.76	"	"	2550	-	260	80	2.8
194	**108**	**2.1**	7.50	"	"	2750	-	235	89	2.6
184	**114**	**1.9**	7.91	"	"	1760	-	220	95	2.3
169	**124**	**2.0**	8.60	"	"	2800	-	205	102	2.4
152	**138**	**1.85**	9.55	"	"	3000	-	183	114	2.2
137	**153**	**1.75**	10.65	"	"	2950	-	164	128	2.1
123	**170**	**1.6**	11.82	"	"	3200	-	148	141	1.95
106	**198**	**1.5**	13.77	"	"	3150	-	127	165	1.8
95	**220**	**1.35**	15.27	"	"	3450	-	114	184	1.65
85	**245**	**1.2**	17.06	"	"	3700	-	102	205	1.45
77	**270**	**1.1**	18.93	"	"	4100	-	92	225	1.35
73	**285**	**1.05**	19.99	"	"	4200	-	88	235	1.3
66	**315**	**0.95**	22.18	"	"	4600	-	79	265	1.15
235	**89**	**3.3**	6.29	**BG40-../DPE11MA4**	65	2600	-	280	75	3.9
205	**102**	**3.2**	7.11	"	"	3950	-	245	85	3.8
191	**110**	**2.7**	7.62	"	"	2650	-	230	91	3.2
175	**120**	**2.9**	8.31	"	"	4100	-	210	100	3.4
162	**129**	**2.3**	9.00	"	"	2650	-	194	108	2.7
158	**132**	**2.7**	9.23	"	"	4350	-	189	111	3.2
141	**149**	**2.5**	10.35	"	"	4350	-	169	124	3.0
127	**165**	**2.4**	11.49	"	"	4600	-	152	138	2.8
113	**185**	**2.2**	12.86	"	"	4500	-	136	154	2.7
102	**205**	**2.1**	14.28	"	"	4900	-	122	172	2.4
89	**235**	**1.8**	16.39	"	"	5300	-	107	196	2.2
80	**260**	**1.65**	18.19	"	"	5600	-	96	215	2.0
74	**280**	**1.5**	19.84	"	"	5800	-	88	235	1.8
66	**315**	**1.35**	22.02	"	"	6000	-	80	260	1.65
62	**335**	**1.25**	23.43	"	"	6200	-	75	280	1.5
56	**375**	**1.15**	26.01	"	"	6500	-	67	310	1.35

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

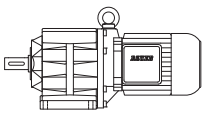
P = 2.2 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
121	**173**	**3.3**	12.06	**BG50-../DPE11MA4**	75	5700	-	145	144	4.0
109	**192**	**3.1**	13.36	"	"	6100	-	131	160	3.7
88	**235**	**2.7**	16.53	"	"	6500	-	106	198	3.2
80	**260**	**2.4**	18.33	"	"	7200	-	95	220	2.9
67	**310**	**2.0**	21.96	"	"	8000	-	80	260	2.4
60	**350**	**1.8**	24.34	"	"	8700	-	72	290	2.2
49	**425**	**1.5**	29.62	"	"	8000	-	59	355	1.75
44.5	**470**	**1.35**	32.84	"	"	8700	-	53	395	1.6
38.5	**540**	**1.15**	37.89	"	"	10000	-	46	455	1.4
35	**600**	**1.05**	42.00	"	"	10000	-	41.5	500	1.25
31	**670**	**0.94**	47.02	"	"	10000	-	37.5	560	1.15
28	**750**	**0.84**	52.12	"	"	10000	-	33.5	620	1.0
49.5	**420**	**2.9**	29.31	**BG60-../DPE11MA4**	107	14800	-	60	350	3.4
45	**465**	**2.6**	32.48	"	"	15400	-	54	385	3.1
37.5	**560**	**2.1**	38.85	"	"	16000	-	45	465	2.6
34	**610**	**1.95**	43.05	"	"	16000	-	40.5	510	2.4
29	**720**	**1.65**	50.31	"	"	16000	-	35	600	2.0
26.5	**790**	**1.5**	55.76	"	"	16000	-	31.5	660	1.8
24	**870**	**1.4**	60.90	"	"	16000	-	29	720	1.65
21.5	**970**	**1.25**	67.49	"	"	16000	-	26	800	1.5
19.5	**1070**	**1.1**	75.71	**BG60Z-../DPE11MA4**	123	16000	-	23	910	1.3
16	**1310**	**0.92**	91.09	"	"	16000	-	19.5	1070	1.1
14.5	**1440**	**0.83**	101.0	"	"	16000	-	17.5	1200	1.0
29	**720**	**3.2**	50.40	**BG70-../DPE11MA4**	138	20000	-	35	600	3.8
24.5	**850**	**2.7**	59.82	"	"	20000	-	29.5	710	3.2
22.5	**930**	**2.5**	64.85	**BG70Z-../DPE11MA4**	164	20000	-	27	770	3.0
20	**1050**	**2.2**	73.82	"	"	20000	-	24	870	2.6
17	**1230**	**1.85**	87.61	"	"	20000	-	20	1050	2.2
15.5	**1350**	**1.7**	95.74	"	"	20000	-	18.5	1130	2.0
13	**1610**	**1.45**	113.6	"	"	20000	-	15.5	1350	1.7
12	**1750**	**1.3**	124.0	"	"	20000	-	14.5	1440	1.6
9.9	**2100**	**1.1**	147.2	"	"	20000	-	12	1750	1.3
8.9	**2350**	**0.98**	163.8	"	"	20000	-	11	1910	1.2
7.5	**2800**	**0.82**	194.4	"	"	20000	-	9.0	2300	1.0
15.5	**1350**	**3.1**	93.89	**BG80Z-../DPE11MA4**	234	26000	-	19	1100	3.8
13	**1610**	**2.6**	112.4	"	"	26000	-	15.5	1350	3.1
12	**1750**	**2.4**	124.8	"	"	26000	-	14	1500	2.8
10	**2100**	**2.0**	145.4	"	"	26000	-	12	1750	2.4
9.0	**2300**	**1.85**	161.5	"	"	26000	-	11	1910	2.2
7.8	**2650**	**1.6**	186.8	"	"	26000	-	9.4	2200	1.9
7.0	**3000**	**1.4**	207.4	"	"	26000	-	8.4	2500	1.7
6.4	**3000**	**1.55**	227.2	**BG80G40-../DPE11MA4**	242	26000	-	7.7	2400	1.9
5.8	**3300**	**1.4**	252.3	"	"	26000	-	6.9	2700	1.7
5.2	**3700**	**1.25**	282.8	"	"	26000	-	6.2	3050	1.5
4.7	**4100**	**1.1**	314.0	"	"	26000	-	5.6	3400	1.35
4.1	**4750**	**0.97**	360.0	"	"	26000	-	4.9	3950	1.15
3.7	**5300**	**0.87**	399.8	"	"	26000	-	4.4	4350	1.05
8.2	**2550**	**3.3**	178.5	**BG90Z-../DPE11MA4**	336	65000	-	9.8	2100	4.0
7.0	**3000**	**2.8**	208.3	"	"	65000	-	8.4	2500	3.4
6.4	**3250**	**2.6**	228.1	"	"	65000	-	7.7	2700	3.1
5.6	**3300**	**2.8**	262.5	**BG90G50-../DPE11MA4**	353	65000	-	6.7	2700	3.4
4.9	**4000**	**2.3**	298.8	"	"	65000	-	5.9	3250	2.8
4.1	**4600**	**2.0**	360.3	"	"	65000	-	4.9	3800	2.4
3.4	**5700**	**1.6**	435.8	"	"	65000	-	4.0	4850	1.9
2.9	**6700**	**1.35**	504.7	"	"	65000	-	3.5	5500	1.65
2.5	**7800**	**1.2**	588.8	"	"	65000	-	3.0	6400	1.45
2.3	**8500**	**1.1**	644.7	"	"	65000	-	2.7	7100	1.3
2.1	**9300**	**0.99**	714.2	"	"	65000	-	2.5	7700	1.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 2.2 kW



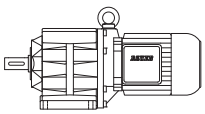
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
3.2	**6500**	**2.8**	456.7	**BG100Z-../DPE11MA4**	543	90000	-	3.9	5300	3.5
2.9	**7200**	**2.6**	508.5	"	"	90000	-	3.5	6000	3.1
2.5	**8400**	**2.2**	591.1	"	"	90000	-	3.0	7000	2.6
2.3	**9100**	**2.0**	658.1	"	"	90000	-	2.7	7700	2.4
2.0	**10500**	**1.75**	759.0	"	"	90000	-	2.3	9100	2.0
1.8	**11600**	**1.6**	845.1	"	"	90000	-	2.1	10000	1.85
1.5	**12400**	**1.5**	976.1	**BG100G50-../DPE11MA4**	540	90000	-	1.8	10000	1.85
1.4	**13600**	**1.35**	1043	"	"	90000	-	1.7	10900	1.7
1.3	**14500**	**1.3**	1204	"	"	90000	-	1.5	12300	1.5
1.1	**17700**	**1.05**	1444	"	"	90000	-	1.3	14700	1.25

P = 3 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
550	**52**	**2.5**	2.67	**BG30-../DPE11LA4**	58	1450	-	660	43	3.0
430	**66**	**2.1**	3.40	"	"	1580	-	520	55	2.5
345	**83**	**2.1**	4.21	"	"	1630	-	415	69	2.5
270	**106**	**1.9**	5.44	"	"	1670	-	320	89	2.2
215	**133**	**1.7**	6.76	"	"	2550	-	260	110	2.1
194	**147**	**1.55**	7.50	"	"	2750	-	235	121	1.9
184	**155**	**1.4**	7.91	"	"	1760	-	220	130	1.65
169	**169**	**1.45**	8.60	"	"	2800	-	205	139	1.75
152	**188**	**1.35**	9.55	"	"	3000	-	183	156	1.65
137	**205**	**1.3**	10.65	"	"	2950	-	164	174	1.55
123	**230**	**1.2**	11.82	"	"	3200	-	148	193	1.4
106	**270**	**1.1**	13.77	"	"	3150	-	127	225	1.3
95	**300**	**1.0**	15.27	"	"	3450	-	114	250	1.2
85	**335**	**0.9**	17.06	"	"	3700	-	102	280	1.05
77	**370**	**0.81**	18.93	"	"	4100	-	92	310	0.97
370	**77**	**3.2**	3.97	**BG40-../DPE11LA4**	77	2400	-	440	65	3.8
295	**97**	**2.8**	4.94	"	"	2450	-	355	80	3.4
235	**121**	**2.4**	6.29	"	"	2600	-	280	102	2.9
230	**124**	**2.5**	6.40	"	"	3750	-	275	104	3.0
205	**139**	**2.3**	7.11	"	"	3950	-	245	116	2.8
191	**150**	**1.95**	7.62	"	"	2650	-	230	124	2.4
175	**163**	**2.1**	8.31	"	"	4100	-	210	136	2.5
162	**176**	**1.7**	9.00	"	"	2650	-	194	147	2.0
158	**181**	**1.95**	9.23	"	"	4350	-	189	151	2.4
141	**200**	**1.9**	10.35	"	"	4350	-	169	169	2.2
127	**225**	**1.75**	11.49	"	"	4600	-	152	188	2.1
113	**250**	**1.65**	12.86	"	"	4500	-	136	210	1.95
102	**280**	**1.5**	14.28	"	"	4900	-	122	230	1.85
89	**320**	**1.35**	16.39	"	"	5300	-	107	265	1.6
80	**355**	**1.2**	18.19	"	"	5600	-	96	295	1.45
74	**385**	**1.1**	19.84	"	"	5800	-	88	325	1.3
66	**430**	**0.99**	22.02	"	"	6000	-	80	355	1.2
62	**460**	**0.92**	23.43	"	"	6200	-	75	380	1.1
56	**510**	**0.83**	26.01	"	"	6500	-	67	425	1.0
167	**171**	**3.0**	8.70	**BG50-../DPE11LA4**	86	5300	-	200	143	3.6
151	**189**	**2.8**	9.65	"	"	5600	-	181	158	3.3
121	**235**	**2.5**	12.06	"	"	5700	-	145	197	2.9
109	**260**	**2.3**	13.36	"	"	6100	-	131	215	2.8
88	**325**	**1.95**	16.53	"	"	6500	-	106	270	2.3
80	**355**	**1.75**	18.33	"	"	7200	-	95	300	2.1
67	**425**	**1.5**	21.96	"	"	8000	-	80	355	1.75
60	**475**	**1.35**	24.34	"	"	8700	-	72	395	1.6
49	**580**	**1.1**	29.62	"	"	8000	-	59	485	1.3
44.5	**640**	**0.98**	32.84	"	"	8700	-	53	540	1.15
38.5	**740**	**0.85**	37.89	"	"	10000	-	46	620	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

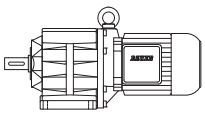
P = 3 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
78	**365**	**3.1**	18.62	**BG60-../DPE11LA4**	119	12400	-	94	300	3.8
65	**440**	**2.7**	22.40	"	"	13300	-	78	365	3.3
59	**485**	**2.5**	24.82	"	"	13800	-	71	400	3.0
49.5	**570**	**2.1**	29.31	"	"	14800	-	60	475	2.5
45	**630**	**1.9**	32.48	"	"	15400	-	54	530	2.3
37.5	**760**	**1.6**	38.85	"	"	16000	-	45	630	1.9
34	**840**	**1.45**	43.05	"	"	16000	-	40.5	700	1.7
29	**980**	**1.2**	50.31	"	"	16000	-	35	810	1.5
26.5	**1080**	**1.1**	55.76	"	"	16000	-	31.5	900	1.35
24	**1190**	**1.0**	60.90	"	"	16000	-	29	980	1.2
21.5	**1330**	**0.9**	67.49	"	"	16000	-	26	1100	1.1
19.5	**1460**	**0.82**	75.71	**BG60Z-../DPE11LA4**	135	16000	-	23	1240	0.97
41.5	**690**	**3.3**	35.24	**BG70-../DPE11LA4**	149	18300	-	49.5	570	4.0
37	**770**	**3.0**	39.22	"	"	19100	-	44.5	640	3.6
31.5	**900**	**2.6**	46.54	"	"	20000	-	37.5	760	3.0
29	**980**	**2.3**	50.40	"	"	20000	-	35	810	2.8
24.5	**1160**	**2.0**	59.82	"	"	20000	-	29.5	970	2.4
22.5	**1270**	**1.8**	64.85	**BG70Z-../DPE11LA4**	176	20000	-	27	1060	2.2
20	**1430**	**1.6**	73.82	"	"	20000	-	24	1190	1.95
17	**1680**	**1.35**	87.61	"	"	20000	-	20	1430	1.6
15.5	**1840**	**1.25**	95.74	"	"	20000	-	18.5	1540	1.5
13	**2200**	**1.05**	113.6	"	"	20000	-	15.5	1840	1.25
12	**2350**	**0.98**	124.0	"	"	20000	-	14.5	1970	1.15
9.9	**2850**	**0.81**	147.2	"	"	20000	-	12	2350	0.98
22	**1300**	**3.2**	66.40	**BG80Z-../DPE11LA4**	246	26000	-	26.5	1080	3.9
20	**1430**	**2.9**	73.73	"	"	26000	-	24	1190	3.5
17.5	**1630**	**2.6**	84.55	"	"	26000	-	21	1360	3.1
15.5	**1840**	**2.3**	93.89	"	"	26000	-	19	1500	2.8
13	**2200**	**1.9**	112.4	"	"	26000	-	15.5	1840	2.3
12	**2350**	**1.8**	124.8	"	"	26000	-	14	2000	2.1
10	**2850**	**1.45**	145.4	"	"	26000	-	12	2350	1.8
9.0	**3150**	**1.35**	161.5	"	"	26000	-	11	2600	1.6
7.8	**3650**	**1.15**	186.8	"	"	26000	-	9.4	3000	1.4
7.0	**4050**	**1.05**	207.4	"	"	26000	-	8.4	3400	1.25
6.4	**4150**	**1.1**	227.2	**BG80G40-../DPE11LA4**	254	26000	-	7.7	3400	1.35
5.8	**4600**	**1.0**	252.3	"	"	26000	-	6.9	3800	1.2
5.2	**5200**	**0.88**	282.8	"	"	26000	-	6.2	4300	1.05
4.7	**5700**	**0.81**	314.0	"	"	26000	-	5.6	4750	0.97
10.5	**2700**	**3.1**	139.2	**BG90Z-../DPE11LA4**	348	65000	-	12.5	2250	3.7
8.9	**3200**	**2.6**	163.0	"	"	65000	-	11	2600	3.2
8.2	**3450**	**2.4**	178.5	"	"	65000	-	9.8	2900	2.9
7.0	**4050**	**2.1**	208.3	"	"	65000	-	8.4	3400	2.5
6.4	**4450**	**1.9**	228.1	"	"	65000	-	7.7	3700	2.3
5.6	**4650**	**2.0**	262.5	**BG90G50-../DPE11LA4**	365	65000	-	6.7	3850	2.4
4.9	**5500**	**1.65**	298.8	"	"	65000	-	5.9	4550	2.0
4.1	**6500**	**1.4**	360.3	"	"	65000	-	4.9	5300	1.75
3.4	**8000**	**1.15**	435.8	"	"	65000	-	4.0	6700	1.35
2.9	**9300**	**0.99**	504.7	"	"	65000	-	3.5	7700	1.2
2.5	**10800**	**0.85**	588.8	"	"	65000	-	3.0	8900	1.05
5.6	**5100**	**3.3**	259.0	**BG100-../DPE11LA4**	465	90000	-	6.8	4200	4.0
4.9	**5800**	**3.2**	300.4	**BG100Z-../DPE11LA4**	555	90000	-	5.8	4900	3.8
4.3	**6600**	**2.8**	343.6	"	"	90000	-	5.1	5600	3.3
3.8	**7500**	**2.5**	382.6	"	"	90000	-	4.6	6200	3.0
3.2	**8900**	**2.1**	456.7	"	"	90000	-	3.9	7300	2.5
2.9	**9800**	**1.9**	508.5	"	"	90000	-	3.5	8100	2.3
2.5	**11400**	**1.6**	591.1	"	"	90000	-	3.0	9500	1.95
2.3	**12400**	**1.5**	658.1	"	"	90000	-	2.7	10600	1.75
2.0	**14300**	**1.3**	759.0	"	"	90000	-	2.3	12400	1.5
1.8	**15900**	**1.15**	845.1	"	"	90000	-	2.1	13600	1.35
1.5	**17500**	**1.05**	976.1	**BG100G50-../DPE11LA4**	552	90000	-	1.8	14300	1.3
1.4	**19000**	**0.97**	1043	"	"	90000	-	1.7	15400	1.2
1.3	**20400**	**0.91**	1204	"	"	90000	-	1.5	17400	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

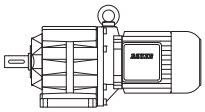
P = 4 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
550	**69**	**1.85**	2.67	**BG30-../DPE11LA4C**	62	1450	-	660	57	2.2
430	**88**	**1.6**	3.40	"	"	1580	-	520	73	1.9
345	**110**	**1.55**	4.21	"	"	1630	-	415	92	1.85
270	**141**	**1.4**	5.44	"	"	1670	-	320	119	1.7
215	**177**	**1.3**	6.76	"	"	2550	-	260	146	1.55
194	**196**	**1.2**	7.50	"	"	2750	-	235	162	1.45
184	**205**	**1.05**	7.91	"	"	1760	-	220	173	1.25
169	**225**	**1.1**	8.60	"	"	2800	-	205	186	1.3
152	**250**	**1.0**	9.55	"	"	3000	-	183	205	1.25
137	**275**	**0.97**	10.65	"	"	2950	-	164	230	1.15
123	**310**	**0.88**	11.82	"	"	3200	-	148	255	1.05
106	**360**	**0.82**	13.77	"	"	3150	-	127	300	0.98
590	**64**	**3.2**	2.46	**BG40-../DPE11LA4C**	81	2150	-	710	53	3.8
455	**83**	**2.7**	3.19	"	"	2350	-	550	69	3.2
370	**103**	**2.4**	3.97	"	"	2400	-	440	86	2.8
295	**129**	**2.1**	4.94	"	"	2450	-	355	107	2.5
235	**162**	**1.8**	6.29	"	"	2600	-	280	136	2.2
230	**166**	**1.9**	6.40	"	"	3750	-	275	138	2.3
205	**186**	**1.75**	7.11	"	"	3950	-	245	155	2.1
191	**200**	**1.5**	7.62	"	"	2650	-	230	166	1.8
175	**215**	**1.6**	8.31	"	"	4100	-	210	181	1.9
162	**235**	**1.25**	9.00	"	"	2650	-	194	196	1.5
158	**240**	**1.5**	9.23	"	"	4350	-	189	200	1.8
141	**270**	**1.4**	10.35	"	"	4350	-	169	225	1.65
127	**300**	**1.3**	11.49	"	"	4600	-	152	250	1.55
113	**335**	**1.25**	12.86	"	"	4500	-	136	280	1.45
102	**370**	**1.15**	14.28	"	"	4900	-	122	310	1.35
89	**425**	**1.0**	16.39	"	"	5300	-	107	355	1.2
80	**475**	**0.89**	18.19	"	"	5600	-	96	395	1.1
74	**510**	**0.83**	19.84	"	"	5800	-	88	430	0.99
300	**127**	**3.1**	4.91	**BG50-../DPE11LA4C**	90	3500	-	355	107	3.7
240	**159**	**2.8**	6.07	"	"	4700	-	290	131	3.4
220	**173**	**2.6**	6.74	"	"	3750	-	260	146	3.1
167	**225**	**2.3**	8.70	"	"	5300	-	200	191	2.7
151	**250**	**2.1**	9.65	"	"	5600	-	181	210	2.5
121	**315**	**1.85**	12.06	"	"	5700	-	145	260	2.2
109	**350**	**1.7**	13.36	"	"	6100	-	131	290	2.0
88	**430**	**1.45**	16.53	"	"	6500	-	106	360	1.75
80	**475**	**1.35**	18.33	"	"	7200	-	95	400	1.6
67	**570**	**1.1**	21.96	"	"	8000	-	80	475	1.35
60	**630**	**1.0**	24.34	"	"	8700	-	72	530	1.2
49	**770**	**0.82**	29.62	"	"	8000	-	59	640	0.98
120	**315**	**3.1**	12.16	**BG60-../DPE11LA4C**	123	10800	-	144	265	3.7
108	**350**	**2.9**	13.47	"	"	11200	-	130	290	3.5
87	**435**	**2.5**	16.80	"	"	12000	-	104	365	3.0
78	**485**	**2.4**	18.62	"	"	12400	-	94	405	2.8
65	**580**	**2.1**	22.40	"	"	13300	-	78	485	2.5
59	**640**	**1.9**	24.82	"	"	13800	-	71	530	2.3
49.5	**770**	**1.55**	29.31	"	"	14800	-	60	630	1.9
45	**840**	**1.45**	32.48	"	"	15400	-	54	700	1.7
37.5	**1010**	**1.2**	38.85	"	"	16000	-	45	840	1.45
34	**1120**	**1.05**	43.05	"	"	16000	-	40.5	940	1.3
29	**1310**	**0.92**	50.31	"	"	16000	-	35	1090	1.1
26.5	**1440**	**0.83**	55.76	"	"	16000	-	31.5	1210	0.99
54	**700**	**3.3**	27.21	**BG70-../DPE11LA4C**	153	16400	-	64	590	3.9
49	**770**	**3.0**	29.69	"	"	16900	-	59	640	3.6
41.5	**920**	**2.5**	35.24	"	"	18300	-	49.5	770	3.0
37	**1030**	**2.2**	39.22	"	"	19100	-	44.5	850	2.7
31.5	**1210**	**1.9**	46.54	"	"	20000	-	37.5	1010	2.3
29	**1310**	**1.75**	50.40	"	"	20000	-	35	1090	2.1
24.5	**1550**	**1.5**	59.82	"	"	20000	-	29.5	1290	1.8

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

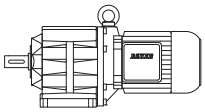
P = 4 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
22.5	**1690**	**1.35**	64.85	**BG70Z-../DPE11LA4C**	180	20000	-	27	1410	1.65
20	**1910**	**1.2**	73.82	"	"	20000	-	24	1590	1.45
17	**2200**	**1.05**	87.61	"	"	20000	-	20	1910	1.2
15.5	**2450**	**0.94**	95.74	"	"	20000	-	18.5	2050	1.1
30	**1270**	**3.3**	48.80	**BG80-../DPE11LA4C**	208	23800	-	36	1060	4.0
25.5	**1490**	**2.8**	57.24	"	"	25400	-	30.5	1250	3.4
23	**1660**	**2.5**	63.56	"	"	26000	-	27.5	1380	3.0
22	**1730**	**2.4**	66.40	**BG80Z-../DPE11LA4C**	250	26000	-	26.5	1440	2.9
20	**1910**	**2.2**	73.73	"	"	26000	-	24	1590	2.6
17.5	**2150**	**1.95**	84.55	"	"	26000	-	21	1810	2.3
15.5	**2450**	**1.7**	93.89	"	"	26000	-	19	2000	2.1
13	**2900**	**1.45**	112.4	"	"	26000	-	15.5	2450	1.7
12	**3150**	**1.35**	124.8	"	"	26000	-	14	2700	1.55
10	**3800**	**1.1**	145.4	"	"	26000	-	12	3150	1.35
9.0	**4200**	**1.0**	161.5	"	"	26000	-	11	3450	1.2
7.8	**4850**	**0.87**	186.8	"	"	26000	-	9.4	4050	1.05
6.4	**5600**	**0.82**	227.2	**BG80G40-../DPE11LA4C**	258	26000	-	7.7	4650	0.99
14	**2700**	**3.1**	105.7	**BG90Z-../DPE11LA4C**	352	65000	-	16.5	2300	3.7
11.5	**3300**	**2.5**	127.1	"	"	65000	-	14	2700	3.1
10.5	**3600**	**2.3**	139.2	"	"	65000	-	12.5	3050	2.8
8.9	**4250**	**2.0**	163.0	"	"	65000	-	11	3450	2.4
8.2	**4650**	**1.8**	178.5	"	"	65000	-	9.8	3850	2.2
7.0	**5400**	**1.55**	208.3	"	"	65000	-	8.4	4500	1.85
6.4	**5900**	**1.4**	228.1	"	"	65000	-	7.7	4950	1.7
5.6	**6300**	**1.45**	262.5	**BG90G50-../DPE11LA4C**	369	65000	-	6.7	5200	1.75
4.9	**7500**	**1.25**	298.8	"	"	65000	-	5.9	6100	1.5
4.1	**8800**	**1.05**	360.3	"	"	65000	-	4.9	7300	1.25
3.4	**10800**	**0.85**	435.8	"	"	65000	-	4.0	9100	1.0
7.3	**5200**	**3.2**	198.8	**BG100-../DPE11LA4C**	469	90000	-	8.8	4300	3.9
6.3	**6000**	**2.8**	232.6	"	"	90000	-	7.5	5000	3.4
5.6	**6800**	**2.5**	259.0	"	"	90000	-	6.8	5600	3.0
5.4	**7000**	**2.6**	269.8	**BG100Z-../DPE11LA4C**	559	90000	-	6.5	5800	3.2
4.9	**7700**	**2.4**	300.4	"	"	90000	-	5.8	6500	2.8
4.3	**8800**	**2.1**	343.6	"	"	90000	-	5.1	7400	2.5
3.8	**10000**	**1.85**	382.6	"	"	90000	-	4.6	8300	2.2
3.2	**11900**	**1.55**	456.7	"	"	90000	-	3.9	9700	1.9
2.9	**13100**	**1.4**	508.5	"	"	90000	-	3.5	10900	1.7
2.5	**15200**	**1.2**	591.1	"	"	90000	-	3.0	12700	1.45
2.3	**16600**	**1.1**	658.1	"	"	90000	-	2.7	14100	1.3
2.0	**19100**	**0.97**	759.0	"	"	90000	-	2.3	16600	1.1
1.8	**21200**	**0.87**	845.1	"	"	90000	-	2.1	18100	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

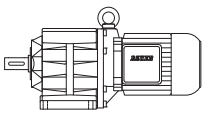
P = 5.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
600	**87**	**3.5**	2.47	**BG50-../DPE13LA4**	101	2900	-	720	72	4.3
415	**126**	**2.8**	3.55	"	"	3300	-	500	105	3.3
300	**175**	**2.3**	4.91	"	"	3500	-	360	145	2.7
245	**210**	**2.1**	6.07	"	"	4700	-	290	181	2.4
220	**235**	**1.9**	6.74	"	"	3750	-	265	198	2.3
168	**310**	**1.65**	8.70	"	"	5300	-	205	255	2.0
152	**345**	**1.5**	9.65	"	"	5600	-	183	285	1.85
122	**430**	**1.35**	12.06	"	"	5700	-	146	355	1.6
110	**475**	**1.25**	13.36	"	"	6100	-	132	395	1.5
89	**590**	**1.05**	16.53	"	"	6500	-	107	490	1.3
80	**650**	**0.97**	18.33	"	"	7200	-	97	540	1.15
67	**780**	**0.81**	21.96	"	"	8000	-	81	640	0.98
215	**240**	**3.3**	6.88	**BG60-../DPE13LA4**	135	8600	-	260	200	3.9
160	**325**	**2.7**	9.13	"	"	9800	-	193	270	3.3
145	**360**	**2.5**	10.12	"	"	10200	-	174	300	3.0
121	**430**	**2.3**	12.16	"	"	10800	-	145	360	2.7
109	**480**	**2.1**	13.47	"	"	11200	-	131	400	2.6
87	**600**	**1.85**	16.80	"	"	12000	-	105	500	2.2
79	**660**	**1.75**	18.62	"	"	12400	-	95	550	2.1
66	**790**	**1.5**	22.40	"	"	13300	-	79	660	1.8
59	**890**	**1.35**	24.82	"	"	13800	-	71	730	1.65
50	**1050**	**1.15**	29.31	"	"	14800	-	61	860	1.4
45	**1160**	**1.05**	32.48	"	"	15400	-	55	950	1.25
38	**1380**	**0.87**	38.85	"	"	16000	-	45.5	1150	1.05
70	**750**	**3.1**	20.98	**BG70-../DPE13LA4**	165	14600	-	84	620	3.7
64	**820**	**2.8**	22.92	"	"	15100	-	77	680	3.4
54	**970**	**2.4**	27.21	"	"	16400	-	65	800	2.9
49.5	**1060**	**2.2**	29.69	"	"	16900	-	60	870	2.6
41.5	**1260**	**1.85**	35.24	"	"	18300	-	50	1050	2.2
37.5	**1400**	**1.65**	39.22	"	"	19100	-	45	1160	2.0
31.5	**1660**	**1.4**	46.54	"	"	20000	-	38	1380	1.65
29	**1810**	**1.25**	50.40	"	"	20000	-	35	1500	1.55
24.5	**2100**	**1.1**	59.82	"	"	20000	-	29.5	1780	1.3
23	**2250**	**1.0**	64.85	**BG70Z-../DPE13LA4**	191	20000	-	27.5	1910	1.2
20	**2600**	**0.88**	73.82	"	"	20000	-	24	2150	1.05
38.5	**1360**	**3.1**	38.00	**BG80-../DPE13LA4**	219	21300	-	46.5	1120	3.8
33.5	**1560**	**2.7**	43.94	"	"	22600	-	40.5	1290	3.3
30	**1750**	**2.4**	48.80	"	"	23800	-	36.5	1430	2.9
26	**2000**	**2.1**	57.24	"	"	25400	-	31	1690	2.5
23	**2250**	**1.85**	63.56	"	"	26000	-	28	1870	2.2
22	**2350**	**1.8**	66.40	**BG80Z-../DPE13LA4**	262	26000	-	27	1940	2.2
20	**2600**	**1.6**	73.73	"	"	26000	-	24	2150	1.95
17.5	**3000**	**1.4**	84.55	"	"	26000	-	21	2500	1.7
16	**3250**	**1.3**	93.89	"	"	26000	-	19	2750	1.55
13	**4000**	**1.05**	112.4	"	"	26000	-	16	3250	1.3
12	**4350**	**0.97**	124.8	"	"	26000	-	14.5	3600	1.15
10.5	**5000**	**0.84**	145.4	"	"	26000	-	12.5	4200	1.0
19.5	**2650**	**3.2**	76.61	**BG90Z-../DPE13LA4**	364	65000	-	23	2250	3.7
17.5	**3000**	**2.8**	83.91	"	"	65000	-	21	2500	3.4
15.5	**3350**	**2.5**	96.53	"	"	65000	-	18.5	2800	3.0
14	**3750**	**2.2**	105.7	"	"	65000	-	17	3050	2.8
11.5	**4550**	**1.85**	127.1	"	"	65000	-	14	3750	2.2
10.5	**5000**	**1.7**	139.2	"	"	65000	-	13	4000	2.1
9.0	**5800**	**1.45**	163.0	"	"	65000	-	11	4750	1.75
8.2	**6400**	**1.3**	178.5	"	"	65000	-	9.9	5300	1.6
7.1	**7300**	**1.15**	208.3	"	"	65000	-	8.5	6100	1.4
6.5	**8000**	**1.05**	228.1	"	"	65000	-	7.8	6700	1.25

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 5.5 kW



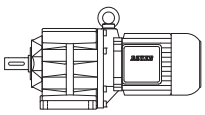
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
5.6	**8900**	**1.05**	262.5	**BG90G50-../DPE13LA4**	380	65000	-	6.8	7200	1.3
4.9	**10400**	**0.88**	298.8	"	"	65000	-	5.9	8600	1.05
9.5	**5500**	**3.1**	154.8	**BG100-../DPE13LA4**	480	90000	-	11.5	4550	3.7
8.2	**6400**	**2.6**	178.6	"	"	90000	-	9.9	5300	3.2
7.4	**7000**	**2.4**	198.8	"	"	90000	-	8.9	5900	2.8
6.3	**8300**	**2.0**	232.6	"	"	90000	-	7.6	6900	2.4
5.7	**9200**	**1.85**	259.0	"	"	90000	-	6.8	7700	2.2
5.5	**9500**	**1.95**	269.8	**BG100Z-../DPE13LA4**	571	90000	-	6.6	7900	2.3
4.9	**10700**	**1.75**	300.4	"	"	90000	-	5.9	8900	2.1
4.3	**12200**	**1.5**	343.6	"	"	90000	-	5.2	10100	1.85
3.9	**13400**	**1.4**	382.6	"	"	90000	-	4.7	11100	1.65
3.2	**16400**	**1.15**	456.7	"	"	90000	-	3.9	13400	1.4
2.9	**18100**	**1.0**	508.5	"	"	90000	-	3.5	15000	1.25
2.5	**21000**	**0.88**	591.1	"	"	90000	-	3.0	17500	1.05
2.3	**22800**	**0.81**	658.1	"	"	90000	-	2.7	19400	0.95

P = 7.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
600	**119**	**2.6**	2.47	**BG50-../DPE13XA4**	102	2900	-	720	99	3.1
415	**172**	**2.0**	3.55	"	"	3300	-	500	143	2.4
300	**235**	**1.7**	4.91	"	"	3500	-	360	198	2.0
245	**290**	**1.55**	6.07	"	"	4700	-	290	245	1.8
220	**325**	**1.4**	6.74	"	"	3750	-	265	270	1.65
168	**425**	**1.2**	8.70	"	"	5300	-	205	345	1.45
152	**470**	**1.1**	9.65	"	"	5600	-	183	390	1.35
122	**580**	**0.99**	12.06	"	"	5700	-	146	490	1.2
110	**650**	**0.91**	13.36	"	"	6100	-	132	540	1.1
295	**240**	**2.9**	4.98	**BG60-../DPE13XA4**	136	7800	-	355	200	3.4
240	**295**	**2.6**	6.16	"	"	8500	-	290	245	3.2
215	**330**	**2.4**	6.88	"	"	8600	-	260	275	2.8
160	**445**	**2.0**	9.13	"	"	9800	-	193	370	2.4
145	**490**	**1.85**	10.12	"	"	10200	-	174	410	2.2
121	**590**	**1.7**	12.16	"	"	10800	-	145	490	2.0
109	**650**	**1.55**	13.47	"	"	11200	-	131	540	1.9
87	**820**	**1.35**	16.80	"	"	12000	-	105	680	1.65
79	**900**	**1.25**	18.62	"	"	12400	-	95	750	1.55
66	**1080**	**1.1**	22.40	"	"	13300	-	79	900	1.35
59	**1210**	**0.99**	24.82	"	"	13800	-	71	1000	1.2
50	**1430**	**0.84**	29.31	"	"	14800	-	61	1170	1.05
95	**750**	**3.1**	15.53	**BG70-../DPE13XA4**	166	12700	-	114	620	3.7
83	**860**	**2.7**	17.68	"	"	13400	-	100	710	3.2
70	**1020**	**2.3**	20.98	"	"	14600	-	84	850	2.7
64	**1110**	**2.1**	22.92	"	"	15100	-	77	930	2.5
54	**1320**	**1.75**	27.21	"	"	16400	-	65	1100	2.1
49.5	**1440**	**1.6**	29.69	"	"	16900	-	60	1190	1.95
41.5	**1720**	**1.35**	35.24	"	"	18300	-	50	1430	1.6
37.5	**1910**	**1.2**	39.22	"	"	19100	-	45	1590	1.45
31.5	**2250**	**1.0**	46.54	"	"	20000	-	38	1880	1.2
29	**2450**	**0.94**	50.40	"	"	20000	-	35	2000	1.15
56	**1270**	**3.3**	26.44	**BG80-../DPE13XA4**	220	17900	-	67	1060	4.0
50	**1430**	**2.9**	29.36	"	"	18900	-	60	1190	3.5
43	**1660**	**2.5**	34.22	"	"	20200	-	52	1370	3.1
38.5	**1860**	**2.3**	38.00	"	"	21300	-	46.5	1540	2.7

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 7.5 kW



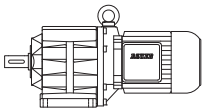
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
33.5	**2100**	**2.0**	43.94	**BG80-../DPE13XA4**	220"	22600	-	40.5	1760	2.4
30	**2350**	**1.8**	48.80	"	"	23800	-	36.5	1960	2.1
26	**2750**	**1.55**	57.24	"	"	25400	-	31	2300	1.85
23	**3100**	**1.35**	63.56	"	"	26000	-	28	2550	1.65
22	**3250**	**1.3**	66.40	**BG80Z-../DPE13XA4**	263	26000	-	27	2650	1.6
20	**3550**	**1.2**	73.73	"	"	26000	-	24	2950	1.4
17.5	**4050**	**1.05**	84.55	"	"	26000	-	21	3400	1.25
16	**4450**	**0.94**	93.89	"	"	26000	-	19	3750	1.1
27.5	**2600**	**3.2**	53.46	**BG90-../DPE13XA4**	309	65000	-	33	2150	3.9
26	**2750**	**2.5**	57.04	**BG90Z-../DPE13XA4**	365	65000	-	31	2300	3.0
23.5	**3000**	**2.5**	62.47	"	"	65000	-	28.5	2500	3.0
19.5	**3650**	**2.3**	76.61	"	"	65000	-	23	3100	2.7
17.5	**4050**	**2.1**	83.91	"	"	65000	-	21	3400	2.5
15.5	**4600**	**1.85**	96.53	"	"	65000	-	18.5	3850	2.2
14	**5100**	**1.65**	105.7	"	"	65000	-	17	4200	2.0
11.5	**6200**	**1.35**	127.1	"	"	65000	-	14	5100	1.65
10.5	**6800**	**1.25**	139.2	"	"	65000	-	13	5500	1.55
9.0	**7900**	**1.05**	163.0	"	"	65000	-	11	6500	1.3
8.2	**8700**	**0.97**	178.5	"	"	65000	-	9.9	7200	1.15
7.1	**10000**	**0.84**	208.3	"	"	65000	-	8.5	8400	1.0
6.7	**10300**	**0.89**	219.9	**BG90G50-../DPE13XA4**	381	65000	-	8.1	8500	1.1
14	**5100**	**3.3**	107.5	**BG100-../DPE13XA4**	481	90000	-	16.5	4300	3.9
12.5	**5700**	**2.9**	119.7	"	"	90000	-	15	4750	3.5
10.5	**6800**	**2.5**	139.1	"	"	90000	-	13	5500	3.1
9.5	**7500**	**2.2**	154.8	"	"	90000	-	11.5	6200	2.7
8.2	**8700**	**1.95**	178.6	"	"	90000	-	9.9	7200	2.3
7.4	**9600**	**1.75**	198.8	"	"	90000	-	8.9	8000	2.1
6.3	**11300**	**1.5**	232.6	"	"	90000	-	7.6	9400	1.8
5.7	**12500**	**1.35**	259.0	"	"	90000	-	6.8	10500	1.6
5.5	**13000**	**1.4**	269.8	**BG100Z-../DPE13XA4**	572	90000	-	6.6	10800	1.7
4.9	**14600**	**1.25**	300.4	"	"	90000	-	5.9	12100	1.55
4.3	**16600**	**1.1**	343.6	"	"	90000	-	5.2	13700	1.35
3.9	**18300**	**1.0**	382.6	"	"	90000	-	4.7	15200	1.2
3.2	**22300**	**0.83**	456.7	"	"	90000	-	3.9	18300	1.0

P = 9.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
600	**151**	**2.0**	2.47	**BG50-../DPE16LB4**	138	2900	-	720	126	2.4
415	**215**	**1.6**	3.55	"	"	3300	-	500	181	1.9
300	**300**	**1.35**	4.91	"	"	3500	-	365	245	1.6
245	**370**	**1.2**	6.07	"	"	4700	-	295	305	1.45
220	**410**	**1.1**	6.74	"	"	3750	-	265	340	1.3
169	**530**	**0.96**	8.70	"	"	5300	-	205	440	1.15
153	**590**	**0.89**	9.65	"	"	5600	-	184	490	1.05
395	**225**	**2.7**	3.74	**BG60-../DPE16LB4**	172	7100	-	475	191	3.2
300	**300**	**2.3**	4.98	"	"	7800	-	360	250	2.8
240	**375**	**2.1**	6.16	"	"	8500	-	290	310	2.5
220	**410**	**1.95**	6.82	"	"	8900	-	260	345	2.3
215	**420**	**1.85**	6.88	"	"	8600	-	260	345	2.3
162	**560**	**1.6**	9.13	"	"	9800	-	194	465	1.9
146	**620**	**1.45**	10.12	"	"	10200	-	175	510	1.8
121	**740**	**1.35**	12.16	"	"	10800	-	146	620	1.6
110	**820**	**1.25**	13.47	"	"	11200	-	132	680	1.5
88	**1030**	**1.1**	16.80	"	"	12000	-	106	850	1.3
79	**1140**	**1.0**	18.62	"	"	12400	-	96	940	1.2
66	**1370**	**0.88**	22.40	"	"	13300	-	80	1130	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 9.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
123	**730**	**3.2**	11.97	**BG70-../DPE16LB4**	206	11200	-	148	610	3.8
113	**800**	**2.9**	13.08	"	"	11600	-	136	660	3.5
95	**950**	**2.4**	15.53	"	"	12700	-	114	790	2.9
84	**1080**	**2.1**	17.68	"	"	13400	-	101	890	2.6
71	**1270**	**1.8**	20.98	"	"	14600	-	85	1060	2.2
65	**1390**	**1.65**	22.92	"	"	15100	-	78	1160	2.0
55	**1640**	**1.4**	27.21	"	"	16400	-	66	1370	1.7
50	**1810**	**1.25**	29.69	"	"	16900	-	60	1510	1.5
42	**2150**	**1.05**	35.24	"	"	18300	-	51	1770	1.3
37.5	**2400**	**0.96**	39.22	"	"	19100	-	45.5	1990	1.15
32	**2800**	**0.82**	46.54	"	"	20000	-	38.5	2350	0.98
67	**1350**	**3.1**	22.09	**BG80-../DPE16LB4**	256	16500	-	81	1120	3.8
56	**1620**	**2.6**	26.44	"	"	17900	-	67	1350	3.1
51	**1770**	**2.4**	29.36	"	"	18900	-	61	1480	2.8
43	**2100**	**2.0**	34.22	"	"	20200	-	52	1740	2.4
39	**2300**	**1.85**	38.00	"	"	21300	-	47	1930	2.2
33.5	**2700**	**1.55**	43.94	"	"	22600	-	40.5	2200	1.9
30.5	**2950**	**1.4**	48.80	"	"	23800	-	36.5	2450	1.7
26	**3450**	**1.2**	57.24	"	"	25400	-	31	2900	1.45
23.5	**3850**	**1.1**	63.56	"	"	26000	-	28	3200	1.3
22.5	**4000**	**1.05**	66.40	**BG80Z-../DPE16LB4**	299	26000	-	27	3350	1.25
20	**4500**	**0.93**	73.73	"	"	26000	-	24.5	3700	1.15
17.5	**5100**	**0.82**	84.55	"	"	26000	-	21	4300	0.98
35.5	**2550**	**3.3**	41.85	**BG90-../DPE16LB4**	346	65000	-	42.5	2100	4.0
30.5	**2950**	**2.8**	48.82	"	"	65000	-	36.5	2450	3.4
27.5	**3250**	**2.6**	53.46	"	"	65000	-	33.5	2700	3.1
26	**3450**	**1.95**	57.04	**BG90Z-../DPE16LB4**	405	65000	-	31.5	2850	2.4
24	**3750**	**2.0**	62.47	"	"	65000	-	28.5	3150	2.4
19.5	**4650**	**1.8**	76.61	"	"	65000	-	23.5	3850	2.2
18	**5000**	**1.7**	83.91	"	"	65000	-	21.5	4200	2.0
15.5	**5800**	**1.45**	96.53	"	"	65000	-	18.5	4900	1.7
14	**6400**	**1.3**	105.7	"	"	65000	-	17	5300	1.6
12	**7500**	**1.1**	127.1	"	"	65000	-	14	6400	1.3
11	**8200**	**1.0**	139.2	"	"	65000	-	13	6900	1.2
9.1	**9900**	**0.85**	163.0	"	"	65000	-	11	8200	1.0
16.5	**5400**	**3.1**	90.02	**BG100-../DPE16LB4**	516	90000	-	20	4500	3.7
14	**6400**	**2.6**	107.5	"	"	90000	-	16.5	5400	3.1
12.5	**7200**	**2.3**	119.7	"	"	90000	-	15	6000	2.8
11	**8200**	**2.0**	139.1	"	"	90000	-	13	6900	2.4
9.5	**9500**	**1.75**	154.8	"	"	90000	-	11.5	7800	2.2
8.3	**10900**	**1.55**	178.6	"	"	90000	-	10	9000	1.85
7.4	**12200**	**1.4**	198.8	"	"	90000	-	9.0	10000	1.7
6.4	**14100**	**1.2**	232.6	"	"	90000	-	7.7	11700	1.45
5.7	**15900**	**1.05**	259.0	"	"	90000	-	6.9	13100	1.3
5.5	**16400**	**1.15**	269.8	**BG100Z-../DPE16LB4**	608	90000	-	6.6	13700	1.35
4.9	**18500**	**1.0**	300.4	"	"	90000	-	5.9	15300	1.2
4.3	**21000**	**0.88**	343.6	"	"	90000	-	5.2	17400	1.05
3.9	**23200**	**0.8**	382.6	"	"	90000	-	4.7	19300	0.96

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 11 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
600	**175**	**1.75**	2.47	**BG50-../DPE16LB4**	138	2900	-	720	145	2.1
415	**250**	**1.4**	3.55	"	"	3300	-	500	210	1.65
300	**350**	**1.15**	4.91	"	"	3500	-	365	285	1.4
245	**425**	**1.05**	6.07	"	"	4700	-	295	355	1.25
220	**475**	**0.95**	6.74	"	"	3750	-	265	395	1.15
169	**620**	**0.82**	8.70	"	"	5300	-	205	510	1.0
590	**178**	**3.0**	2.52	**BG60-../DPE16LB4**	172	6200	-	710	147	3.6
395	**265**	**2.3**	3.74	"	"	7100	-	475	220	2.8
300	**350**	**1.95**	4.98	"	"	7800	-	360	290	2.4
240	**435**	**1.75**	6.16	"	"	8500	-	290	360	2.1
220	**475**	**1.7**	6.82	"	"	8900	-	260	400	2.0
215	**485**	**1.6**	6.88	"	"	8600	-	260	400	1.95
162	**640**	**1.4**	9.13	"	"	9800	-	194	540	1.65
146	**710**	**1.3**	10.12	"	"	10200	-	175	600	1.5
121	**860**	**1.15**	12.16	"	"	10800	-	146	710	1.4
110	**950**	**1.05**	13.47	"	"	11200	-	132	790	1.3
88	**1190**	**0.93**	16.80	"	"	12000	-	106	990	1.1
79	**1320**	**0.87**	18.62	"	"	12400	-	96	1090	1.05
146	**710**	**3.2**	10.09	**BG70-../DPE16LB4**	206	10200	-	176	590	3.9
123	**850**	**2.7**	11.97	"	"	11200	-	148	700	3.3
113	**920**	**2.5**	13.08	"	"	11600	-	136	770	3.0
95	**1100**	**2.1**	15.53	"	"	12700	-	114	920	2.5
84	**1250**	**1.85**	17.68	"	"	13400	-	101	1040	2.2
71	**1470**	**1.55**	20.98	"	"	14600	-	85	1230	1.85
65	**1610**	**1.45**	22.92	"	"	15100	-	78	1340	1.7
55	**1910**	**1.2**	27.21	"	"	16400	-	66	1590	1.45
50	**2100**	**1.1**	29.69	"	"	16900	-	60	1750	1.3
42	**2500**	**0.92**	35.24	"	"	18300	-	51	2050	1.1
37.5	**2800**	**0.82**	39.22	"	"	19100	-	45.5	2300	1.0
74	**1410**	**3.0**	19.89	**BG80-../DPE16LB4**	256	15500	-	89	1180	3.6
67	**1560**	**2.7**	22.09	"	"	16500	-	81	1290	3.3
56	**1870**	**2.2**	26.44	"	"	17900	-	67	1560	2.7
51	**2050**	**2.0**	29.36	"	"	18900	-	61	1720	2.4
43	**2400**	**1.75**	34.22	"	"	20200	-	52	2000	2.1
39	**2650**	**1.6**	38.00	"	"	21300	-	47	2200	1.9
33.5	**3100**	**1.35**	43.94	"	"	22600	-	40.5	2550	1.65
30.5	**3400**	**1.25**	48.80	"	"	23800	-	36.5	2850	1.45
26	**4000**	**1.05**	57.24	"	"	25400	-	31	3350	1.25
23.5	**4450**	**0.94**	63.56	"	"	26000	-	28	3750	1.1
22.5	**4650**	**0.9**	66.40	**BG80Z-../DPE16LB4**	299	26000	-	27	3850	1.1
20	**5200**	**0.81**	73.73	"	"	26000	-	24.5	4250	0.99
38.5	**2700**	**3.1**	38.21	**BG90-../DPE16LB4**	346	65000	-	46.5	2250	3.7
35.5	**2950**	**2.8**	41.85	"	"	65000	-	42.5	2450	3.4
30.5	**3400**	**2.5**	48.82	"	"	65000	-	36.5	2850	2.9
27.5	**3800**	**2.2**	53.46	"	"	65000	-	33.5	3100	2.7
26	**4000**	**1.7**	57.04	**BG90Z-../DPE16LB4**	405	65000	-	31.5	3300	2.1
24	**4350**	**1.7**	62.47	"	"	65000	-	28.5	3650	2.1
19.5	**5300**	**1.6**	76.61	"	"	65000	-	23.5	4450	1.9
18	**5800**	**1.45**	83.91	"	"	65000	-	21.5	4850	1.75
15.5	**6700**	**1.25**	96.53	"	"	65000	-	18.5	5600	1.5
14	**7500**	**1.1**	105.7	"	"	65000	-	17	6100	1.4
12	**8700**	**0.97**	127.1	"	"	65000	-	14	7500	1.1
11	**9500**	**0.88**	139.2	"	"	65000	-	13	8000	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 11 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
21	**5000**	**3.2**	70.69	**BG100-../DPE16LB4**	516	90000	-	25.5	4100	3.9
18.5	**5600**	**3.0**	80.85	"	"	90000	-	22	4750	3.5
16.5	**6300**	**2.7**	90.02	"	"	90000	-	20	5200	3.2
14	**7500**	**2.2**	107.5	"	"	90000	-	16.5	6300	2.7
12.5	**8400**	**2.0**	119.7	"	"	90000	-	15	7000	2.4
11	**9500**	**1.75**	139.1	"	"	90000	-	13	8000	2.1
9.5	**11000**	**1.55**	154.8	"	"	90000	-	11.5	9100	1.85
8.3	**12600**	**1.35**	178.6	"	"	90000	-	10	10500	1.6
7.4	**14100**	**1.2**	198.8	"	"	90000	-	9.0	11600	1.45
6.4	**16400**	**1.0**	232.6	"	"	90000	-	7.7	13600	1.25
5.7	**18400**	**0.91**	259.0	"	"	90000	-	6.9	15200	1.1
5.5	**19100**	**0.97**	269.8	**BG100Z-../DPE16LB4**	608	90000	-	6.6	15900	1.15
4.9	**21400**	**0.86**	300.4	"	"	90000	-	5.9	17800	1.05

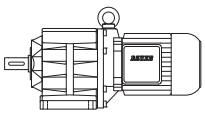
6

P = 15 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
600	**235**	**1.3**	2.47	**BG50-../DPE16XB4**	148	2900	-	720	198	1.55
415	**345**	**1.0**	3.55	"	"	3300	-	500	285	1.2
300	**475**	**0.84**	4.91	"	"	3500	-	365	390	1.0
590	**240**	**2.2**	2.52	**BG60-../DPE16XB4**	182	6200	-	710	200	2.7
395	**360**	**1.7**	3.74	"	"	7100	-	475	300	2.0
300	**475**	**1.45**	4.98	"	"	7800	-	360	395	1.75
240	**590**	**1.3**	6.16	"	"	8500	-	290	490	1.6
220	**650**	**1.25**	6.82	"	"	8900	-	260	550	1.45
215	**660**	**1.2**	6.88	"	"	8600	-	260	550	1.4
162	**880**	**1.0**	9.13	"	"	9800	-	194	730	1.2
146	**980**	**0.93**	10.12	"	"	10200	-	175	810	1.15
121	**1180**	**0.84**	12.16	"	"	10800	-	146	980	1.0
210	**680**	**3.2**	7.14	**BG70-../DPE16XB4**	216	8800	-	250	570	3.8
174	**820**	**2.8**	8.48	"	"	9500	-	210	680	3.4
146	**980**	**2.3**	10.09	"	"	10200	-	176	810	2.8
123	**1160**	**2.0**	11.97	"	"	11200	-	148	960	2.4
113	**1260**	**1.85**	13.08	"	"	11600	-	136	1050	2.2
95	**1500**	**1.55**	15.53	"	"	12700	-	114	1250	1.85
84	**1700**	**1.35**	17.68	"	"	13400	-	101	1410	1.65
71	**2000**	**1.15**	20.98	"	"	14600	-	85	1680	1.35
65	**2200**	**1.05**	22.92	"	"	15100	-	78	1830	1.25
55	**2600**	**0.88**	27.21	"	"	16400	-	66	2150	1.05
50	**2850**	**0.81**	29.69	"	"	16900	-	60	2350	0.98
95	**1500**	**2.8**	15.62	**BG80-../DPE16XB4**	266	13700	-	114	1250	3.4
85	**1680**	**2.5**	17.35	"	"	14600	-	103	1390	3.0
74	**1930**	**2.2**	19.89	"	"	15500	-	89	1600	2.6
67	**2100**	**2.0**	22.09	"	"	16500	-	81	1760	2.4
56	**2550**	**1.65**	26.44	"	"	17900	-	67	2100	2.0
51	**2800**	**1.5**	29.36	"	"	18900	-	61	2300	1.85
43	**3300**	**1.25**	34.22	"	"	20200	-	52	2750	1.55
39	**3650**	**1.15**	38.00	"	"	21300	-	47	3000	1.4
33.5	**4250**	**0.99**	43.94	"	"	22600	-	40.5	3500	1.2
30.5	**4650**	**0.9**	48.80	"	"	23800	-	36.5	3900	1.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 15 kW



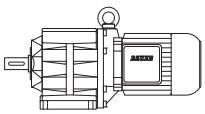
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
49.5	**2850**	**2.9**	29.78	**BG90-../DPE16XB4**	356	65000	-	60	2350	3.6
45.5	**3100**	**2.7**	32.62	"	"	65000	-	55	2600	3.2
38.5	**3700**	**2.3**	38.21	"	"	65000	-	46.5	3050	2.8
35.5	**4000**	**2.1**	41.85	"	"	65000	-	42.5	3350	2.5
30.5	**4650**	**1.8**	48.82	"	"	65000	-	36.5	3900	2.2
27.5	**5200**	**1.6**	53.46	"	"	65000	-	33.5	4250	2.0
26	**5500**	**1.25**	57.04	**BG90Z-../DPE16XB4**	415	65000	-	31.5	4500	1.5
24	**5900**	**1.25**	62.47	"	"	65000	-	28.5	5000	1.5
19.5	**7300**	**1.15**	76.61	"	"	65000	-	23.5	6000	1.4
18	**7900**	**1.05**	83.91	"	"	65000	-	21.5	6600	1.25
15.5	**9200**	**0.91**	96.53	"	"	65000	-	18.5	7700	1.1
14	**10200**	**0.82**	105.7	"	"	65000	-	17	8400	1.0
32	**4450**	**3.2**	46.43	**BG100-../DPE16XB4**	526	90000	-	38.5	3700	3.8
28.5	**5000**	**2.9**	51.70	"	"	90000	-	34.5	4150	3.5
23.5	**6000**	**2.6**	63.49	"	"	90000	-	28	5100	3.0
21	**6800**	**2.3**	70.69	"	"	90000	-	25.5	5600	2.8
18.5	**7700**	**2.1**	80.85	"	"	90000	-	22	6500	2.5
16.5	**8600**	**1.95**	90.02	"	"	90000	-	20	7100	2.4
14	**10200**	**1.65**	107.5	"	"	90000	-	16.5	8600	1.95
12.5	**11400**	**1.45**	119.7	"	"	90000	-	15	9500	1.75
11	**13000**	**1.3**	139.1	"	"	90000	-	13	11000	1.55
9.5	**15000**	**1.1**	154.8	"	"	90000	-	11.5	12400	1.35
8.3	**17200**	**0.98**	178.6	"	"	90000	-	10	14300	1.15
7.4	**19300**	**0.87**	198.8	"	"	90000	-	9.0	15900	1.05

P = 18.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
600	**290**	**1.05**	2.47	**BG50-../DPE18LB4**	200	2900	-	720	245	1.25
415	**425**	**0.82**	3.55	"	"	3300	-	500	350	0.99
590	**295**	**1.8**	2.52	**BG60-../DPE18LB4**	229	6200	-	710	245	2.2
395	**445**	**1.4**	3.74	"	"	7100	-	475	370	1.65
300	**580**	**1.2**	4.98	"	"	7800	-	360	490	1.4
215	**820**	**0.95**	6.88	"	"	8600	-	260	670	1.15
162	**1090**	**0.81**	9.13	"	"	9800	-	194	910	0.98
300	**580**	**2.6**	4.95	**BG70-../DPE18LB4**	257	6900	-	360	490	3.1
255	**690**	**2.5**	5.87	"	"	8200	-	305	570	3.1
210	**840**	**2.6**	7.14	"	"	8800	-	250	700	3.1
174	**1010**	**2.3**	8.48	"	"	9500	-	210	840	2.7
146	**1210**	**1.9**	10.09	"	"	10200	-	176	1000	2.3
123	**1430**	**1.6**	11.97	"	"	11200	-	148	1190	1.95
113	**1560**	**1.45**	13.08	"	"	11600	-	136	1290	1.8
95	**1850**	**1.25**	15.53	"	"	12700	-	114	1540	1.5
84	**2100**	**1.1**	17.68	"	"	13400	-	101	1740	1.3
71	**2450**	**0.94**	20.98	"	"	14600	-	85	2050	1.1
65	**2700**	**0.85**	22.92	"	"	15100	-	78	2250	1.0
129	**1360**	**3.1**	11.43	**BG80-../DPE18LB4**	311	11600	-	155	1130	3.7
116	**1520**	**2.8**	12.69	"	"	12400	-	140	1260	3.3
95	**1850**	**2.3**	15.62	"	"	13700	-	114	1540	2.7
85	**2050**	**2.0**	17.35	"	"	14600	-	103	1710	2.5
74	**2350**	**1.8**	19.89	"	"	15500	-	89	1980	2.1
67	**2600**	**1.6**	22.09	"	"	16500	-	81	2150	1.95
56	**3150**	**1.35**	26.44	"	"	17900	-	67	2600	1.6

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 18.5 kW



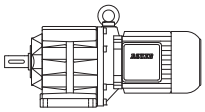
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
51	**3450**	**1.2**	29.36	**BG80-../DPE18LB4**	311	18900	-	61	2850	1.45
43	**4100**	**1.0**	34.22	"	"	20200	-	52	3350	1.25
39	**4500**	**0.93**	38.00	"	"	21300	-	47	3750	1.1
33.5	**5200**	**0.81**	43.94	"	"	22600	-	40.5	4350	0.97
65	**2700**	**3.1**	22.62	**BG90-../DPE18LB4**	402	65000	-	79	2200	3.8
60	**2900**	**2.9**	24.78	"	"	65000	-	72	2450	3.4
49.5	**3550**	**2.4**	29.78	"	"	65000	-	60	2900	2.9
45.5	**3850**	**2.2**	32.62	"	"	65000	-	55	3200	2.6
38.5	**4550**	**1.85**	38.21	"	"	65000	-	46.5	3750	2.2
35.5	**4950**	**1.7**	41.85	"	"	65000	-	42.5	4150	2.0
30.5	**5700**	**1.45**	48.82	"	"	65000	-	36.5	4800	1.75
27.5	**6400**	**1.3**	53.46	"	"	65000	-	33.5	5200	1.6
26	**6700**	**1.0**	57.04	**BG90Z-../DPE18LB4**	456	65000	-	31.5	5600	1.2
24	**7300**	**1.05**	62.47	"	"	65000	-	28.5	6100	1.25
19.5	**9000**	**0.93**	76.61	"	"	65000	-	23.5	7500	1.1
18	**9800**	**0.86**	83.91	"	"	65000	-	21.5	8200	1.0
44	**4000**	**3.2**	33.71	**BG100-../DPE18LB4**	572	88500	-	53	3300	3.9
39.5	**4450**	**3.0**	37.54	"	"	90000	-	47.5	3700	3.6
32	**5500**	**2.6**	46.43	"	"	90000	-	38.5	4550	3.1
28.5	**6100**	**2.4**	51.70	"	"	90000	-	34.5	5100	2.8
23.5	**7500**	**2.1**	63.49	"	"	90000	-	28	6300	2.4
21	**8400**	**1.9**	70.69	"	"	90000	-	25.5	6900	2.3
18.5	**9500**	**1.75**	80.85	"	"	90000	-	22	8000	2.1
16.5	**10700**	**1.55**	90.02	"	"	90000	-	20	8800	1.9
14	**12600**	**1.35**	107.5	"	"	90000	-	16.5	10700	1.55
12.5	**14100**	**1.2**	119.7	"	"	90000	-	15	11700	1.45
11	**16000**	**1.05**	139.1	"	"	90000	-	13	13500	1.25
9.5	**18500**	**0.91**	154.8	"	"	90000	-	11.5	15300	1.1

P = 22 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
600	**350**	**0.87**	2.47	**BG50-../DPE18XB4**	218	2900	-	720	290	1.05
590	**355**	**1.5**	2.52	**BG60-../DPE18XB4**	247	6200	-	710	295	1.8
395	**530**	**1.15**	3.74	"	"	7100	-	475	440	1.4
300	**700**	**0.98**	4.98	"	"	7800	-	360	580	1.2
215	**970**	**0.8**	6.88	"	"	8600	-	260	800	0.98
300	**700**	**2.1**	4.95	**BG70-../DPE18XB4**	275	6900	-	360	580	2.6
255	**820**	**2.1**	5.87	"	"	8200	-	305	680	2.6
210	**1000**	**2.2**	7.14	"	"	8800	-	250	840	2.6
174	**1200**	**1.9**	8.48	"	"	9500	-	210	1000	2.3
146	**1430**	**1.6**	10.09	"	"	10200	-	176	1190	1.95
123	**1700**	**1.35**	11.97	"	"	11200	-	148	1410	1.65
113	**1850**	**1.25**	13.08	"	"	11600	-	136	1540	1.5
95	**2200**	**1.05**	15.53	"	"	12700	-	114	1840	1.25
84	**2500**	**0.92**	17.68	"	"	13400	-	101	2050	1.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

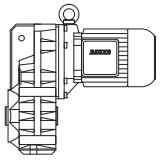
P = 22 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
250	**840**	**3.2**	5.94	**BG80-../DPE18XB4**	329	8300	-	300	700	3.8
225	**930**	**3.2**	6.60	"	"	9100	-	270	770	3.8
178	**1180**	**3.2**	8.30	"	"	10400	-	215	970	3.9
160	**1310**	**3.0**	9.21	"	"	10800	-	193	1080	3.6
129	**1620**	**2.6**	11.43	"	"	11600	-	155	1350	3.1
116	**1810**	**2.3**	12.69	"	"	12400	-	140	1500	2.8
95	**2200**	**1.9**	15.62	"	"	13700	-	114	1840	2.3
85	**2450**	**1.7**	17.35	"	"	14600	-	103	2000	2.1
74	**2800**	**1.5**	19.89	"	"	15500	-	89	2350	1.8
67	**3100**	**1.35**	22.09	"	"	16500	-	81	2550	1.65
56	**3750**	**1.1**	26.44	"	"	17900	-	67	3100	1.35
51	**4100**	**1.0**	29.36	"	"	18900	-	61	3400	1.25
43	**4850**	**0.87**	34.22	"	"	20200	-	52	4000	1.05
82	**2550**	**3.2**	17.96	**BG90-../DPE18XB4**	420	59800	-	99	2100	3.9
75	**2800**	**3.0**	19.67	"	"	62400	-	90	2300	3.7
65	**3200**	**2.6**	22.62	"	"	65000	-	79	2650	3.2
60	**3500**	**2.4**	24.78	"	"	65000	-	72	2900	2.9
49.5	**4200**	**2.0**	29.78	"	"	65000	-	60	3500	2.4
45.5	**4600**	**1.85**	32.62	"	"	65000	-	55	3800	2.2
38.5	**5400**	**1.55**	38.21	"	"	65000	-	46.5	4500	1.85
35.5	**5900**	**1.4**	41.85	"	"	65000	-	42.5	4900	1.7
30.5	**6800**	**1.25**	48.82	"	"	65000	-	36.5	5700	1.45
27.5	**7600**	**1.1**	53.46	"	"	65000	-	33.5	6200	1.35
26	**8000**	**0.85**	57.04	**BG90Z-../DPE18XB4**	474	65000	-	31.5	6600	1.05
24	**8700**	**0.86**	62.47	"	"	65000	-	28.5	7300	1.05
44	**4750**	**2.7**	33.71	**BG100-../DPE18XB4**	590	88500	-	53	3950	3.3
39.5	**5300**	**2.5**	37.54	"	"	90000	-	47.5	4400	3.0
32	**6500**	**2.2**	46.43	"	"	90000	-	38.5	5400	2.6
28.5	**7300**	**2.0**	51.70	"	"	90000	-	34.5	6000	2.4
23.5	**8900**	**1.75**	63.49	"	"	90000	-	28	7500	2.1
21	**10000**	**1.6**	70.69	"	"	90000	-	25.5	8200	1.95
18.5	**11300**	**1.45**	80.85	"	"	90000	-	22	9500	1.75
16.5	**12700**	**1.3**	90.02	"	"	90000	-	20	10500	1.6
14	**15000**	**1.1**	107.5	"	"	90000	-	16.5	12700	1.3
12.5	**16800**	**1.0**	119.7	"	"	90000	-	15	14000	1.2
11	**19100**	**0.88**	139.1	"	"	90000	-	13	16100	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

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Page

BF-series shaft-mounted geared motors Selection 115-148

Description of shaft mounted-geared units
- Sizes
- Bauer service factors (f_B) for shaft-mounted geared motors
- Continuous operation without switching frequency Z ≤1/h
- Switching duty
- Bauer service factor
- Explanation of shock classification
- Key to abbreviations
- Selection tables, shaft mounted-geared motors

Sizes

Bauer BF-series shaft-mounted geared motors are normally supplied in ten frame sizes and with torques of 90 to 18,500 Nm. Higher torques are available on request. The gear unit is accommodated in a sturdy cast housing

Bauer service factors (f_B) for shaft-mounted geared motors

Of the numerous factors influencing the total loading of a gear unit, the most important include:

- Mean torque (rated torque)
- Daily operating hours
- Severity of torque peaks (shock classification)
- Frequency of torque peaks (switching duty)

These factors can be represented in a simplified and practical manner by **service factors**. The tables and explanations below attempt to provide an objective description of the **shock classification**, rather than a classification of the driven machinery. Experience has shown that, in addition to the torque shocks caused by the driven machinery (M_x/M_N), above all the power transmission components (clutches, chains etc.) plus the mass ratios play a decisive role in this.

See Bauer special imprint SD32 for more information.

Continuous operation without switching frequency Z ≤1/h

Factor f_1 for shock classification and operating time

Shock classification	Operating hours per day t_d	>4 h ≤8 h	>8 h ≤16 h	>16 h ≤24 h
I		0,8	1,0	1,2
II		1,05	1,25	1,45
III		1,45	1,55	1,7

Switching duty

Factor f_2 for shock classification and switching frequency

Switching frequency in single- shift operation t_d ≤8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	0,95	1,1	1,15
II	1,2	1,35	1,4
III	1,55	1,6	1,6

Switching frequency in multiple- shift operation t_d >8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	1,3	1,45	1,5
II	1,5	1,6	1,65
III	1,75	1,8	1,8

Bauer service factor

Bauer Service factor $f_B = f_1$ or $f_B = f_2$

For example: Shock classification II for Z = 100 switching operations per hour and multiple-shift operation yields a service factor $f_B = f_2 = 1.5$

Explanation of shock classification

Shock classification I:
Uniform without shock loads. All the following requirements must be satisfied:

- FI ≤1,3
- M_x/M_N ≤1,0
- Shock-absorbing power transmission components (e.g. highly resilient, zero-play coupling, φ N ≥5°)

Shock classification II:
Moderate shock loads. At least one of the following conditions applies:
- 1,3 <Fl ≤4
- 1 <M_x/M_N ≤1,6
- Shock-neutral power transmission components (e.g. gear wheels, zero- play rigid coupling or resilient coupling with φ N <5°)

Shock classification III:
Heavy shock loads. At least one of the following conditions applies:
- Fl >4
- 1,6 <M_x/M_N ≤2,0
- Shock-amplifying power transmission components (e.g. coupling with play or chain drive)

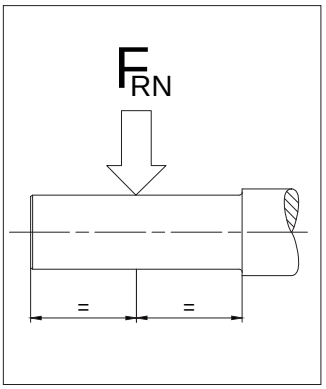
Key to abbreviations

Z	Switching duty number of switching operations per hour
t_d	Daily operating time in hours (h/d)
Fl	Factor of inertia Fl = $(J_{ext} + J_{rot})/J_{rot}$
J_{ext}	Mass moment of inertia of the machine to be driven, in relation to the motor's rotor shaft (kgm^2)
J_{rot}	Mass moment of inertia of the motor rotor (kgm^2)
M_x	Highest impact torque above the static torque which can occur during normal operation or in emergency situations
M_N	Required static load torque for the application
M_x/M_N	Relative torque - Factor
φ_N	Torsional offset of the resilient coupling under rated torque

Selection tables, shaft-mounted geared motors

Key to abbreviations

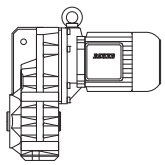
P	Rated output
n_2	Rated speed of the output shaft
i	Gear reduction ratio
M_2	Rated torque at the output shaft
f_B	Bauer service factor
F_{RN}	Maximum permissible radial force with normal bearings
F_{RV}	Maximum permissible radial force with reinforced bearings in each case with standard solid shaft (Code -.1 und -.2)



Use the selection tables to determine the size of geared motor required. The codes clearly define the Type of gear unit and output shaft (see chapter 11 „dimensional drawings shaft-mounted gear motors").

Motor power overload protection
Motor-power ratings, particularly in conjunction with four-stage and multi-stage gear units, are more than ample in some instances. Consequently, and in much the same way as with low-power motors, rated current is not a measure of gear loading and cannot be used to protect the gear unit against overloading. It is advisable to provide gears at risk from excessive load or blockage with a protective mechanism (e. g., sliding clutch, sliding hub, shear pin or an alternative).

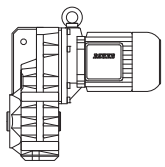
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
150	**7.6**	**9.2**	9.21	**BF06-../DPE05LA4**	10	1900	-	182	6.2	11
115	**9.9**	**7.6**	12.07	"	"	2000	-	139	8.2	9.1
98	**11.6**	**7.3**	14.21	"	"	2100	-	118	9.7	8.8
82	**13.9**	**6.8**	16.99	"	"	2500	-	99	11.5	8.3
68	**16.8**	**5.7**	20.42	"	"	2700	-	82	13.9	6.8
52	**22**	**4.3**	26.76	"	"	3000	-	63	18.1	5.2
44	**26**	**3.7**	31.50	"	"	3200	-	54	21	4.5
37	**30.5**	**3.1**	37.69	"	"	3500	-	44.5	25.5	3.7
30	**38**	**2.5**	46.14	"	"	3800	-	36.5	31	3.1
24	**47.5**	**2.0**	58.33	"	"	4000	-	29	39.5	2.4
21	**54**	**1.75**	66.82	"	"	4000	-	25	45.5	2.1
17	**67**	**1.4**	83.61	"	"	4000	-	20	57	1.65
15	**76**	**1.25**	95.16	"	"	4000	-	18	63	1.5
12.5	**91**	**0.89**	110.8	"	"	4000	-	15.5	73	1.1
15.5	**73**	**3.3**	90.91	**BF10-../DPE06LA4**	23	5400	-	18.5	61	3.9
14	**81**	**3.0**	99.97	"	"	5600	-	17	67	3.6
12.5	**91**	**2.6**	112.3	"	"	5900	-	15	76	3.2
11.5	**99**	**2.4**	123.5	"	"	6100	-	14	81	3.0
11	**104**	**2.3**	128.9	"	"	6200	-	13	88	2.7
9.8	**116**	**2.1**	141.8	"	"	6400	-	12	95	2.5
9.2	**124**	**1.95**	151.2	**BF10Z-../DPE06LA4**	24	6400	-	11.5	99	2.4
8.4	**136**	**1.75**	166.2	"	"	6400	-	10.5	109	2.2
7.7	**148**	**1.6**	180.1	"	"	6400	-	9.3	123	1.95
7.0	**163**	**1.45**	198.0	"	"	6400	-	8.5	134	1.8
6.5	**176**	**1.35**	214.5	"	"	6400	-	7.8	146	1.65
5.9	**194**	**1.25**	235.8	"	"	6400	-	7.1	161	1.5
5.4	**210**	**1.15**	257.4	"	"	6400	-	6.5	176	1.35
4.9	**230**	**1.05**	283.1	"	"	6400	-	5.9	194	1.25
4.3	**265**	**0.91**	324.3	"	"	6400	-	5.2	220	1.1
3.9	**290**	**0.83**	356.6	"	"	6400	-	4.7	240	1.0
3.7	**265**	**0.98**	377.9	**BF10G06-../DPE06LA4**	28	6400	-	4.5	210	1.25
3.3	**300**	**0.87**	424.5	"	"	6400	-	4.0	240	1.1
2.6	**260***	**1.0**	536.0	"	"	6400	-	3.2	260	1.0
2.2	**260***	**1.0**	643.8	"	"	6400	-	2.6	260	1.0
1.8	**260***	**1.0**	768.2	"	"	6400	-	2.2	260	1.0
1.7	**260***	**1.0**	845.1	"	"	6400	-	2.0	260	1.0
1.4	**260***	**1.0**	994.0	"	"	6400	-	1.7	260	1.0
1.2	**260***	**1.0**	1190	"	"	6400	-	1.5	260	1.0
1.0	**260***	**1.0**	1452	"	"	6400	-	1.2	260	1.0
0.8	**260***	**1.0**	1744	"	"	6400	-	1.0	260	1.0
0.7	**260***	**1.0**	2096	"	"	6400	-	0.8	260	1.0
0.6	**260***	**1.0**	2467	"	"	6400	-	0.7	260	1.0
0.47	**260***	**1.0**	2952	"	"	6400	-	0.6	260	1.0
0.43	**260***	**1.0**	3220	"	"	6400	-	0.55	260	1.0
0.36	**260***	**1.0**	3942	"	"	6400	-	0.43	260	1.0
0.31	**260***	**1.0**	4569	"	"	6400	-	0.37	260	1.0
0.25	**260***	**1.0**	5709	"	"	6400	-	0.3	260	1.0
0.22	**260***	**1.0**	6550	"	"	6400	-	0.26	260	1.0
0.2	**260***	**1.0**	7144	"	"	6400	-	0.24	260	1.0
0.16	**260***	**1.0**	8681	"	"	6400	-	0.2	260	1.0
0.15	**260***	**1.0**	9471	"	"	6400	-	0.18	260	1.0
8.9	**128**	**3.3**	155.4	**BF20Z-../DPE06LA4**	31	7900	-	11	104	4.0
8.4	**136**	**3.1**	164.3	"	"	7900	-	10.5	109	3.9
7.7	**148**	**2.8**	180.8	"	"	7900	-	9.3	123	3.4
7.1	**161**	**2.6**	197.1	"	"	7900	-	8.5	134	3.1
6.4	**179**	**2.3**	216.9	"	"	7900	-	7.7	148	2.8
5.9	**194**	**2.2**	235.9	"	"	7900	-	7.1	161	2.6
5.4	**210**	**2.0**	259.6	"	"	7900	-	6.5	176	2.4

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

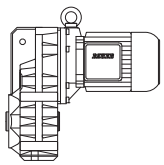
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
4.7	**240**	**1.75**	295.5	**BF20Z-../DPE06LA4**	31	7900	-	5.7	200	2.1
4.3	**265**	**1.6**	325.2	"	"	7900	-	5.2	220	1.9
4.1	**275**	**1.55**	339.1	"	"	7900	-	5.0	225	1.85
3.7	**305**	**1.4**	373.1	"	"	7900	-	4.5	250	1.7
3.4	**335**	**1.25**	418.1	"	"	7900	-	4.0	285	1.45
3.0	**380**	**1.1**	460.0	"	"	7900	-	3.7	305	1.4
2.7	**370**	**1.25**	513.7	**BF20G06-../DPE06LA4**	34	7900	-	3.3	290	1.6
2.3	**435**	**1.05**	617.0	"	"	7900	-	2.8	345	1.35
1.9	**540**	**0.85**	736.1	"	"	7900	-	2.3	435	1.05
1.8	**570**	**0.81**	810.0	"	"	7900	-	2.1	480	0.96
1.5	**460***	**1.0**	952.7	"	"	7900	-	1.8	460	1.0
1.3	**460***	**1.0**	1140	"	"	7900	-	1.5	460	1.0
1.0	**460***	**1.0**	1392	"	"	7900	-	1.2	460	1.0
0.95	**460***	**1.0**	1533	"	"	7900	-	1.1	460	1.0
0.8	**460***	**1.0**	1764	"	"	7900	-	0.95	460	1.0
0.65	**460***	**1.0**	2192	"	"	7900	-	0.8	460	1.0
0.55	**460***	**1.0**	2579	"	"	7900	-	0.65	460	1.0
0.49	**460***	**1.0**	2829	"	"	7900	-	0.6	460	1.0
0.45	**460***	**1.0**	3086	"	"	7900	-	0.55	460	1.0
0.37	**460***	**1.0**	3778	"	"	7900	-	0.45	460	1.0
0.32	**460***	**1.0**	4379	"	"	7900	-	0.39	460	1.0
0.26	**460***	**1.0**	5471	"	"	7900	-	0.31	460	1.0
0.21	**460***	**1.0**	6847	"	"	7900	-	0.25	460	1.0
0.17	**460***	**1.0**	8320	"	"	7900	-	0.21	460	1.0
0.16	**460***	**1.0**	9077	"	"	7900	-	0.19	460	1.0
6.2	**184**	**3.1**	224.8	**BF30Z-../DPE06LA4**	42	7400	-	7.5	152	3.8
5.6	**200**	**2.9**	247.3	"	"	7400	-	6.8	168	3.4
5.3	**215**	**2.7**	263.5	"	"	7400	-	6.4	179	3.2
4.8	**235**	**2.4**	289.8	"	"	7400	-	5.8	197	2.9
4.5	**250**	**2.3**	310.7	"	"	7400	-	5.4	210	2.7
4.1	**275**	**2.1**	341.8	"	"	7400	-	4.9	230	2.5
3.7	**305**	**1.9**	375.1	"	"	7400	-	4.5	250	2.3
3.4	**335**	**1.7**	412.6	"	"	7400	-	4.1	275	2.1
3.0	**380**	**1.5**	463.3	"	"	7400	-	3.7	305	1.9
2.8	**405**	**1.4**	509.6	"	"	7400	-	3.3	345	1.65
2.6	**440**	**1.3**	537.0	"	"	7400	-	3.2	355	1.6
2.4	**475**	**1.2**	590.7	"	"	7400	-	2.9	395	1.45
2.3	**435**	**1.45**	622.4	**BF30G06-../DPE06LA4**	45	7400	-	2.7	360	1.75
2.0	**510**	**1.25**	705.1	"	"	7400	-	2.4	420	1.5
1.7	**600**	**1.05**	817.1	"	"	7400	-	2.1	475	1.35
1.5	**690**	**0.91**	961.1	"	"	7400	-	1.8	560	1.15
1.2	**630***	**1.0**	1150	"	"	7400	-	1.5	630	1.0
1.1	**630***	**1.0**	1286	"	"	7400	-	1.3	630	1.0
1.0	**630***	**1.0**	1404	"	"	7400	-	1.2	630	1.0
0.85	**630***	**1.0**	1686	"	"	7400	-	1.0	630	1.0
0.7	**630***	**1.0**	2026	"	"	7400	-	0.85	630	1.0
0.6	**630***	**1.0**	2386	"	"	7400	-	0.7	630	1.0
0.49	**630***	**1.0**	2854	"	"	7400	-	0.6	630	1.0
0.4	**630***	**1.0**	3493	"	"	7400	-	0.48	630	1.0
0.37	**630***	**1.0**	3811	"	"	7400	-	0.44	630	1.0
0.32	**630***	**1.0**	4417	"	"	7400	-	0.38	630	1.0
0.28	**630***	**1.0**	5060	"	"	7400	-	0.34	630	1.0
0.22	**630***	**1.0**	6333	"	"	7400	-	0.27	630	1.0
0.2	**630***	**1.0**	7206	"	"	7400	-	0.24	630	1.0
0.18	**630***	**1.0**	7861	"	"	7400	-	0.22	630	1.0
0.16	**630***	**1.0**	9157	"	"	7400	-	0.19	630	1.0
4.0	**285**	**3.2**	346.8	**BF40Z-../DPE06LA4**	53	10600	-	4.9	230	3.9
3.7	**305**	**3.0**	381.5	"	"	10600	-	4.4	260	3.5
3.4	**335**	**2.7**	417.3	"	"	10600	-	4.1	275	3.3
3.1	**365**	**2.5**	459.1	"	"	10600	-	3.7	305	3.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

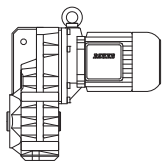
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
2.7	**420**	**2.1**	514.6	**BF40Z-../DPE06LA4**	53	10600	-	3.3	345	2.6
2.5	**455**	**2.0**	566.1	"	"	10600	-	3.0	380	2.4
1.9	**395**	**2.5**	731.6	**BF40G10-../DPE06LA4**	58	10600	-	2.3	290	3.4
1.5	**540**	**1.85**	928.9	"	"	10600	-	1.8	410	2.4
1.3	**640**	**1.55**	1106	"	"	10600	-	1.6	475	2.1
1.1	**800**	**1.25**	1324	"	"	10600	-	1.3	640	1.55
0.95	**940**	**1.05**	1484	"	"	10600	-	1.2	690	1.45
0.8	**1000***	**1.0**	1810	"	"	10600	-	0.95	1000	1.0
0.7	**1000***	**1.0**	1997	"	"	10600	-	0.85	1000	1.0
0.55	**1000***	**1.0**	2536	"	"	10600	-	0.7	1000	1.0
0.5	**1000***	**1.0**	2810	"	"	10600	-	0.6	1000	1.0
0.42	**1000***	**1.0**	3346	"	"	10600	-	0.5	1000	1.0
0.35	**1000***	**1.0**	3985	"	"	10600	-	0.42	1000	1.0
0.29	**1000***	**1.0**	4784	"	"	10600	-	0.35	1000	1.0
0.26	**1000***	**1.0**	5439	"	"	10600	-	0.31	1000	1.0
0.22	**1000***	**1.0**	6377	"	"	10600	-	0.27	1000	1.0
0.18	**1000***	**1.0**	7875	"	"	10600	-	0.22	1000	1.0
0.16	**1000***	**1.0**	9042	"	"	10600	-	0.19	1000	1.0
2.8	**405**	**3.2**	496.4	**BF50Z-../DPE06LA4**	82	13600	-	3.4	335	3.9
2.5	**455**	**2.9**	555.2	"	"	13600	-	3.1	365	3.6
1.6	**500**	**2.8**	864.5	**BF50G10-../DPE06LA4**	86	13600	-	2.0	365	3.8
1.4	**590**	**2.4**	1029	"	"	13600	-	1.7	445	3.1
1.2	**740**	**1.9**	1203	"	"	13600	-	1.4	600	2.3
1.1	**800**	**1.75**	1359	"	"	13600	-	1.3	640	2.2
0.95	**930**	**1.5**	1520	"	"	13600	-	1.1	770	1.8
0.85	**1060**	**1.3**	1684	"	"	13600	-	1.0	860	1.65
0.7	**1330**	**1.05**	2059	"	"	13600	-	0.85	1040	1.35
0.6	**1400***	**1.0**	2360	"	"	13600	-	0.75	1400	1.0
0.5	**1400***	**1.0**	2810	"	"	13600	-	0.6	1400	1.0
0.42	**1400***	**1.0**	3348	"	"	13600	-	0.5	1400	1.0
0.35	**1400***	**1.0**	4019	"	"	13600	-	0.42	1400	1.0
0.28	**1400***	**1.0**	5062	"	"	13600	-	0.33	1400	1.0
0.24	**1400***	**1.0**	5935	"	"	13600	-	0.29	1400	1.0
0.19	**1400***	**1.0**	7329	"	"	13600	-	0.23	1400	1.0
0.17	**1400***	**1.0**	8120	"	"	13600	-	0.21	1400	1.0
0.15	**1400***	**1.0**	9324	"	"	13600	-	0.18	1400	1.0
0.95	**820**	**3.0**	1494	**BF60G20-../DPE06LA4**	134	15300	43300	1.2	570	4.4
0.85	**920**	**2.7**	1658	"	"	15300	43300	1.1	620	4.0
0.75	**1080**	**2.3**	1955	"	"	15300	43300	0.9	820	3.0
0.65	**1300**	**1.9**	2172	"	"	15300	43300	0.8	970	2.6
0.5	**1790**	**1.4**	2781	"	"	15300	43300	0.65	1260	2.0
0.43	**2150**	**1.15**	3237	"	"	15300	43300	0.55	1580	1.6
0.36	**2500***	**1.0**	3883	"	"	15300	43300	0.44	2500	1.0
0.3	**2500***	**1.0**	4646	"	"	15300	43300	0.36	2500	1.0
0.27	**2500***	**1.0**	5241	"	"	15300	43300	0.32	2500	1.0
0.23	**2500***	**1.0**	6014	"	"	15300	43300	0.28	2500	1.0
0.21	**2500***	**1.0**	6679	"	"	15300	43300	0.26	2500	1.0
0.17	**2500***	**1.0**	8235	"	"	15300	43300	0.21	2500	1.0
0.49	**1840**	**3.1**	2849	**BF70G20-../DPE06LA4**	212	16100	47700	0.6	1410	4.0
0.41	**2300**	**2.5**	3417	"	"	16100	47700	0.49	1840	3.1
0.34	**2850**	**2.0**	4090	"	"	16100	47700	0.41	2300	2.5
0.31	**3200**	**1.8**	4542	"	"	16100	47700	0.37	2600	2.2
0.27	**3750**	**1.5**	5124	"	"	16100	47700	0.33	2950	1.95
0.25	**4050**	**1.4**	5691	"	"	16100	47700	0.3	3300	1.75
0.22	**4700**	**1.2**	6530	"	"	16100	47700	0.26	3900	1.45
0.2	**5200**	**1.1**	7248	"	"	16100	47700	0.24	4250	1.35
0.18	**5700***	**1.0**	8052	"	"	16100	47700	0.21	5700	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

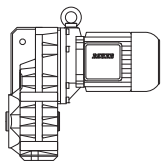
P = 0.18 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
181	**9.4**	**7.2**	7.66	**BF06-../DPE07LA4**	14	1800	-	220	7.8	8.7
150	**11.4**	**6.1**	9.21	"	"	1900	-	182	9.4	7.4
115	**14.9**	**5.0**	12.07	"	"	2000	-	139	12.3	6.1
98	**17.5**	**4.9**	14.21	"	"	2100	-	118	14.5	5.9
82	**20.5**	**4.6**	16.99	"	"	2500	-	99	17.3	5.5
68	**25**	**3.8**	20.42	"	"	2700	-	82	20.5	4.6
52	**33**	**2.9**	26.76	"	"	3000	-	63	27	3.5
44	**39**	**2.4**	31.50	"	"	3200	-	54	31.5	3.0
37	**46**	**2.1**	37.69	"	"	3500	-	44.5	38.5	2.5
30	**57**	**1.65**	46.14	"	"	3800	-	36.5	47	2.0
24	**71**	**1.35**	58.33	"	"	4000	-	29	59	1.6
21	**81**	**1.15**	66.82	"	"	4000	-	25	68	1.4
17	**101**	**0.94**	83.61	"	"	4000	-	20	85	1.1
15	**114**	**0.83**	95.16	"	"	4000	-	18	95	1.0
22.5	**76**	**3.2**	61.55	**BF10-../DPE07LA4**	26	4700	-	27.5	62	3.9
20.5	**83**	**2.9**	67.69	"	"	4900	-	25	68	3.5
18	**95**	**2.5**	77.55	"	"	5100	-	22	78	3.1
16.5	**104**	**2.3**	85.27	"	"	5300	-	20	85	2.8
15.5	**110**	**2.2**	90.91	"	"	5400	-	18.5	92	2.6
14	**122**	**1.95**	99.97	"	"	5600	-	17	101	2.4
12.5	**137**	**1.75**	112.3	"	"	5900	-	15	114	2.1
11.5	**149**	**1.6**	123.5	"	"	6100	-	14	122	1.95
11	**156**	**1.55**	128.9	"	"	6200	-	13	132	1.8
9.8	**175**	**1.35**	141.8	"	"	6400	-	12	143	1.7
9.2	**186**	**1.3**	151.2	**BF10Z-../DPE07LA4**	27	6400	-	11.5	149	1.6
8.4	**200**	**1.2**	166.2	"	"	6400	-	10.5	163	1.45
7.7	**220**	**1.1**	180.1	"	"	6400	-	9.3	184	1.3
7.0	**245**	**0.98**	198.0	"	"	6400	-	8.5	200	1.2
6.5	**260**	**0.92**	214.5	"	"	6400	-	7.8	220	1.1
5.9	**290**	**0.83**	235.8	"	"	6400	-	7.1	240	1.0
13	**132**	**3.2**	110.2	**BF20-../DPE07LA4**	32	7300	-	15.5	110	3.8
11.5	**149**	**2.8**	123.5	"	"	7600	-	14	122	3.4
10.5	**163**	**2.6**	135.9	"	"	7900	-	12.5	137	3.1
9.8	**175**	**2.4**	141.2	**BF20Z-../DPE07LA4**	34	7900	-	12	143	2.9
8.9	**193**	**2.2**	155.4	"	"	7900	-	11	156	2.7
8.4	**200**	**2.1**	164.3	"	"	7900	-	10.5	163	2.6
7.7	**220**	**1.9**	180.8	"	"	7900	-	9.3	184	2.3
7.1	**240**	**1.75**	197.1	"	"	7900	-	8.5	200	2.1
6.4	**265**	**1.6**	216.9	"	"	7900	-	7.7	220	1.9
5.9	**290**	**1.45**	235.9	"	"	7900	-	7.1	240	1.75
5.4	**315**	**1.35**	259.6	"	"	7900	-	6.5	260	1.6
4.7	**365**	**1.15**	295.5	"	"	7900	-	5.7	300	1.4
4.3	**395**	**1.05**	325.2	"	"	7900	-	5.2	330	1.25
4.1	**415**	**1.0**	339.1	"	"	7900	-	5.0	340	1.25
3.7	**460**	**0.91**	373.1	"	"	7900	-	4.5	380	1.1
3.4	**500**	**0.84**	418.1	"	"	7900	-	4.0	425	0.99
9.2	**186**	**3.1**	150.7	**BF30Z-../DPE07LA4**	45	7400	-	11.5	149	3.9
8.4	**200**	**2.9**	165.8	"	"	7400	-	10.5	163	3.5
7.9	**215**	**2.7**	176.6	"	"	7400	-	9.5	180	3.2
7.2	**235**	**2.4**	194.3	"	"	7400	-	8.6	199	2.9
6.2	**275**	**2.1**	224.8	"	"	7400	-	7.5	225	2.6
5.6	**305**	**1.9**	247.3	"	"	7400	-	6.8	250	2.3
5.3	**320**	**1.8**	263.5	"	"	7400	-	6.4	265	2.2
4.8	**355**	**1.6**	289.8	"	"	7400	-	5.8	295	1.95
4.5	**380**	**1.5**	310.7	"	"	7400	-	5.4	315	1.85
4.1	**415**	**1.4**	341.8	"	"	7400	-	4.9	350	1.65

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

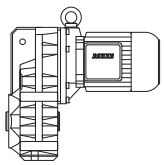
P = 0.18 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
3.7	**460**	**1.25**	375.1	**BF30Z-../DPE07LA4**	45	7400	-	4.5	380	1.5
3.4	**500**	**1.15**	412.6	"	"	7400	-	4.1	415	1.4
3.0	**570**	**1.0**	463.3	"	"	7400	-	3.7	460	1.25
2.8	**610**	**0.94**	509.6	"	"	7400	-	3.3	520	1.1
2.6	**660**	**0.87**	537.0	"	"	7400	-	3.2	530	1.1
2.4	**710**	**0.81**	590.7	"	"	7400	-	2.9	590	0.97
2.3	**680**	**0.93**	622.4	**BF30G06-../DPE07LA4**	47	7400	-	2.7	570	1.1
6.3	**270**	**3.3**	222.4	**BF40Z-../DPE07LA4**	55	10600	-	7.6	225	4.0
5.5	**310**	**2.9**	253.2	"	"	10600	-	6.6	260	3.5
5.0	**340**	**2.6**	278.5	"	"	10600	-	6.0	285	3.2
4.7	**365**	**2.5**	295.1	"	"	10600	-	5.7	300	3.0
4.3	**395**	**2.3**	324.7	"	"	10600	-	5.2	330	2.7
4.0	**425**	**2.1**	346.8	"	"	10600	-	4.9	350	2.6
3.7	**460**	**1.95**	381.5	"	"	10600	-	4.4	390	2.3
3.4	**500**	**1.8**	417.3	"	"	10600	-	4.1	415	2.2
3.1	**550**	**1.65**	459.1	"	"	10600	-	3.7	460	1.95
2.7	**630**	**1.45**	514.6	"	"	10600	-	3.3	520	1.75
2.5	**680**	**1.3**	566.1	"	"	10600	-	3.0	570	1.6
2.4	**520**	**1.9**	597.3	**BF40G10-../DPE07LA4**	61	10600	-	2.8	425	2.4
1.9	**690**	**1.45**	731.6	"	"	10600	-	2.3	540	1.85
1.5	**920**	**1.1**	928.9	"	"	10600	-	1.8	730	1.35
1.3	**1080**	**0.93**	1106	"	"	10600	-	1.6	830	1.2
4.4	**390**	**3.3**	316.6	**BF50Z-../DPE07LA4**	85	13600	-	5.3	320	4.1
3.9	**440**	**3.0**	354.0	"	"	13600	-	4.8	355	3.7
3.6	**475**	**2.7**	392.8	"	"	13600	-	4.3	395	3.3
3.2	**530**	**2.5**	439.3	"	"	13600	-	3.9	440	3.0
2.8	**610**	**2.1**	496.4	"	"	13600	-	3.4	500	2.6
2.5	**680**	**1.9**	555.2	"	"	13600	-	3.1	550	2.4
2.1	**620**	**2.3**	680.9	**BF50G10-../DPE07LA4**	89	13600	-	2.5	495	2.8
1.6	**860**	**1.65**	864.5	"	"	13600	-	2.0	650	2.2
1.4	**1000**	**1.4**	1029	"	"	13600	-	1.7	780	1.8
1.2	**1220**	**1.15**	1203	"	"	13600	-	1.4	1010	1.4
1.1	**1320**	**1.05**	1359	"	"	13600	-	1.3	1080	1.3
1.5	**870**	**2.9**	937.6	**BF60G20-../DPE07LA4**	136	15300	43300	1.8	670	3.7
1.2	**1120**	**2.2**	1211	"	"	15300	43300	1.4	920	2.7
0.95	**1430**	**1.75**	1494	"	"	15300	43300	1.2	1050	2.4
0.85	**1600**	**1.55**	1658	"	"	15300	43300	1.1	1140	2.2
0.75	**1840**	**1.35**	1955	"	"	15300	43300	0.9	1460	1.7
0.65	**2150**	**1.15**	2172	"	"	15300	43300	0.8	1680	1.5
0.75	**1850**	**3.1**	1912	**BF70G20-../DPE07LA4**	215	16100	47700	0.9	1470	3.9
0.6	**2350**	**2.4**	2448	"	"	16100	47700	0.7	1970	2.9
0.49	**3000**	**1.9**	2849	"	"	16100	47700	0.6	2350	2.4
0.41	**3700**	**1.55**	3417	"	"	16100	47700	0.49	3000	1.9
0.34	**4550**	**1.25**	4090	"	"	16100	47700	0.41	3700	1.55
0.31	**5000**	**1.15**	4542	"	"	16100	47700	0.37	4150	1.35

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

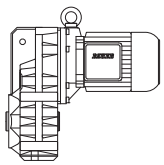
P = 0.25 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
250	**9.5**	**6.5**	5.72	**BF06-../DPE08MA4**	16	1600	-	300	7.9	7.8
186	**12.8**	**5.3**	7.66	"	"	1800	-	225	10.6	6.4
155	**15.4**	**4.5**	9.21	"	"	1900	-	186	12.8	5.5
118	**20**	**3.8**	12.07	"	"	2000	-	142	16.8	4.5
100	**23.5**	**3.6**	14.21	"	"	2100	-	121	19.7	4.3
84	**28**	**3.4**	16.99	"	"	2500	-	101	23.5	4.0
70	**34**	**2.8**	20.42	"	"	2700	-	84	28	3.4
54	**44**	**2.2**	26.76	"	"	3000	-	64	37	2.6
45.5	**52**	**1.85**	31.50	"	"	3200	-	55	43	2.2
38	**62**	**1.55**	37.69	"	"	3500	-	45.5	52	1.85
31	**77**	**1.25**	46.14	"	"	3800	-	37.5	63	1.5
24.5	**97**	**0.98**	58.33	"	"	4000	-	29.5	80	1.2
21.5	**111**	**0.86**	66.82	"	"	4000	-	26	91	1.05
33	**72**	**3.3**	43.06	**BF10-../DPE08MA4**	27	4100	-	40	59	4.1
30	**79**	**3.0**	47.35	"	"	4250	-	36.5	65	3.7
28	**85**	**2.8**	51.28	"	"	4400	-	33.5	71	3.4
25.5	**93**	**2.6**	56.39	"	"	4550	-	30.5	78	3.1
23.5	**101**	**2.4**	61.55	"	"	4700	-	28	85	2.8
21	**113**	**2.1**	67.69	"	"	4900	-	25.5	93	2.6
18.5	**129**	**1.85**	77.55	"	"	5100	-	22.5	106	2.3
17	**140**	**1.7**	85.27	"	"	5300	-	20.5	116	2.1
16	**149**	**1.6**	90.91	"	"	5400	-	19	125	1.9
14.5	**164**	**1.45**	99.97	"	"	5600	-	17.5	136	1.75
13	**183**	**1.3**	112.3	"	"	5900	-	15.5	154	1.55
11.5	**205**	**1.15**	123.5	"	"	6100	-	14	170	1.4
9.4	**250**	**0.96**	151.2	**BF10Z-../DPE08MA4**	28	6400	-	11.5	205	1.15
8.6	**275**	**0.87**	166.2	"	"	6400	-	10.5	225	1.05
7.9	**300**	**0.8**	180.1	"	"	6400	-	9.5	250	0.96
16.5	**144**	**2.9**	87.31	**BF20-../DPE08MA4**	33	6600	-	20	119	3.5
14.5	**164**	**2.6**	100.2	"	"	7000	-	17.5	136	3.1
13	**183**	**2.3**	110.2	"	"	7300	-	16	149	2.8
11.5	**205**	**2.0**	123.5	"	"	7600	-	14	170	2.5
10.5	**225**	**1.85**	135.9	"	"	7900	-	13	183	2.3
9.2	**255**	**1.65**	155.4	**BF20Z-../DPE08MA4**	35	7900	-	11.5	205	2.0
8.7	**270**	**1.55**	164.3	"	"	7900	-	10.5	225	1.85
7.9	**300**	**1.4**	180.8	"	"	7900	-	9.5	250	1.7
7.3	**325**	**1.3**	197.1	"	"	7900	-	8.7	270	1.55
6.6	**360**	**1.15**	216.9	"	"	7900	-	7.9	300	1.4
6.1	**390**	**1.1**	235.9	"	"	7900	-	7.3	325	1.3
5.5	**430**	**0.98**	259.6	"	"	7900	-	6.6	360	1.15
4.9	**485**	**0.87**	295.5	"	"	7900	-	5.8	410	1.0
13.5	**176**	**3.3**	107.6	**BF30-../DPE08MA4**	43	6700	-	16	149	3.9
12.5	**191**	**3.0**	118.3	"	"	7000	-	14.5	164	3.5
11.5	**205**	**2.8**	124.7	"	"	7100	-	14	170	3.4
10.5	**225**	**2.6**	137.1	"	"	7400	-	12.5	191	3.0
9.5	**250**	**2.3**	150.7	**BF30Z-../DPE08MA4**	46	7400	-	11.5	205	2.8
8.6	**275**	**2.1**	165.8	"	"	7400	-	10.5	225	2.6
8.1	**290**	**2.0**	176.6	"	"	7400	-	9.7	245	2.3
7.4	**320**	**1.8**	194.3	"	"	7400	-	8.9	265	2.2
6.4	**370**	**1.55**	224.8	"	"	7400	-	7.7	310	1.85
5.8	**410**	**1.4**	247.3	"	"	7400	-	7.0	340	1.7
5.4	**440**	**1.3**	263.5	"	"	7400	-	6.5	365	1.6
4.9	**485**	**1.2**	289.8	"	"	7400	-	6.0	395	1.45
4.6	**510**	**1.15**	310.7	"	"	7400	-	5.6	425	1.35
4.2	**560**	**1.05**	341.8	"	"	7400	-	5.1	465	1.25
3.8	**620**	**0.93**	375.1	"	"	7400	-	4.6	510	1.15
3.5	**680**	**0.85**	412.6	"	"	7400	-	4.2	560	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

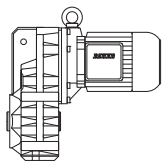
P = 0.25 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
8.3	**285**	**3.2**	171.2	**BF40Z-../DPE08MA4**	56	10600	-	10	235	3.8
7.6	**310**	**2.9**	188.3	"	"	10600	-	9.1	260	3.5
7.1	**335**	**2.7**	202.2	"	"	10600	-	8.5	280	3.2
6.4	**370**	**2.4**	222.4	"	"	10600	-	7.7	310	2.9
5.7	**415**	**2.2**	253.2	"	"	10600	-	6.8	350	2.6
5.1	**465**	**1.95**	278.5	"	"	10600	-	6.2	385	2.3
4.9	**485**	**1.85**	295.1	"	"	10600	-	5.8	410	2.2
4.4	**540**	**1.65**	324.7	"	"	10600	-	5.3	450	2.0
4.1	**580**	**1.55**	346.8	"	"	10600	-	5.0	475	1.9
3.8	**620**	**1.45**	381.5	"	"	10600	-	4.5	530	1.7
3.5	**680**	**1.3**	417.3	"	"	10600	-	4.1	580	1.55
3.1	**770**	**1.15**	459.1	"	"	10600	-	3.8	620	1.45
2.8	**850**	**1.05**	514.6	"	"	10600	-	3.4	700	1.3
2.6	**910**	**0.99**	566.1	"	"	10600	-	3.1	770	1.15
2.4	**800**	**1.25**	597.3	**BF40G10-../DPE08MA4**	62	10600	-	2.9	630	1.6
2.0	**980**	**1.0**	731.6	"	"	10600	-	2.4	780	1.3
5.8	**410**	**3.2**	247.5	**BF50Z-../DPE08MA4**	86	13600	-	7.0	340	3.8
5.2	**455**	**2.9**	276.8	"	"	13600	-	6.2	385	3.4
4.5	**530**	**2.5**	316.6	"	"	13600	-	5.5	430	3.0
4.1	**580**	**2.2**	354.0	"	"	13600	-	4.9	485	2.7
3.7	**640**	**2.0**	392.8	"	"	13600	-	4.4	540	2.4
3.3	**720**	**1.8**	439.3	"	"	13600	-	3.9	610	2.1
2.9	**820**	**1.6**	496.4	"	"	13600	-	3.5	680	1.9
2.6	**910**	**1.45**	555.2	"	"	13600	-	3.1	770	1.7
2.1	**940**	**1.5**	680.9	**BF50G10-../DPE08MA4**	90	13600	-	2.6	720	1.95
1.7	**1190**	**1.2**	864.5	"	"	13600	-	2.0	980	1.45
1.4	**1480**	**0.95**	1029	"	"	13600	-	1.7	1180	1.2
3.4	**700**	**3.3**	421.6	**BF60Z-../DPE08MA4**	130	15300	43300	4.1	580	4.0
3.1	**770**	**3.0**	459.9	"	"	15300	43300	3.8	620	3.7
2.8	**850**	**2.7**	510.3	"	"	15300	43300	3.4	700	3.3
2.1	**840**	**3.0**	689.0	**BF60G20-../DPE08MA4**	137	15300	43300	2.5	660	3.8
1.8	**1020**	**2.5**	813.2	"	"	15300	43300	2.2	770	3.2
1.6	**1210**	**2.1**	937.6	"	"	15300	43300	1.9	980	2.6
1.2	**1680**	**1.5**	1211	"	"	15300	43300	1.5	1280	1.95
1.0	**2000**	**1.25**	1494	"	"	15300	43300	1.2	1610	1.55
0.9	**2200**	**1.15**	1658	"	"	15300	43300	1.1	1750	1.45
1.1	**1810**	**3.1**	1390	**BF70G20-../DPE08MA4**	216	16100	47700	1.3	1480	3.9
0.9	**2200**	**2.6**	1621	"	"	16100	47700	1.1	1760	3.2
0.75	**2700**	**2.1**	1912	"	"	16100	47700	0.9	2200	2.6
0.6	**3500**	**1.65**	2448	"	"	16100	47700	0.7	2900	1.95
0.5	**4250**	**1.35**	2849	"	"	16100	47700	0.65	3150	1.8
0.42	**5100**	**1.1**	3417	"	"	16100	47700	0.55	3850	1.5
0.42	**3450**	**3.0**	3461	**BF80G40-../DPE08MA4**	340	39600	75000	0.5	2550	4.1
0.37	**4150**	**2.5**	3843	"	"	39600	75000	0.45	3000	3.5
0.33	**4900**	**2.1**	4411	"	"	39600	75000	0.39	3800	2.8
0.3	**5600**	**1.9**	4895	"	"	39600	75000	0.35	4500	2.3
0.24	**7600**	**1.4**	5926	"	"	39600	75000	0.29	5900	1.8
0.21	**9000**	**1.15**	6999	"	"	39600	75000	0.25	7200	1.45
0.25	**7000**	**2.6**	5888	**BF90G50-../DPE08MA4**	610	42800	120000	0.3	5400	3.4
0.22	**8300**	**2.2**	6529	"	"	42800	120000	0.27	6300	2.9
0.19	**10000**	**1.85**	7533	"	"	42800	120000	0.23	7800	2.4
0.18	**10700**	**1.75**	8350	"	"	42800	120000	0.21	8800	2.1
0.16	**12400**	**1.5**	9348	"	"	42800	120000	0.19	10000	1.85

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

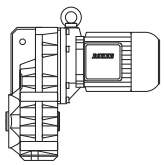
P = 0.37 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
250	**14.1**	**4.4**	5.72	**BF06-../DPE08LA4**	17	1600	-	300	11.7	5.3
186	**18.9**	**3.6**	7.66	"	"	1800	-	225	15.7	4.3
155	**22.5**	**3.1**	9.21	"	"	1900	-	186	18.9	3.7
118	**29.5**	**2.5**	12.07	"	"	2000	-	142	24.5	3.1
100	**35**	**2.4**	14.21	"	"	2100	-	121	29	2.9
84	**42**	**2.3**	16.99	"	"	2500	-	101	34.5	2.8
70	**50**	**1.9**	20.42	"	"	2700	-	84	42	2.3
54	**65**	**1.45**	26.76	"	"	3000	-	64	55	1.75
45.5	**77**	**1.25**	31.50	"	"	3200	-	55	64	1.5
38	**92**	**1.05**	37.69	"	"	3500	-	45.5	77	1.25
31	**113**	**0.84**	46.14	"	"	3800	-	37.5	94	1.0
45.5	**77**	**3.1**	31.31	**BF10-../DPE08LA4**	28	3600	-	55	64	3.8
39.5	**89**	**2.7**	36.15	"	"	3800	-	47.5	74	3.2
36	**98**	**2.4**	39.75	"	"	3950	-	43.5	81	3.0
33	**107**	**2.2**	43.06	"	"	4100	-	40	88	2.7
30	**117**	**2.1**	47.35	"	"	4250	-	36.5	96	2.5
28	**126**	**1.9**	51.28	"	"	4400	-	33.5	105	2.3
25.5	**138**	**1.75**	56.39	"	"	4550	-	30.5	115	2.1
23.5	**150**	**1.6**	61.55	"	"	4700	-	28	126	1.9
21	**168**	**1.45**	67.69	"	"	4900	-	25.5	138	1.75
18.5	**191**	**1.25**	77.55	"	"	5100	-	22.5	157	1.55
17	**205**	**1.15**	85.27	"	"	5300	-	20.5	172	1.4
16	**220**	**1.1**	90.91	"	"	5400	-	19	185	1.3
14.5	**240**	**1.0**	99.97	"	"	5600	-	17.5	200	1.2
13	**270**	**0.89**	112.3	"	"	5900	-	15.5	225	1.05
27	**130**	**3.2**	53.43	**BF20-../DPE08LA4**	35	5500	-	32.5	108	3.9
24.5	**144**	**2.9**	58.24	"	"	5600	-	29.5	119	3.5
22.5	**157**	**2.7**	64.08	"	"	5900	-	27	130	3.2
20.5	**172**	**2.4**	69.70	"	"	6100	-	25	141	3.0
19	**185**	**2.3**	76.69	"	"	6300	-	22.5	157	2.7
16.5	**210**	**2.0**	87.31	"	"	6600	-	20	176	2.4
14.5	**240**	**1.75**	100.2	"	"	7000	-	17.5	200	2.1
13	**270**	**1.55**	110.2	"	"	7300	-	16	220	1.9
11.5	**305**	**1.4**	123.5	"	"	7600	-	14	250	1.7
10.5	**335**	**1.25**	135.9	"	"	7900	-	13	270	1.55
9.2	**380**	**1.1**	155.4	**BF20Z-../DPE08LA4**	37	7900	-	11.5	305	1.4
8.7	**405**	**1.05**	164.3	"	"	7900	-	10.5	335	1.25
7.9	**445**	**0.94**	180.8	"	"	7900	-	9.5	370	1.15
7.3	**480**	**0.88**	197.1	"	"	7900	-	8.7	405	1.05
20	**176**	**3.3**	72.13	**BF30-../DPE08LA4**	45	5700	-	24	147	3.9
18	**196**	**2.9**	79.34	"	"	5900	-	22	160	3.6
16.5	**210**	**2.7**	87.08	"	"	6200	-	20	176	3.3
15	**235**	**2.4**	95.79	"	"	6400	-	18	196	2.9
13.5	**260**	**2.2**	107.6	"	"	6700	-	16	220	2.6
12.5	**280**	**2.1**	118.3	"	"	7000	-	14.5	240	2.4
11.5	**305**	**1.9**	124.7	"	"	7100	-	14	250	2.3
10.5	**335**	**1.7**	137.1	"	"	7400	-	12.5	280	2.1
9.5	**370**	**1.55**	150.7	**BF30Z-../DPE08LA4**	48	7400	-	11.5	305	1.9
8.6	**410**	**1.4**	165.8	"	"	7400	-	10.5	335	1.7
8.1	**435**	**1.3**	176.6	"	"	7400	-	9.7	360	1.6
7.4	**475**	**1.2**	194.3	"	"	7400	-	8.9	395	1.45
6.4	**550**	**1.05**	224.8	"	"	7400	-	7.7	455	1.25
5.8	**600**	**0.96**	247.3	"	"	7400	-	7.0	500	1.15
5.4	**650**	**0.88**	263.5	"	"	7400	-	6.5	540	1.05
4.9	**720**	**0.8**	289.8	"	"	7400	-	6.0	580	0.99
13	**270**	**3.3**	111.1	**BF40-../DPE08LA4**	54	9800	-	15.5	225	4.0
11.5	**305**	**3.0**	124.5	"	"	10200	-	14	250	3.6
10.5	**335**	**2.7**	137.0	"	"	10600	-	12.5	280	3.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

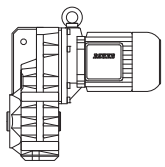
P = 0.37 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
9.2	**380**	**2.4**	155.6	**BF40Z-../DPE08LA4**	58	10600	-	11	320	2.8
8.3	**425**	**2.1**	171.2	"	"	10600	-	10	350	2.6
7.6	**460**	**1.95**	188.3	"	"	10600	-	9.1	385	2.3
7.1	**495**	**1.8**	202.2	"	"	10600	-	8.5	415	2.2
6.4	**550**	**1.65**	222.4	"	"	10600	-	7.7	455	2.0
5.7	**610**	**1.5**	253.2	"	"	10600	-	6.8	510	1.75
5.1	**690**	**1.3**	278.5	"	"	10600	-	6.2	560	1.6
4.9	**720**	**1.25**	295.1	"	"	10600	-	5.8	600	1.5
4.4	**800**	**1.15**	324.7	"	"	10600	-	5.3	660	1.35
4.1	**860**	**1.05**	346.8	"	"	10600	-	5.0	700	1.3
3.8	**920**	**0.98**	381.5	"	"	10600	-	4.5	780	1.15
3.5	**1000**	**0.9**	417.3	"	"	10600	-	4.1	860	1.05
3.1	**1130**	**0.8**	459.1	"	"	10600	-	3.8	920	0.98
7.8	**450**	**2.9**	183.5	**BF50Z-../DPE08LA4**	88	13600	-	9.4	375	3.5
7.0	**500**	**2.6**	205.2	"	"	13600	-	8.4	420	3.1
5.8	**600**	**2.2**	247.5	"	"	13600	-	7.0	500	2.6
5.2	**670**	**1.95**	276.8	"	"	13600	-	6.2	560	2.3
4.5	**780**	**1.65**	316.6	"	"	13600	-	5.5	640	2.0
4.1	**860**	**1.5**	354.0	"	"	13600	-	4.9	720	1.8
3.7	**950**	**1.35**	392.8	"	"	13600	-	4.4	800	1.65
3.3	**1070**	**1.2**	439.3	"	"	13600	-	3.9	900	1.45
2.9	**1210**	**1.05**	496.4	"	"	13600	-	3.5	1000	1.3
2.6	**1350**	**0.96**	555.2	"	"	13600	-	3.1	1130	1.15
2.1	**1490**	**0.94**	680.9	**BF50G10-../DPE08LA4**	92	13600	-	2.6	1160	1.2
4.9	**720**	**3.2**	293.4	**BF60Z-../DPE08LA4**	131	15300	43300	5.9	590	3.9
4.4	**800**	**2.9**	325.6	"	"	15300	43300	5.3	660	3.5
3.8	**920**	**2.5**	380.0	"	"	15300	43300	4.5	780	2.9
3.4	**1030**	**2.2**	421.6	"	"	15300	43300	4.1	860	2.7
3.1	**1130**	**2.0**	459.9	"	"	15300	43300	3.8	920	2.5
2.8	**1260**	**1.85**	510.3	"	"	15300	43300	3.4	1030	2.2
2.5	**1170**	**2.1**	569.3	**BF60G20-../DPE08LA4**	139	15300	43300	3.1	900	2.8
2.1	**1390**	**1.8**	689.0	"	"	15300	43300	2.5	1120	2.2
1.8	**1650**	**1.5**	813.2	"	"	15300	43300	2.2	1290	1.95
1.6	**1930**	**1.3**	937.6	"	"	15300	43300	1.9	1580	1.6
1.2	**2600**	**0.96**	1211	"	"	15300	43300	1.5	2000	1.25
1.7	**1820**	**3.1**	872.1	**BF70G20-../DPE08LA4**	217	16100	47700	2.0	1510	3.8
1.4	**2200**	**2.6**	1017	"	"	16100	47700	1.7	1770	3.2
1.1	**2850**	**2.0**	1390	"	"	16100	47700	1.3	2350	2.4
0.9	**3500**	**1.65**	1621	"	"	16100	47700	1.1	2800	2.0
0.75	**4250**	**1.35**	1912	"	"	16100	47700	0.9	3450	1.65
0.6	**5400**	**1.05**	2448	"	"	16100	47700	0.7	4550	1.25
0.7	**3450**	**3.0**	2051	**BF80G40-../DPE08LA4**	341	39600	75000	0.85	2550	4.1
0.6	**4300**	**2.4**	2422	"	"	39600	75000	0.75	3100	3.4
0.55	**4400**	**2.4**	2785	"	"	39600	75000	0.65	3400	3.1
0.46	**5500**	**1.9**	3092	"	"	39600	75000	0.6	3750	2.8
0.42	**6200**	**1.7**	3461	"	"	39600	75000	0.5	4850	2.2
0.37	**7200**	**1.45**	3843	"	"	39600	75000	0.45	5500	1.9
0.33	**8400**	**1.25**	4411	"	"	39600	75000	0.39	6700	1.55
0.3	**9400**	**1.1**	4895	"	"	39600	75000	0.35	7800	1.35
0.39	**6500**	**2.8**	3644	**BF90G50-../DPE08LA4**	612	42800	120000	0.47	5000	3.7
0.33	**8200**	**2.3**	4366	"	"	42800	120000	0.4	6300	2.9
0.3	**9200**	**2.0**	4839	"	"	42800	120000	0.36	7300	2.5
0.25	**11600**	**1.6**	5888	"	"	42800	120000	0.3	9200	2.0
0.22	**13500**	**1.35**	6529	"	"	42800	120000	0.27	10500	1.75
0.19	**16000**	**1.15**	7533	"	"	42800	120000	0.23	12800	1.45
0.18	**17100**	**1.1**	8350	"	"	42800	120000	0.21	14300	1.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

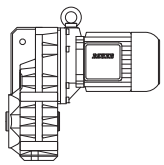
P = 0.55 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
250	**21**	**3.0**	5.72	**BF06-../DPE08XA4**	18	1600	-	300	17.5	3.5
186	**28**	**2.4**	7.66	"	"	1800	-	225	23	3.0
155	**33.5**	**2.1**	9.21	"	"	1900	-	186	28	2.5
118	**44.5**	**1.7**	12.07	"	"	2000	-	142	36.5	2.1
100	**52**	**1.65**	14.21	"	"	2100	-	121	43	2.0
84	**62**	**1.55**	16.99	"	"	2500	-	101	52	1.85
70	**75**	**1.25**	20.42	"	"	2700	-	84	62	1.55
54	**97**	**0.98**	26.76	"	"	3000	-	64	82	1.15
45.5	**115**	**0.83**	31.50	"	"	3200	-	55	95	1.0
95	**55**	**3.3**	15.04	**BF10-../DPE08XA4**	30	2800	-	114	46	4.0
71	**73**	**3.3**	20.05	"	"	3000	-	86	61	3.9
61	**86**	**2.8**	23.28	"	"	3200	-	74	70	3.4
56	**93**	**2.6**	25.60	"	"	3350	-	67	78	3.1
50	**105**	**2.3**	28.47	"	"	3450	-	61	86	2.8
45.5	**115**	**2.1**	31.31	"	"	3600	-	55	95	2.5
39.5	**132**	**1.8**	36.15	"	"	3800	-	47.5	110	2.2
36	**145**	**1.65**	39.75	"	"	3950	-	43.5	120	2.0
33	**159**	**1.5**	43.06	"	"	4100	-	40	131	1.85
30	**175**	**1.35**	47.35	"	"	4250	-	36.5	143	1.7
28	**187**	**1.3**	51.28	"	"	4400	-	33.5	156	1.55
25.5	**205**	**1.15**	56.39	"	"	4550	-	30.5	172	1.4
23.5	**220**	**1.1**	61.55	"	"	4700	-	28	187	1.3
21	**250**	**0.96**	67.69	"	"	4900	-	25.5	205	1.15
18.5	**280**	**0.86**	77.55	"	"	5100	-	22.5	230	1.05
40	**131**	**3.2**	35.85	**BF20-../DPE08XA4**	36	4650	-	48	109	3.9
34.5	**152**	**2.8**	41.72	"	"	4950	-	41	128	3.3
31	**169**	**2.5**	45.90	"	"	5100	-	37.5	140	3.0
29.5	**178**	**2.4**	48.56	"	"	5200	-	35.5	147	2.9
27	**194**	**2.2**	53.43	"	"	5500	-	32.5	161	2.6
24.5	**210**	**2.0**	58.24	"	"	5600	-	29.5	178	2.4
22.5	**230**	**1.85**	64.08	"	"	5900	-	27	194	2.2
20.5	**255**	**1.65**	69.70	"	"	6100	-	25	210	2.0
19	**275**	**1.55**	76.69	"	"	6300	-	22.5	230	1.85
16.5	**315**	**1.35**	87.31	"	"	6600	-	20	260	1.6
14.5	**360**	**1.15**	100.2	"	"	7000	-	17.5	300	1.4
13	**400**	**1.05**	110.2	"	"	7300	-	16	325	1.3
11.5	**455**	**0.92**	123.5	"	"	7600	-	14	375	1.1
10.5	**500**	**0.84**	135.9	"	"	7900	-	13	400	1.05
27.5	**191**	**3.0**	52.20	**BF30-../DPE08XA4**	46	5000	-	33	159	3.6
25	**210**	**2.7**	57.41	"	"	5200	-	30	175	3.3
23.5	**220**	**2.6**	61.17	"	"	5300	-	28	187	3.1
21.5	**240**	**2.4**	67.28	"	"	5500	-	25.5	205	2.8
20	**260**	**2.2**	72.13	"	"	5700	-	24	215	2.7
18	**290**	**2.0**	79.34	"	"	5900	-	22	235	2.4
16.5	**315**	**1.85**	87.08	"	"	6200	-	20	260	2.2
15	**350**	**1.65**	95.79	"	"	6400	-	18	290	2.0
13.5	**385**	**1.5**	107.6	"	"	6700	-	16	325	1.75
12.5	**420**	**1.35**	118.3	"	"	7000	-	14.5	360	1.6
11.5	**455**	**1.25**	124.7	"	"	7100	-	14	375	1.55
10.5	**500**	**1.15**	137.1	"	"	7400	-	12.5	420	1.35
9.5	**550**	**1.05**	150.7	**BF30Z-../DPE08XA4**	48	7400	-	11.5	455	1.25
8.6	**610**	**0.94**	165.8	"	"	7400	-	10.5	500	1.15
8.1	**640**	**0.9**	176.6	"	"	7400	-	9.7	540	1.05
7.4	**700**	**0.82**	194.3	"	"	7400	-	8.9	590	0.97
18.5	**280**	**3.2**	78.55	**BF40-../DPE08XA4**	55	8500	-	22	235	3.8
17	**305**	**3.0**	83.91	"	"	8700	-	20.5	255	3.5
15.5	**335**	**2.7**	92.31	"	"	9100	-	19	275	3.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

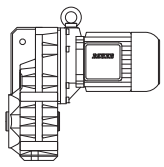
P = 0.55 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
14.5	**360**	**2.5**	101.0	**BF40-../DPE08XA4**	55	9400	-	17	305	3.0
13	**400**	**2.3**	111.1	"	"	9800	-	15.5	335	2.7
11.5	**455**	**2.0**	124.5	"	"	10200	-	14	375	2.4
10.5	**500**	**1.8**	137.0	"	"	10600	-	12.5	420	2.1
9.2	**570**	**1.6**	155.6	**BF40Z-../DPE08XA4**	59	10600	-	11	475	1.9
8.3	**630**	**1.45**	171.2	"	"	10600	-	10	520	1.75
7.6	**690**	**1.3**	188.3	"	"	10600	-	9.1	570	1.6
7.1	**730**	**1.25**	202.2	"	"	10600	-	8.5	610	1.5
6.4	**820**	**1.1**	222.4	"	"	10600	-	7.7	680	1.3
5.7	**920**	**0.98**	253.2	"	"	10600	-	6.8	770	1.15
5.1	**1020**	**0.88**	278.5	"	"	10600	-	6.2	840	1.05
4.9	**1070**	**0.84**	295.1	"	"	10600	-	5.8	900	1.0
12.5	**420**	**3.1**	114.0	**BF50-../DPE08XA4**	84	12900	-	15	350	3.7
11.5	**455**	**2.9**	127.5	"	"	13600	-	13.5	385	3.4
10.5	**500**	**2.6**	138.1	**BF50Z-../DPE08XA4**	88	13600	-	12.5	420	3.1
9.2	**570**	**2.3**	154.5	"	"	13600	-	11.5	455	2.9
7.8	**670**	**1.95**	183.5	"	"	13600	-	9.4	550	2.4
7.0	**750**	**1.75**	205.2	"	"	13600	-	8.4	620	2.1
5.8	**900**	**1.45**	247.5	"	"	13600	-	7.0	750	1.75
5.2	**1010**	**1.3**	276.8	"	"	13600	-	6.2	840	1.55
4.5	**1160**	**1.1**	316.6	"	"	13600	-	5.5	950	1.35
4.1	**1280**	**1.0**	354.0	"	"	13600	-	4.9	1070	1.2
3.7	**1410**	**0.92**	392.8	"	"	13600	-	4.4	1190	1.1
3.3	**1590**	**0.82**	439.3	"	"	13600	-	3.9	1340	0.97
7.6	**690**	**3.3**	187.7	**BF60Z-../DPE08XA4**	132	15300	43300	9.2	570	4.0
6.5	**800**	**2.9**	221.4	"	"	15300	43300	7.8	670	3.4
5.8	**900**	**2.6**	245.6	"	"	15300	43300	7.0	750	3.1
4.9	**1070**	**2.1**	293.4	"	"	15300	43300	5.9	890	2.6
4.4	**1190**	**1.95**	325.6	"	"	15300	43300	5.3	990	2.3
3.8	**1380**	**1.65**	380.0	"	"	15300	43300	4.5	1160	2.0
3.4	**1540**	**1.5**	421.6	"	"	15300	43300	4.1	1280	1.8
3.1	**1690**	**1.35**	459.9	"	"	15300	43300	3.8	1380	1.65
2.8	**1870**	**1.25**	510.3	"	"	15300	43300	3.4	1540	1.5
2.5	**1860**	**1.35**	569.3	**BF60G20-../DPE08XA4**	140	15300	43300	3.1	1450	1.7
2.1	**2200**	**1.15**	689.0	"	"	15300	43300	2.5	1810	1.4
1.8	**2600**	**0.96**	813.2	"	"	15300	43300	2.2	2050	1.2
1.6	**3000**	**0.83**	937.6	"	"	15300	43300	1.9	2450	1.0
3.3	**1590**	**3.3**	439.2	**BF70Z-../DPE08XA4**	220	16100	47700	3.9	1340	3.9
2.8	**1870**	**2.8**	512.4	"	"	16100	47700	3.4	1540	3.4
2.5	**1850**	**3.1**	577.5	**BF70G20-../DPE08XA4**	218	16100	47700	3.0	1500	3.8
2.2	**2100**	**2.7**	673.6	"	"	16100	47700	2.6	1730	3.3
1.7	**2800**	**2.0**	872.1	"	"	16100	47700	2.0	2350	2.4
1.4	**3450**	**1.65**	1017	"	"	16100	47700	1.7	2750	2.1
1.1	**4400**	**1.3**	1390	"	"	16100	47700	1.3	3650	1.55
0.9	**5400**	**1.05**	1621	"	"	16100	47700	1.1	4350	1.3
1.5	**3500**	**3.0**	990.4	**BF80Z-../DPE08XA4**	337	39600	75000	1.8	2900	3.6
1.3	**4000**	**2.6**	1124	"	"	39600	75000	1.6	3250	3.2
1.1	**3300**	**3.2**	1329	**BF80G40-../DPE08XA4**	342	39600	75000	1.3	2550	4.1
1.0	**3850**	**2.7**	1491	"	"	39600	75000	1.2	2950	3.6
0.85	**4550**	**2.3**	1693	"	"	39600	75000	1.1	3150	3.3
0.7	**5900**	**1.8**	2051	"	"	39600	75000	0.85	4550	2.3
0.6	**7100**	**1.5**	2422	"	"	39600	75000	0.75	5400	1.95
0.55	**7500**	**1.4**	2785	"	"	39600	75000	0.65	6000	1.75
0.46	**9300**	**1.15**	3092	"	"	39600	75000	0.6	6600	1.6
0.42	**10200**	**1.05**	3461	"	"	39600	75000	0.5	8200	1.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.55 kW



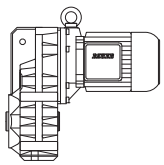
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
0.55	**7100**	**2.6**	2656	**BF90G50-../DPE08XA4**	613	42800	120000	0.65	5700	3.2
0.49	**8400**	**2.2**	2952	"	"	42800	120000	0.6	6500	2.8
0.44	**9400**	**1.95**	3286	"	"	42800	120000	0.55	7000	2.6
0.39	**10900**	**1.7**	3644	"	"	42800	120000	0.47	8600	2.2
0.33	**13400**	**1.4**	4366	"	"	42800	120000	0.4	10600	1.75
0.3	**15000**	**1.25**	4839	"	"	42800	120000	0.36	12000	1.55

P = 0.75 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
260	**27.5**	**5.0**	5.60	**BF10-../DPE09LA4**	36	1950	-	315	22.5	6.1
192	**37**	**4.1**	7.58	"	"	2200	-	230	31	4.9
150	**47.5**	**3.7**	9.69	"	"	2350	-	180	39.5	4.5
123	**58**	**3.2**	11.84	"	"	2500	-	147	48.5	3.8
97	**73**	**2.5**	15.04	"	"	2800	-	116	61	3.0
80	**89**	**2.7**	18.23	"	"	2900	-	96	74	3.2
73	**98**	**2.4**	20.05	"	"	3000	-	87	82	2.9
63	**113**	**2.1**	23.28	"	"	3200	-	75	95	2.5
57	**125**	**1.9**	25.60	"	"	3350	-	68	105	2.3
51	**140**	**1.7**	28.47	"	"	3450	-	62	115	2.1
46.5	**154**	**1.55**	31.31	"	"	3600	-	56	127	1.9
40.5	**176**	**1.35**	36.15	"	"	3800	-	48.5	147	1.65
36.5	**196**	**1.2**	39.75	"	"	3950	-	44	162	1.5
34	**210**	**1.15**	43.06	"	"	4100	-	40.5	176	1.35
31	**230**	**1.05**	47.35	"	"	4250	-	37	193	1.25
28.5	**250**	**0.96**	51.28	"	"	4400	-	34	210	1.15
26	**275**	**0.87**	56.39	"	"	4550	-	31	230	1.05
24	**295**	**0.81**	61.55	"	"	4700	-	28.5	250	0.96
53	**135**	**3.1**	27.62	**BF20-../DPE09LA4**	42	4150	-	63	113	3.7
48	**149**	**2.8**	30.40	"	"	4400	-	58	123	3.4
45	**159**	**2.6**	32.58	"	"	4450	-	54	132	3.2
40.5	**176**	**2.4**	35.85	"	"	4650	-	49	146	2.9
35	**200**	**2.1**	41.72	"	"	4950	-	42	170	2.5
32	**220**	**1.9**	45.90	"	"	5100	-	38	188	2.2
30	**235**	**1.8**	48.56	"	"	5200	-	36	198	2.1
27.5	**260**	**1.6**	53.43	"	"	5500	-	33	215	1.95
25	**285**	**1.45**	58.24	"	"	5600	-	30	235	1.8
23	**310**	**1.35**	64.08	"	"	5900	-	27.5	260	1.6
21	**340**	**1.25**	69.70	"	"	6100	-	25	285	1.45
19	**375**	**1.1**	76.69	"	"	6300	-	23	310	1.35
17	**420**	**1.0**	87.31	"	"	6600	-	20	355	1.2
15.5	**460**	**0.91**	96.08	"	"	6900	-	18.5	385	1.1
14.5	**490**	**0.86**	100.2	"	"	7000	-	17.5	405	1.05
41.5	**172**	**3.3**	35.00	**BF30-../DPE09LA4**	53	4200	-	50	143	4.0
38	**188**	**3.1**	38.49	"	"	4400	-	45.5	157	3.7
35.5	**200**	**2.9**	41.01	"	"	4500	-	42.5	168	3.4
32.5	**220**	**2.6**	45.10	"	"	4700	-	39	183	3.1
28	**255**	**2.3**	52.20	"	"	5000	-	33.5	210	2.7
25.5	**280**	**2.1**	57.41	"	"	5200	-	30.5	230	2.5
24	**295**	**1.95**	61.17	"	"	5300	-	28.5	250	2.3
22	**325**	**1.75**	67.28	"	"	5500	-	26	275	2.1
20.5	**345**	**1.65**	72.13	"	"	5700	-	24.5	290	2.0
18.5	**385**	**1.5**	79.34	"	"	5900	-	22	325	1.75

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

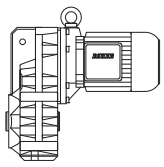
P = 0.75 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
17	**420**	**1.35**	87.08	**BF30-../DPE09LA4**	53	6200	-	20	355	1.6
15.5	**460**	**1.25**	95.79	"	"	6400	-	18.5	385	1.5
13.5	**530**	**1.1**	107.6	"	"	6700	-	16.5	430	1.35
12.5	**570**	**1.0**	118.3	"	"	7000	-	15	475	1.2
12	**590**	**0.97**	124.7	"	"	7100	-	14	510	1.15
11	**650**	**0.88**	137.1	"	"	7400	-	13	550	1.05
24	**295**	**3.1**	61.25	**BF40-../DPE09LA4**	62	7600	-	28.5	250	3.6
22	**325**	**2.8**	67.38	"	"	8000	-	26	275	3.3
20.5	**345**	**2.6**	71.40	"	"	8100	-	24.5	290	3.1
18.5	**385**	**2.3**	78.55	"	"	8500	-	22.5	315	2.9
17.5	**405**	**2.2**	83.91	"	"	8700	-	21	340	2.6
16	**445**	**2.0**	92.31	"	"	9100	-	19	375	2.4
14.5	**490**	**1.85**	101.0	"	"	9400	-	17.5	405	2.2
13.5	**530**	**1.7**	111.1	"	"	9800	-	16	445	2.0
12	**590**	**1.55**	124.5	"	"	10200	-	14	510	1.75
11	**650**	**1.4**	137.0	"	"	10600	-	13	550	1.65
10.5	**680**	**1.3**	141.4	**BF40Z-../DPE09LA4**	66	10600	-	12.5	570	1.6
9.4	**760**	**1.2**	155.6	"	"	10600	-	11.5	620	1.45
8.5	**840**	**1.05**	171.2	"	"	10600	-	10.5	680	1.3
7.8	**910**	**0.99**	188.3	"	"	10600	-	9.3	770	1.15
7.2	**990**	**0.91**	202.2	"	"	10600	-	8.7	820	1.1
6.6	**1080**	**0.83**	222.4	"	"	10600	-	7.9	900	1.0
18	**395**	**3.3**	81.33	**BF50-../DPE09LA4**	90	11300	-	21.5	330	3.9
16.5	**430**	**3.0**	90.24	"	"	11800	-	19.5	365	3.6
14.5	**490**	**2.7**	100.9	"	"	12300	-	17.5	405	3.2
13	**550**	**2.4**	114.0	"	"	12900	-	15.5	460	2.8
11.5	**620**	**2.1**	127.5	"	"	13600	-	14	510	2.5
10.5	**680**	**1.9**	138.1	**BF50Z-../DPE09LA4**	95	13600	-	13	550	2.4
9.4	**760**	**1.7**	154.5	"	"	13600	-	11.5	620	2.1
8.0	**890**	**1.45**	183.5	"	"	13600	-	9.5	750	1.75
7.1	**1000**	**1.3**	205.2	"	"	13600	-	8.5	840	1.55
5.9	**1210**	**1.05**	247.5	"	"	13600	-	7.1	1000	1.3
5.3	**1350**	**0.96**	276.8	"	"	13600	-	6.3	1130	1.15
4.6	**1550**	**0.84**	316.6	"	"	13600	-	5.5	1300	1.0
8.6	**830**	**2.8**	169.2	**BF60Z-../DPE09LA4**	139	15300	43300	10.5	680	3.4
7.8	**910**	**2.5**	187.7	"	"	15300	43300	9.3	770	3.0
6.6	**1080**	**2.1**	221.4	"	"	15300	43300	7.9	900	2.6
6.0	**1190**	**1.95**	245.6	"	"	15300	43300	7.1	1000	2.3
5.0	**1430**	**1.6**	293.4	"	"	15300	43300	6.0	1190	1.95
4.5	**1590**	**1.45**	325.6	"	"	15300	43300	5.4	1320	1.75
3.9	**1830**	**1.25**	380.0	"	"	15300	43300	4.6	1550	1.5
3.5	**2000**	**1.15**	421.6	"	"	15300	43300	4.2	1700	1.35
3.2	**2200**	**1.05**	459.9	"	"	15300	43300	3.8	1880	1.2
2.9	**2450**	**0.94**	510.3	"	"	15300	43300	3.5	2000	1.15
2.6	**2500**	**1.0**	569.3	**BF60G20-../DPE09LA4**	146	15300	43300	3.1	2050	1.2
2.2	**2950**	**0.85**	689.0	"	"	15300	43300	2.6	2450	1.0
4.3	**1660**	**3.1**	341.7	**BF70Z-../DPE09LA4**	227	16100	47700	5.1	1400	3.7
3.7	**1930**	**2.7**	398.7	"	"	16100	47700	4.4	1620	3.2
3.4	**2100**	**2.5**	439.2	"	"	16100	47700	4.0	1790	2.9
2.9	**2450**	**2.1**	512.4	"	"	16100	47700	3.4	2100	2.5
2.8	**2300**	**2.5**	524.1	**BF70G20-../DPE09LA4**	225	16100	47700	3.4	1880	3.0
2.6	**2500**	**2.3**	577.5	"	"	16100	47700	3.1	2050	2.8
2.2	**2950**	**1.95**	673.6	"	"	16100	47700	2.6	2450	2.3
1.7	**3950**	**1.45**	872.1	"	"	16100	47700	2.0	3300	1.75
1.5	**4450**	**1.3**	1017	"	"	16100	47700	1.8	3650	1.55
1.1	**6100**	**0.93**	1390	"	"	16100	47700	1.3	5100	1.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.75 kW



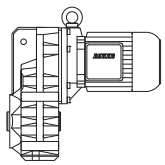
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
2.2	**3250**	**3.2**	662.1	**BF80Z-../DPE09LA4**	344	39600	75000	2.7	2650	4.0
1.9	**3750**	**2.8**	770.6	"	"	39600	75000	2.3	3100	3.4
1.7	**4200**	**2.5**	874.6	"	"	39600	75000	2.0	3550	3.0
1.5	**4750**	**2.2**	990.4	"	"	39600	75000	1.8	3950	2.7
1.3	**5500**	**1.9**	1124	"	"	39600	75000	1.6	4450	2.4
1.1	**5000**	**2.1**	1329	**BF80G40-../DPE09LA4**	349	39600	75000	1.4	3650	2.9
1.0	**5700**	**1.85**	1491	"	"	39600	75000	1.2	4550	2.3
0.9	**6300**	**1.65**	1693	"	"	39600	75000	1.1	4900	2.1
0.75	**7900**	**1.35**	2051	"	"	39600	75000	0.85	6800	1.55
0.6	**10300**	**1.0**	2422	"	"	39600	75000	0.75	7900	1.35
0.9	**6300**	**2.9**	1678	**BF90G50-../DPE09LA4**	620	42800	120000	1.1	4900	3.8
0.8	**7100**	**2.6**	1867	"	"	42800	120000	0.95	5700	3.2
0.7	**8100**	**2.3**	2154	"	"	42800	120000	0.85	6300	2.9
0.55	**10600**	**1.75**	2656	"	"	42800	120000	0.7	7800	2.4
0.5	**12000**	**1.55**	2952	"	"	42800	120000	0.6	9600	1.95
0.45	**13400**	**1.4**	3286	"	"	42800	120000	0.55	10500	1.75
0.4	**15400**	**1.2**	3644	"	"	42800	120000	0.48	12400	1.5

P = 1.1 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
260	**40**	**3.5**	5.60	**BF10-../DPE09XA4**	40	1950	-	315	33	4.2
192	**54**	**2.8**	7.58	"	"	2200	-	230	45.5	3.4
150	**70**	**2.5**	9.69	"	"	2350	-	180	58	3.1
123	**85**	**2.2**	11.84	"	"	2500	-	147	71	2.6
97	**108**	**1.7**	15.04	"	"	2800	-	116	90	2.0
80	**131**	**1.85**	18.23	"	"	2900	-	96	109	2.2
73	**143**	**1.7**	20.05	"	"	3000	-	87	120	2.0
63	**166**	**1.45**	23.28	"	"	3200	-	75	140	1.7
57	**184**	**1.3**	25.60	"	"	3350	-	68	154	1.55
51	**205**	**1.15**	28.47	"	"	3450	-	62	169	1.4
46.5	**225**	**1.05**	31.31	"	"	3600	-	56	187	1.3
40.5	**255**	**0.94**	36.15	"	"	3800	-	48.5	215	1.1
36.5	**285**	**0.84**	39.75	"	"	3950	-	44	235	1.0
111	**94**	**3.0**	13.18	**BF20-../DPE09XA4**	46	3300	-	133	78	3.7
94	**111**	**2.8**	15.54	"	"	3450	-	112	93	3.3
87	**120**	**3.0**	16.77	"	"	3500	-	104	101	3.6
79	**132**	**2.8**	18.45	"	"	3600	-	95	110	3.4
66	**159**	**2.5**	22.04	"	"	3800	-	79	132	3.0
60	**175**	**2.3**	24.25	"	"	3950	-	72	145	2.8
53	**198**	**2.1**	27.62	"	"	4150	-	63	166	2.5
48	**215**	**1.95**	30.40	"	"	4400	-	58	181	2.3
45	**230**	**1.85**	32.58	"	"	4450	-	54	194	2.2
40.5	**255**	**1.65**	35.85	"	"	4650	-	49	210	2.0
35	**300**	**1.4**	41.72	"	"	4950	-	42	250	1.7
32	**325**	**1.3**	45.90	"	"	5100	-	38	275	1.55
30	**350**	**1.2**	48.56	"	"	5200	-	36	290	1.45
27.5	**380**	**1.1**	53.43	"	"	5500	-	33	315	1.35
25	**420**	**1.0**	58.24	"	"	5600	-	30	350	1.2
23	**455**	**0.92**	64.08	"	"	5900	-	27.5	380	1.1
21	**500**	**0.84**	69.70	"	"	6100	-	25	420	1.0
61	**172**	**3.2**	24.03	**BF30-../DPE09XA4**	57	3600	-	73	143	3.9
52	**200**	**2.9**	28.23	"	"	3800	-	62	169	3.4
47	**220**	**2.6**	31.05	"	"	4000	-	57	184	3.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

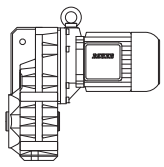
P = 1.1 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
41.5	**250**	**2.3**	35.00	**BF30-../DPE09XA4**	57	4200	-	50	210	2.7
38	**275**	**2.1**	38.49	"	"	4400	-	45.5	230	2.5
35.5	**295**	**1.95**	41.01	"	"	4500	-	42.5	245	2.3
32.5	**320**	**1.8**	45.10	"	"	4700	-	39	265	2.2
28	**375**	**1.55**	52.20	"	"	5000	-	33.5	310	1.85
25.5	**410**	**1.4**	57.41	"	"	5200	-	30.5	340	1.7
24	**435**	**1.3**	61.17	"	"	5300	-	28.5	365	1.6
22	**475**	**1.2**	67.28	"	"	5500	-	26	400	1.45
20.5	**510**	**1.15**	72.13	"	"	5700	-	24.5	425	1.35
18.5	**560**	**1.05**	79.34	"	"	5900	-	22	475	1.2
17	**610**	**0.94**	87.08	"	"	6200	-	20	520	1.1
15.5	**670**	**0.86**	95.79	"	"	6400	-	18.5	560	1.05
35.5	**295**	**3.1**	41.42	**BF40-../DPE09XA4**	66	6500	-	42.5	245	3.7
32	**325**	**2.8**	45.56	"	"	6800	-	38.5	270	3.3
30	**350**	**2.6**	48.92	"	"	7000	-	36	290	3.1
27	**385**	**2.3**	53.82	"	"	7200	-	32.5	320	2.8
24	**435**	**2.1**	61.25	"	"	7600	-	28.5	365	2.5
22	**475**	**1.9**	67.38	"	"	8000	-	26	400	2.3
20.5	**510**	**1.75**	71.40	"	"	8100	-	24.5	425	2.1
18.5	**560**	**1.6**	78.55	"	"	8500	-	22.5	465	1.95
17.5	**600**	**1.5**	83.91	"	"	8700	-	21	500	1.8
16	**650**	**1.4**	92.31	"	"	9100	-	19	550	1.65
14.5	**720**	**1.25**	101.0	"	"	9400	-	17.5	600	1.5
13.5	**770**	**1.15**	111.1	"	"	9800	-	16	650	1.4
12	**870**	**1.05**	124.5	"	"	10200	-	14	750	1.2
11	**950**	**0.95**	137.0	"	"	10600	-	13	800	1.15
10.5	**1000**	**0.9**	141.4	**BF40Z-../DPE09XA4**	70	10600	-	12.5	840	1.05
9.4	**1110**	**0.81**	155.6	"	"	10600	-	11.5	910	0.99
26	**400**	**3.3**	56.86	**BF50-../DPE09XA4**	94	9300	-	31	335	3.9
23	**455**	**2.9**	63.59	"	"	9800	-	27.5	380	3.4
20	**520**	**2.5**	72.72	"	"	10700	-	24	435	3.0
18	**580**	**2.2**	81.33	"	"	11300	-	21.5	485	2.7
16.5	**630**	**2.1**	90.24	"	"	11800	-	19.5	530	2.5
14.5	**720**	**1.8**	100.9	"	"	12300	-	17.5	600	2.2
13	**800**	**1.65**	114.0	"	"	12900	-	15.5	670	1.95
11.5	**910**	**1.45**	127.5	"	"	13600	-	14	750	1.75
10.5	**1000**	**1.3**	138.1	**BF50Z-../DPE09XA4**	99	13600	-	13	800	1.65
9.4	**1110**	**1.15**	154.5	"	"	13600	-	11.5	910	1.45
8.0	**1310**	**0.99**	183.5	"	"	13600	-	9.5	1100	1.2
7.1	**1470**	**0.88**	205.2	"	"	13600	-	8.5	1230	1.05
14	**750**	**3.1**	103.7	**BF60-../DPE09XA4**	124	14100	39900	17	610	3.8
13	**800**	**2.9**	113.1	"	"	14600	41300	15.5	670	3.4
12	**870**	**2.6**	125.5	"	"	15300	43300	14	750	3.1
10.5	**1000**	**2.3**	140.8	**BF60Z-../DPE09XA4**	143	15300	43300	12.5	840	2.7
8.6	**1220**	**1.9**	169.2	"	"	15300	43300	10.5	1000	2.3
7.8	**1340**	**1.7**	187.7	"	"	15300	43300	9.3	1120	2.1
6.6	**1590**	**1.45**	221.4	"	"	15300	43300	7.9	1320	1.75
6.0	**1750**	**1.3**	245.6	"	"	15300	43300	7.1	1470	1.55
5.0	**2100**	**1.1**	293.4	"	"	15300	43300	6.0	1750	1.3
4.5	**2300**	**1.0**	325.6	"	"	15300	43300	5.4	1940	1.2
3.9	**2650**	**0.87**	380.0	"	"	15300	43300	4.6	2250	1.0
6.3	**1660**	**3.1**	233.0	**BF70Z-../DPE09XA4**	231	16100	47700	7.5	1400	3.7
5.7	**1840**	**2.8**	258.7	"	"	16100	47700	6.8	1540	3.4
4.9	**2100**	**2.5**	301.8	"	"	16100	47700	5.8	1810	2.9
4.3	**2400**	**2.2**	341.7	"	"	16100	47700	5.1	2050	2.5
3.7	**2800**	**1.85**	398.7	"	"	16100	47700	4.4	2350	2.2
3.4	**3050**	**1.7**	439.2	"	"	16100	47700	4.0	2600	2.0
2.9	**3600**	**1.45**	512.4	"	"	16100	47700	3.4	3050	1.7

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 1.1 kW



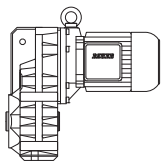
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
2.8	**3500**	**1.65**	524.1	**BF70G20-../DPE09XA4**	229	16100	47700	3.4	2850	2.0
2.6	**3750**	**1.5**	577.5	"	"	16100	47700	3.1	3100	1.85
2.2	**4450**	**1.3**	673.6	"	"	16100	47700	2.6	3750	1.5
1.7	**5900**	**0.97**	872.1	"	"	16100	47700	2.0	4950	1.15
1.5	**6700**	**0.85**	1017	"	"	16100	47700	1.8	5500	1.05
3.3	**3150**	**3.3**	450.4	**BF80Z-../DPE09XA4**	348	39600	75000	3.9	2650	4.0
2.9	**3600**	**2.9**	511.2	"	"	39600	75000	3.5	3000	3.5
2.5	**4200**	**2.5**	583.4	"	"	39600	75000	3.0	3500	3.0
2.2	**4750**	**2.2**	662.1	"	"	39600	75000	2.7	3850	2.7
1.9	**5500**	**1.9**	770.6	"	"	39600	75000	2.3	4550	2.3
1.7	**6100**	**1.7**	874.6	"	"	39600	75000	2.0	5200	2.0
1.5	**7000**	**1.5**	990.4	"	"	39600	75000	1.8	5800	1.8
1.3	**8000**	**1.3**	1124	"	"	39600	75000	1.6	6500	1.6
1.1	**8100**	**1.3**	1329	**BF80G40-../DPE09XA4**	353	39600	75000	1.4	6000	1.75
1.0	**9100**	**1.15**	1491	"	"	39600	75000	1.2	7300	1.45
0.9	**10000**	**1.05**	1693	"	"	39600	75000	1.1	7900	1.35
1.8	**5800**	**3.2**	845.1	**BF90Z-../DPE09XA4**	612	42800	120000	2.1	5000	3.7
1.4	**6100**	**3.0**	1043	**BF90G50-../DPE09XA4**	624	42800	120000	1.7	4750	3.9
1.3	**6400**	**2.9**	1204	"	"	42800	120000	1.5	5300	3.5
1.1	**8100**	**2.3**	1444	"	"	42800	120000	1.3	6700	2.8
0.9	**10000**	**1.85**	1678	"	"	42800	120000	1.1	7900	2.3
0.8	**11300**	**1.65**	1867	"	"	42800	120000	0.95	9200	2.0
0.7	**12900**	**1.45**	2154	"	"	42800	120000	0.85	10300	1.8
0.55	**16700**	**1.1**	2656	"	"	42800	120000	0.7	12600	1.45

P = 1.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
260	**55**	**2.5**	5.60	**BF10-../DPE09XA4C**	43	1950	-	315	45	3.1
192	**74**	**2.1**	7.58	"	"	2200	-	230	62	2.5
150	**95**	**1.85**	9.69	"	"	2350	-	180	79	2.2
123	**116**	**1.6**	11.84	"	"	2500	-	147	97	1.9
97	**147**	**1.25**	15.04	"	"	2800	-	116	123	1.5
80	**179**	**1.35**	18.23	"	"	2900	-	96	149	1.6
73	**196**	**1.2**	20.05	"	"	3000	-	87	164	1.45
63	**225**	**1.05**	23.28	"	"	3200	-	75	191	1.25
57	**250**	**0.96**	25.60	"	"	3350	-	68	210	1.15
51	**280**	**0.86**	28.47	"	"	3450	-	62	230	1.05
182	**78**	**2.8**	8.00	**BF20-../DPE09XA4C**	49	2850	-	220	65	3.4
138	**103**	**2.5**	10.51	"	"	3100	-	166	86	3.0
111	**129**	**2.2**	13.18	"	"	3300	-	133	107	2.7
94	**152**	**2.0**	15.54	"	"	3450	-	112	127	2.4
87	**164**	**2.2**	16.77	"	"	3500	-	104	137	2.6
79	**181**	**2.0**	18.45	"	"	3600	-	95	150	2.5
66	**215**	**1.85**	22.04	"	"	3800	-	79	181	2.2
60	**235**	**1.7**	24.25	"	"	3950	-	72	198	2.0
53	**270**	**1.55**	27.62	"	"	4150	-	63	225	1.85
48	**295**	**1.4**	30.40	"	"	4400	-	58	245	1.7
45	**315**	**1.35**	32.58	"	"	4450	-	54	265	1.6
40.5	**350**	**1.2**	35.85	"	"	4650	-	49	290	1.45
35	**405**	**1.05**	41.72	"	"	4950	-	42	340	1.25
32	**445**	**0.94**	45.90	"	"	5100	-	38	375	1.1
30	**475**	**0.88**	48.56	"	"	5200	-	36	395	1.05
27.5	**520**	**0.81**	53.43	"	"	5500	-	33	430	0.98

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

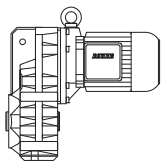
P = 1.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
146	**98**	**3.3**	9.99	**BF30-../DPE09XA4C**	59	2850	-	175	81	4.0
113	**126**	**2.9**	12.91	"	"	3050	-	135	106	3.5
91	**157**	**2.6**	16.00	"	"	3250	-	109	131	3.1
83	**172**	**2.8**	17.65	"	"	3300	-	99	144	3.3
75	**191**	**2.6**	19.41	"	"	3400	-	90	159	3.2
67	**210**	**2.5**	21.85	"	"	3500	-	80	179	3.0
61	**230**	**2.4**	24.03	"	"	3600	-	73	196	2.8
52	**275**	**2.1**	28.23	"	"	3800	-	62	230	2.5
47	**300**	**1.9**	31.05	"	"	4000	-	57	250	2.3
41.5	**345**	**1.65**	35.00	"	"	4200	-	50	285	2.0
38	**375**	**1.55**	38.49	"	"	4400	-	45.5	310	1.85
35.5	**400**	**1.45**	41.01	"	"	4500	-	42.5	335	1.7
32.5	**440**	**1.3**	45.10	"	"	4700	-	39	365	1.6
28	**510**	**1.15**	52.20	"	"	5000	-	33.5	425	1.35
25.5	**560**	**1.05**	57.41	"	"	5200	-	30.5	465	1.25
24	**590**	**0.97**	61.17	"	"	5300	-	28.5	500	1.15
22	**650**	**0.88**	67.28	"	"	5500	-	26	550	1.05
20.5	**690**	**0.83**	72.13	"	"	5700	-	24.5	580	0.99
68	**210**	**3.3**	21.60	**BF40-../DPE09XA4C**	69	5200	-	81	176	4.0
62	**230**	**3.2**	23.77	"	"	5400	-	74	193	3.8
54	**265**	**2.9**	26.86	"	"	5600	-	65	220	3.5
49.5	**285**	**2.8**	29.55	"	"	5800	-	59	240	3.4
42.5	**335**	**2.6**	34.21	"	"	6000	-	51	280	3.1
39	**365**	**2.4**	37.64	"	"	6200	-	46.5	305	2.9
35.5	**400**	**2.3**	41.42	"	"	6500	-	42.5	335	2.7
32	**445**	**2.0**	45.56	"	"	6800	-	38.5	370	2.4
30	**475**	**1.9**	48.92	"	"	7000	-	36	395	2.3
27	**530**	**1.7**	53.82	"	"	7200	-	32.5	440	2.0
24	**590**	**1.55**	61.25	"	"	7600	-	28.5	500	1.8
22	**650**	**1.4**	67.38	"	"	8000	-	26	550	1.65
20.5	**690**	**1.3**	71.40	"	"	8100	-	24.5	580	1.55
18.5	**770**	**1.15**	78.55	"	"	8500	-	22.5	630	1.45
17.5	**810**	**1.1**	83.91	"	"	8700	-	21	680	1.3
16	**890**	**1.0**	92.31	"	"	9100	-	19	750	1.2
14.5	**980**	**0.92**	101.0	"	"	9400	-	17.5	810	1.1
13.5	**1060**	**0.85**	111.1	"	"	9800	-	16	890	1.0
34.5	**415**	**3.1**	42.15	**BF50-../DPE09XA4C**	97	8500	-	41.5	345	3.8
31	**460**	**2.8**	47.14	"	"	8900	-	37	385	3.4
26	**550**	**2.4**	56.86	"	"	9300	-	31	460	2.8
23	**620**	**2.1**	63.59	"	"	9800	-	27.5	520	2.5
20	**710**	**1.85**	72.72	"	"	10700	-	24	590	2.2
18	**790**	**1.65**	81.33	"	"	11300	-	21.5	660	1.95
16.5	**860**	**1.5**	90.24	"	"	11800	-	19.5	730	1.8
14.5	**980**	**1.35**	100.9	"	"	12300	-	17.5	810	1.6
13	**1100**	**1.2**	114.0	"	"	12900	-	15.5	920	1.4
11.5	**1240**	**1.05**	127.5	"	"	13600	-	14	1020	1.25
10.5	**1360**	**0.96**	138.1	**BF50Z-../DPE09XA4C**	102	13600	-	13	1100	1.2
9.4	**1520**	**0.86**	154.5	"	"	13600	-	11.5	1240	1.05
20.5	**690**	**3.3**	72.15	**BF60-../DPE09XA4C**	126	12000	34000	24.5	580	4.0
18.5	**770**	**3.0**	80.05	"	"	12600	35600	22	650	3.5
16	**890**	**2.6**	93.44	"	"	13500	38200	19	750	3.1
14	**1020**	**2.3**	103.7	"	"	14100	39900	17	840	2.7
13	**1100**	**2.1**	113.1	"	"	14600	41300	15.5	920	2.5
12	**1190**	**1.95**	125.5	"	"	15300	43300	14	1020	2.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

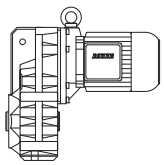
P = 1.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
10.5	**1360**	**1.7**	140.8	**BF60Z-../DPE09XA4C**	146	15300	43300	12.5	1140	2.0
8.6	**1660**	**1.4**	169.2	"	"	15300	43300	10.5	1360	1.7
7.8	**1830**	**1.25**	187.7	"	"	15300	43300	9.3	1540	1.5
6.6	**2150**	**1.05**	221.4	"	"	15300	43300	7.9	1810	1.25
6.0	**2350**	**0.98**	245.6	"	"	15300	43300	7.1	2000	1.15
5.0	**2850**	**0.81**	293.4	"	"	15300	43300	6.0	2350	0.98
8.1	**1760**	**3.0**	179.7	**BF70Z-../DPE09XA4C**	234	16100	47700	9.7	1470	3.5
7.3	**1960**	**2.7**	199.7	"	"	16100	47700	8.8	1620	3.2
6.3	**2250**	**2.3**	233.0	"	"	16100	47700	7.5	1910	2.7
5.7	**2500**	**2.1**	258.7	"	"	16100	47700	6.8	2100	2.5
4.9	**2900**	**1.8**	301.8	"	"	16100	47700	5.8	2450	2.1
4.3	**3300**	**1.6**	341.7	"	"	16100	47700	5.1	2800	1.85
3.7	**3850**	**1.35**	398.7	"	"	16100	47700	4.4	3250	1.6
3.4	**4200**	**1.25**	439.2	"	"	16100	47700	4.0	3550	1.45
2.9	**4900**	**1.05**	512.4	"	"	16100	47700	3.4	4200	1.25
2.8	**4850**	**1.2**	524.1	**BF70G20-../DPE09XA4C**	232	16100	47700	3.4	3950	1.45
2.6	**5200**	**1.1**	577.5	"	"	16100	47700	3.1	4350	1.3
2.2	**6200**	**0.92**	673.6	"	"	16100	47700	2.6	5200	1.1
4.2	**3400**	**3.1**	347.3	**BF80Z-../DPE09XA4C**	350	39600	75000	5.1	2800	3.8
3.7	**3850**	**2.7**	394.2	"	"	39600	75000	4.5	3150	3.3
3.3	**4300**	**2.4**	450.4	"	"	39600	75000	3.9	3650	2.9
2.9	**4900**	**2.1**	511.2	"	"	39600	75000	3.5	4050	2.6
2.5	**5700**	**1.85**	583.4	"	"	39600	75000	3.0	4750	2.2
2.2	**6500**	**1.6**	662.1	"	"	39600	75000	2.7	5300	2.0
1.9	**7500**	**1.4**	770.6	"	"	39600	75000	2.3	6200	1.7
1.7	**8400**	**1.25**	874.6	"	"	39600	75000	2.0	7100	1.5
1.5	**9500**	**1.1**	990.4	"	"	39600	75000	1.8	7900	1.35
1.3	**11000**	**0.95**	1124	"	"	39600	75000	1.6	8900	1.2
1.1	**11500**	**0.91**	1329	**BF80G40-../DPE09XA4C**	356	39600	75000	1.4	8700	1.2
1.0	**12900**	**0.81**	1491	"	"	39600	75000	1.2	10500	1.0
2.5	**5700**	**3.2**	591.1	**BF90Z-../DPE09XA4C**	614	42800	120000	3.0	4750	3.9
2.3	**6200**	**3.0**	658.1	"	"	42800	120000	2.7	5300	3.5
2.0	**7100**	**2.6**	759.0	"	"	42800	120000	2.3	6200	3.0
1.8	**7900**	**2.3**	845.1	"	"	42800	120000	2.1	6800	2.7
1.5	**7900**	**2.3**	976.1	**BF90G50-../DPE09XA4C**	626	42800	120000	1.8	6300	2.9
1.4	**8800**	**2.1**	1043	"	"	42800	120000	1.7	7000	2.6
1.3	**9400**	**1.95**	1204	"	"	42800	120000	1.5	7900	2.3
1.1	**11600**	**1.6**	1444	"	"	42800	120000	1.3	9600	1.95
0.9	**14300**	**1.3**	1678	"	"	42800	120000	1.1	11400	1.6
0.8	**16100**	**1.15**	1867	"	"	42800	120000	0.95	13200	1.4
0.7	**18400**	**1.0**	2154	"	"	42800	120000	0.85	14700	1.25

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

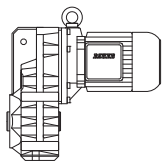
P = 2.2 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
230	**91**	**2.9**	6.34	**BF30-../DPE11MA4**	66	2400	-	275	76	3.5
180	**116**	**2.5**	8.07	"	"	2650	-	220	95	3.0
146	**143**	**2.2**	9.99	"	"	2850	-	175	120	2.7
113	**185**	**2.0**	12.91	"	"	3050	-	135	155	2.4
91	**230**	**1.75**	16.00	"	"	3250	-	109	192	2.1
83	**250**	**1.9**	17.65	"	"	3300	-	99	210	2.3
75	**280**	**1.8**	19.41	"	"	3400	-	90	230	2.2
67	**310**	**1.7**	21.85	"	"	3500	-	80	260	2.0
61	**340**	**1.65**	24.03	"	"	3600	-	73	285	1.95
52	**400**	**1.45**	28.23	"	"	3800	-	62	335	1.7
47	**445**	**1.3**	31.05	"	"	4000	-	57	365	1.6
41.5	**500**	**1.15**	35.00	"	"	4200	-	50	420	1.35
38	**550**	**1.05**	38.49	"	"	4400	-	45.5	460	1.25
35.5	**590**	**0.97**	41.01	"	"	4500	-	42.5	490	1.15
32.5	**640**	**0.9**	45.10	"	"	4700	-	39	530	1.1
191	**110**	**3.3**	7.62	**BF40-../DPE11MA4**	80	3900	-	230	91	4.0
153	**137**	**3.0**	9.48	"	"	4150	-	184	114	3.6
123	**170**	**2.7**	11.79	"	"	4450	-	148	141	3.3
97	**215**	**2.4**	15.02	"	"	4800	-	116	181	2.9
84	**250**	**2.5**	17.35	"	"	4950	-	101	205	3.1
76	**275**	**2.4**	19.09	"	"	5100	-	92	225	3.0
68	**305**	**2.3**	21.60	"	"	5200	-	81	255	2.8
62	**335**	**2.2**	23.77	"	"	5400	-	74	280	2.6
54	**385**	**2.0**	26.86	"	"	5600	-	65	320	2.4
49.5	**420**	**1.9**	29.55	"	"	5800	-	59	355	2.3
42.5	**490**	**1.75**	34.21	"	"	6000	-	51	410	2.1
39	**530**	**1.7**	37.64	"	"	6200	-	46.5	450	2.0
35.5	**590**	**1.55**	41.42	"	"	6500	-	42.5	490	1.85
32	**650**	**1.4**	45.56	"	"	6800	-	38.5	540	1.65
30	**700**	**1.3**	48.92	"	"	7000	-	36	580	1.55
27	**770**	**1.15**	53.82	"	"	7200	-	32.5	640	1.4
57	**365**	**3.2**	25.88	**BF50-../DPE11MA4**	110	7100	-	68	305	3.8
46	**455**	**2.8**	31.73	"	"	7500	-	55	380	3.3
41	**510**	**2.5**	35.49	"	"	7800	-	49.5	420	3.1
34.5	**600**	**2.2**	42.15	"	"	8500	-	41.5	500	2.6
31	**670**	**1.95**	47.14	"	"	8900	-	37	560	2.3
26	**800**	**1.65**	56.86	"	"	9300	-	31	670	1.95
23	**910**	**1.45**	63.59	"	"	9800	-	27.5	760	1.7
20	**1050**	**1.25**	72.72	"	"	10700	-	24	870	1.5
18	**1160**	**1.1**	81.33	"	"	11300	-	21.5	970	1.35
16.5	**1270**	**1.0**	90.24	"	"	11800	-	19.5	1070	1.2
14.5	**1440**	**0.9**	100.9	"	"	12300	-	17.5	1200	1.1
27	**770**	**3.0**	54.44	**BF60-../DPE11MA4**	141	10500	29700	32	650	3.5
24.5	**850**	**2.7**	60.40	"	"	11100	31400	29	720	3.2
20.5	**1020**	**2.3**	72.15	"	"	12000	34000	24.5	850	2.7
18.5	**1130**	**2.0**	80.05	"	"	12600	35600	22	950	2.4
16	**1310**	**1.75**	93.44	"	"	13500	38200	19	1100	2.1
14	**1500**	**1.55**	103.7	"	"	14100	39900	17	1230	1.85
13	**1610**	**1.45**	113.1	"	"	14600	41300	15.5	1350	1.7
12	**1750**	**1.3**	125.5	"	"	15300	43300	14	1500	1.55
10.5	**2000**	**1.15**	140.8	**BF60Z-../DPE11MA4**	157	15300	43300	12.5	1680	1.35
8.6	**2400**	**0.96**	169.2	"	"	15300	43300	10.5	2000	1.15
7.8	**2650**	**0.87**	187.7	"	"	15300	43300	9.3	2250	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 2.2 kW



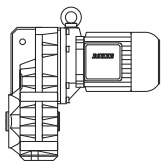
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
12	**1750**	**3.0**	122.7	**BF70-../DPE11MA4**	220	16100	47700	14.5	1440	3.6
11	**1910**	**2.7**	133.0	**BF70Z-../DPE11MA4**	247	16100	47700	13.5	1550	3.4
9.5	**2200**	**2.4**	154.0	"	"	16100	47700	11.5	1820	2.9
8.1	**2550**	**2.0**	179.7	"	"	16100	47700	9.7	2150	2.4
7.3	**2850**	**1.8**	199.7	"	"	16100	47700	8.8	2350	2.2
6.3	**3300**	**1.6**	233.0	"	"	16100	47700	7.5	2800	1.85
5.7	**3650**	**1.4**	258.7	"	"	16100	47700	6.8	3050	1.7
4.9	**4250**	**1.2**	301.8	"	"	16100	47700	5.8	3600	1.45
4.3	**4850**	**1.05**	341.7	"	"	16100	47700	5.1	4100	1.25
3.7	**5600**	**0.93**	398.7	"	"	16100	47700	4.4	4750	1.1
3.4	**6100**	**0.85**	439.2	"	"	16100	47700	4.0	5200	1.0
7.0	**3000**	**3.2**	209.4	**BF80-../DPE11MA4**	316	34300	75000	8.4	2500	3.8
6.2	**3350**	**2.8**	237.1	"	"	36900	75000	7.4	2800	3.4
5.4	**3850**	**2.5**	269.1	"	"	39600	75000	6.5	3200	3.0
5.0	**4200**	**2.5**	291.7	**BF80Z-../DPE11MA4**	363	39600	75000	6.0	3500	3.0
4.2	**5000**	**2.1**	347.3	"	"	39600	75000	5.1	4100	2.6
3.7	**5600**	**1.9**	394.2	"	"	39600	75000	4.5	4650	2.3
3.3	**6300**	**1.65**	450.4	"	"	39600	75000	3.9	5300	2.0
2.9	**7200**	**1.45**	511.2	"	"	39600	75000	3.5	6000	1.75
2.5	**8400**	**1.25**	583.4	"	"	39600	75000	3.0	7000	1.5
2.2	**9500**	**1.1**	662.1	"	"	39600	75000	2.7	7700	1.35
1.9	**11000**	**0.95**	770.6	"	"	39600	75000	2.3	9100	1.15
1.7	**12300**	**0.85**	874.6	"	"	39600	75000	2.0	10500	1.0
3.2	**6500**	**2.8**	456.7	**BF90Z-../DPE11MA4**	629	42800	120000	3.9	5300	3.5
2.9	**7200**	**2.6**	508.5	"	"	42800	120000	3.5	6000	3.1
2.5	**8400**	**2.2**	591.1	"	"	42800	120000	3.0	7000	2.6
2.3	**9100**	**2.0**	658.1	"	"	42800	120000	2.7	7700	2.4
2.0	**10500**	**1.75**	759.0	"	"	42800	120000	2.3	9100	2.0
1.8	**11600**	**1.6**	845.1	"	"	42800	120000	2.1	10000	1.85
1.5	**12400**	**1.5**	976.1	**BF90G50-../DPE11MA4**	639	42800	120000	1.8	10000	1.85
1.4	**13600**	**1.35**	1043	"	"	42800	120000	1.7	10900	1.7
1.3	**14500**	**1.3**	1204	"	"	42800	120000	1.5	12300	1.5
1.1	**17700**	**1.05**	1444	"	"	42800	120000	1.3	14700	1.25

P = 3 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
230	**124**	**2.1**	6.34	**BF30-../DPE11LA4**	78	2400	-	275	104	2.5
180	**159**	**1.8**	8.07	"	"	2650	-	220	130	2.2
146	**196**	**1.65**	9.99	"	"	2850	-	175	163	1.95
113	**250**	**1.45**	12.91	"	"	3050	-	135	210	1.75
91	**310**	**1.3**	16.00	"	"	3250	-	109	260	1.55
83	**345**	**1.4**	17.65	"	"	3300	-	99	285	1.7
75	**380**	**1.3**	19.41	"	"	3400	-	90	315	1.6
67	**425**	**1.25**	21.85	"	"	3500	-	80	355	1.5
61	**465**	**1.2**	24.03	"	"	3600	-	73	390	1.4
52	**550**	**1.05**	28.23	"	"	3800	-	62	460	1.25
47	**600**	**0.96**	31.05	"	"	4000	-	57	500	1.15
41.5	**690**	**0.83**	35.00	"	"	4200	-	50	570	1.0
250	**114**	**2.9**	5.87	**BF40-../DPE11LA4**	92	3550	-	300	95	3.5
191	**150**	**2.5**	7.62	"	"	3900	-	230	124	3.0
153	**187**	**2.2**	9.48	"	"	4150	-	184	155	2.7
123	**230**	**2.0**	11.79	"	"	4450	-	148	193	2.4
97	**295**	**1.75**	15.02	"	"	4800	-	116	245	2.1
84	**340**	**1.85**	17.35	"	"	4950	-	101	280	2.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

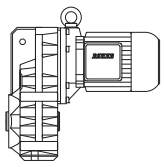
P = 3 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
76	**375**	**1.75**	19.09	**BF40-../DPE11LA4**	92	5100	-	92	310	2.1
68	**420**	**1.65**	21.60	"	"	5200	-	81	350	2.0
62	**460**	**1.6**	23.77	"	"	5400	-	74	385	1.9
54	**530**	**1.45**	26.86	"	"	5600	-	65	440	1.75
49.5	**570**	**1.4**	29.55	"	"	5800	-	59	485	1.65
42.5	**670**	**1.3**	34.21	"	"	6000	-	51	560	1.55
39	**730**	**1.2**	37.64	"	"	6200	-	46.5	610	1.45
35.5	**800**	**1.15**	41.42	"	"	6500	-	42.5	670	1.35
32	**890**	**1.0**	45.56	"	"	6800	-	38.5	740	1.2
30	**950**	**0.95**	48.92	"	"	7000	-	36	790	1.15
27	**1060**	**0.85**	53.82	"	"	7200	-	32.5	880	1.0
136	**210**	**3.2**	10.68	**BF50-../DPE11LA4**	122	5600	-	163	175	3.9
99	**285**	**2.8**	14.65	"	"	6100	-	119	240	3.3
87	**325**	**2.9**	16.70	"	"	6200	-	105	270	3.5
78	**365**	**2.7**	18.68	"	"	6400	-	94	300	3.3
63	**450**	**2.5**	23.14	"	"	6800	-	76	375	3.0
57	**500**	**2.3**	25.88	"	"	7100	-	68	420	2.8
46	**620**	**2.0**	31.73	"	"	7500	-	55	520	2.4
41	**690**	**1.9**	35.49	"	"	7800	-	49.5	570	2.3
34.5	**830**	**1.55**	42.15	"	"	8500	-	41.5	690	1.9
31	**920**	**1.4**	47.14	"	"	8900	-	37	770	1.7
26	**1100**	**1.2**	56.86	"	"	9300	-	31	920	1.4
23	**1240**	**1.05**	63.59	"	"	9800	-	27.5	1040	1.25
20	**1430**	**0.91**	72.72	"	"	10700	-	24	1190	1.1
18	**1590**	**0.82**	81.33	"	"	11300	-	21.5	1330	0.98
46.5	**610**	**3.1**	31.20	**BF60-../DPE11LA4**	153	8800	24900	56	510	3.7
42	**680**	**2.9**	34.62	"	"	9100	25700	51	560	3.5
35	**810**	**2.6**	41.60	"	"	9600	27100	42	680	3.1
31.5	**900**	**2.5**	46.16	"	"	9900	28000	38	750	3.0
27	**1060**	**2.2**	54.44	"	"	10500	29700	32	890	2.6
24.5	**1160**	**2.0**	60.40	"	"	11100	31400	29	980	2.3
20.5	**1390**	**1.65**	72.15	"	"	12000	34000	24.5	1160	2.0
18.5	**1540**	**1.5**	80.05	"	"	12600	35600	22	1300	1.75
16	**1790**	**1.3**	93.44	"	"	13500	38200	19	1500	1.55
14	**2000**	**1.15**	103.7	"	"	14100	39900	17	1680	1.35
13	**2200**	**1.05**	113.1	"	"	14600	41300	15.5	1840	1.25
12	**2350**	**0.98**	125.5	"	"	15300	43300	14	2000	1.15
10.5	**2700**	**0.85**	140.8	**BF60Z-../DPE11LA4**	169	15300	43300	12.5	2250	1.0
18	**1590**	**3.3**	81.82	**BF70-../DPE11LA4**	232	12800	41300	21.5	1330	3.9
15.5	**1840**	**2.8**	95.46	"	"	14000	43700	18.5	1540	3.4
14	**2000**	**2.6**	105.2	"	"	14700	45100	17	1680	3.1
12	**2350**	**2.2**	122.7	"	"	16100	47700	14.5	1970	2.6
11	**2600**	**2.0**	133.0	**BF70Z-../DPE11LA4**	258	16100	47700	13.5	2100	2.5
9.5	**3000**	**1.75**	154.0	"	"	16100	47700	11.5	2450	2.1
8.1	**3500**	**1.5**	179.7	"	"	16100	47700	9.7	2950	1.75
7.3	**3900**	**1.35**	199.7	"	"	16100	47700	8.8	3250	1.6
6.3	**4500**	**1.15**	233.0	"	"	16100	47700	7.5	3800	1.35
5.7	**5000**	**1.05**	258.7	"	"	16100	47700	6.8	4200	1.25
4.9	**5800**	**0.9**	301.8	"	"	16100	47700	5.8	4900	1.05
9.2	**3100**	**3.1**	158.5	**BF80-../DPE11LA4**	328	29000	75000	11	2600	3.7
7.9	**3600**	**2.6**	184.5	"	"	31800	75000	9.5	3000	3.2
7.0	**4050**	**2.3**	209.4	"	"	34300	75000	8.4	3400	2.8
6.2	**4600**	**2.1**	237.1	"	"	36900	75000	7.4	3850	2.5
5.4	**5300**	**1.8**	269.1	"	"	39600	75000	6.5	4400	2.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 3 kW



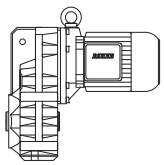
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
5.0	**5700**	**1.85**	291.7	**BF80Z-../DPE11LA4**	375	39600	75000	6.0	4750	2.2
4.2	**6800**	**1.55**	347.3	"	"	39600	75000	5.1	5600	1.9
3.7	**7700**	**1.35**	394.2	"	"	39600	75000	4.5	6300	1.65
3.3	**8600**	**1.2**	450.4	"	"	39600	75000	3.9	7300	1.45
2.9	**9800**	**1.05**	511.2	"	"	39600	75000	3.5	8100	1.3
2.5	**11400**	**0.92**	583.4	"	"	39600	75000	3.0	9500	1.1
2.2	**13000**	**0.81**	662.1	"	"	39600	75000	2.7	10600	0.99
5.6	**5100**	**3.3**	259.0	**BF90-../DPE11LA4**	581	42800	120000	6.8	4200	4.0
4.9	**5800**	**3.2**	300.4	**BF90Z-../DPE11LA4**	641	42800	120000	5.8	4900	3.8
4.3	**6600**	**2.8**	343.6	"	"	42800	120000	5.1	5600	3.3
3.8	**7500**	**2.5**	382.6	"	"	42800	120000	4.6	6200	3.0
3.2	**8900**	**2.1**	456.7	"	"	42800	120000	3.9	7300	2.5
2.9	**9800**	**1.9**	508.5	"	"	42800	120000	3.5	8100	2.3
2.5	**11400**	**1.6**	591.1	"	"	42800	120000	3.0	9500	1.95
2.3	**12400**	**1.5**	658.1	"	"	42800	120000	2.7	10600	1.75
2.0	**14300**	**1.3**	759.0	"	"	42800	120000	2.3	12400	1.5
1.8	**15900**	**1.15**	845.1	"	"	42800	120000	2.1	13600	1.35
1.5	**17500**	**1.05**	976.1	**BF90G50-../DPE11LA4**	651	42800	120000	1.8	14300	1.3
1.4	**19000**	**0.97**	1043	"	"	42800	120000	1.7	15400	1.2
1.3	**20400**	**0.91**	1204	"	"	42800	120000	1.5	17400	1.05

P = 4 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
230	**166**	**1.6**	6.34	**BF30-../DPE11LA4C**	82	2400	-	275	138	1.9
180	**210**	**1.35**	8.07	"	"	2650	-	220	173	1.65
146	**260**	**1.25**	9.99	"	"	2850	-	175	215	1.5
113	**335**	**1.1**	12.91	"	"	3050	-	135	280	1.3
91	**415**	**0.98**	16.00	"	"	3250	-	109	350	1.15
83	**460**	**1.05**	17.65	"	"	3300	-	99	385	1.25
75	**500**	**1.0**	19.41	"	"	3400	-	90	420	1.2
67	**570**	**0.93**	21.85	"	"	3500	-	80	475	1.1
61	**620**	**0.89**	24.03	"	"	3600	-	73	520	1.05
250	**152**	**2.2**	5.87	**BF40-../DPE11LA4C**	96	3550	-	300	127	2.6
191	**200**	**1.85**	7.62	"	"	3900	-	230	166	2.2
153	**245**	**1.7**	9.48	"	"	4150	-	184	205	2.0
123	**310**	**1.5**	11.79	"	"	4450	-	148	255	1.8
97	**390**	**1.35**	15.02	"	"	4800	-	116	325	1.6
84	**450**	**1.4**	17.35	"	"	4950	-	101	375	1.7
76	**500**	**1.35**	19.09	"	"	5100	-	92	415	1.6
68	**560**	**1.25**	21.60	"	"	5200	-	81	470	1.5
62	**610**	**1.2**	23.77	"	"	5400	-	74	510	1.45
54	**700**	**1.1**	26.86	"	"	5600	-	65	580	1.35
49.5	**770**	**1.05**	29.55	"	"	5800	-	59	640	1.25
42.5	**890**	**0.96**	34.21	"	"	6000	-	51	740	1.15
39	**970**	**0.92**	37.64	"	"	6200	-	46.5	820	1.1
35.5	**1070**	**0.84**	41.42	"	"	6500	-	42.5	890	1.0
189	**200**	**2.8**	7.71	**BF50-../DPE11LA4C**	126	5100	-	230	166	3.4
136	**280**	**2.4**	10.68	"	"	5600	-	163	230	2.9
99	**385**	**2.1**	14.65	"	"	6100	-	119	320	2.5
87	**435**	**2.2**	16.70	"	"	6200	-	105	360	2.6
78	**485**	**2.1**	18.68	"	"	6400	-	94	405	2.5
63	**600**	**1.85**	23.14	"	"	6800	-	76	500	2.2
57	**670**	**1.75**	25.88	"	"	7100	-	68	560	2.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

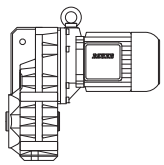
P = 4 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
46	**830**	**1.55**	31.73	**BF50-../DPE11LA4C**	126	7500	-	55	690	1.85
41	**930**	**1.4**	35.49	"	"	7800	-	49.5	770	1.7
34.5	**1100**	**1.2**	42.15	"	"	8500	-	41.5	920	1.4
31	**1230**	**1.05**	47.14	"	"	8900	-	37	1030	1.25
26	**1460**	**0.89**	56.86	"	"	9300	-	31	1230	1.05
102	**370**	**3.2**	14.24	**BF60-../DPE11LA4C**	157	7100	20000	123	310	3.8
86	**440**	**3.3**	16.96	"	"	7300	20600	103	370	3.9
78	**485**	**3.1**	18.81	"	"	7600	21500	93	410	3.7
65	**580**	**2.9**	22.58	"	"	8000	22600	78	485	3.4
58	**650**	**2.7**	25.05	"	"	8200	23200	70	540	3.2
46.5	**820**	**2.3**	31.20	"	"	8800	24900	56	680	2.8
42	**900**	**2.2**	34.62	"	"	9100	25700	51	740	2.7
35	**1090**	**1.95**	41.60	"	"	9600	27100	42	900	2.4
31.5	**1210**	**1.85**	46.16	"	"	9900	28000	38	1000	2.2
27	**1410**	**1.65**	54.44	"	"	10500	29700	32	1190	1.95
24.5	**1550**	**1.5**	60.40	"	"	11100	31400	29	1310	1.75
20.5	**1860**	**1.25**	72.15	"	"	12000	34000	24.5	1550	1.5
18.5	**2050**	**1.1**	80.05	"	"	12600	35600	22	1730	1.35
16	**2350**	**0.98**	93.44	"	"	13500	38200	19	2000	1.15
14	**2700**	**0.85**	103.7	"	"	14100	39900	17	2200	1.05
23.5	**1620**	**3.2**	61.94	**BF70-../DPE11LA4C**	236	10800	37400	28.5	1340	3.9
20.5	**1860**	**2.8**	72.26	"	"	12000	39600	24.5	1550	3.4
18	**2100**	**2.5**	81.82	"	"	12800	41300	21.5	1770	2.9
15.5	**2450**	**2.1**	95.46	"	"	14000	43700	18.5	2050	2.5
14	**2700**	**1.95**	105.2	"	"	14700	45100	17	2200	2.4
12	**3150**	**1.65**	122.7	"	"	16100	47700	14.5	2600	2.0
11	**3450**	**1.5**	133.0	**BF70Z-../DPE11LA4C**	262	16100	47700	13.5	2800	1.85
9.5	**4000**	**1.3**	154.0	"	"	16100	47700	11.5	3300	1.6
8.1	**4700**	**1.1**	179.7	"	"	16100	47700	9.7	3900	1.35
7.3	**5200**	**1.0**	199.7	"	"	16100	47700	8.8	4300	1.2
6.3	**6000**	**0.87**	233.0	"	"	16100	47700	7.5	5000	1.05
12	**3150**	**3.0**	122.4	**BF80-../DPE11LA4C**	332	24500	75000	14.5	2600	3.7
10.5	**3600**	**2.6**	139.7	"	"	26700	75000	12.5	3050	3.1
9.2	**4150**	**2.3**	158.5	"	"	29000	75000	11	3450	2.8
7.9	**4800**	**2.0**	184.5	"	"	31800	75000	9.5	4000	2.4
7.0	**5400**	**1.75**	209.4	"	"	34300	75000	8.4	4500	2.1
6.2	**6100**	**1.55**	237.1	"	"	36900	75000	7.4	5100	1.85
5.4	**7000**	**1.35**	269.1	"	"	39600	75000	6.5	5800	1.65
5.0	**7600**	**1.4**	291.7	**BF80Z-../DPE11LA4C**	379	39600	75000	6.0	6300	1.65
4.2	**9000**	**1.15**	347.3	"	"	39600	75000	5.1	7400	1.4
3.7	**10300**	**1.0**	394.2	"	"	39600	75000	4.5	8400	1.25
3.3	**11500**	**0.91**	450.4	"	"	39600	75000	3.9	9700	1.1
2.9	**13100**	**0.8**	511.2	"	"	39600	75000	3.5	10900	0.96
7.3	**5200**	**3.2**	198.8	**BF90-../DPE11LA4C**	585	36000	111300	8.8	4300	3.9
6.3	**6000**	**2.8**	232.6	"	"	39900	118300	7.5	5000	3.4
5.6	**6800**	**2.5**	259.0	"	"	42800	120000	6.8	5600	3.0
5.4	**7000**	**2.6**	269.8	**BF90Z-../DPE11LA4C**	645	42800	120000	6.5	5800	3.2
4.9	**7700**	**2.4**	300.4	"	"	42800	120000	5.8	6500	2.8
4.3	**8800**	**2.1**	343.6	"	"	42800	120000	5.1	7400	2.5
3.8	**10000**	**1.85**	382.6	"	"	42800	120000	4.6	8300	2.2
3.2	**11900**	**1.55**	456.7	"	"	42800	120000	3.9	9700	1.9
2.9	**13100**	**1.4**	508.5	"	"	42800	120000	3.5	10900	1.7
2.5	**15200**	**1.2**	591.1	"	"	42800	120000	3.0	12700	1.45
2.3	**16600**	**1.1**	658.1	"	"	42800	120000	2.7	14100	1.3
2.0	**19100**	**0.97**	759.0	"	"	42800	120000	2.3	16600	1.1
1.8	**21200**	**0.87**	845.1	"	"	42800	120000	2.1	18100	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

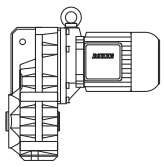
P = 5.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
275	**191**	**2.6**	5.38	**BF50-../DPE13LA4**	136	4500	-	330	159	3.1
190	**275**	**2.1**	7.71	"	"	5100	-	230	225	2.5
137	**380**	**1.8**	10.68	"	"	5600	-	165	315	2.1
100	**520**	**1.5**	14.65	"	"	6100	-	121	430	1.85
88	**590**	**1.6**	16.70	"	"	6200	-	106	495	1.9
79	**660**	**1.5**	18.68	"	"	6400	-	95	550	1.8
64	**820**	**1.35**	23.14	"	"	6800	-	77	680	1.65
57	**920**	**1.25**	25.88	"	"	7100	-	69	760	1.55
46.5	**1120**	**1.15**	31.73	"	"	7500	-	56	930	1.35
41.5	**1260**	**1.05**	35.49	"	"	7800	-	50	1050	1.25
35	**1500**	**0.87**	42.15	"	"	8500	-	42	1250	1.05
189	**275**	**3.2**	7.74	**BF60-../DPE13LA4**	169	6000	16900	230	225	3.9
142	**365**	**2.8**	10.31	"	"	6500	18400	171	305	3.3
103	**500**	**2.4**	14.24	"	"	7100	20000	124	420	2.8
87	**600**	**2.4**	16.96	"	"	7300	20600	104	500	2.9
78	**670**	**2.3**	18.81	"	"	7600	21500	94	550	2.8
65	**800**	**2.1**	22.58	"	"	8000	22600	78	670	2.5
59	**890**	**1.95**	25.05	"	"	8200	23200	71	730	2.4
47	**1110**	**1.7**	31.20	"	"	8800	24900	57	920	2.1
42.5	**1230**	**1.6**	34.62	"	"	9100	25700	51	1020	1.95
35.5	**1470**	**1.45**	41.60	"	"	9600	27100	42.5	1230	1.75
32	**1640**	**1.35**	46.16	"	"	9900	28000	38.5	1360	1.65
27	**1940**	**1.2**	54.44	"	"	10500	29700	32.5	1610	1.45
24.5	**2100**	**1.1**	60.40	"	"	11100	31400	29.5	1780	1.3
20.5	**2550**	**0.9**	72.15	"	"	12000	34000	24.5	2100	1.1
18.5	**2800**	**0.82**	80.05	"	"	12600	35600	22	2350	0.98
31	**1690**	**3.1**	47.82	**BF70-../DPE13LA4**	248	9100	34000	37	1410	3.7
26.5	**1980**	**2.6**	55.79	"	"	10200	36000	32	1640	3.2
24	**2150**	**2.4**	61.94	"	"	10800	37400	28.5	1840	2.8
20.5	**2550**	**2.0**	72.26	"	"	12000	39600	24.5	2100	2.5
18	**2900**	**1.8**	81.82	"	"	12800	41300	22	2350	2.2
15.5	**3350**	**1.55**	95.46	"	"	14000	43700	18.5	2800	1.85
14	**3750**	**1.4**	105.2	"	"	14700	45100	17	3050	1.7
12	**4350**	**1.2**	122.7	"	"	16100	47700	14.5	3600	1.45
11	**4750**	**1.1**	133.0	**BF70Z-../DPE13LA4**	273	16100	47700	13.5	3850	1.35
9.5	**5500**	**0.95**	154.0	"	"	16100	47700	11.5	4550	1.15
8.2	**6400**	**0.81**	179.7	"	"	16100	47700	9.8	5300	0.98
18	**2900**	**3.3**	83.16	**BF80-../DPE13LA4**	344	18400	65100	21.5	2400	4.0
15.5	**3350**	**2.8**	94.38	"	"	20300	68500	19	2750	3.5
14	**3750**	**2.5**	107.9	"	"	22400	72300	16.5	3150	3.0
12	**4350**	**2.2**	122.4	"	"	24500	75000	14.5	3600	2.6
10.5	**5000**	**1.9**	139.7	"	"	26700	75000	13	4000	2.4
9.3	**5600**	**1.7**	158.5	"	"	29000	75000	11.5	4550	2.1
8.0	**6500**	**1.45**	184.5	"	"	31800	75000	9.6	5400	1.75
7.0	**7500**	**1.25**	209.4	"	"	34300	75000	8.5	6100	1.55
6.2	**8400**	**1.15**	237.1	"	"	36900	75000	7.5	7000	1.35
5.5	**9500**	**1.0**	269.1	"	"	39600	75000	6.6	7900	1.2
5.1	**10200**	**1.05**	291.7	**BF80Z-../DPE13LA4**	390	39600	75000	6.1	8600	1.2
4.3	**12200**	**0.86**	347.3	"	"	39600	75000	5.1	10200	1.05
9.5	**5500**	**3.1**	154.8	**BF90-../DPE13LA4**	596	30100	100800	11.5	4550	3.7
8.2	**6400**	**2.6**	178.6	"	"	33400	106700	9.9	5300	3.2
7.4	**7000**	**2.4**	198.8	"	"	36000	111300	8.9	5900	2.8
6.3	**8300**	**2.0**	232.6	"	"	39900	118300	7.6	6900	2.4
5.7	**9200**	**1.85**	259.0	"	"	42800	120000	6.8	7700	2.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 5.5 kW



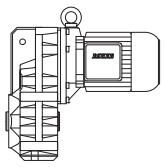
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
5.5	**9500**	**1.95**	269.8	**BF90Z-../DPE13LA4**	657	42800	120000	6.6	7900	2.3
4.9	**10700**	**1.75**	300.4	"	"	42800	120000	5.9	8900	2.1
4.3	**12200**	**1.5**	343.6	"	"	42800	120000	5.2	10100	1.85
3.9	**13400**	**1.4**	382.6	"	"	42800	120000	4.7	11100	1.65
3.2	**16400**	**1.15**	456.7	"	"	42800	120000	3.9	13400	1.4
2.9	**18100**	**1.0**	508.5	"	"	42800	120000	3.5	15000	1.25
2.5	**21000**	**0.88**	591.1	"	"	42800	120000	3.0	17500	1.05
2.3	**22800**	**0.81**	658.1	"	"	42800	120000	2.7	19400	0.95

P = 7.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
275	**260**	**1.9**	5.38	**BF50-../DPE13XA4**	137	4500	-	330	215	2.3
190	**375**	**1.5**	7.71	"	"	5100	-	230	310	1.8
137	**520**	**1.3**	10.68	"	"	5600	-	165	430	1.55
100	**710**	**1.1**	14.65	"	"	6100	-	121	590	1.35
88	**810**	**1.15**	16.70	"	"	6200	-	106	670	1.4
79	**900**	**1.1**	18.68	"	"	6400	-	95	750	1.35
64	**1110**	**1.0**	23.14	"	"	6800	-	77	930	1.2
57	**1250**	**0.93**	25.88	"	"	7100	-	69	1030	1.15
46.5	**1540**	**0.82**	31.73	"	"	7500	-	56	1270	1.0
280	**255**	**3.0**	5.22	**BF60-../DPE13XA4**	170	5200	14800	340	210	3.6
189	**375**	**2.3**	7.74	"	"	6000	16900	230	310	2.8
142	**500**	**2.0**	10.31	"	"	6500	18400	171	415	2.4
103	**690**	**1.75**	14.24	"	"	7100	20000	124	570	2.1
87	**820**	**1.75**	16.96	"	"	7300	20600	104	680	2.1
78	**910**	**1.65**	18.81	"	"	7600	21500	94	760	2.0
65	**1100**	**1.5**	22.58	"	"	8000	22600	78	910	1.8
59	**1210**	**1.45**	25.05	"	"	8200	23200	71	1000	1.75
47	**1520**	**1.25**	31.20	"	"	8800	24900	57	1250	1.5
42.5	**1680**	**1.2**	34.62	"	"	9100	25700	51	1400	1.4
35.5	**2000**	**1.05**	41.60	"	"	9600	27100	42.5	1680	1.25
32	**2200**	**1.0**	46.16	"	"	9900	28000	38.5	1860	1.2
27	**2650**	**0.87**	54.44	"	"	10500	29700	32.5	2200	1.05
40	**1790**	**2.9**	36.88	**BF70-../DPE13XA4**	249	7900	31100	48	1490	3.5
34	**2100**	**2.5**	43.02	"	"	8700	32800	41	1740	3.0
31	**2300**	**2.3**	47.82	"	"	9100	34000	37	1930	2.7
26.5	**2700**	**1.95**	55.79	"	"	10200	36000	32	2200	2.4
24	**2950**	**1.75**	61.94	"	"	10800	37400	28.5	2500	2.1
20.5	**3450**	**1.5**	72.26	"	"	12000	39600	24.5	2900	1.8
18	**3950**	**1.3**	81.82	"	"	12800	41300	22	3250	1.6
15.5	**4600**	**1.15**	95.46	"	"	14000	43700	18.5	3850	1.35
14	**5100**	**1.0**	105.2	"	"	14700	45100	17	4200	1.25
12	**5900**	**0.88**	122.7	"	"	16100	47700	14.5	4900	1.05
11	**6500**	**0.8**	133.0	**BF70Z-../DPE13XA4**	274	16100	47700	13.5	5300	0.98
24	**2950**	**3.2**	61.55	**BF80-../DPE13XA4**	345	14800	58100	29	2450	3.8
21	**3400**	**2.8**	69.86	"	"	15900	60600	25.5	2800	3.4
18	**3950**	**2.4**	83.16	"	"	18400	65100	21.5	3300	2.9
15.5	**4600**	**2.1**	94.38	"	"	20300	68500	19	3750	2.5
14	**5100**	**1.85**	107.9	"	"	22400	72300	16.5	4300	2.2
12	**5900**	**1.6**	122.4	"	"	24500	75000	14.5	4900	1.95
10.5	**6800**	**1.4**	139.7	"	"	26700	75000	13	5500	1.75
9.3	**7700**	**1.25**	158.5	"	"	29000	75000	11.5	6200	1.55
8.0	**8900**	**1.05**	184.5	"	"	31800	75000	9.6	7400	1.3
7.0	**10200**	**0.93**	209.4	"	"	34300	75000	8.5	8400	1.15
6.2	**11500**	**0.83**	237.1	"	"	36900	75000	7.5	9500	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 7.5 kW



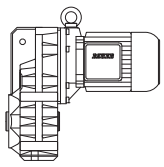
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
14	**5100**	**3.3**	107.5	**BF90-../DPE13XA4**	597	22300	86900	16.5	4300	3.9
12.5	**5700**	**2.9**	119.7	"	"	24500	90800	15	4750	3.5
10.5	**6800**	**2.5**	139.1	"	"	27700	96300	13	5500	3.1
9.5	**7500**	**2.2**	154.8	"	"	30100	100800	11.5	6200	2.7
8.2	**8700**	**1.95**	178.6	"	"	33400	106700	9.9	7200	2.3
7.4	**9600**	**1.75**	198.8	"	"	36000	111300	8.9	8000	2.1
6.3	**11300**	**1.5**	232.6	"	"	39900	118300	7.6	9400	1.8
5.7	**12500**	**1.35**	259.0	"	"	42800	120000	6.8	10500	1.6
5.5	**13000**	**1.4**	269.8	**BF90Z-../DPE13XA4**	658	42800	120000	6.6	10800	1.7
4.9	**14600**	**1.25**	300.4	"	"	42800	120000	5.9	12100	1.55
4.3	**16600**	**1.1**	343.6	"	"	42800	120000	5.2	13700	1.35
3.9	**18300**	**1.0**	382.6	"	"	42800	120000	4.7	15200	1.2
3.2	**22300**	**0.83**	456.7	"	"	42800	120000	3.9	18300	1.0

P = 9.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
275	**325**	**1.55**	5.38	**BF50-../DPE16LB4**	173	4500	-	330	270	1.85
191	**475**	**1.2**	7.71	"	"	5100	-	230	390	1.45
138	**650**	**1.05**	10.68	"	"	5600	-	166	540	1.25
101	**890**	**0.89**	14.65	"	"	6100	-	121	740	1.05
89	**1010**	**0.94**	16.70	"	"	6200	-	106	850	1.1
79	**1140**	**0.88**	18.68	"	"	6400	-	95	950	1.05
285	**315**	**2.4**	5.22	**BF60-../DPE16LB4**	206	5200	14800	340	265	2.8
190	**475**	**1.85**	7.74	"	"	6000	16900	230	390	2.2
143	**630**	**1.6**	10.31	"	"	6500	18400	172	520	1.95
104	**870**	**1.35**	14.24	"	"	7100	20000	125	720	1.65
87	**1040**	**1.4**	16.96	"	"	7300	20600	105	860	1.7
79	**1140**	**1.35**	18.81	"	"	7600	21500	95	950	1.6
66	**1370**	**1.2**	22.58	"	"	8000	22600	79	1140	1.45
59	**1530**	**1.15**	25.05	"	"	8200	23200	71	1270	1.35
47.5	**1910**	**0.99**	31.20	"	"	8800	24900	57	1590	1.2
42.5	**2100**	**0.95**	34.62	"	"	9100	25700	52	1740	1.15
35.5	**2550**	**0.84**	41.60	"	"	9600	27100	43	2100	1.0
32	**2800**	**0.8**	46.16	"	"	9900	28000	38.5	2350	0.95
60	**1510**	**3.3**	24.55	**BF70-../DPE16LB4**	289	7000	27700	73	1240	4.1
54	**1680**	**3.1**	27.29	"	"	7000	28400	65	1390	3.7
46.5	**1950**	**2.7**	31.84	"	"	7700	30000	56	1620	3.2
40	**2250**	**2.3**	36.88	"	"	7900	31100	48	1890	2.8
34.5	**2600**	**2.0**	43.02	"	"	8700	32800	41.5	2150	2.4
31	**2900**	**1.8**	47.82	"	"	9100	34000	37.5	2400	2.2
26.5	**3400**	**1.55**	55.79	"	"	10200	36000	32	2800	1.85
24	**3750**	**1.4**	61.94	"	"	10800	37400	29	3100	1.7
20.5	**4400**	**1.2**	72.26	"	"	12000	39600	24.5	3700	1.4
18	**5000**	**1.05**	81.82	"	"	12800	41300	22	4100	1.25
15.5	**5800**	**0.9**	95.46	"	"	14000	43700	19	4750	1.1
14	**6400**	**0.81**	105.2	"	"	14700	45100	17	5300	0.98
31	**2900**	**3.0**	47.46	**BF80-../DPE16LB4**	385	13400	53700	37.5	2400	3.6
27.5	**3250**	**2.8**	53.86	"	"	14000	55800	33	2700	3.3
24	**3750**	**2.5**	61.55	"	"	14800	58100	29	3100	3.0
21.5	**4200**	**2.3**	69.86	"	"	15900	60600	25.5	3550	2.7
18	**5000**	**1.9**	83.16	"	"	18400	65100	21.5	4200	2.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 9.5 kW



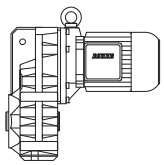
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
16	**5600**	**1.7**	94.38	**BF80-../DPE16LB4**	385	20300	68500	19	4750	2.0
14	**6400**	**1.5**	107.9	"	"	22400	72300	16.5	5400	1.75
12.5	**7200**	**1.3**	122.4	"	"	24500	75000	14.5	6200	1.55
11	**8200**	**1.15**	139.7	"	"	26700	75000	13	6900	1.4
9.3	**9700**	**0.98**	158.5	"	"	29000	75000	11.5	7800	1.2
8.0	**11300**	**0.84**	184.5	"	"	31800	75000	9.6	9400	1.0
16.5	**5400**	**3.1**	90.02	**BF90-../DPE16LB4**	632	18900	80600	20	4500	3.7
14	**6400**	**2.6**	107.5	"	"	22300	86900	16.5	5400	3.1
12.5	**7200**	**2.3**	119.7	"	"	24500	90800	15	6000	2.8
11	**8200**	**2.0**	139.1	"	"	27700	96300	13	6900	2.4
9.5	**9500**	**1.75**	154.8	"	"	30100	100800	11.5	7800	2.2
8.3	**10900**	**1.55**	178.6	"	"	33400	106700	10	9000	1.85
7.4	**12200**	**1.4**	198.8	"	"	36000	111300	9.0	10000	1.7
6.4	**14100**	**1.2**	232.6	"	"	39900	118300	7.7	11700	1.45
5.7	**15900**	**1.05**	259.0	"	"	42800	120000	6.9	13100	1.3
5.5	**16400**	**1.15**	269.8	**BF90Z-../DPE16LB4**	694	42800	120000	6.6	13700	1.35
4.9	**18500**	**1.0**	300.4	"	"	42800	120000	5.9	15300	1.2
4.3	**21000**	**0.88**	343.6	"	"	42800	120000	5.2	17400	1.05
3.9	**23200**	**0.8**	382.6	"	"	42800	120000	4.7	19300	0.96

P = 11 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
275	**380**	**1.3**	5.38	**BF50-../DPE16LB4**	173	4500	-	330	315	1.6
191	**550**	**1.05**	7.71	"	"	5100	-	230	455	1.25
138	**760**	**0.89**	10.68	"	"	5600	-	166	630	1.05
89	**1180**	**0.81**	16.70	"	"	6200	-	106	990	0.96
285	**365**	**2.1**	5.22	**BF60-../DPE16LB4**	206	5200	14800	340	305	2.5
190	**550**	**1.6**	7.74	"	"	6000	16900	230	455	1.9
143	**730**	**1.4**	10.31	"	"	6500	18400	172	610	1.65
104	**1010**	**1.2**	14.24	"	"	7100	20000	125	840	1.4
87	**1200**	**1.2**	16.96	"	"	7300	20600	105	1000	1.45
79	**1320**	**1.15**	18.81	"	"	7600	21500	95	1100	1.4
66	**1590**	**1.05**	22.58	"	"	8000	22600	79	1320	1.25
59	**1780**	**0.97**	25.05	"	"	8200	23200	71	1470	1.2
47.5	**2200**	**0.86**	31.20	"	"	8800	24900	57	1840	1.05
42.5	**2450**	**0.81**	34.62	"	"	9100	25700	52	2000	0.99
70	**1500**	**3.1**	21.04	**BF70-../DPE16LB4**	289	6400	26300	85	1230	3.7
60	**1750**	**2.9**	24.55	"	"	7000	27700	73	1430	3.5
54	**1940**	**2.7**	27.29	"	"	7000	28400	65	1610	3.2
46.5	**2250**	**2.3**	31.84	"	"	7700	30000	56	1870	2.8
40	**2600**	**2.0**	36.88	"	"	7900	31100	48	2150	2.4
34.5	**3000**	**1.75**	43.02	"	"	8700	32800	41.5	2500	2.1
31	**3350**	**1.55**	47.82	"	"	9100	34000	37.5	2800	1.85
26.5	**3950**	**1.3**	55.79	"	"	10200	36000	32	3250	1.6
24	**4350**	**1.2**	61.94	"	"	10800	37400	29	3600	1.45
20.5	**5100**	**1.0**	72.26	"	"	12000	39600	24.5	4250	1.2
18	**5800**	**0.9**	81.82	"	"	12800	41300	22	4750	1.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 11 kW



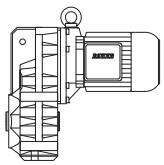
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
44	**2350**	**3.3**	33.61	**BF80-../DPE16LB4**	385	11700	48400	53	1980	3.9
39	**2650**	**3.0**	38.14	"	"	12200	50300	46.5	2250	3.6
31	**3350**	**2.6**	47.46	"	"	13400	53700	37.5	2800	3.1
27.5	**3800**	**2.4**	53.86	"	"	14000	55800	33	3150	2.8
24	**4350**	**2.1**	61.55	"	"	14800	58100	29	3600	2.6
44	**2350**	**3.3**	33.61	**BF80-../DPE16LB4**	385	11700	48400	53	1980	3.9
39	**2650**	**3.0**	38.14	"	"	12200	50300	46.5	2250	3.6
31	**3350**	**2.6**	47.46	"	"	13400	53700	37.5	2800	3.1
27.5	**3800**	**2.4**	53.86	"	"	14000	55800	33	3150	2.8
24	**4350**	**2.1**	61.55	"	"	14800	58100	29	3600	2.6
21.5	**4850**	**1.95**	69.86	**BF80-../DPE16LB4**	"	15900	60600	25.5	4100	2.3
18	**5800**	**1.65**	83.16	"	"	18400	65100	21.5	4850	1.95
16	**6500**	**1.45**	94.38	"	"	20300	68500	19	5500	1.75
14	**7500**	**1.25**	107.9	"	"	22400	72300	16.5	6300	1.5
12.5	**8400**	**1.15**	122.4	"	"	24500	75000	14.5	7200	1.3
11	**9500**	**1.0**	139.7	"	"	26700	75000	13	8000	1.2
9.3	**11200**	**0.85**	158.5	"	"	29000	75000	11.5	9100	1.05
21	**5000**	**3.2**	70.69	**BF90-../DPE16LB4**	632	16800	74700	25.5	4100	3.9
18.5	**5600**	**3.0**	80.85	"	"	17500	77500	22	4750	3.5
16.5	**6300**	**2.7**	90.02	"	"	18900	80600	20	5200	3.2
14	**7500**	**2.2**	107.5	"	"	22300	86900	16.5	6300	2.7
12.5	**8400**	**2.0**	119.7	"	"	24500	90800	15	7000	2.4
11	**9500**	**1.75**	139.1	"	"	27700	96300	13	8000	2.1
9.5	**11000**	**1.55**	154.8	"	"	30100	100800	11.5	9100	1.85
8.3	**12600**	**1.35**	178.6	"	"	33400	106700	10	10500	1.6
7.4	**14100**	**1.2**	198.8	"	"	36000	111300	9.0	11600	1.45
6.4	**16400**	**1.0**	232.6	"	"	39900	118300	7.7	13600	1.25
5.7	**18400**	**0.91**	259.0	"	"	42800	120000	6.9	15200	1.1
5.5	**19100**	**0.97**	269.8	**BF90Z-../DPE16LB4**	694	42800	120000	6.6	15900	1.15
4.9	**21400**	**0.86**	300.4	"	"	42800	120000	5.9	17800	1.05

P = 15 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
275	**520**	**0.96**	5.38	**BF50-../DPE16XB4**	183	4500	-	330	430	1.15
285	**500**	**1.5**	5.22	**BF60-../DPE16XB4**	216	5200	14800	340	420	1.8
190	**750**	**1.15**	7.74	"	"	6000	16900	230	620	1.4
143	**1000**	**1.0**	10.31	"	"	6500	18400	172	830	1.2
104	**1370**	**0.87**	14.24	"	"	7100	20000	125	1140	1.05
87	**1640**	**0.88**	16.96	"	"	7300	20600	105	1360	1.05
79	**1810**	**0.84**	18.81	"	"	7600	21500	95	1500	1.0
99	**1440**	**2.5**	14.90	**BF70-../DPE16XB4**	299	5900	24000	119	1200	3.0
85	**1680**	**2.5**	17.39	"	"	6200	25000	102	1400	3.0
70	**2000**	**2.3**	21.04	"	"	6400	26300	85	1680	2.7
60	**2350**	**2.1**	24.55	"	"	7000	27700	73	1960	2.6
54	**2650**	**1.95**	27.29	"	"	7000	28400	65	2200	2.4
46.5	**3050**	**1.7**	31.84	"	"	7700	30000	56	2550	2.0
40	**3550**	**1.45**	36.88	"	"	7900	31100	48	2950	1.75
34.5	**4150**	**1.25**	43.02	"	"	8700	32800	41.5	3450	1.5
31	**4600**	**1.15**	47.82	"	"	9100	34000	37.5	3800	1.35
26.5	**5400**	**0.96**	55.79	"	"	10200	36000	32	4450	1.15
24	**5900**	**0.88**	61.94	"	"	10800	37400	29	4900	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 15 kW



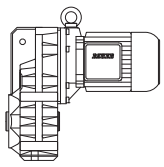
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
90	**1590**	**3.3**	16.49	**BF80-../DPE16XB4**	395	11400	41400	108	1320	4.0
64	**2200**	**2.9**	23.29	"	"	11800	44900	76	1880	3.4
49	**2900**	**2.5**	30.21	"	"	12300	47900	59	2400	3.0
44	**3250**	**2.4**	33.61	"	"	11700	48400	53	2700	2.9
39	**3650**	**2.2**	38.14	"	"	12200	50300	46.5	3050	2.6
31	**4600**	**1.85**	47.46	"	"	13400	53700	37.5	3800	2.3
27.5	**5200**	**1.7**	53.86	"	"	14000	55800	33	4300	2.1
24	**5900**	**1.6**	61.55	"	"	14800	58100	29	4900	1.9
21.5	**6600**	**1.45**	69.86	"	"	15900	60600	25.5	5600	1.7
18	**7900**	**1.2**	83.16	"	"	18400	65100	21.5	6600	1.45
16	**8900**	**1.05**	94.38	"	"	20300	68500	19	7500	1.25
14	**10200**	**0.93**	107.9	"	"	22400	72300	16.5	8600	1.1
12.5	**11400**	**0.83**	122.4	„	"	24500	75000	14.5	9800	0.97
32	**4450**	**3.2**	46.43	**BF90-../DPE16XB4**	642	13800	65500	38.5	3700	3.8
28.5	**5000**	**2.9**	51.70	"	"	14600	67800	34.5	4150	3.5
23.5	**6000**	**2.6**	63.49	"	"	15800	72000	28	5100	3.0
21	**6800**	**2.3**	70.69	"	"	16800	74700	25.5	5600	2.8
18.5	**7700**	**2.1**	80.85	"	"	17500	77500	22	6500	2.5
16.5	**8600**	**1.95**	90.02	"	"	18900	80600	20	7100	2.4
14	**10200**	**1.65**	107.5	"	"	22300	86900	16.5	8600	1.95
12.5	**11400**	**1.45**	119.7	"	"	24500	90800	15	9500	1.75
11	**13000**	**1.3**	139.1	"	"	27700	96300	13	11000	1.55
9.5	**15000**	**1.1**	154.8	"	"	30100	100800	11.5	12400	1.35
8.3	**17200**	**0.98**	178.6	"	"	33400	106700	10	14300	1.15
7.4	**19300**	**0.87**	198.8	"	"	36000	111300	9.0	15900	1.05

P = 18.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
285	**610**	**1.25**	5.22	**BF60-../DPE18LB4**	263	5200	14800	340	510	1.5
190	**920**	**0.94**	7.74	"	"	6000	16900	230	760	1.15
143	**1230**	**0.82**	10.31	"	"	6500	18400	172	1020	0.99
143	**1230**	**2.0**	10.32	**BF70-../DPE18LB4**	340	4600	18700	172	1020	2.5
123	**1430**	**2.1**	12.04	"	"	4900	19700	148	1190	2.5
99	**1780**	**2.1**	14.90	"	"	5900	24000	119	1480	2.5
85	**2050**	**2.1**	17.39	"	"	6200	25000	102	1730	2.5
70	**2500**	**1.85**	21.04	"	"	6400	26300	85	2050	2.2
60	**2900**	**1.75**	24.55	"	"	7000	27700	73	2400	2.1
54	**3250**	**1.6**	27.29	"	"	7000	28400	65	2700	1.95
46.5	**3750**	**1.4**	31.84	"	"	7700	30000	56	3150	1.65
40	**4400**	**1.2**	36.88	"	"	7900	31100	48	3650	1.4
34.5	**5100**	**1.0**	43.02	"	"	8700	32800	41.5	4250	1.2
31	**5600**	**0.93**	47.82	"	"	9100	34000	37.5	4700	1.1
129	**1360**	**2.7**	11.42	**BF80-../DPE18LB4**	436	8900	32200	155	1130	3.2
90	**1960**	**2.7**	16.49	"	"	11400	41400	108	1630	3.3
64	**2750**	**2.3**	23.29	"	"	11800	44900	76	2300	2.7
49	**3600**	**2.0**	30.21	"	"	12300	47900	59	2950	2.4
44	**4000**	**1.95**	33.61	"	"	11700	48400	53	3300	2.4
39	**4500**	**1.8**	38.14	"	"	12200	50300	46.5	3750	2.2
31	**5600**	**1.55**	47.46	"	"	13400	53700	37.5	4700	1.85
27.5	**6400**	**1.4**	53.86	"	"	14000	55800	33	5300	1.7
24	**7300**	**1.25**	61.55	"	"	14800	58100	29	6000	1.55
21.5	**8200**	**1.15**	69.86	"	"	15900	60600	25.5	6900	1.4
18	**9800**	**0.97**	83.16	"	"	18400	65100	21.5	8200	1.15
16	**11000**	**0.86**	94.38	"	"	20300	68500	19	9200	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 18.5 kW



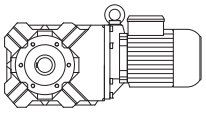
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
44	**4000**	**3.2**	33.71	**BF90-../DPE18LB4**	688	11900	59300	53	3300	3.9
39.5	**4450**	**3.0**	37.54	"	"	12700	61500	47.5	3700	3.6
32	**5500**	**2.6**	46.43	"	"	13800	65500	38.5	4550	3.1
28.5	**6100**	**2.4**	51.70	"	"	14600	67800	34.5	5100	2.8
23.5	**7500**	**2.1**	63.49	"	"	15800	72000	28	6300	2.4
21	**8400**	**1.9**	70.69	"	"	16800	74700	25.5	6900	2.3
18.5	**9500**	**1.75**	80.85	"	"	17500	77500	22	8000	2.1
16.5	**10700**	**1.55**	90.02	"	"	18900	80600	20	8800	1.9
14	**12600**	**1.35**	107.5	"	"	22300	86900	16.5	10700	1.55
12.5	**14100**	**1.2**	119.7	"	"	24500	90800	15	11700	1.45
11	**16000**	**1.05**	139.1	"	"	27700	96300	13	13500	1.25
9.5	**18500**	**0.91**	154.8	"	"	30100	100800	11.5	15300	1.1

P = 22 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
285	**730**	**1.05**	5.22	**BF60-../DPE18XB4**	281	5200	14800	340	610	1.25
143	**1460**	**1.7**	10.32	**BF70-../DPE18XB4**	358	4600	18700	172	1220	2.1
123	**1700**	**1.75**	12.04	"	"	4900	19700	148	1410	2.1
99	**2100**	**1.75**	14.90	"	"	5900	24000	119	1760	2.1
85	**2450**	**1.75**	17.39	"	"	6200	25000	102	2050	2.1
70	**3000**	**1.55**	21.04	"	"	6400	26300	85	2450	1.9
60	**3500**	**1.45**	24.55	"	"	7000	27700	73	2850	1.75
54	**3850**	**1.35**	27.29	"	"	7000	28400	65	3200	1.65
46.5	**4500**	**1.15**	31.84	"	"	7700	30000	56	3750	1.4
40	**5200**	**1.0**	36.88	"	"	7900	31100	48	4350	1.2
34.5	**6000**	**0.87**	43.02	"	"	8700	32800	41.5	5000	1.05
129	**1620**	**2.3**	11.42	**BF80-../DPE18XB4**	454	8900	32200	155	1350	2.7
90	**2300**	**2.3**	16.49	"	"	11400	41400	108	1940	2.7
64	**3250**	**1.95**	23.29	"	"	11800	44900	76	2750	2.3
49	**4250**	**1.65**	30.21	"	"	12300	47900	59	3550	2.0
44	**4750**	**1.65**	33.61	"	"	11700	48400	53	3950	1.95
39	**5300**	**1.5**	38.14	"	"	12200	50300	46.5	4500	1.8
31	**6700**	**1.3**	47.46	"	"	13400	53700	37.5	5600	1.55
27.5	**7600**	**1.2**	53.86	"	"	14000	55800	33	6300	1.4
24	**8700**	**1.05**	61.55	"	"	14800	58100	29	7200	1.3
21.5	**9700**	**0.98**	69.86	"	"	15900	60600	25.5	8200	1.15
18	**11600**	**0.82**	83.16	"	"	18400	65100	21.5	9700	0.98
44	**4750**	**2.7**	33.71	**BF90-../DPE18XB4**	706	11900	59300	53	3950	3.3
39.5	**5300**	**2.5**	37.54	"	"	12700	61500	47.5	4400	3.0
32	**6500**	**2.2**	46.43	"	"	13800	65500	38.5	5400	2.6
28.5	**7300**	**2.0**	51.70	"	"	14600	67800	34.5	6000	2.4
23.5	**8900**	**1.75**	63.49	"	"	15800	72000	28	7500	2.1
21	**10000**	**1.6**	70.69	"	"	16800	74700	25.5	8200	1.95
18.5	**11300**	**1.45**	80.85	"	"	17500	77500	22	9500	1.75
16.5	**12700**	**1.3**	90.02	"	"	18900	80600	20	10500	1.6
14	**15000**	**1.1**	107.5	"	"	22300	86900	16.5	12700	1.3
12.5	**16800**	**1.0**	119.7	"	"	24500	90800	15	14000	1.2
11	**19100**	**0.88**	139.1	"	"	27700	96300	13	16100	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

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Page

BK-series bevel-geared motors 149-178
Selection

Description of bevel-geared units
- Sizes
- Bauer service factors (f_B) for bevel-geared motors
- Continuous operation without switching frequency Z ≤1/h
- Switching duty
- Bauer service factor
- Explanation of shock classification
- Key to abbreviations
- Selection tables, bevel-geared motors

Sizes

Bauer BK-series bevel-geared motors are normally supplied in ten frame sizes and with torques of 80 to 18,500 Nm. Higher torques are available on request. The gear unit is accommodated in a sturdy cast housing

Bauer service factors (f_B) for bevel-geared motors

Of the numerous factors influencing the total loading of a gear unit, the most important include:

- Mean torque (rated torque)
- Daily operating hours
- Severity of torque peaks (shock classification)
- Frequency of torque peaks (switching duty)

These factors can be represented in a simplified and practical manner by **service factors**. The tables and explanations below attempt to provide an objective description of the **shock classification**, rather than a classification of the driven machinery. Experience has shown that, in addition to the torque shocks caused by the driven machinery (M_x/M_N), above all the power transmission components (clutches, chains etc.) plus the mass ratios play a decisive role in this.

See Bauer special imprint SD32 for more information.

Continuous operation without switching frequency Z ≤1/h

Factor f_1 for shock classification and operating time

Shock classification	Operating hours per day t_d	>4 h	>8 h	>16 h
		≤8 h	≤16 h	≤24 h
I		0,8	1,0	1,2
II		1,05	1,25	1,45
III		1,45	1,55	1,7

Switching duty

Factor f_2 for shock classification and switching frequency

Switching frequency in single- shift operation t_d ≤8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	0,95	1,1	1,15
II	1,2	1,35	1,4
III	1,55	1,6	1,6

Switching frequency in multiple- shift operation t_d >8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	1,3	1,45	1,5
II	1,5	1,6	1,65
III	1,75	1,8	1,8

Bauer Service factor

Bauer service factor $f_B = f_1$ or $f_B = f_2$
For example: Shock classification II for Z = 100 switching operations per hour and multiple-shift operation yields a service factor $f_B = f_2 = 1,5$

Explanation of shock classification

Shock classification I:
Uniform without shock loads. All the following requirements must be satisfied:
- FI ≤1,3

- $M_x/M_N \leq 1,0$
- Shock-absorbing power transmission components (e.g. highly resilient, zero-play coupling, φ N ≥5°)

Shock classification II:
Moderate shock loads. At least one of the following conditions applies:
- 1,3 <FI ≤4
- 1 <M_x/M_N ≤1,6
- Shock-neutral power transmission components (e.g. gear wheels, zero- playrigid coupling or resilient coupling with φ N <5°)

Shock classification III:
Heavy shock loads. At least one of the following conditions applies:
- FI >4
- 1,6 <M_x/M_N ≤2,0
- Shock-amplifying power transmission components (e.g. coupling with play or chain drive)

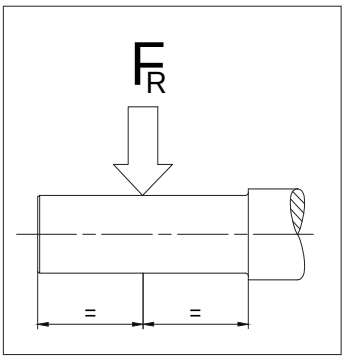
Key to abbreviations

Z	Switching duty number of switching operations per hour
t_d	Daily operating time in hours (h/d)
FI	Factor of inertia FI = $(J_{ext} + J_{rot})/J_{rot}$
J_{ext}	Mass moment of inertia of the machine to be driven, in relation to the motor's rotor shaft (kgm²)
J_{rot}	Mass moment of inertia of the motor rotor (kgm²)
M_x	Highest impact torque above the static torque which can occur during normal operation or in emergency situations
M_N	Required static load torque for the application
M_x/M_N	Relative torque - Factor
φ_N	Torsional offset of the resilient coupling under rated torque

Selection tables, bevel-geared motors

Key to abbreviations

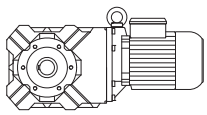
P	Rated output
n_2	Rated speed of the output shaft
i	Gear reduction ratio
M_2	Rated torque at the output shaft
f_B	Bauer service factor
F_{RN}	Maximum permissible radial force with normal bearings
F_{RV}	Maximum permissible radial force with reinforced bearings in each case with standard solid shaft (Code -.1 and -.2)



Use the selection tables to determine the size of geared motor required. The codes clearly define the Type of gear unit and output shaft (see chapter 12 "dimensional drawing bevel-geared motors").

Motor power overload protection
Motor-power ratings, particularly in conjunction with four-stage and multi-stage gear units, are more than ample in some instances. Consequently, and in much the same way as with low-power motors, rated current is not a measure of gear loading and cannot be used to protect the gear unit against overloading. It is advisable to provide gears at risk from excessive load or blockage with a protective mechanism (e. g., slip clutch, slip hub, shear pin or an alternative)

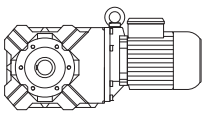
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
119	**8.8**	**9.1**	11.67	**BK06-../DPE05LA4**	9.5	930	-	144	7.3	11
91	**11.4**	**7.0**	15.29	"	"	1020	-	110	9.4	8.5
77	**13.3**	**6.0**	18.00	"	"	1080	-	93	11	7.3
65	**15.8**	**5.1**	21.54	"	"	1150	-	78	13.2	6.1
53	**19.4**	**4.1**	26.36	"	"	1230	-	64	16.1	5.0
41.5	**24.5**	**3.3**	33.33	"	"	1320	-	51	20	4.0
36.5	**28**	**2.9**	38.18	"	"	1380	-	44	23	3.5
29	**35**	**2.3**	47.78	"	"	1500	-	35	29	2.8
25.5	**39.5**	**1.7**	54.38	"	"	1600	-	31	32.5	2.1
22	**46**	**1.4**	63.33	"	"	1700	-	26.5	38	1.65
15.5	**64**	**2.8**	89.30	**BK10-../DPE06LA4**	23	7000	-	19	52	3.4
13.5	**72**	**2.2**	102.5	"	"	7000	-	16.5	59	2.7
11.5	**84**	**1.65**	120.3	**BK10Z-../DPE06LA4**	24	7000	-	14	69	2.0
9.7	**99**	**1.65**	143.2	"	"	7000	-	12	80	2.0
8.1	**117**	**1.7**	170.6	"	"	7000	-	9.8	97	2.1
6.8	**138**	**1.45**	204.7	"	"	7000	-	8.2	114	1.75
5.4	**174**	**1.15**	257.9	"	"	7000	-	6.5	144	1.4
4.6	**200**	**0.92**	302.4	"	"	7000	-	5.6	165	1.1
4.1	**205**	**1.05**	343.2	**BK10G06-../DPE06LA4**	28	7000	-	4.9	169	1.3
3.4	**245**	**0.9**	410.8	"	"	7000	-	4.1	200	1.1
3.1	**270**	**0.81**	459.2	"	"	7000	-	3.7	225	0.98
2.8	**220***	**1.0**	501.4	"	"	7000	-	3.4	220	1.0
2.5	**220***	**1.0**	552.3	"	"	7000	-	3.1	220	1.0
2.2	**220***	**1.0**	635.5	"	"	7000	-	2.7	220	1.0
1.8	**220***	**1.0**	789.7	"	"	7000	-	2.2	220	1.0
1.5	**220***	**1.0**	929.3	"	"	7000	-	1.8	220	1.0
1.3	**220***	**1.0**	1112	"	"	7000	-	1.6	220	1.0
1.1	**220***	**1.0**	1361	"	"	7000	-	1.3	220	1.0
0.9	**220***	**1.0**	1577	"	"	7000	-	1.1	220	1.0
0.75	**220***	**1.0**	1971	"	"	7000	-	0.85	220	1.0
0.65	**220***	**1.0**	2261	"	"	7000	-	0.75	220	1.0
0.6	**220***	**1.0**	2467	"	"	7000	-	0.7	220	1.0
0.49	**220***	**1.0**	2849	"	"	7000	-	0.6	220	1.0
0.45	**220***	**1.0**	3107	"	"	7000	-	0.55	220	1.0
0.4	**220***	**1.0**	3537	"	"	7000	-	0.48	220	1.0
0.34	**220***	**1.0**	4120	"	"	7000	-	0.41	220	1.0
9.6	**100**	**3.3**	144.5	**BK20Z-../DPE06LA4**	34	8700	9000	12	80	4.1
8.0	**118**	**2.8**	173.4	"	"	8700	9000	9.7	98	3.4
6.7	**140**	**2.4**	207.5	"	"	8700	9000	8.1	116	2.8
5.4	**174**	**1.9**	259.9	"	"	8700	9000	6.5	144	2.3
4.7	**197**	**1.6**	298.2	"	"	8700	9000	5.7	162	1.95
3.8	**240**	**1.2**	367.7	"	"	8700	9000	4.6	199	1.45
3.3	**255**	**1.4**	429.7	**BK20G06-../DPE06LA4**	38	8700	9000	3.9	210	1.7
2.9	**290**	**1.25**	480.4	"	"	8700	9000	3.5	235	1.55
2.7	**310**	**1.15**	524.5	"	"	8700	9000	3.2	260	1.4
2.2	**380**	**0.95**	630.0	"	"	8700	9000	2.7	310	1.15
1.9	**445**	**0.81**	757.0	"	"	8700	9000	2.3	365	0.99
1.6	**360***	**1.0**	891.2	"	"	8700	9000	1.9	360	1.0
1.3	**360***	**1.0**	1066	"	"	8700	9000	1.6	360	1.0
1.1	**360***	**1.0**	1305	"	"	8700	9000	1.3	360	1.0
1.0	**360***	**1.0**	1424	"	"	8700	9000	1.2	360	1.0
0.85	**360***	**1.0**	1650	"	"	8700	9000	1.1	360	1.0
0.7	**360***	**1.0**	2062	"	"	8700	9000	0.85	360	1.0
0.6	**360***	**1.0**	2366	"	"	8700	9000	0.75	360	1.0
0.55	**360***	**1.0**	2580	"	"	8700	9000	0.65	360	1.0
0.49	**360***	**1.0**	2831	"	"	8700	9000	0.6	360	1.0
0.45	**360***	**1.0**	3088	"	"	8700	9000	0.55	360	1.0
0.4	**360***	**1.0**	3515	"	"	8700	9000	0.48	360	1.0
0.34	**360***	**1.0**	4094	"	"	8700	9000	0.41	360	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

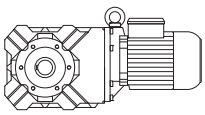
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
6.4	**146**	**3.1**	216.5	**BK30Z-../DPE06LA4**	41	11200	12000	7.8	120	3.8
5.5	**170**	**2.6**	255.3	"	"	11200	12000	6.6	142	3.2
4.5	**205**	**1.9**	308.3	"	"	11200	12000	5.5	170	2.3
3.7	**250**	**1.6**	380.7	"	"	11200	12000	4.4	210	1.9
3.2	**285**	**1.35**	441.3	"	"	11200	12000	3.8	240	1.6
3.0	**280**	**1.75**	471.5	**BK30G06-../DPE06LA4**	44	11200	12000	3.6	230	2.1
2.5	**335**	**1.45**	567.0	"	"	11200	12000	3.0	275	1.8
2.2	**380**	**1.3**	652.5	"	"	11200	12000	2.6	320	1.55
1.9	**445**	**1.1**	743.0	"	"	11200	12000	2.3	365	1.35
1.8	**470**	**1.05**	810.9	"	"	11200	12000	2.1	400	1.25
1.5	**560**	**0.88**	954.1	"	"	11200	12000	1.8	465	1.05
1.3	**490***	**1.0**	1142	"	"	11200	12000	1.5	490	1.0
1.1	**490***	**1.0**	1281	"	"	11200	12000	1.4	490	1.0
0.9	**490***	**1.0**	1620	"	"	11200	12000	1.1	490	1.0
0.8	**490***	**1.0**	1767	"	"	11200	12000	0.95	490	1.0
0.7	**490***	**1.0**	2024	"	"	11200	12000	0.85	490	1.0
0.55	**490***	**1.0**	2738	"	"	11200	12000	0.65	490	1.0
0.47	**490***	**1.0**	2986	"	"	11200	12000	0.6	490	1.0
0.41	**490***	**1.0**	3399	"	"	11200	12000	0.5	490	1.0
0.35	**490***	**1.0**	3959	"	"	11200	12000	0.43	490	1.0
4.0	**230**	**2.5**	348.7	**BK40Z-../DPE06LA4**	64	11700	17000	4.8	193	3.0
3.3	**275**	**2.1**	430.0	"	"	11700	17000	3.9	235	2.4
2.6	**275**	**3.1**	540.0	**BK40G10-../DPE06LA4**	68	11700	17000	3.1	220	3.9
2.1	**350**	**2.4**	660.2	"	"	11700	17000	2.6	275	3.1
1.9	**395**	**2.2**	756.7	"	"	11700	17000	2.3	315	2.7
1.7	**450**	**1.9**	838.4	"	"	11700	17000	2.0	370	2.3
1.4	**550**	**1.55**	998.3	"	"	11700	17000	1.7	445	1.9
1.2	**650**	**1.3**	1189	"	"	11700	17000	1.5	510	1.65
1.0	**790**	**1.1**	1428	"	"	11700	17000	1.2	650	1.3
0.8	**850***	**1.0**	1798	"	"	11700	17000	0.95	850	1.0
0.7	**850***	**1.0**	2108	"	"	11700	17000	0.8	850	1.0
0.6	**850***	**1.0**	2350	"	"	11700	17000	0.75	850	1.0
0.55	**850***	**1.0**	2604	"	"	11700	17000	0.65	850	1.0
0.45	**850***	**1.0**	3077	"	"	11700	17000	0.55	850	1.0
0.41	**850***	**1.0**	3429	"	"	11700	17000	0.49	850	1.0
0.37	**850***	**1.0**	3800	"	"	11700	17000	0.44	850	1.0
0.32	**850***	**1.0**	4363	"	"	11700	17000	0.39	850	1.0
3.4	**265**	**3.2**	414.8	**BK50Z-../DPE06LA4**	92	14100	26000	4.1	220	3.8
2.2	**345**	**3.3**	651.7	**BK50G10-../DPE06LA4**	96	14100	111000	2.6	280	4.1
2.0	**385**	**3.0**	722.2	"	"	14100	111000	2.4	310	3.7
1.7	**460**	**2.5**	859.8	"	"	14100	111000	2.0	380	3.0
1.4	**560**	**2.1**	1024	"	"	14100	111000	1.7	460	2.5
1.2	**670**	**1.7**	1230	"	"	14100	111000	1.4	560	2.1
1.0	**800**	**1.45**	1398	"	"	14100	111000	1.2	660	1.75
0.9	**900**	**1.3**	1549	"	"	14100	111000	1.1	730	1.6
0.8	**1010**	**1.15**	1816	"	"	14100	111000	0.95	850	1.35
0.7	**1150***	**1.0**	2024	"	"	14100	111000	0.85	1150	1.0
0.6	**1150***	**1.0**	2450	"	"	14100	111000	0.7	1150	1.0
0.55	**1150***	**1.0**	2730	"	"	14100	111000	0.65	1150	1.0
0.46	**1150***	**1.0**	3025	"	"	14100	111000	0.6	1150	1.0
0.4	**1150***	**1.0**	3492	"	"	14100	111000	0.48	1150	1.0
0.36	**1150***	**1.0**	3870	"	"	14100	111000	0.44	1150	1.0
0.32	**1150***	**1.0**	4443	"	"	14100	111000	0.38	1150	1.0
0.9	**860**	**2.9**	1618	**BK60G20-../DPE06LA4**	123	16600	34000	1.1	630	4.0
0.8	**970**	**2.6**	1810	"	"	16600	34000	0.95	740	3.4
0.7	**1160**	**2.2**	2010	"	"	16600	34000	0.85	870	2.9
0.6	**1400**	**1.8**	2371	"	"	16600	34000	0.75	1020	2.5
0.55	**1540**	**1.6**	2733	"	"	16600	34000	0.65	1220	2.0
0.46	**1940**	**1.3**	3036	"	"	16600	34000	0.6	1360	1.85
0.4	**2300**	**1.1**	3533	"	"	16600	34000	0.48	1830	1.35

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.12 kW



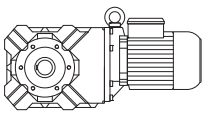
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
0.33	**2500***	**1.0**	4239	**BK60G20-../DPE06LA4**	123	16600	34000	0.4	2500	1.0
0.28	**2500***	**1.0**	5072	"	"	16600	34000	0.33	2500	1.0
0.25	**2500***	**1.0**	5721	"	"	16600	34000	0.3	2500	1.0
0.22	**2500***	**1.0**	6565	"	"	16600	34000	0.26	2500	1.0
0.19	**2500***	**1.0**	7291	"	"	16600	34000	0.23	2500	1.0
0.18	**2500***	**1.0**	8093	"	"	16600	34000	0.21	2500	1.0
0.16	**2500***	**1.0**	8990	"	"	16600	34000	0.19	2500	1.0
0.46	**1840**	**3.1**	3041	**BK70G20-../DPE06LA4**	201	24100	50000	0.55	1440	4.0
0.4	**2150**	**2.7**	3505	"	"	24100	50000	0.48	1700	3.4
0.36	**2450**	**2.3**	3894	"	"	24100	50000	0.43	1960	2.9
0.31	**2950**	**1.95**	4531	"	"	24100	50000	0.37	2350	2.4
0.26	**3700**	**1.55**	5436	"	"	24100	50000	0.31	2950	1.95
0.22	**4500**	**1.25**	6504	"	"	24100	50000	0.26	3700	1.55
0.17	**5700***	**1.0**	8149	"	"	24100	50000	0.21	5700	1.0
0.15	**5700***	**1.0**	9351	"	"	24100	50000	0.18	5700	1.0

P = 0.18 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
143	**11**	**7.3**	9.71	**BK06-../DPE07LA4**	14	880	-	172	9.1	8.8
119	**13.2**	**6.1**	11.67	"	"	930	-	144	10.9	7.3
91	**17.1**	**4.7**	15.29	"	"	1020	-	110	14.2	5.6
77	**20**	**4.0**	18.00	"	"	1080	-	93	16.6	4.8
65	**23.5**	**3.4**	21.54	"	"	1150	-	78	19.8	4.0
53	**29**	**2.8**	26.36	"	"	1230	-	64	24	3.3
41.5	**37**	**2.2**	33.33	"	"	1320	-	51	30	2.7
36.5	**42**	**1.9**	38.18	"	"	1380	-	44	35	2.3
29	**52**	**1.55**	47.78	"	"	1500	-	35	43.5	1.85
25.5	**59**	**1.15**	54.38	"	"	1600	-	31	49	1.4
22	**69**	**0.92**	63.33	"	"	1700	-	26.5	57	1.1
22.5	**67**	**3.0**	61.68	**BK10-../DPE07LA4**	26	7000	-	27.5	55	3.6
19.5	**77**	**2.6**	72.31	"	"	7000	-	23.5	64	3.1
15.5	**96**	**1.85**	89.30	"	"	7000	-	19	78	2.3
13.5	**108**	**1.45**	102.5	"	"	7000	-	16.5	88	1.8
11.5	**127**	**1.1**	120.3	**BK10Z-../DPE07LA4**	27	7000	-	14	104	1.3
9.7	**148**	**1.1**	143.2	"	"	7000	-	12	120	1.35
8.1	**176**	**1.15**	170.6	"	"	7000	-	9.8	145	1.4
6.8	**205**	**0.98**	204.7	"	"	7000	-	8.2	171	1.15
13	**113**	**2.8**	108.6	**BK20-../DPE07LA4**	35	8700	9000	15.5	95	3.3
11.5	**127**	**2.6**	124.2	**BK20Z-../DPE07LA4**	37	8700	9000	13.5	108	3.1
9.6	**150**	**2.2**	144.5	"	"	8700	9000	12	120	2.8
8.0	**178**	**1.85**	173.4	"	"	8700	9000	9.7	147	2.2
6.7	**210**	**1.55**	207.5	"	"	8700	9000	8.1	174	1.9
5.4	**260**	**1.25**	259.9	"	"	8700	9000	6.5	215	1.55
4.7	**295**	**1.05**	298.2	"	"	8700	9000	5.7	240	1.3
3.8	**360**	**0.81**	367.7	"	"	8700	9000	4.6	295	0.99
3.3	**390**	**0.92**	429.7	**BK20G06-../DPE07LA4**	40	8700	9000	3.9	330	1.1
2.9	**445**	**0.81**	480.4	"	"	8700	9000	3.5	365	0.99
9.6	**150**	**3.0**	145.1	**BK30Z-../DPE07LA4**	44	11200	12000	12	120	3.8
7.5	**190**	**2.4**	184.8	"	"	11200	12000	9.1	156	2.9
6.4	**220**	**2.0**	216.5	"	"	11200	12000	7.8	180	2.5
5.5	**255**	**1.75**	255.3	"	"	11200	12000	6.6	210	2.1
4.5	**310**	**1.25**	308.3	"	"	11200	12000	5.5	255	1.5
3.7	**375**	**1.05**	380.7	"	"	11200	12000	4.4	315	1.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.18 kW



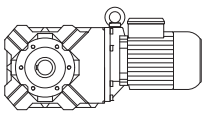
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
3.2	**425**	**0.9**	441.3	**BK30Z-../DPE07LA**	44	11200	12000	3.8	360	1.05
3.0	**430**	**1.15**	471.5	**BK30G06-../DPE07LA4**	46	11200	12000	3.6	355	1.4
2.5	**510**	**0.96**	567.0	"	"	11200	12000	3.0	430	1.15
2.2	**580**	**0.84**	652.5	"	"	11200	12000	2.6	495	0.99
5.6	**245**	**3.2**	246.6	**BK40Z-../DPE07LA4**	66	11700	17000	6.8	200	3.9
4.8	**290**	**2.4**	289.8	"	"	11700	17000	5.8	240	2.9
4.0	**345**	**1.7**	348.7	"	"	11700	17000	4.8	290	2.0
3.3	**415**	**1.4**	430.0	"	"	11700	17000	3.9	350	1.65
2.9	**405**	**2.1**	487.3	**BK40G10-../DPE07LA4**	71	11700	17000	3.5	325	2.6
2.6	**450**	**1.9**	540.0	"	"	11700	17000	3.1	370	2.3
2.1	**560**	**1.5**	660.2	"	"	11700	17000	2.6	450	1.9
1.9	**630**	**1.35**	756.7	"	"	11700	17000	2.3	510	1.65
1.7	**710**	**1.2**	838.4	"	"	11700	17000	2.0	590	1.45
1.4	**870**	**0.98**	998.3	"	"	11700	17000	1.7	710	1.2
1.2	**1020**	**0.83**	1189	"	"	11700	17000	1.5	810	1.05
4.3	**320**	**3.2**	328.2	**BK50Z-../DPE07LA4**	95	14100	26000	5.1	270	3.7
3.4	**400**	**2.1**	414.8	"	"	14100	26000	4.1	335	2.5
3.0	**395**	**2.9**	465.1	**BK50G10-../DPE07LA4**	99	14100	111000	3.6	320	3.6
2.7	**440**	**2.6**	513.4	"	"	14100	111000	3.3	350	3.3
2.5	**480**	**2.4**	568.6	"	"	14100	111000	3.0	390	2.9
2.2	**550**	**2.1**	651.7	"	"	14100	111000	2.6	455	2.5
2.0	**610**	**1.9**	722.2	"	"	14100	111000	2.4	500	2.3
1.7	**720**	**1.6**	859.8	"	"	14100	111000	2.0	600	1.9
1.4	**880**	**1.3**	1024	"	"	14100	111000	1.7	720	1.6
1.2	**1030**	**1.1**	1230	"	"	14100	111000	1.4	880	1.3
1.0	**1240**	**0.93**	1398	"	"	14100	111000	1.2	1030	1.1
1.4	**920**	**2.7**	1016	**BK60G20-../DPE07LA4**	125	16600	34000	1.7	710	3.5
1.1	**1220**	**2.0**	1322	"	"	16600	34000	1.3	980	2.6
0.9	**1500**	**1.65**	1618	"	"	16600	34000	1.1	1150	2.2
0.8	**1690**	**1.5**	1810	"	"	16600	34000	0.95	1350	1.85
0.7	**1980**	**1.25**	2010	"	"	16600	34000	0.85	1550	1.6
0.6	**2350**	**1.05**	2371	"	"	16600	34000	0.75	1790	1.4
0.7	**1940**	**2.9**	2040	**BK70G20-../DPE07LA4**	204	24100	50000	0.85	1500	3.8
0.55	**2500**	**2.3**	2578	"	"	24100	50000	0.65	2000	2.9
0.46	**3050**	**1.85**	3041	"	"	24100	50000	0.55	2450	2.3
0.4	**3600**	**1.6**	3505	"	"	24100	50000	0.48	2850	2.0
0.36	**4050**	**1.4**	3894	"	"	24100	50000	0.43	3250	1.75
0.31	**4800**	**1.2**	4531	"	"	24100	50000	0.37	3900	1.45

P = 0.25 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
196	**11.2**	**6.5**	7.25	**BK06-../DPE08MA4**	15	800	-	240	9.1	8.0
147	**14.9**	**5.4**	9.71	"	"	880	-	177	12.4	6.5
122	**18**	**4.4**	11.67	"	"	930	-	147	14.9	5.4
93	**23**	**3.5**	15.29	"	"	1020	-	112	19.3	4.1
79	**27**	**3.0**	18.00	"	"	1080	-	95	22.5	3.6
66	**32.5**	**2.5**	21.54	"	"	1150	-	80	26.5	3.0
54	**39.5**	**2.0**	26.36	"	"	1230	-	65	33	2.4
43	**49.5**	**1.6**	33.33	"	"	1320	-	52	41	1.95
37.5	**57**	**1.4**	38.18	"	"	1380	-	45	47.5	1.7
30	**70**	**1.15**	47.78	"	"	1500	-	36	59	1.35
35	**61**	**3.3**	40.79	**BK10-../DPE08MA4**	27	6000	-	42	51	3.9
29.5	**72**	**2.8**	48.96	"	"	6400	-	35	60	3.3
23.5	**90**	**2.2**	61.68	"	"	7000	-	28	75	2.7

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

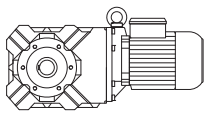
P = 0.25 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
20	**105**	**1.9**	72.31	**BK10-../DPE08MA4**	27	7000	-	24	87	2.3
16	**129**	**1.4**	89.30	"	"	7000	-	19.5	106	1.7
12	**169**	**0.81**	120.3	**BK10Z-../DPE08MA4**	28	7000	-	14.5	139	0.99
10	**200**	**0.82**	143.2	"	"	7000	-	12	167	0.98
8.4	**235**	**0.85**	170.6	"	"	7000	-	10.5	188	1.05
18.5	**113**	**2.9**	76.79	**BK20-../DPE08MA4**	36	7500	9000	22.5	93	3.5
16.5	**125**	**2.6**	88.12	"	"	8000	9000	19.5	106	3.1
13.5	**152**	**2.1**	108.6	"	"	8700	9000	16	128	2.5
11.5	**176**	**1.9**	124.2	**BK20Z-../DPE08MA4**	38	8700	9000	14	144	2.3
9.9	**200**	**1.65**	144.5	"	"	8700	9000	12	167	2.0
8.2	**240**	**1.4**	173.4	"	"	8700	9000	9.9	200	1.65
6.9	**280**	**1.2**	207.5	"	"	8700	9000	8.3	235	1.4
5.5	**355**	**0.93**	259.9	"	"	8700	9000	6.6	295	1.1
14	**144**	**3.1**	102.4	**BK30-../DPE08MA4**	42	11200	12000	17	119	3.8
11.5	**176**	**2.6**	123.9	**BK30Z-../DPE08MA4**	45	11200	12000	14	144	3.1
9.8	**200**	**2.3**	145.1	"	"	11200	12000	12	167	2.7
7.7	**255**	**1.75**	184.8	"	"	11200	12000	9.3	210	2.1
6.6	**295**	**1.55**	216.5	"	"	11200	12000	7.9	245	1.85
5.6	**345**	**1.3**	255.3	"	"	11200	12000	6.7	290	1.55
4.7	**415**	**0.93**	308.3	"	"	11200	12000	5.6	345	1.1
3.8	**500**	**0.81**	380.7	"	"	11200	12000	4.5	425	0.95
3.1	**590**	**0.83**	471.5	**BK30G06-../DPE08MA4**	50	11200	12000	3.7	495	0.99
6.8	**285**	**2.7**	211.5	**BK40Z-../DPE08MA4**	67	11700	17000	8.1	240	3.3
5.8	**330**	**2.4**	246.6	"	"	11700	17000	7.0	275	2.8
4.9	**390**	**1.75**	289.8	"	"	11700	17000	6.0	320	2.1
4.1	**470**	**1.25**	348.7	"	"	11700	17000	5.0	385	1.5
3.4	**560**	**1.0**	430.0	"	"	11700	17000	4.0	475	1.2
3.0	**560**	**1.5**	487.3	**BK40G10-../DPE08MA4**	72	11700	17000	3.6	465	1.85
2.7	**630**	**1.35**	540.0	"	"	11700	17000	3.2	520	1.65
2.2	**780**	**1.1**	660.2	"	"	11700	17000	2.6	650	1.3
1.9	**900**	**0.94**	756.7	"	"	11700	17000	2.3	740	1.15
1.7	**1010**	**0.84**	838.4	"	"	11700	17000	2.1	810	1.05
5.4	**355**	**3.0**	264.5	**BK50Z-../DPE08MA4**	96	14100	26000	6.5	295	3.6
4.4	**435**	**2.3**	328.2	"	"	14100	26000	5.3	360	2.8
3.5	**540**	**1.55**	414.8	"	"	14100	26000	4.2	450	1.9
3.1	**550**	**2.1**	465.1	**BK50G10-../DPE08MA4**	100	14100	111000	3.7	455	2.5
2.8	**610**	**1.9**	513.4	"	"	14100	111000	3.4	495	2.3
2.5	**690**	**1.65**	568.6	"	"	14100	111000	3.1	550	2.1
2.2	**780**	**1.45**	651.7	"	"	14100	111000	2.7	630	1.85
2.0	**870**	**1.3**	722.2	"	"	14100	111000	2.4	710	1.6
1.7	**1020**	**1.15**	859.8	"	"	14100	111000	2.0	860	1.35
1.4	**1250**	**0.92**	1024	"	"	14100	111000	1.7	1020	1.15
3.1	**770**	**3.0**	460.4	**BK60Z-../DPE08MA4**	119	16600	34000	3.8	620	3.7
2.9	**820**	**2.8**	498.0	"	"	16600	34000	3.5	680	3.4
2.6	**910**	**2.5**	557.2	"	"	16600	34000	3.1	770	3.0
2.3	**770**	**3.2**	621.5	**BK60G20-../DPE08MA4**	126	16600	34000	2.8	590	4.2
1.9	**940**	**2.7**	752.1	"	"	16600	34000	2.3	720	3.5
1.6	**1150**	**2.2**	887.8	"	"	16600	34000	2.0	850	2.9
1.4	**1400**	**1.8**	1016	"	"	16600	34000	1.7	1100	2.3
1.1	**1830**	**1.35**	1322	"	"	16600	34000	1.3	1500	1.65
0.9	**2200**	**1.15**	1618	"	"	16600	34000	1.1	1760	1.4
1.0	**1950**	**2.9**	1457	**BK70G20-../DPE08MA4**	205	24100	50000	1.2	1560	3.7
0.85	**2350**	**2.4**	1696	"	"	24100	50000	1.1	1740	3.3
0.7	**2850**	**2.0**	2040	"	"	24100	50000	0.85	2250	2.5
0.6	**3350**	**1.7**	2578	"	"	24100	50000	0.7	2800	2.0
0.47	**4400**	**1.3**	3041	"	"	24100	50000	0.6	3300	1.75
0.41	**5100**	**1.1**	3505	"	"	24100	50000	0.49	4150	1.35

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.25 kW



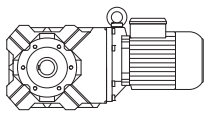
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
0.46	**3700**	**3.1**	3120	**BK80G40-../DPE08MA4**	347	30000	75000	0.55	2850	4.0
0.38	**4800**	**2.4**	3776	"	"	30000	75000	0.46	3700	3.1
0.32	**6000**	**1.9**	4461	"	"	30000	75000	0.39	4650	2.5
0.29	**6700**	**1.7**	5032	"	"	30000	75000	0.34	5500	2.1
0.25	**8000**	**1.45**	5865	"	"	30000	75000	0.3	6500	1.75
0.21	**9900**	**1.15**	6893	"	"	30000	75000	0.25	8000	1.45
0.19	**11100**	**1.05**	7652	"	"	30000	75000	0.23	8900	1.3
0.29	**6100**	**3.0**	4952	**BK90G50-../DPE08MA4**	620	49400	120000	0.35	4700	3.9
0.26	**7000**	**2.6**	5491	"	"	49400	120000	0.32	5300	3.5
0.23	**8200**	**2.3**	6335	"	"	49400	120000	0.27	6700	2.8
0.21	**9200**	**2.0**	7022	"	"	49400	120000	0.25	7400	2.5
0.19	**10400**	**1.8**	7862	"	"	49400	120000	0.22	8700	2.1
0.15	**13800**	**1.35**	9935	"	"	49400	120000	0.18	11100	1.65

P = 0.37kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
196	**16.5**	**4.4**	7.25	**BK06-../DPE08LA4**	16	800	-	240	13.5	5.4
147	**22**	**3.6**	9.71	"	"	880	-	177	18.3	4.4
122	**26.5**	**3.0**	11.67	"	"	930	-	147	22	3.6
93	**34.5**	**2.3**	15.29	"	"	1020	-	112	28.5	2.8
79	**40**	**2.0**	18.00	"	"	1080	-	95	33	2.4
66	**48**	**1.65**	21.54	"	"	1150	-	80	39.5	2.0
54	**58**	**1.4**	26.36	"	"	1230	-	65	48.5	1.65
43	**73**	**1.1**	33.33	"	"	1320	-	52	61	1.3
37.5	**84**	**0.95**	38.18	"	"	1380	-	45	70	1.15
49.5	**64**	**3.1**	28.76	**BK10-../DPE08LA4**	28	5200	-	60	53	3.8
41.5	**76**	**2.6**	34.25	"	"	5600	-	50	63	3.2
35	**90**	**2.2**	40.79	"	"	6000	-	42	75	2.7
29.5	**106**	**1.9**	48.96	"	"	6400	-	35	89	2.2
23.5	**133**	**1.5**	61.68	"	"	7000	-	28	112	1.8
20	**155**	**1.3**	72.31	"	"	7000	-	24	129	1.55
16	**192**	**0.93**	89.30	"	"	7000	-	19.5	157	1.15
28	**112**	**2.9**	51.22	**BK20-../DPE08LA4**	38	6300	9000	33.5	93	3.5
23.5	**133**	**2.5**	61.30	"	"	6500	9000	28	112	2.9
18.5	**168**	**1.95**	76.79	"	"	7500	9000	22.5	138	2.4
16.5	**186**	**1.75**	88.12	"	"	8000	9000	19.5	157	2.1
13.5	**225**	**1.4**	108.6	"	"	8700	9000	16	189	1.65
11.5	**260**	**1.25**	124.2	**BK20Z-../DPE08LA4**	40	8700	9000	14	210	1.55
9.9	**295**	**1.1**	144.5	"	"	8700	9000	12	245	1.35
8.2	**355**	**0.93**	173.4	"	"	8700	9000	9.9	295	1.1
6.9	**415**	**0.8**	207.5	"	"	8700	9000	8.3	345	0.96
20	**153**	**2.9**	71.56	**BK30-../DPE08LA4**	44	9700	12000	24	128	3.5
16.5	**184**	**2.4**	88.38	"	"	10600	12000	19.5	155	2.9
14	**210**	**2.1**	102.4	"	"	11200	12000	17	176	2.6
11.5	**260**	**1.75**	123.9	**BK30Z-../DPE08LA4**	46	11200	12000	14	210	2.1
9.8	**300**	**1.5**	145.1	"	"	11200	12000	12	245	1.85
7.7	**380**	**1.2**	184.8	"	"	11200	12000	9.3	315	1.45
6.6	**435**	**1.05**	216.5	"	"	11200	12000	7.9	365	1.25
5.6	**510**	**0.88**	255.3	"	"	11200	12000	6.7	430	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

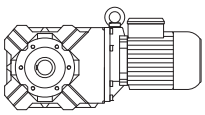
P = 0.37 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
12.5	**240**	**3.3**	118.2	**BK40Z-../DPE08LA4**	69	11700	17000	14.5	205	3.8
10	**295**	**2.6**	143.0	"	"	11700	17000	12	245	3.2
8.5	**345**	**2.3**	169.0	"	"	11700	17000	10.5	275	2.8
6.8	**425**	**1.85**	211.5	"	"	11700	17000	8.1	355	2.2
5.8	**490**	**1.6**	246.6	"	"	11700	17000	7.0	405	1.95
4.9	**580**	**1.2**	289.8	"	"	11700	17000	6.0	475	1.45
4.1	**690**	**0.84**	348.7	"	"	11700	17000	5.0	570	1.0
3.0	**870**	**0.98**	487.3	**BK40G10-../DPE08LA4**	73	11700	17000	3.6	720	1.2
2.7	**960**	**0.89**	540.0	"	"	11700	17000	3.2	810	1.05
9.3	**315**	**3.3**	153.3	**BK50Z-../DPE08LA4**	98	14100	26000	11.5	255	4.1
6.9	**415**	**2.5**	206.8	"	"	14100	26000	8.3	345	3.0
5.4	**530**	**2.0**	264.5	"	"	14100	26000	6.5	440	2.4
4.4	**650**	**1.55**	328.2	"	"	14100	26000	5.3	540	1.85
3.5	**800**	**1.05**	414.8	"	"	14100	26000	4.2	670	1.25
3.1	**840**	**1.35**	465.1	**BK50G10-../DPE08LA4**	102	14100	111000	3.7	700	1.65
2.8	**940**	**1.2**	513.4	"	"	14100	111000	3.4	770	1.5
2.5	**1050**	**1.1**	568.6	"	"	14100	111000	3.1	840	1.35
2.2	**1190**	**0.97**	651.7	"	"	14100	111000	2.7	970	1.2
2.0	**1310**	**0.88**	722.2	"	"	14100	111000	2.4	1090	1.05
4.5	**780**	**2.9**	317.7	**BK60Z-../DPE08LA4**	120	16600	34000	5.4	650	3.5
4.0	**880**	**2.6**	355.5	"	"	16600	34000	4.9	720	3.2
3.5	**1000**	**2.3**	411.5	"	"	16600	34000	4.2	840	2.7
3.1	**1130**	**2.0**	460.4	"	"	16600	34000	3.8	920	2.5
2.9	**1210**	**1.9**	498.0	"	"	16600	34000	3.5	1000	2.3
2.6	**1350**	**1.7**	557.2	"	"	16600	34000	3.1	1130	2.0
2.3	**1270**	**1.95**	621.5	**BK60G20-../DPE08LA4**	128	16600	34000	2.8	1000	2.5
1.9	**1540**	**1.6**	752.1	"	"	16600	34000	2.3	1220	2.0
1.6	**1870**	**1.35**	887.8	"	"	16600	34000	2.0	1430	1.75
1.4	**2200**	**1.15**	1016	"	"	16600	34000	1.7	1770	1.4
1.1	**2850**	**0.88**	1322	"	"	16600	34000	1.3	2350	1.05
2.0	**1760**	**3.0**	733.6	**BK70Z-../DPE08LA4**	208	24100	50000	2.4	1470	3.5
1.7	**1720**	**3.3**	847.7	**BK70G20-../DPE08LA4**	206	24100	50000	2.1	1320	4.3
1.5	**1950**	**2.9**	964.6	"	"	24100	50000	1.8	1550	3.7
1.3	**2250**	**2.5**	1139	"	"	24100	50000	1.6	1770	3.2
1.2	**2550**	**2.2**	1280	"	"	24100	50000	1.4	2100	2.7
1.0	**3100**	**1.85**	1457	"	"	24100	50000	1.2	2500	2.3
0.85	**3700**	**1.55**	1696	"	"	24100	50000	1.1	2750	2.1
0.7	**4500**	**1.25**	2040	"	"	24100	50000	0.85	3600	1.6
0.6	**5200**	**1.1**	2578	"	"	24100	50000	0.7	4400	1.3
0.65	**4000**	**2.9**	2205	**BK80G40-../DPE08LA4**	348	30000	75000	0.8	3000	3.8
0.6	**4400**	**2.6**	2449	"	"	30000	75000	0.7	3600	3.2
0.55	**4950**	**2.3**	2811	"	"	30000	75000	0.65	3950	2.9
0.46	**6200**	**1.85**	3120	"	"	30000	75000	0.55	4950	2.3
0.38	**7800**	**1.45**	3776	"	"	30000	75000	0.46	6200	1.85
0.32	**9500**	**1.2**	4461	"	"	30000	75000	0.39	7600	1.5
0.29	**10700**	**1.05**	5032	"	"	30000	75000	0.34	8900	1.3
0.39	**6900**	**2.7**	3672	**BK90G50-../DPE08LA4**	621	49400	120000	0.47	5400	3.4
0.35	**7900**	**2.3**	4070	"	"	49400	120000	0.43	6100	3.0
0.29	**10000**	**1.85**	4952	"	"	49400	120000	0.35	7900	2.3
0.26	**11400**	**1.6**	5491	"	"	49400	120000	0.32	8900	2.1
0.23	**13200**	**1.4**	6335	"	"	49400	120000	0.27	10900	1.7
0.21	**14700**	**1.25**	7022	"	"	49400	120000	0.25	12000	1.55
0.19	**16400**	**1.15**	7862	"	"	49400	120000	0.22	13900	1.35

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

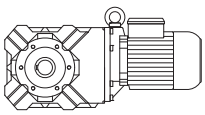
P = 0.55 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
196	**24.5**	**3.0**	7.25	**BK06-../DPE08XA4**	18	800	-	240	20	3.7
147	**32.5**	**2.5**	9.71	"	"	880	-	177	27	3.0
122	**39.5**	**2.0**	11.67	"	"	930	-	147	32.5	2.5
93	**51**	**1.55**	15.29	"	"	1020	-	112	42.5	1.9
79	**59**	**1.35**	18.00	"	"	1080	-	95	49.5	1.6
66	**71**	**1.15**	21.54	"	"	1150	-	80	59	1.35
54	**87**	**0.92**	26.36	"	"	1230	-	65	72	1.1
120	**40**	**2.9**	11.93	**BK10-../DPE08XA4**	30	3100	-	144	33.5	3.4
84	**56**	**2.4**	16.92	"	"	3700	-	102	46	3.0
77	**61**	**3.3**	18.52	"	"	4300	-	93	50	4.0
63	**75**	**2.7**	22.65	"	"	4650	-	76	62	3.2
49.5	**95**	**2.1**	28.76	"	"	5200	-	60	78	2.6
41.5	**113**	**1.75**	34.25	"	"	5600	-	50	94	2.1
35	**135**	**1.5**	40.79	"	"	6000	-	42	112	1.8
29.5	**158**	**1.25**	48.96	"	"	6400	-	35	133	1.5
23.5	**198**	**1.0**	61.68	"	"	7000	-	28	166	1.2
20	**230**	**0.87**	72.31	"	"	7000	-	24	192	1.05
39	**121**	**2.7**	36.69	**BK20-../DPE08XA4**	39	5400	9000	47	100	3.3
33.5	**141**	**2.3**	42.70	"	"	5800	9000	40.5	116	2.8
28	**166**	**2.0**	51.22	"	"	6300	9000	33.5	139	2.4
23.5	**198**	**1.65**	61.30	"	"	6500	9000	28	166	2.0
18.5	**245**	**1.35**	76.79	"	"	7500	9000	22.5	205	1.6
16.5	**275**	**1.2**	88.12	"	"	8000	9000	19.5	230	1.45
13.5	**330**	**0.95**	108.6	"	"	8700	9000	16	280	1.15
11.5	**385**	**0.86**	124.2	**BK20Z-../DPE08XA4**	41	8700	9000	14	315	1.05
33.5	**139**	**3.2**	42.89	**BK30-../DPE08XA4**	45	7800	12000	40	116	3.9
28.5	**162**	**2.8**	50.27	"	"	8300	12000	34.5	133	3.4
24	**192**	**2.3**	59.27	"	"	8900	12000	29	159	2.8
20	**225**	**2.0**	71.56	"	"	9700	12000	24	190	2.4
16.5	**270**	**1.65**	88.38	"	"	10600	12000	19.5	230	1.95
14	**315**	**1.45**	102.4	"	"	11200	12000	17	260	1.75
11.5	**385**	**1.15**	123.9	**BK30Z-../DPE08XA4**	48	11200	12000	14	315	1.45
9.8	**450**	**1.0**	145.1	"	"	11200	12000	12	365	1.25
7.7	**560**	**0.8**	184.8	"	"	11200	12000	9.3	465	0.97
17	**265**	**2.9**	84.36	**BK40-../DPE08XA4**	65	10700	17000	20.5	220	3.5
14	**315**	**2.5**	104.0	"	"	11700	17000	16.5	270	2.9
12.5	**355**	**2.2**	118.2	**BK40Z-../DPE08XA4**	70	11700	17000	14.5	305	2.6
10	**440**	**1.75**	143.0	"	"	11700	17000	12	365	2.1
8.5	**510**	**1.55**	169.0	"	"	11700	17000	10.5	415	1.9
6.8	**630**	**1.25**	211.5	"	"	11700	17000	8.1	530	1.45
5.8	**730**	**1.05**	246.6	"	"	11700	17000	7.0	600	1.3
4.9	**860**	**0.8**	289.8	"	"	11700	17000	6.0	700	0.98
12.5	**355**	**3.0**	115.4	**BK50Z-../DPE08XA4**	98	14100	26000	15	295	3.6
9.3	**465**	**2.3**	153.3	"	"	14100	26000	11.5	375	2.8
6.9	**620**	**1.7**	206.8	"	"	14100	26000	8.3	510	2.1
5.4	**780**	**1.35**	264.5	"	"	14100	26000	6.5	650	1.6
4.4	**960**	**1.05**	328.2	"	"	14100	26000	5.3	800	1.25
3.1	**1290**	**0.89**	465.1	**BK50G10-../DPE08XA4**	103	14100	111000	3.7	1080	1.05
2.8	**1420**	**0.81**	513.4	"	"	14100	111000	3.4	1170	0.98
7.0	**750**	**3.1**	205.0	**BK60Z-../DPE08XA4**	121	16600	34000	8.4	620	3.7
6.0	**870**	**2.6**	239.7	"	"	16600	34000	7.2	720	3.2
5.3	**990**	**2.3**	268.2	"	"	16600	34000	6.4	820	2.8
4.5	**1160**	**2.0**	317.7	"	"	16600	34000	5.4	970	2.4
4.0	**1310**	**1.75**	355.5	"	"	16600	34000	4.9	1070	2.1
3.5	**1500**	**1.55**	411.5	"	"	16600	34000	4.2	1250	1.85
3.1	**1690**	**1.35**	460.4	"	"	16600	34000	3.8	1380	1.65
2.9	**1810**	**1.25**	498.0	"	"	16600	34000	3.5	1500	1.55
2.6	**2000**	**1.15**	557.2	"	"	16600	34000	3.1	1690	1.35

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.55 kW



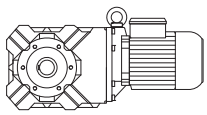
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
2.3	**2000**	**1.25**	621.5	**BK60G20-../DPE08XA4**	129	16600	34000	2.8	1610	1.55
1.9	**2400**	**1.05**	752.1	"	"	16600	34000	2.3	1960	1.3
1.6	**2900**	**0.86**	887.8	"	"	16600	34000	2.0	2250	1.1
3.3	**1590**	**3.3**	432.1	**BK70Z-../DPE08XA4**	210	24100	50000	4.0	1310	4.0
2.9	**1810**	**2.9**	501.8	"	"	24100	50000	3.5	1500	3.5
2.5	**2100**	**2.5**	570.8	"	"	24100	50000	3.0	1750	3.0
2.3	**2250**	**2.3**	644.9	"	"	24100	50000	2.7	1940	2.7
2.0	**2600**	**2.0**	733.6	"	"	24100	50000	2.4	2150	2.4
1.7	**2700**	**2.1**	847.7	**BK70G20-../DPE08XA4**	207	24100	50000	2.1	2100	2.7
1.5	**3050**	**1.85**	964.6	"	"	24100	50000	1.8	2500	2.3
1.3	**3600**	**1.6**	1139	"	"	24100	50000	1.6	2850	2.0
1.2	**4000**	**1.45**	1280	"	"	24100	50000	1.4	3350	1.7
1.0	**4800**	**1.2**	1457	"	"	24100	50000	1.2	3900	1.45
1.1	**3750**	**3.1**	1307	**BK80G40-../DPE08XA4**	349	30000	75000	1.4	2700	4.3
1.0	**4050**	**2.8**	1425	"	"	30000	75000	1.2	3150	3.7
0.9	**4600**	**2.5**	1583	"	"	30000	75000	1.1	3550	3.2
0.8	**5200**	**2.2**	1775	"	"	30000	75000	1.0	3950	2.9
0.65	**6600**	**1.75**	2205	"	"	30000	75000	0.8	5100	2.3
0.6	**7300**	**1.6**	2449	"	"	30000	75000	0.7	6000	1.9
0.55	**8000**	**1.45**	2811	"	"	30000	75000	0.65	6600	1.75
0.46	**9900**	**1.15**	3120	"	"	30000	75000	0.55	8000	1.45
0.55	**7400**	**2.5**	2764	**BK90G50-../DPE08XA4**	622	49400	120000	0.65	5900	3.1
0.47	**9000**	**2.1**	3065	"	"	49400	120000	0.6	6600	2.8
0.39	**11300**	**1.65**	3672	"	"	49400	120000	0.47	9000	2.1
0.35	**12900**	**1.45**	4070	"	"	49400	120000	0.43	10100	1.85
0.29	**16000**	**1.15**	4952	"	"	49400	120000	0.35	12900	1.45
0.26	**18000**	**1.05**	5491	"	"	49400	120000	0.32	14300	1.3

P = 0.75 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
330	**19.9**	**4.8**	4.44	**BK10-../DPE09LA4**	36	1900	-	395	16.6	5.7
245	**26.5**	**4.0**	6.02	"	"	2100	-	290	22.5	4.7
189	**34.5**	**3.3**	7.68	"	"	2400	-	230	28.5	4.0
155	**42.5**	**2.7**	9.40	"	"	2700	-	186	35	3.3
136	**47**	**3.9**	10.70	"	"	3500	-	163	39.5	4.6
122	**54**	**2.1**	11.93	"	"	3100	-	146	45	2.6
100	**64**	**3.1**	14.50	"	"	3900	-	120	53	3.8
86	**74**	**1.85**	16.92	"	"	3700	-	103	62	2.2
79	**81**	**2.5**	18.52	"	"	4300	-	94	68	2.9
65	**99**	**2.0**	22.65	"	"	4650	-	77	83	2.4
51	**126**	**1.6**	28.76	"	"	5200	-	61	105	1.9
42.5	**151**	**1.3**	34.25	"	"	5600	-	51	126	1.6
36	**179**	**1.1**	40.79	"	"	6000	-	43	149	1.35
30	**210**	**0.95**	48.96	"	"	6400	-	36	177	1.15
84	**77**	**3.0**	17.42	**BK20-../DPE09LA4**	46	3250	9000	100	65	3.6
60	**107**	**3.1**	24.29	"	"	4500	9000	72	89	3.7
51	**126**	**2.6**	28.66	"	"	4850	9000	61	105	3.1
40	**161**	**2.0**	36.69	"	"	5400	9000	47.5	135	2.4
34	**189**	**1.75**	42.70	"	"	5800	9000	41	157	2.1
28.5	**220**	**1.5**	51.22	"	"	6300	9000	34	187	1.75
24	**265**	**1.25**	61.30	"	"	6500	9000	28.5	220	1.5
19	**330**	**1.0**	76.79	"	"	7500	9000	23	270	1.2
16.5	**375**	**0.88**	88.12	"	"	8000	9000	20	310	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

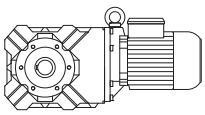
P = 0.75 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
43.5	**148**	**3.0**	33.70	**BK30-../DPE09LA4**	52	7000	12000	52	123	3.7
34	**187**	**2.4**	42.89	"	"	7800	12000	41	155	2.9
29	**215**	**2.1**	50.27	"	"	8300	12000	35	180	2.5
24.5	**255**	**1.75**	59.27	"	"	8900	12000	29.5	210	2.1
20.5	**300**	**1.5**	71.56	"	"	9700	12000	24.5	250	1.8
16.5	**370**	**1.2**	88.38	"	"	10600	12000	20	305	1.5
14.5	**415**	**1.1**	102.4	"	"	11200	12000	17	355	1.25
12	**500**	**0.9**	123.9	**BK30Z-../DPE09LA4**	54	11200	12000	14.5	415	1.1
24.5	**255**	**3.1**	59.66	**BK40-../DPE09LA4**	72	9100	17000	29.5	210	3.7
21	**295**	**2.6**	70.11	"	"	9800	17000	25	245	3.2
17.5	**355**	**2.2**	84.36	"	"	10700	17000	21	295	2.6
14	**430**	**1.8**	104.0	"	"	11700	17000	17	355	2.2
12.5	**485**	**1.6**	118.2	**BK40Z-../DPE09LA4**	76	11700	17000	15	405	1.95
10.5	**570**	**1.35**	143.0	"	"	11700	17000	12.5	480	1.65
8.6	**690**	**1.15**	169.0	"	"	11700	17000	10.5	560	1.4
6.9	**850**	**0.92**	211.5	"	"	11700	17000	8.3	700	1.1
5.9	**980**	**0.8**	246.6	"	"	11700	17000	7.1	810	0.96
19.5	**315**	**3.3**	75.40	**BK50-../DPE09LA4**	100	12600	26000	23.5	265	4.0
15.5	**395**	**2.7**	95.29	"	"	14100	26000	18.5	330	3.2
13	**465**	**2.3**	115.4	**BK50Z-../DPE09LA4**	105	14100	26000	15.5	390	2.7
9.5	**620**	**1.7**	153.3	"	"	14100	26000	11.5	510	2.1
7.1	**820**	**1.3**	206.8	"	"	14100	26000	8.5	690	1.5
5.5	**1050**	**1.0**	264.5	"	"	14100	26000	6.6	870	1.2
9.5	**750**	**3.1**	153.7	**BK60Z-../DPE09LA4**	128	16600	34000	11.5	620	3.7
8.0	**890**	**2.6**	183.2	"	"	16600	34000	9.5	750	3.1
7.1	**1000**	**2.3**	205.0	"	"	16600	34000	8.5	840	2.7
6.1	**1170**	**1.95**	239.7	"	"	16600	34000	7.3	980	2.3
5.5	**1300**	**1.75**	268.2	"	"	16600	34000	6.5	1100	2.1
4.6	**1550**	**1.5**	317.7	"	"	16600	34000	5.5	1300	1.75
4.1	**1740**	**1.3**	355.5	"	"	16600	34000	4.9	1460	1.6
3.6	**1980**	**1.15**	411.5	"	"	16600	34000	4.3	1660	1.4
3.2	**2200**	**1.05**	460.4	"	"	16600	34000	3.8	1880	1.2
3.0	**2350**	**0.98**	498.0	"	"	16600	34000	3.5	2000	1.15
2.7	**2650**	**0.87**	557.2	"	"	16600	34000	3.2	2200	1.05
2.4	**2700**	**0.93**	621.5	**BK60G20-../DPE09LA4**	136	16600	34000	2.8	2250	1.1
4.4	**1620**	**3.2**	333.6	**BK70Z-../DPE09LA4**	216	24100	50000	5.3	1350	3.9
3.9	**1830**	**2.8**	379.9	"	"	24100	50000	4.6	1550	3.4
3.4	**2100**	**2.5**	432.1	"	"	24100	50000	4.1	1740	3.0
2.9	**2450**	**2.1**	501.8	"	"	24100	50000	3.5	2000	2.6
2.6	**2750**	**1.9**	570.8	"	"	24100	50000	3.1	2300	2.3
2.3	**3100**	**1.7**	644.9	"	"	24100	50000	2.7	2650	1.95
2.0	**3550**	**1.45**	733.6	"	"	24100	50000	2.4	2950	1.75
1.8	**3600**	**1.6**	847.7	**BK70G20-../DPE09LA4**	214	24100	50000	2.1	3050	1.85
1.6	**4050**	**1.4**	964.6	"	"	24100	50000	1.9	3350	1.7
1.3	**5000**	**1.15**	1139	"	"	24100	50000	1.6	4000	1.45
1.2	**5500**	**1.05**	1280	"	"	24100	50000	1.4	4700	1.2
1.0	**6700**	**0.85**	1457	"	"	24100	50000	1.2	5500	1.05
1.6	**3550**	**3.2**	963.0	**BK80G40-../DPE09LA4**	356	30000	75000	1.9	2850	4.0
1.4	**4100**	**2.8**	1079	"	"	30000	75000	1.7	3200	3.6
1.2	**4950**	**2.3**	1307	"	"	30000	75000	1.4	4100	2.8
1.1	**5300**	**2.2**	1425	"	"	30000	75000	1.3	4300	2.7
0.95	**6300**	**1.85**	1583	"	"	30000	75000	1.1	5200	2.2
0.85	**7100**	**1.6**	1775	"	"	30000	75000	1.0	5800	2.0
0.7	**8800**	**1.3**	2205	"	"	30000	75000	0.8	7500	1.55
0.6	**10400**	**1.1**	2449	"	"	30000	75000	0.75	8100	1.4

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.75 kW



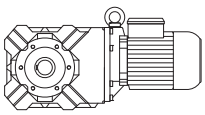
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
0.95	**6000**	**3.1**	1579	**BK90G50-../DPE09LA4**	629	49400	120000	1.2	4450	4.2
0.85	**6700**	**2.8**	1803	"	"	49400	120000	1.0	5400	3.4
0.75	**7600**	**2.4**	2016	"	"	49400	120000	0.9	6000	3.1
0.55	**10900**	**1.7**	2764	"	"	49400	120000	0.65	8900	2.1
0.48	**12800**	**1.45**	3065	"	"	49400	120000	0.6	9800	1.9
0.4	**15700**	**1.2**	3672	"	"	49400	120000	0.48	12800	1.45
0.36	**17700**	**1.05**	4070	"	"	49400	120000	0.43	14500	1.3

P = 1.1 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
330	**29**	**3.3**	4.44	**BK10-../DPE09XA4**	40	1900	-	395	24	4.0
245	**39**	**2.7**	6.02	"	"	2100	-	290	33	3.2
189	**51**	**2.3**	7.68	"	"	2400	-	230	42	2.7
155	**62**	**1.85**	9.40	"	"	2700	-	186	51	2.3
136	**69**	**2.6**	10.70	"	"	3500	-	163	58	3.1
122	**79**	**1.45**	11.93	"	"	3100	-	146	66	1.75
100	**94**	**2.1**	14.50	"	"	3900	-	120	78	2.6
86	**109**	**1.25**	16.92	"	"	3700	-	103	91	1.5
79	**119**	**1.7**	18.52	"	"	4300	-	94	100	2.0
65	**145**	**1.4**	22.65	"	"	4650	-	77	122	1.65
51	**185**	**1.1**	28.76	"	"	5200	-	61	154	1.3
42.5	**220**	**0.91**	34.25	"	"	5600	-	51	185	1.1
125	**77**	**3.0**	11.69	**BK20-../DPE09XA4**	50	2400	8800	149	64	3.6
84	**113**	**2.0**	17.42	"	"	3250	9000	100	95	2.4
75	**126**	**2.6**	19.39	"	"	4050	9000	90	105	3.1
60	**157**	**2.1**	24.29	"	"	4500	9000	72	131	2.5
51	**185**	**1.8**	28.66	"	"	4850	9000	61	154	2.1
40	**235**	**1.4**	36.69	"	"	5400	9000	47.5	199	1.65
34	**275**	**1.2**	42.70	"	"	5800	9000	41	230	1.45
28.5	**325**	**1.0**	51.22	"	"	6300	9000	34	270	1.2
24	**385**	**0.86**	61.30	"	"	6500	9000	28.5	325	1.0
70	**136**	**2.4**	20.85	**BK30-../DPE09XA4**	56	5000	12000	84	113	2.8
63	**150**	**3.0**	23.20	"	"	5900	12000	75	126	3.6
51	**185**	**2.4**	28.76	"	"	6500	12000	61	154	2.9
43.5	**215**	**2.1**	33.70	"	"	7000	12000	52	181	2.5
34	**270**	**1.65**	42.89	"	"	7800	12000	41	225	2.0
29	**315**	**1.45**	50.27	"	"	8300	12000	35	260	1.75
24.5	**375**	**1.2**	59.27	"	"	8900	12000	29.5	310	1.45
20.5	**445**	**1.0**	71.56	"	"	9700	12000	24.5	370	1.2
16.5	**540**	**0.83**	88.38	"	"	10600	12000	20	450	1.0
35.5	**265**	**2.9**	40.88	**BK40-../DPE09XA4**	76	7600	17000	43	215	3.6
28.5	**320**	**2.4**	51.18	"	"	8400	17000	34	270	2.9
24.5	**375**	**2.1**	59.66	"	"	9100	17000	29.5	310	2.5
21	**435**	**1.8**	70.11	"	"	9800	17000	25	365	2.1
17.5	**520**	**1.5**	84.36	"	"	10700	17000	21	435	1.8
14	**630**	**1.25**	104.0	"	"	11700	17000	17	520	1.5
12.5	**710**	**1.1**	118.2	**BK40Z-../DPE09XA4**	80	11700	17000	15	590	1.3
10.5	**840**	**0.93**	143.0	"	"	11700	17000	12.5	700	1.1
24	**385**	**2.7**	60.76	**BK50-../DPE09XA4**	104	11400	26000	29	315	3.3
19.5	**465**	**2.3**	75.40	"	"	12600	26000	23.5	385	2.7
15.5	**580**	**1.8**	95.29	"	"	14100	26000	18.5	485	2.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

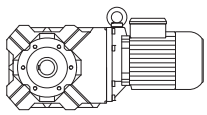
P = 1.1 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
13	**680**	**1.55**	115.4	**BK50Z-../DPE09XA4**	109	14100	26000	15.5	570	1.85
9.5	**910**	**1.15**	153.3	"	"	14100	26000	11.5	750	1.4
7.1	**1210**	**0.87**	206.8	"	"	14100	26000	8.5	1010	1.05
14.5	**720**	**3.2**	101.2	**BK60-../DPE09XA4**	113	13900	34000	17.5	600	3.8
13	**800**	**2.9**	113.2	"	"	15000	34000	15.5	670	3.4
12	**870**	**2.6**	122.5	"	"	15500	34000	14.5	720	3.2
11	**950**	**2.4**	137.0	"	"	16600	34000	13	800	2.9
9.5	**1100**	**2.1**	153.7	**BK60Z-../DPE09XA4**	132	16600	34000	11.5	910	2.5
8.0	**1310**	**1.75**	183.2	"	"	16600	34000	9.5	1100	2.1
7.1	**1470**	**1.55**	205.0	"	"	16600	34000	8.5	1230	1.85
6.1	**1720**	**1.35**	239.7	"	"	16600	34000	7.3	1430	1.6
5.5	**1910**	**1.2**	268.2	"	"	16600	34000	6.5	1610	1.45
4.6	**2250**	**1.0**	317.7	"	"	16600	34000	5.5	1910	1.2
4.1	**2550**	**0.9**	355.5	"	"	16600	34000	4.9	2100	1.1
6.5	**1610**	**3.2**	226.2	**BK70Z-../DPE09XA4**	220	24100	50000	7.7	1360	3.8
5.7	**1840**	**2.8**	257.3	"	"	24100	50000	6.8	1540	3.4
5.0	**2100**	**2.5**	293.3	"	"	24100	50000	6.0	1750	3.0
4.4	**2350**	**2.2**	333.6	"	"	24100	50000	5.3	1980	2.6
3.9	**2650**	**1.95**	379.9	"	"	24100	50000	4.6	2250	2.3
3.4	**3050**	**1.7**	432.1	"	"	24100	50000	4.1	2550	2.0
2.9	**3600**	**1.45**	501.8	"	"	24100	50000	3.5	3000	1.75
2.6	**4000**	**1.3**	570.8	"	"	24100	50000	3.1	3350	1.55
2.3	**4550**	**1.15**	644.9	"	"	24100	50000	2.7	3850	1.35
2.0	**5200**	**1.0**	733.6	"	"	24100	50000	2.4	4350	1.2
1.8	**5400**	**1.05**	847.7	**BK70G20-../DPE09XA4**	218	24100	50000	2.1	4600	1.25
1.6	**6100**	**0.93**	964.6	"	"	24100	50000	1.9	5100	1.1
3.0	**3500**	**3.3**	499.5	**BK80Z-../DPE09XA4**	349	30000	75000	3.5	3000	3.8
2.6	**4000**	**2.9**	559.5	"	"	30000	75000	3.2	3250	3.5
2.4	**3600**	**3.2**	607.8	**BK80G40-../DPE09XA4**	360	30000	75000	2.9	2850	4.0
2.2	**3900**	**2.9**	680.9	"	"	30000	75000	2.6	3200	3.6
2.0	**4400**	**2.6**	756.3	"	"	30000	75000	2.4	3550	3.2
1.8	**4900**	**2.3**	847.2	"	"	30000	75000	2.1	4050	2.8
1.6	**5600**	**2.1**	963.0	"	"	30000	75000	1.9	4600	2.5
1.4	**6400**	**1.8**	1079	"	"	30000	75000	1.7	5100	2.3
1.2	**7700**	**1.5**	1307	"	"	30000	75000	1.4	6400	1.8
1.1	**8300**	**1.4**	1425	"	"	30000	75000	1.3	6900	1.65
0.95	**9800**	**1.15**	1583	"	"	30000	75000	1.1	8300	1.4
0.85	**11000**	**1.05**	1775	"	"	30000	75000	1.0	9200	1.25
1.5	**5600**	**3.3**	1008	**BK90G50-../DPE09XA4**	633	49400	120000	1.8	4450	4.2
1.3	**6500**	**2.8**	1127	"	"	49400	120000	1.6	5000	3.7
1.1	**8300**	**2.2**	1363	"	"	49400	120000	1.3	6800	2.7
0.95	**9500**	**1.95**	1579	"	"	49400	120000	1.2	7200	2.6
0.85	**10600**	**1.75**	1803	"	"	49400	120000	1.0	8700	2.1
0.75	**12000**	**1.55**	2016	"	"	49400	120000	0.9	9700	1.9
0.55	**16900**	**1.1**	2764	"	"	49400	120000	0.65	14000	1.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

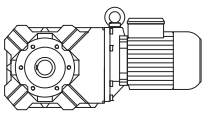
P = 1.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
330	**39.5**	**2.4**	4.44	**BK10-../DPE09XA4C**	43	1900	-	395	33	2.9
245	**53**	**2.0**	6.02	"	"	2100	-	290	45	2.3
189	**69**	**1.65**	7.68	"	"	2400	-	230	57	2.0
155	**85**	**1.35**	9.40	"	"	2700	-	186	70	1.65
136	**94**	**1.95**	10.70	"	"	3500	-	163	79	2.3
122	**108**	**1.05**	11.93	"	"	3100	-	146	90	1.3
100	**128**	**1.55**	14.50	"	"	3900	-	120	107	1.85
86	**149**	**0.91**	16.92	"	"	3700	-	103	125	1.1
79	**163**	**1.25**	18.52	"	"	4300	-	94	137	1.45
65	**198**	**1.0**	22.65	"	"	4650	-	77	167	1.2
51	**250**	**0.8**	28.76	"	"	5200	-	61	210	0.95
184	**71**	**3.3**	7.91	**BK20-../DPE09XA4C**	52	1330	7600	220	59	3.9
147	**89**	**2.6**	9.91	"	"	1910	8300	176	74	3.1
131	**98**	**3.1**	11.14	"	"	3300	8100	157	82	3.7
125	**105**	**2.2**	11.69	"	"	2400	8800	149	88	2.6
99	**130**	**2.5**	14.75	"	"	3650	9000	118	109	3.0
84	**155**	**1.5**	17.42	"	"	3250	9000	100	130	1.8
75	**171**	**1.95**	19.39	"	"	4050	9000	90	143	2.3
60	**210**	**1.55**	24.29	"	"	4500	9000	72	179	1.85
51	**250**	**1.3**	28.66	"	"	4850	9000	61	210	1.55
40	**320**	**1.05**	36.69	"	"	5400	9000	47.5	270	1.2
34	**375**	**0.88**	42.70	"	"	5800	9000	41	310	1.05
122	**108**	**3.0**	11.93	**BK30-../DPE09XA4C**	58	3650	12000	146	90	3.6
104	**125**	**2.6**	13.98	"	"	4050	12000	125	104	3.1
81	**159**	**2.8**	17.95	"	"	5300	12000	97	132	3.4
70	**186**	**1.7**	20.85	"	"	5000	12000	84	155	2.1
63	**200**	**2.3**	23.20	"	"	5900	12000	75	171	2.6
51	**250**	**1.8**	28.76	"	"	6500	12000	61	210	2.1
43.5	**295**	**1.55**	33.70	"	"	7000	12000	52	245	1.85
34	**370**	**1.2**	42.89	"	"	7800	12000	41	310	1.45
29	**430**	**1.05**	50.27	"	"	8300	12000	35	360	1.25
24.5	**510**	**0.88**	59.27	"	"	8900	12000	29.5	425	1.05
51	**250**	**3.1**	28.59	**BK40-../DPE09XA4C**	79	6300	17000	61	210	3.7
42	**305**	**2.6**	34.61	"	"	6900	17000	51	250	3.1
35.5	**360**	**2.2**	40.88	"	"	7600	17000	43	295	2.6
28.5	**440**	**1.75**	51.18	"	"	8400	17000	34	370	2.1
24.5	**510**	**1.55**	59.66	"	"	9100	17000	29.5	425	1.85
21	**590**	**1.3**	70.11	"	"	9800	17000	25	495	1.6
17.5	**710**	**1.1**	84.36	"	"	10700	17000	21	590	1.3
14	**860**	**0.91**	104.0	"	"	11700	17000	17	710	1.1
12.5	**970**	**0.8**	118.2	**BK40Z-../DPE09XA4C**	83	11700	17000	15	810	0.96
31	**410**	**2.6**	47.50	**BK50-../DPE09XA4C**	107	10100	25700	37	340	3.1
24	**520**	**2.0**	60.76	"	"	11400	26000	29	430	2.4
19.5	**630**	**1.65**	75.40	"	"	12600	26000	23.5	530	2.0
15.5	**790**	**1.35**	95.29	"	"	14100	26000	18.5	660	1.6
13	**930**	**1.15**	115.4	**BK50Z-../DPE09XA4C**	112	14100	26000	15.5	780	1.35
9.5	**1250**	**0.84**	153.3	"	"	14100	26000	11.5	1030	1.0
19	**750**	**3.1**	78.13	**BK60-../DPE09XA4C**	115	11900	34000	22.5	630	3.7
17	**840**	**2.7**	87.41	"	"	12900	34000	20	710	3.2
14.5	**980**	**2.3**	101.2	"	"	13900	34000	17.5	810	2.8
13	**1100**	**2.1**	113.2	"	"	15000	34000	15.5	920	2.5
12	**1190**	**1.95**	122.5	"	"	15500	34000	14.5	980	2.3
11	**1300**	**1.75**	137.0	"	"	16600	34000	13	1100	2.1
9.5	**1500**	**1.55**	153.7	**BK60Z-../DPE09XA4C**	135	16600	34000	11.5	1240	1.85
8.0	**1790**	**1.3**	183.2	"	"	16600	34000	9.5	1500	1.55
7.1	**2000**	**1.15**	205.0	"	"	16600	34000	8.5	1680	1.35
6.1	**2300**	**1.0**	239.7	"	"	16600	34000	7.3	1960	1.15
5.5	**2600**	**0.88**	268.2	"	"	16600	34000	6.5	2200	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 1.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
8.3	**1720**	**3.0**	175.7	**BK70-../DPE09XA4C**	202	24100	50000	10	1430	3.6
7.7	**1860**	**2.8**	190.4	**BK70Z-../DPE09XA4C**	223	24100	50000	9.2	1550	3.4
6.5	**2200**	**2.4**	226.2	"	"	24100	50000	7.7	1860	2.8
5.7	**2500**	**2.1**	257.3	"	"	24100	50000	6.8	2100	2.5
5.0	**2850**	**1.8**	293.3	"	"	24100	50000	6.0	2350	2.2
4.4	**3250**	**1.6**	333.6	"	"	24100	50000	5.3	2700	1.95
3.9	**3650**	**1.4**	379.9	"	"	24100	50000	4.6	3100	1.7
3.4	**4200**	**1.25**	432.1	"	"	24100	50000	4.1	3450	1.5
2.9	**4900**	**1.05**	501.8	"	"	24100	50000	3.5	4050	1.3
2.6	**5500**	**0.95**	570.8	"	"	24100	50000	3.1	4600	1.15
2.3	**6200**	**0.84**	644.9	"	"	24100	50000	2.7	5300	0.98
3.8	**3750**	**3.1**	389.0	**BK80Z-../DPE09XA4C**	351	30000	75000	4.5	3150	3.7
3.4	**4200**	**2.7**	435.7	"	"	30000	75000	4.0	3550	3.2
3.0	**4750**	**2.4**	499.5	"	"	30000	75000	3.5	4050	2.8
2.6	**5500**	**2.1**	559.5	"	"	30000	75000	3.2	4450	2.6
2.4	**5200**	**2.2**	607.8	**BK80G40-../DPE09XA4C**	363	30000	75000	2.9	4150	2.8
2.2	**5600**	**2.1**	680.9	"	"	30000	75000	2.6	4650	2.5
2.0	**6300**	**1.85**	756.3	"	"	30000	75000	2.4	5100	2.3
1.8	**7000**	**1.65**	847.2	"	"	30000	75000	2.1	5900	1.95
1.6	**8000**	**1.45**	963.0	"	"	30000	75000	1.9	6600	1.75
1.4	**9200**	**1.25**	1079	"	"	30000	75000	1.7	7400	1.55
1.2	**10900**	**1.05**	1307	"	"	30000	75000	1.4	9200	1.25
1.1	**11800**	**0.97**	1425	"	"	30000	75000	1.3	9800	1.15
2.3	**6200**	**3.0**	637.7	**BK90Z-../DPE09XA4C**	624	49400	120000	2.8	5100	3.6
2.1	**6800**	**2.7**	713.5	"	"	49400	120000	2.5	5700	3.2
1.8	**6600**	**2.8**	821.0	**BK90G50-../DPE09XA4C**	635	49400	120000	2.2	5100	3.6
1.7	**7200**	**2.6**	882.3	"	"	49400	120000	2.0	5900	3.1
1.5	**8200**	**2.3**	1008	"	"	49400	120000	1.8	6600	2.8
1.3	**9500**	**1.95**	1127	"	"	49400	120000	1.6	7400	2.5
1.1	**11800**	**1.55**	1363	"	"	49400	120000	1.3	9800	1.9
0.95	**13500**	**1.35**	1579	"	"	49400	120000	1.2	10400	1.8
0.85	**15100**	**1.25**	1803	"	"	49400	120000	1.0	12600	1.45
0.75	**17100**	**1.1**	2016	"	"	49400	120000	0.9	13900	1.35

P = 2.2 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
310	**62**	**3.1**	4.73	**BK30-../DPE11MA4**	65	1550	8800	370	52	3.7
245	**78**	**2.7**	6.02	"	"	1690	9600	290	66	3.2
195	**99**	**2.7**	7.45	"	"	2200	10400	235	82	3.3
151	**128**	**2.5**	9.63	"	"	3150	11500	181	106	3.0
128	**147**	**2.8**	11.39	"	"	4150	11000	153	123	3.4
122	**158**	**2.0**	11.93	"	"	3650	12000	146	132	2.4
104	**183**	**1.75**	13.98	"	"	4050	12000	125	152	2.1
100	**189**	**2.4**	14.50	"	"	4900	12000	120	157	2.9
81	**230**	**1.95**	17.95	"	"	5300	12000	97	194	2.3
63	**300**	**1.5**	23.20	"	"	5900	12000	75	250	1.8
51	**370**	**1.2**	28.76	"	"	6500	12000	61	305	1.5
43.5	**430**	**1.05**	33.70	"	"	7000	12000	52	360	1.25
123	**157**	**3.1**	11.86	**BK40-../DPE11MA4**	90	1770	12200	147	131	3.8
65	**290**	**2.7**	22.44	"	"	5500	16500	78	240	3.3
51	**370**	**2.1**	28.59	"	"	6300	17000	61	305	2.6
42	**450**	**1.75**	34.61	"	"	6900	17000	51	370	2.1
35.5	**530**	**1.45**	40.88	"	"	7600	17000	43	435	1.8

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 2.2 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
81	**235**	**3.1**	17.92	**BK50-../DPE11MA4**	120	4600	16800	98	195	3.7
55	**340**	**3.1**	26.51	"	"	7800	21200	66	285	3.7
41.5	**455**	**2.3**	35.21	"	"	8700	23100	49.5	380	2.8
31	**600**	**1.75**	47.50	"	"	10100	25700	37	500	2.1
24	**770**	**1.35**	60.76	"	"	11400	26000	29	630	1.65
19.5	**930**	**1.15**	75.40	"	"	12600	26000	23.5	770	1.35
29	**720**	**3.2**	50.40	**BK60-../DPE11MA4**	130	9100	29800	35	600	3.8
25	**840**	**2.7**	58.95	"	"	9900	31500	30	700	3.3
22	**950**	**2.4**	65.95	"	"	10900	33000	26.5	790	2.9
19	**1100**	**2.1**	78.13	"	"	11900	34000	22.5	930	2.5
17	**1230**	**1.85**	87.41	"	"	12900	34000	20	1050	2.2
14.5	**1440**	**1.6**	101.2	"	"	13900	34000	17.5	1200	1.9
13	**1610**	**1.45**	113.2	"	"	15000	34000	15.5	1350	1.7
12	**1750**	**1.3**	122.5	"	"	15500	34000	14.5	1440	1.6
11	**1910**	**1.2**	137.0	"	"	16600	34000	13	1610	1.45
9.5	**2200**	**1.05**	153.7	**BK60Z-../DPE11MA4**	146	16600	34000	11.5	1820	1.25
8.0	**2600**	**0.88**	183.2	"	"	16600	34000	9.5	2200	1.05
12.5	**1680**	**3.1**	120.2	**BK70-../DPE11MA4**	209	18600	50000	14.5	1440	3.6
11	**1910**	**2.7**	136.7	"	"	20700	50000	13	1610	3.2
9.4	**2200**	**2.4**	154.4	"	"	21900	50000	11.5	1820	2.9
8.3	**2500**	**2.1**	175.7	"	"	24100	50000	10	2100	2.5
7.7	**2700**	**1.95**	190.4	**BK70Z-../DPE11MA4**	236	24100	50000	9.2	2250	2.3
6.5	**3200**	**1.65**	226.2	"	"	24100	50000	7.7	2700	1.95
5.7	**3650**	**1.4**	257.3	"	"	24100	50000	6.8	3050	1.7
5.0	**4200**	**1.25**	293.3	"	"	24100	50000	6.0	3500	1.5
4.4	**4750**	**1.1**	333.6	"	"	24100	50000	5.3	3950	1.3
3.9	**5300**	**0.98**	379.9	"	"	24100	50000	4.6	4550	1.15
3.4	**6100**	**0.85**	432.1	"	"	24100	50000	4.1	5100	1.0
5.8	**3600**	**3.2**	253.3	**BK80Z-../DPE11MA4**	366	30000	75000	6.9	3000	3.8
4.9	**4250**	**2.7**	300.6	"	"	30000	75000	5.8	3600	3.2
4.4	**4750**	**2.4**	336.7	"	"	30000	75000	5.2	4000	2.9
3.8	**5500**	**2.1**	389.0	"	"	30000	75000	4.5	4650	2.5
3.4	**6100**	**1.9**	435.7	"	"	30000	75000	4.0	5200	2.2
3.0	**7000**	**1.65**	499.5	"	"	30000	75000	3.5	6000	1.9
2.6	**8000**	**1.45**	559.5	"	"	30000	75000	3.2	6500	1.75
2.4	**8000**	**1.45**	607.8	**BK80G40-../DPE11MA4**	374	30000	75000	2.9	6400	1.8
2.2	**8700**	**1.3**	680.9	"	"	30000	75000	2.6	7200	1.6
2.0	**9600**	**1.2**	756.3	"	"	30000	75000	2.4	7900	1.45
1.8	**10700**	**1.05**	847.2	"	"	30000	75000	2.1	9000	1.3
1.6	**12200**	**0.94**	963.0	"	"	30000	75000	1.9	10100	1.15
1.4	**13900**	**0.83**	1079	"	"	30000	75000	1.7	11300	1.0
3.4	**6100**	**3.0**	435.3	**BK90Z-../DPE11MA4**	632	49400	120000	4.0	5200	3.6
3.0	**7000**	**2.6**	499.2	"	"	49400	120000	3.5	6000	3.1
2.6	**8000**	**2.3**	558.5	"	"	49400	120000	3.2	6500	2.8
2.3	**9100**	**2.0**	637.7	"	"	49400	120000	2.8	7500	2.5
2.1	**10000**	**1.85**	713.5	"	"	49400	120000	2.5	8400	2.2
1.8	**10300**	**1.8**	821.0	**BK90G50-../DPE11MA4**	648	49400	120000	2.2	8200	2.3
1.7	**11100**	**1.65**	882.3	"	"	49400	120000	2.0	9300	2.0
1.5	**12600**	**1.45**	1008	"	"	49400	120000	1.8	10300	1.8
1.3	**14600**	**1.25**	1127	"	"	49400	120000	1.6	11600	1.6
1.1	**17800**	**1.05**	1363	"	"	49400	120000	1.3	14900	1.25

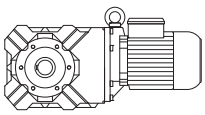
The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 3 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
310	**85**	**2.3**	4.73	**BK30-../DPE11LA4**	76	1550	8800	370	71	2.7
245	**107**	**2.0**	6.02	"	"	1690	9600	290	90	2.4
195	**135**	**2.0**	7.45	"	"	2200	10400	235	112	2.4
151	**174**	**1.85**	9.63	"	"	3150	11500	181	145	2.2
128	**200**	**2.1**	11.39	"	"	4150	11000	153	168	2.5
122	**215**	**1.5**	11.93	"	"	3650	12000	146	180	1.8
104	**250**	**1.3**	13.98	"	"	4050	12000	125	205	1.55
100	**255**	**1.75**	14.50	"	"	4900	12000	120	210	2.1
81	**315**	**1.45**	17.95	"	"	5300	12000	97	265	1.7
63	**405**	**1.1**	23.20	"	"	5900	12000	75	340	1.3
51	**500**	**0.9**	28.76	"	"	6500	12000	61	420	1.05
156	**168**	**2.9**	9.31	**BK40-../DPE11LA4**	102	1040	11200	187	140	3.5
123	**210**	**2.3**	11.86	"	"	1770	12200	147	179	2.8
100	**255**	**3.1**	14.50	"	"	4500	14300	120	210	3.7
81	**315**	**2.5**	18.05	"	"	4900	15300	97	265	2.9
65	**395**	**1.95**	22.44	"	"	5500	16500	78	330	2.4
51	**500**	**1.55**	28.59	"	"	6300	17000	61	420	1.85
42	**610**	**1.3**	34.61	"	"	6900	17000	51	500	1.55
35.5	**720**	**1.1**	40.88	"	"	7600	17000	43	590	1.3
81	**320**	**2.3**	17.92	**BK50-../DPE11LA4**	132	4600	16800	98	265	2.7
76	**335**	**3.1**	19.33	"	"	6900	19200	91	280	3.8
55	**465**	**2.3**	26.51	"	"	7800	21200	66	390	2.7
41.5	**620**	**1.7**	35.21	"	"	8700	23100	49.5	520	2.0
31	**820**	**1.3**	47.50	"	"	10100	25700	37	680	1.55
24	**1050**	**1.0**	60.76	"	"	11400	26000	29	860	1.2
19.5	**1270**	**0.83**	75.40	"	"	12600	26000	23.5	1060	0.99
38.5	**740**	**3.1**	37.80	**BK60-../DPE11LA4**	142	7300	26500	46.5	610	3.8
32.5	**880**	**2.6**	45.05	"	"	8200	28300	39	730	3.2
29	**980**	**2.3**	50.40	"	"	9100	29800	35	810	2.8
25	**1140**	**2.0**	58.95	"	"	9900	31500	30	950	2.4
22	**1300**	**1.75**	65.95	"	"	10900	33000	26.5	1080	2.1
19	**1500**	**1.55**	78.13	"	"	11900	34000	22.5	1270	1.8
17	**1680**	**1.35**	87.41	"	"	12900	34000	20	1430	1.6
14.5	**1970**	**1.15**	101.2	"	"	13900	34000	17.5	1630	1.4
13	**2200**	**1.05**	113.2	"	"	15000	34000	15.5	1840	1.25
12	**2350**	**0.98**	122.5	"	"	15500	34000	14.5	1970	1.15
11	**2600**	**0.88**	137.0	"	"	16600	34000	13	2200	1.05
16	**1790**	**2.9**	90.96	**BK70-../DPE11LA4**	221	15300	49900	19.5	1460	3.6
14.5	**1970**	**2.6**	103.5	"	"	17200	50000	17	1680	3.1
12.5	**2250**	**2.3**	120.2	"	"	18600	50000	14.5	1970	2.6
11	**2600**	**2.0**	136.7	"	"	20700	50000	13	2200	2.4
9.4	**3000**	**1.75**	154.4	"	"	21900	50000	11.5	2450	2.1
8.3	**3450**	**1.5**	175.7	"	"	24100	50000	10	2850	1.8
7.7	**3700**	**1.4**	190.4	**BK70Z-../DPE11LA4**	247	24100	50000	9.2	3100	1.7
6.5	**4400**	**1.2**	226.2	"	"	24100	50000	7.7	3700	1.4
5.7	**5000**	**1.05**	257.3	"	"	24100	50000	6.8	4200	1.25
5.0	**5700**	**0.91**	293.3	"	"	24100	50000	6.0	4750	1.1
4.4	**6500**	**0.8**	333.6	"	"	24100	50000	5.3	5400	0.96
8.5	**3350**	**3.1**	171.5	**BK80-../DPE11LA4**	336	30000	75000	10.5	2700	3.9
8.2	**3450**	**3.3**	177.6	**BK80Z-../DPE11LA4**	378	30000	75000	9.8	2900	4.0
7.3	**3900**	**2.9**	198.9	"	"	30000	75000	8.8	3250	3.5
6.5	**4400**	**2.6**	226.1	"	"	30000	75000	7.7	3700	3.1
5.8	**4900**	**2.3**	253.3	"	"	30000	75000	6.9	4150	2.8
4.9	**5800**	**2.0**	300.6	"	"	30000	75000	5.8	4900	2.3
4.4	**6500**	**1.75**	336.7	"	"	30000	75000	5.2	5500	2.1
3.8	**7500**	**1.55**	389.0	"	"	30000	75000	4.5	6300	1.85
3.4	**8400**	**1.35**	435.7	"	"	30000	75000	4.0	7100	1.6
3.0	**9500**	**1.2**	499.5	"	"	30000	75000	3.5	8100	1.4
2.6	**11000**	**1.05**	559.5	"	"	30000	75000	3.2	8900	1.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 3 kW



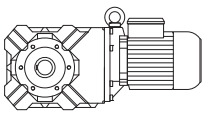
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
2.4	**11100**	**1.05**	607.8	**BK80G40-../DPE11LA4**	386	30000	75000	2.9	9100	1.25
2.2	**12100**	**0.95**	680.9	"	"	30000	75000	2.6	10100	1.15
2.0	**13500**	**0.85**	756.3	"	"	30000	75000	2.4	11100	1.05
5.0	**5700**	**3.2**	295.6	**BK90Z-../DPE11LA4**	643	49400	120000	5.9	4850	3.8
4.4	**6500**	**2.8**	330.7	"	"	49400	120000	5.3	5400	3.4
3.8	**7500**	**2.5**	389.1	"	"	49400	120000	4.5	6300	2.9
3.4	**8400**	**2.2**	435.3	"	"	49400	120000	4.0	7100	2.6
3.0	**9500**	**1.95**	499.2	"	"	49400	120000	3.5	8100	2.3
2.6	**11000**	**1.7**	558.5	"	"	49400	120000	3.2	8900	2.1
2.3	**12400**	**1.5**	637.7	"	"	49400	120000	2.8	10200	1.8
2.1	**13600**	**1.35**	713.5	"	"	49400	120000	2.5	11400	1.6
1.8	**14500**	**1.3**	821.0	**BK90G50-../DPE11LA4**	660	49400	120000	2.2	11600	1.6
1.7	**15600**	**1.2**	882.3	"	"	49400	120000	2.0	13100	1.4
1.5	**17700**	**1.05**	1008	"	"	49400	120000	1.8	14500	1.3
1.3	**20500**	**0.9**	1127	"	"	49400	120000	1.6	16400	1.15
2.0	**13500**	**0.85**	756.3	"	"	30000	75000	2.4	11100	1.05
5.0	**5700**	**3.2**	295.6	**BK90Z-../DPE11LA4**	643	49400	120000	5.9	4850	3.8
4.4	**6500**	**2.8**	330.7	"	"	49400	120000	5.3	5400	3.4
3.8	**7500**	**2.5**	389.1	"	"	49400	120000	4.5	6300	2.9
3.4	**8400**	**2.2**	435.3	"	"	49400	120000	4.0	7100	2.6
3.0	**9500**	**1.95**	499.2	"	"	49400	120000	3.5	8100	2.3
2.6	**11000**	**1.7**	558.5	"	"	49400	120000	3.2	8900	2.1
2.3	**12400**	**1.5**	637.7	"	"	49400	120000	2.8	10200	1.8
2.1	**13600**	**1.35**	713.5	"	"	49400	120000	2.5	11400	1.6
1.8	**14500**	**1.3**	821.0	**BK90G50-../DPE11LA4**	660	49400	120000	2.2	11600	1.6
1.7	**15600**	**1.2**	882.3	"	"	49400	120000	2.0	13100	1.4
1.5	**17700**	**1.05**	1008	"	"	49400	120000	1.8	14500	1.3
1.3	**20500**	**0.9**	1127	"	"	49400	120000	1.6	16400	1.15

P = 4 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
310	**113**	**1.7**	4.73	**BK30-../DPE11LA4C**	80	1550	8800	370	94	2.1
245	**143**	**1.5**	6.02	"	"	1690	9600	290	121	1.75
195	**180**	**1.5**	7.45	"	"	2200	10400	235	149	1.8
151	**230**	**1.4**	9.63	"	"	3150	11500	181	194	1.65
128	**265**	**1.55**	11.39	"	"	4150	11000	153	220	1.9
122	**285**	**1.1**	11.93	"	"	3650	12000	146	240	1.35
104	**330**	**0.97**	13.98	"	"	4050	12000	125	275	1.15
100	**340**	**1.3**	14.50	"	"	4900	12000	120	285	1.6
81	**420**	**1.05**	17.95	"	"	5300	12000	97	350	1.3
63	**540**	**0.83**	23.20	"	"	5900	12000	75	455	0.99
245	**143**	**3.3**	6.02	**BK40-../DPE11LA4C**	106	470	9800	290	121	3.9
194	**181**	**2.7**	7.49	"	"	750	10500	235	149	3.3
156	**225**	**2.2**	9.31	"	"	1040	11200	187	187	2.6
130	**260**	**2.8**	11.17	"	"	4100	13100	156	220	3.3
123	**285**	**1.75**	11.86	"	"	1770	12200	147	235	2.1
100	**340**	**2.3**	14.50	"	"	4500	14300	120	285	2.7
81	**420**	**1.85**	18.05	"	"	4900	15300	97	350	2.2
65	**520**	**1.5**	22.44	"	"	5500	16500	78	440	1.75
51	**670**	**1.15**	28.59	"	"	6300	17000	61	560	1.4
42	**810**	**0.96**	34.61	"	"	6900	17000	51	670	1.15
35.5	**960**	**0.81**	40.88	"	"	7600	17000	43	790	0.99

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

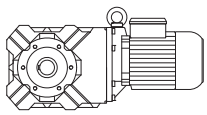
P = 4 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
104	**330**	**3.2**	13.95	**BK50-../DPE11LA4C**	136	6100	17400	125	275	3.8
96	**355**	**3.0**	15.19	"	"	6300	18000	115	295	3.6
81	**425**	**1.7**	17.92	"	"	4600	16800	98	350	2.1
76	**450**	**2.3**	19.33	"	"	6900	19200	91	375	2.8
55	**620**	**1.7**	26.51	"	"	7800	21200	66	520	2.0
41.5	**820**	**1.3**	35.21	"	"	8700	23100	49.5	690	1.5
31	**1090**	**0.96**	47.50	"	"	10100	25700	37	910	1.15
53	**720**	**3.2**	27.36	**BK60-../DPE11LA4C**	146	5600	23200	64	590	3.9
43	**880**	**2.6**	33.78	"	"	6500	25200	52	730	3.2
38.5	**990**	**2.3**	37.80	"	"	7300	26500	46.5	820	2.8
32.5	**1170**	**1.95**	45.05	"	"	8200	28300	39	970	2.4
29	**1310**	**1.75**	50.40	"	"	9100	29800	35	1090	2.1
25	**1520**	**1.5**	58.95	"	"	9900	31500	30	1270	1.8
22	**1730**	**1.35**	65.95	"	"	10900	33000	26.5	1440	1.6
19	**2000**	**1.15**	78.13	"	"	11900	34000	22.5	1690	1.35
17	**2200**	**1.05**	87.41	"	"	12900	34000	20	1910	1.2
14.5	**2600**	**0.88**	101.2	"	"	13900	34000	17.5	2150	1.05
24	**1590**	**3.3**	61.60	**BK70-../DPE11LA4C**	225	11500	42800	28.5	1340	3.9
21	**1810**	**2.9**	70.23	"	"	12500	44800	25	1520	3.4
18.5	**2050**	**2.5**	79.89	"	"	14300	47600	22	1730	3.0
16	**2350**	**2.2**	90.96	"	"	15300	49900	19.5	1950	2.7
14.5	**2600**	**2.0**	103.5	"	"	17200	50000	17	2200	2.4
12.5	**3050**	**1.7**	120.2	"	"	18600	50000	14.5	2600	2.0
11	**3450**	**1.5**	136.7	"	"	20700	50000	13	2900	1.8
9.4	**4050**	**1.3**	154.4	"	"	21900	50000	11.5	3300	1.6
8.3	**4600**	**1.15**	175.7	"	"	24100	50000	10	3800	1.35
7.7	**4950**	**1.05**	190.4	**BK70Z-../DPE11LA4C**	251	24100	50000	9.2	4150	1.25
6.5	**5800**	**0.9**	226.2	"	"	24100	50000	7.7	4950	1.05
11.5	**3300**	**3.2**	131.6	**BK80-../DPE11LA4C**	340	24900	75000	13.5	2800	3.8
9.5	**4000**	**2.6**	153.1	"	"	27200	75000	11.5	3300	3.2
8.5	**4450**	**2.4**	171.5	"	"	30000	75000	10.5	3600	2.9
8.2	**4650**	**2.5**	177.6	**BK80Z-../DPE11LA4C**	382	30000	75000	9.8	3850	3.0
7.3	**5200**	**2.2**	198.9	"	"	30000	75000	8.8	4300	2.7
6.5	**5800**	**2.0**	226.1	"	"	30000	75000	7.7	4950	2.3
5.8	**6500**	**1.75**	253.3	"	"	30000	75000	6.9	5500	2.1
4.9	**7700**	**1.5**	300.6	"	"	30000	75000	5.8	6500	1.75
4.4	**8600**	**1.35**	336.7	"	"	30000	75000	5.2	7300	1.6
3.8	**10000**	**1.15**	389.0	"	"	30000	75000	4.5	8400	1.35
3.4	**11200**	**1.05**	435.7	"	"	30000	75000	4.0	9500	1.2
3.0	**12700**	**0.91**	499.5	"	"	30000	75000	3.5	10900	1.05
6.2	**6100**	**3.0**	234.6	**BK90Z-../DPE11LA4C**	647	49400	120000	7.5	5000	3.7
5.6	**6800**	**2.7**	262.5	"	"	49400	120000	6.7	5700	3.2
5.0	**7600**	**2.4**	295.6	"	"	49400	120000	5.9	6400	2.9
4.4	**8600**	**2.2**	330.7	"	"	49400	120000	5.3	7200	2.6
3.8	**10000**	**1.85**	389.1	"	"	49400	120000	4.5	8400	2.2
3.4	**11200**	**1.65**	435.3	"	"	49400	120000	4.0	9500	1.95
3.0	**12700**	**1.45**	499.2	"	"	49400	120000	3.5	10900	1.7
2.6	**14600**	**1.25**	558.5	"	"	49400	120000	3.2	11900	1.55
2.3	**16600**	**1.1**	637.7	"	"	49400	120000	2.8	13600	1.35
2.1	**18100**	**1.0**	713.5	"	"	49400	120000	2.5	15200	1.2
1.8	**19800**	**0.93**	821.0	**BK90G50-../DPE11LA4C**	664	49400	120000	2.2	16000	1.15
1.7	**21200**	**0.87**	882.3	"	"	49400	120000	2.0	17900	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

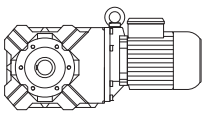
P = 5.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
400	**120**	**6.0**	3.67	**BK50-../DPE13LA4**	146	115	9400	480	100	7.2
280	**172**	**4.7**	5.26	"	"	130	10700	335	144	5.6
205	**235**	**3.5**	7.29	"	"	620	111000	245	197	4.1
151	**310**	**3.0**	9.73	"	"	5400	15400	181	260	3.6
146	**330**	**2.5**	10.00	"	"	1220	13200	176	270	3.0
105	**450**	**2.3**	13.95	"	"	6100	17400	127	370	2.8
97	**485**	**2.2**	15.19	"	"	6300	18000	116	405	2.6
82	**580**	**1.25**	17.92	"	"	4600	16800	99	480	1.5
76	**620**	**1.7**	19.33	"	"	6900	19200	92	510	2.1
56	**840**	**1.25**	26.51	"	"	7800	21200	67	700	1.5
41.5	**1130**	**0.93**	35.21	"	"	8700	23100	50	940	1.1
72	**720**	**3.1**	20.54	**BK60-../DPE13LA4**	158	4400	20600	86	610	3.7
60	**870**	**2.6**	24.45	"	"	4850	22000	72	720	3.2
54	**970**	**2.4**	27.36	"	"	5600	23200	65	800	2.9
43.5	**1200**	**1.9**	33.78	"	"	6500	25200	53	990	2.3
39	**1340**	**1.7**	37.80	"	"	7300	26500	47	1110	2.1
32.5	**1610**	**1.45**	45.05	"	"	8200	28300	39.5	1320	1.75
29	**1810**	**1.25**	50.40	"	"	9100	29800	35	1500	1.55
25	**2100**	**1.1**	58.95	"	"	9900	31500	30	1750	1.3
22.5	**2300**	**1.0**	65.95	"	"	10900	33000	27	1940	1.2
19	**2750**	**0.84**	78.13	"	"	11900	34000	23	2250	1.0
32.5	**1610**	**3.2**	45.59	**BK70-../DPE13LA4**	237	9000	37900	39	1340	3.8
27	**1940**	**2.7**	54.15	"	"	9900	40200	33	1590	3.3
24	**2150**	**2.4**	61.60	"	"	11500	42800	29	1810	2.9
21	**2500**	**2.1**	70.23	"	"	12500	44800	25.5	2050	2.5
18.5	**2800**	**1.85**	79.89	"	"	14300	47600	22.5	2300	2.3
16.5	**3150**	**1.65**	90.96	"	"	15300	49900	19.5	2650	1.95
14.5	**3600**	**1.45**	103.5	"	"	17200	50000	17.5	3000	1.75
12.5	**4200**	**1.25**	120.2	"	"	18600	50000	15	3500	1.5
11	**4750**	**1.1**	136.7	"	"	20700	50000	13	4000	1.3
9.5	**5500**	**0.95**	154.4	"	"	21900	50000	11.5	4550	1.15
8.4	**6200**	**0.84**	175.7	"	"	24100	50000	10.5	5000	1.05
16	**3250**	**3.2**	91.53	**BK80-../DPE13LA4**	351	18300	74200	19.5	2650	3.9
14.5	**3600**	**2.9**	102.5	"	"	20500	75000	17.5	3000	3.5
12.5	**4200**	**2.5**	117.5	"	"	22300	75000	15	3500	3.0
11.5	**4550**	**2.3**	131.6	"	"	24900	75000	13.5	3850	2.7
9.6	**5400**	**1.95**	153.1	"	"	27200	75000	11.5	4550	2.3
8.6	**6100**	**1.7**	171.5	"	"	30000	75000	10.5	5000	2.1
8.3	**6300**	**1.85**	177.6	**BK80Z-../DPE13LA4**	394	30000	75000	10	5200	2.2
7.4	**7000**	**1.65**	198.9	"	"	30000	75000	8.9	5900	1.95
6.5	**8000**	**1.45**	226.1	"	"	30000	75000	7.8	6700	1.7
5.8	**9000**	**1.3**	253.3	"	"	30000	75000	7.0	7500	1.55
4.9	**10700**	**1.05**	300.6	"	"	30000	75000	5.9	8900	1.3
4.4	**11900**	**0.97**	336.7	"	"	30000	75000	5.3	9900	1.15
3.8	**13800**	**0.83**	389.0	"	"	30000	75000	4.6	11400	1.0
9.8	**5300**	**3.2**	149.5	**BK90-../DPE13LA4**	603	45600	120000	12	4350	3.9
8.8	**5900**	**2.8**	167.2	"	"	49400	120000	11	4750	3.5
8.4	**6200**	**3.0**	174.7	**BK90Z-../DPE13LA4**	659	49400	120000	10.5	5000	3.7
7.5	**7000**	**2.6**	195.4	"	"	49400	120000	9.1	5700	3.2
6.3	**8300**	**2.2**	234.6	"	"	49400	120000	7.6	6900	2.7
5.6	**9300**	**2.0**	262.5	"	"	49400	120000	6.8	7700	2.4
5.0	**10500**	**1.75**	295.6	"	"	49400	120000	6.0	8700	2.1
4.5	**11600**	**1.6**	330.7	"	"	49400	120000	5.4	9700	1.9
3.8	**13800**	**1.35**	389.1	"	"	49400	120000	4.6	11400	1.6
3.4	**15400**	**1.2**	435.3	"	"	49400	120000	4.1	12800	1.45
3.0	**17500**	**1.05**	499.2	"	"	49400	120000	3.6	14500	1.3
2.7	**19400**	**0.95**	558.5	"	"	49400	120000	3.2	16400	1.15
2.3	**22800**	**0.81**	637.7	"	"	49400	120000	2.8	18700	0.99

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

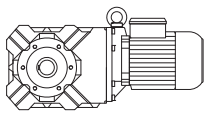
P = 7.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
400	**164**	**4.4**	3.67	**BK50-../DPE13XA4**	147	115	9400	480	137	5.2
280	**235**	**3.5**	5.26	"	"	130	10700	335	196	4.1
205	**320**	**2.5**	7.29	"	"	620	111000	245	265	3.1
151	**425**	**2.2**	9.73	"	"	5400	15400	181	355	2.6
146	**450**	**1.8**	10.00	"	"	1220	13200	176	370	2.2
105	**610**	**1.7**	13.95	"	"	6100	17400	127	500	2.1
97	**660**	**1.6**	15.19	"	"	6300	18000	116	550	1.9
82	**790**	**0.92**	17.92	"	"	4600	16800	99	650	1.1
76	**840**	**1.25**	19.33	"	"	6900	19200	92	700	1.5
56	**1150**	**0.91**	26.51	"	"	7800	21200	67	960	1.1
135	**530**	**3.2**	10.82	**BK60-../DPE13XA4**	159	3200	17000	163	435	3.9
118	**600**	**3.1**	12.38	"	"	3500	17400	143	500	3.8
106	**670**	**2.9**	13.85	"	"	3850	18000	128	550	3.6
102	**700**	**2.8**	14.41	"	"	3650	18600	123	580	3.3
91	**780**	**2.5**	16.05	"	"	4050	18800	110	650	3.0
80	**890**	**2.5**	18.36	"	"	4000	19900	96	740	3.0
72	**990**	**2.3**	20.54	"	"	4400	20600	86	830	2.7
60	**1190**	**1.95**	24.45	"	"	4850	22000	72	990	2.3
54	**1320**	**1.75**	27.36	"	"	5600	23200	65	1100	2.1
43.5	**1640**	**1.4**	33.78	"	"	6500	25200	53	1350	1.7
39	**1830**	**1.25**	37.80	"	"	7300	26500	47	1520	1.5
32.5	**2200**	**1.05**	45.05	"	"	8200	28300	39.5	1810	1.25
29	**2450**	**0.94**	50.40	"	"	9100	29800	35	2000	1.15
25	**2850**	**0.81**	58.95	"	"	9900	31500	30	2350	0.98
47.5	**1500**	**3.0**	30.90	**BK70-../DPE13XA4**	238	7500	33600	57	1250	3.6
42	**1700**	**2.8**	35.15	"	"	8000	35000	51	1400	3.4
36.5	**1960**	**2.5**	40.08	"	"	8300	36300	44	1620	3.0
32.5	**2200**	**2.3**	45.59	"	"	9000	37900	39	1830	2.8
27	**2650**	**1.95**	54.15	"	"	9900	40200	33	2150	2.4
24	**2950**	**1.75**	61.60	"	"	11500	42800	29	2450	2.1
21	**3400**	**1.55**	70.23	"	"	12500	44800	25.5	2800	1.85
18.5	**3850**	**1.35**	79.89	"	"	14300	47600	22.5	3150	1.65
16.5	**4300**	**1.2**	90.96	"	"	15300	49900	19.5	3650	1.4
14.5	**4900**	**1.05**	103.5	"	"	17200	50000	17.5	4050	1.3
12.5	**5700**	**0.91**	120.2	"	"	18600	50000	15	4750	1.1
11	**6500**	**0.8**	136.7	"	"	20700	50000	13	5500	0.95
24.5	**2900**	**3.2**	59.60	**BK80-../DPE13XA4**	352	15700	65500	30	2350	3.9
21	**3400**	**2.8**	70.72	"	"	16600	68700	25	2850	3.4
18.5	**3850**	**2.6**	79.22	"	"	17600	71300	22.5	3150	3.2
16	**4450**	**2.3**	91.53	"	"	18300	74200	19.5	3650	2.8
14.5	**4900**	**2.1**	102.5	"	"	20500	75000	17.5	4050	2.6
12.5	**5700**	**1.85**	117.5	"	"	22300	75000	15	4750	2.2
11.5	**6200**	**1.7**	131.6	"	"	24900	75000	13.5	5300	2.0
9.6	**7400**	**1.4**	153.1	"	"	27200	75000	11.5	6200	1.7
8.6	**8300**	**1.25**	171.5	"	"	30000	75000	10.5	6800	1.55
8.3	**8600**	**1.35**	177.6	**BK80Z-../DPE13XA4**	395	30000	75000	10	7100	1.6
7.4	**9600**	**1.2**	198.9	"	"	30000	75000	8.9	8000	1.45
6.5	**11000**	**1.05**	226.1	"	"	30000	75000	7.8	9100	1.25
5.8	**12300**	**0.93**	253.3	"	"	30000	75000	7.0	10200	1.15
12.5	**5700**	**2.9**	117.0	**BK90-../DPE13XA4**	604	39200	113000	15.5	4600	3.7
11.5	**6200**	**2.7**	130.9	"	"	42700	119400	13.5	5300	3.2
9.8	**7300**	**2.3**	149.5	"	"	45600	120000	12	5900	2.8
8.8	**8100**	**2.1**	167.2	"	"	49400	120000	11	6500	2.6
8.4	**8500**	**2.2**	174.7	**BK90Z-../DPE13XA4**	660	49400	120000	10.5	6800	2.7
7.5	**9500**	**1.95**	195.4	"	"	49400	120000	9.1	7800	2.4
6.3	**11300**	**1.65**	234.6	"	"	49400	120000	7.6	9400	1.95
5.6	**12700**	**1.45**	262.5	"	"	49400	120000	6.8	10500	1.75
5.0	**14300**	**1.3**	295.6	"	"	49400	120000	6.0	11900	1.55
4.5	**15900**	**1.15**	330.7	"	"	49400	120000	5.4	13200	1.4
3.8	**18800**	**0.98**	389.1	"	"	49400	120000	4.6	15500	1.2
3.4	**21000**	**0.88**	435.3	"	"	49400	120000	4.1	17400	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

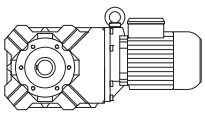
P = 9.5 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
405	**205**	**3.5**	3.67	**BK50-../DPE16LB4**	183	115	9400	485	172	4.2
280	**295**	**2.8**	5.26	"	"	130	10700	340	245	3.3
205	**405**	**2.0**	7.29	"	"	620	111000	245	340	2.4
152	**530**	**1.75**	9.73	"	"	5400	15400	182	445	2.1
147	**560**	**1.45**	10.00	"	"	1220	13200	177	470	1.75
106	**770**	**1.35**	13.95	"	"	6100	17400	127	640	1.65
97	**840**	**1.25**	15.19	"	"	6300	18000	117	690	1.5
77	**1060**	**0.99**	19.33	"	"	6900	19200	92	880	1.2
205	**440**	**3.3**	7.29	**BK60-../DPE16LB4**	195	2800	14900	245	370	4.0
136	**660**	**2.5**	10.82	"	"	3200	17000	164	550	3.0
119	**760**	**2.5**	12.38	"	"	3500	17400	143	630	3.0
107	**840**	**2.3**	13.85	"	"	3850	18000	128	700	2.8
103	**880**	**2.2**	14.41	"	"	3650	18600	123	730	2.6
92	**980**	**2.0**	16.05	"	"	4050	18800	111	810	2.4
81	**1120**	**1.95**	18.36	"	"	4000	19900	97	930	2.3
72	**1260**	**1.8**	20.54	"	"	4400	20600	87	1040	2.2
61	**1480**	**1.55**	24.45	"	"	4850	22000	73	1240	1.85
54	**1680**	**1.35**	27.36	"	"	5600	23200	65	1390	1.65
44	**2050**	**1.1**	33.78	"	"	6500	25200	53	1710	1.35
39	**2300**	**1.0**	37.80	"	"	7300	26500	47	1930	1.2
33	**2700**	**0.85**	45.05	"	"	8200	28300	39.5	2250	1.0
97	**930**	**3.3**	15.16	**BK70-../DPE16LB4**	278	5600	25800	117	770	4.0
86	**1050**	**3.3**	17.24	"	"	6500	29200	103	880	4.0
68	**1330**	**3.1**	21.88	"	"	6500	30200	81	1120	3.6
60	**1510**	**2.8**	24.89	"	"	7000	31500	72	1260	3.4
48	**1890**	**2.4**	30.90	"	"	7500	33600	58	1560	2.9
42	**2150**	**2.2**	35.15	"	"	8000	35000	51	1770	2.7
37	**2450**	**2.0**	40.08	"	"	8300	36300	44.5	2000	2.4
32.5	**2750**	**1.85**	45.59	"	"	9000	37900	39	2300	2.2
27.5	**3250**	**1.6**	54.15	"	"	9900	40200	33	2700	1.95
24	**3750**	**1.4**	61.60	"	"	11500	42800	29	3100	1.7
21	**4300**	**1.2**	70.23	"	"	12500	44800	25.5	3550	1.45
18.5	**4900**	**1.05**	79.89	"	"	14300	47600	22.5	4000	1.3
16.5	**5400**	**0.96**	90.96	"	"	15300	49900	19.5	4650	1.1
14.5	**6200**	**0.84**	103.5	"	"	17200	50000	17.5	5100	1.0
35.5	**2550**	**3.2**	41.78	**BK80-../DPE16LB4**	388	13500	58700	42.5	2100	3.9
31.5	**2850**	**3.0**	46.80	"	"	14300	60900	38	2350	3.7
28	**3200**	**2.8**	53.21	"	"	14800	63100	33.5	2700	3.3
25	**3600**	**2.6**	59.60	"	"	15700	65500	30	3000	3.1
21	**4300**	**2.2**	70.72	"	"	16600	68700	25.5	3550	2.7
19	**4750**	**2.1**	79.22	"	"	17600	71300	22.5	4000	2.5
16.5	**5400**	**1.95**	91.53	"	"	18300	74200	19.5	4650	2.2
14.5	**6200**	**1.7**	102.5	"	"	20500	75000	17.5	5100	2.1
13	**6900**	**1.5**	117.5	"	"	22300	75000	15.5	5800	1.8
11.5	**7800**	**1.35**	131.6	"	"	24900	75000	13.5	6700	1.55
9.7	**9300**	**1.15**	153.1	"	"	27200	75000	12	7500	1.4
8.6	**10500**	**1.0**	171.5	"	"	30000	75000	10.5	8600	1.2
8.3	**10900**	**1.05**	177.6	**BK80Z-../DPE16LB4**	431	30000	75000	10	9000	1.3
7.4	**12200**	**0.94**	198.9	"	"	30000	75000	8.9	10100	1.15
6.6	**13700**	**0.84**	226.1	"	"	30000	75000	7.9	11400	1.0
16.5	**5400**	**3.1**	91.19	**BK90-../DPE16LB4**	641	33300	101000	19.5	4650	3.6
14.5	**6200**	**2.7**	102.0	"	"	36600	107000	17.5	5100	3.3
13	**6900**	**2.4**	117.0	"	"	39200	113000	15.5	5800	2.9
11.5	**7800**	**2.2**	130.9	"	"	42700	119400	14	6400	2.6
9.9	**9100**	**1.85**	149.5	"	"	45600	120000	12	7500	2.2
8.8	**10300**	**1.65**	167.2	"	"	49400	120000	11	8200	2.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 9.5 kW



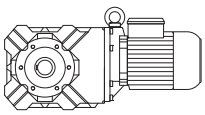
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
8.5	**10600**	**1.75**	174.7	**BK90Z-../DPE16LB4**	700	49400	120000	10.5	8600	2.2
7.6	**11900**	**1.55**	195.4	"	"	49400	120000	9.1	9900	1.85
6.3	**14400**	**1.3**	234.6	"	"	49400	120000	7.6	11900	1.55
5.6	**16200**	**1.15**	262.5	"	"	49400	120000	6.8	13300	1.4
5.0	**18100**	**1.0**	295.6	"	"	49400	120000	6.0	15100	1.25
4.5	**20100**	**0.92**	330.7	"	"	49400	120000	5.4	16800	1.1

P = 11 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
405	**235**	**3.1**	3.67	**BK50-../DPE16LB4**	183	115	9400	485	199	3.6
280	**345**	**2.4**	5.26	"	"	130	10700	340	280	2.9
205	**470**	**1.75**	7.29	"	"	620	111000	245	390	2.1
152	**620**	**1.5**	9.73	"	"	5400	15400	182	510	1.85
147	**650**	**1.25**	10.00	"	"	1220	13200	177	540	1.5
106	**890**	**1.2**	13.95	"	"	6100	17400	127	740	1.4
97	**970**	**1.1**	15.19	"	"	6300	18000	117	800	1.3
77	**1220**	**0.86**	19.33	"	"	6900	19200	92	1020	1.05
205	**510**	**2.9**	7.29	**BK60-../DPE16LB4**	195	2800	14900	245	425	3.4
136	**770**	**2.2**	10.82	"	"	3200	17000	164	640	2.6
119	**880**	**2.1**	12.38	"	"	3500	17400	143	730	2.6
107	**980**	**2.0**	13.85	"	"	3850	18000	128	820	2.4
103	**1010**	**1.9**	14.41	"	"	3650	18600	123	850	2.3
92	**1140**	**1.75**	16.05	"	"	4050	18800	111	940	2.1
81	**1290**	**1.7**	18.36	"	"	4000	19900	97	1080	2.0
72	**1450**	**1.55**	20.54	"	"	4400	20600	87	1200	1.9
61	**1720**	**1.35**	24.45	"	"	4850	22000	73	1430	1.6
54	**1940**	**1.2**	27.36	"	"	5600	23200	65	1610	1.45
44	**2350**	**0.98**	33.78	"	"	6500	25200	53	1980	1.15
39	**2650**	**0.87**	37.80	"	"	7300	26500	47	2200	1.05
108	**970**	**3.1**	13.70	**BK70-../DPE16LB4**	278	5400	24800	130	800	3.8
97	**1080**	**2.8**	15.16	"	"	5600	25800	117	890	3.4
86	**1220**	**2.9**	17.24	"	"	6500	29200	103	1010	3.5
68	**1540**	**2.6**	21.88	"	"	6500	30200	81	1290	3.2
60	**1750**	**2.4**	24.89	"	"	7000	31500	72	1450	2.9
48	**2150**	**2.1**	30.90	"	"	7500	33600	58	1810	2.5
42	**2500**	**1.9**	35.15	"	"	8000	35000	51	2050	2.3
37	**2800**	**1.75**	40.08	"	"	8300	36300	44.5	2350	2.1
32.5	**3200**	**1.6**	45.59	"	"	9000	37900	39	2650	1.95
27.5	**3800**	**1.35**	54.15	"	"	9900	40200	33	3150	1.65
24	**4350**	**1.2**	61.60	"	"	11500	42800	29	3600	1.45
21	**5000**	**1.05**	70.23	"	"	12500	44800	25.5	4100	1.25
18.5	**5600**	**0.93**	79.89	"	"	14300	47600	22.5	4650	1.1
16.5	**6300**	**0.83**	90.96	"	"	15300	49900	19.5	5300	0.98
43	**2400**	**3.3**	34.22	**BK80-../DPE16LB4**	388	12600	55400	52	2000	3.9
35.5	**2950**	**2.8**	41.78	"	"	13500	58700	42.5	2450	3.4
31.5	**3300**	**2.6**	46.80	"	"	14300	60900	38	2750	3.1
28	**3750**	**2.4**	53.21	"	"	14800	63100	33.5	3100	2.9
25	**4200**	**2.2**	59.60	"	"	15700	65500	30	3500	2.6
21	**5000**	**1.95**	70.72	"	"	16600	68700	25.5	4100	2.3
19	**5500**	**1.85**	79.22	"	"	17600	71300	22.5	4650	2.2
16.5	**6300**	**1.65**	91.53	"	"	18300	74200	19.5	5300	1.95
14.5	**7200**	**1.45**	102.5	"	"	20500	75000	17.5	6000	1.75
13	**8000**	**1.3**	117.5	"	"	22300	75000	15.5	6700	1.55
11.5	**9100**	**1.15**	131.6	"	"	24900	75000	13.5	7700	1.35
9.7	**10800**	**0.97**	153.1	"	"	27200	75000	12	8700	1.2
8.6	**12200**	**0.86**	171.5	"	"	30000	75000	10.5	10000	1.05

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 11 kW



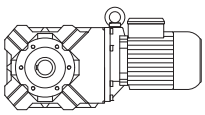
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
8.3	**12600**	**0.91**	177.6	**BK80Z-../DPE16LB4**	431	30000	75000	10	10500	1.1
7.4	**14100**	**0.82**	198.9	"	"	30000	75000	8.9	11800	0.97
19	**5500**	**3.1**	77.51	**BK90-../DPE16LB4**	641	30300	94400	23	4550	3.7
16.5	**6300**	**2.7**	91.19	"	"	33300	101000	19.5	5300	3.2
14.5	**7200**	**2.3**	102.0	"	"	36600	107000	17.5	6000	2.8
13	**8000**	**2.1**	117.0	"	"	39200	113000	15.5	6700	2.5
11.5	**9100**	**1.85**	130.9	"	"	42700	119400	14	7500	2.2
9.9	**10600**	**1.6**	149.5	"	"	45600	120000	12	8700	1.95
8.8	**11900**	**1.4**	167.2	"	"	49400	120000	11	9500	1.75
8.5	**12300**	**1.5**	174.7	**BK90Z-../DPE16LB4**	700	49400	120000	10.5	10000	1.85
7.6	**13800**	**1.35**	195.4	"	"	49400	120000	9.1	11500	1.6
6.3	**16600**	**1.1**	234.6	"	"	49400	120000	7.6	13800	1.35
5.6	**18700**	**0.99**	262.5	"	"	49400	120000	6.8	15400	1.2
5.0	**21000**	**0.88**	295.6	"	"	49400	120000	6.0	17500	1.05

P = 15 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
405	**325**	**2.2**	3.67	**BK50-../DPE16XB4**	193	115	9400	485	270	2.7
280	**470**	**1.75**	5.26	"	"	130	10700	340	385	2.1
205	**640**	**1.25**	7.29	"	"	620	111000	245	530	1.55
152	**840**	**1.1**	9.73	"	"	5400	15400	182	700	1.35
147	**890**	**0.91**	10.00	"	"	1220	13200	177	740	1.1
106	**1210**	**0.87**	13.95	"	"	6100	17400	127	1010	1.05
97	**1320**	**0.8**	15.19	"	"	6300	18000	117	1100	0.95
205	**690**	**2.1**	7.29	**BK60-../DPE16XB4**	205	2800	14900	245	580	2.5
136	**1050**	**1.6**	10.82	"	"	3200	17000	164	870	1.95
119	**1200**	**1.55**	12.38	"	"	3500	17400	143	1000	1.9
107	**1330**	**1.5**	13.85	"	"	3850	18000	128	1110	1.8
103	**1390**	**1.4**	14.41	"	"	3650	18600	123	1160	1.65
92	**1550**	**1.25**	16.05	"	"	4050	18800	111	1290	1.55
81	**1760**	**1.25**	18.36	"	"	4000	19900	97	1470	1.5
72	**1980**	**1.15**	20.54	"	"	4400	20600	87	1640	1.35
61	**2300**	**1.0**	24.45	"	"	4850	22000	73	1960	1.15
54	**2650**	**0.87**	27.36	"	"	5600	23200	65	2200	1.05
108	**1320**	**2.3**	13.70	**BK70-../DPE16XB4**	288	5400	24800	130	1100	2.8
97	**1470**	**2.1**	15.16	"	"	5600	25800	117	1220	2.5
86	**1660**	**2.1**	17.24	"	"	6500	29200	103	1390	2.5
68	**2100**	**1.95**	21.88	"	"	6500	30200	81	1760	2.3
60	**2350**	**1.8**	24.89	"	"	7000	31500	72	1980	2.2
48	**2950**	**1.55**	30.90	"	"	7500	33600	58	2450	1.85
42	**3400**	**1.4**	35.15	"	"	8000	35000	51	2800	1.7
37	**3850**	**1.25**	40.08	"	"	8300	36300	44.5	3200	1.5
32.5	**4400**	**1.15**	45.59	"	"	9000	37900	39	3650	1.4
27.5	**5200**	**1.0**	54.15	"	"	9900	40200	33	4300	1.2
24	**5900**	**0.88**	61.60	"	"	11500	42800	29	4900	1.05
48.5	**2950**	**2.5**	30.56	**BK80-../DPE16XB4**	398	11900	53400	58	2450	3.1
43	**3300**	**2.4**	34.22	"	"	12600	55400	52	2750	2.8
35.5	**4000**	**2.1**	41.78	"	"	13500	58700	42.5	3350	2.5
31.5	**4500**	**1.9**	46.80	"	"	14300	60900	38	3750	2.3
28	**5100**	**1.75**	53.21	"	"	14800	63100	33.5	4250	2.1
25	**5700**	**1.6**	59.60	"	"	15700	65500	30	4750	1.95
21	**6800**	**1.4**	70.72	"	"	16600	68700	25.5	5600	1.7

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 15 kW



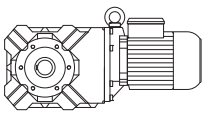
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
19	**7500**	**1.35**	79.22	**BK80-../DPE16XB4**	398	17600	71300	22.5	6300	1.6
16.5	**8600**	**1.2**	91.53	"	"	18300	74200	19.5	7300	1.4
14.5	**9800**	**1.05**	102.5	"	"	20500	75000	17.5	8100	1.3
13	**11000**	**0.95**	117.5	"	"	22300	75000	15.5	9200	1.15
11.5	**12400**	**0.85**	131.6	"	"	24900	75000	13.5	10600	0.99
27	**5300**	**3.0**	54.98	**BK90-../DPE16XB4**	651	24000	81000	32.5	4400	3.7
24	**5900**	**2.8**	61.52	"	"	25500	84600	29	4900	3.4
21.5	**6600**	**2.5**	69.27	"	"	27200	88900	26	5500	3.1
19	**7500**	**2.2**	77.51	"	"	30300	94400	23	6200	2.7
16.5	**8600**	**1.95**	91.19	"	"	33300	101000	19.5	7300	2.3
14.5	**9800**	**1.7**	102.0	"	"	36600	107000	17.5	8100	2.1
13	**11000**	**1.55**	117.0	"	"	39200	113000	15.5	9200	1.85
11.5	**12400**	**1.35**	130.9	"	"	42700	119400	14	10200	1.65
9.9	**14400**	**1.15**	149.5	"	"	45600	120000	12	11900	1.4
8.8	**16200**	**1.05**	167.2	"	"	49400	120000	11	13000	1.3
8.5	**16800**	**1.1**	174.7	**BK90Z-../DPE16XB4**	710	49400	120000	10.5	13600	1.35
7.6	**18800**	**0.98**	195.4	"	"	49400	120000	9.1	15700	1.2
6.3	**22700**	**0.81**	234.6	"	"	49400	120000	7.6	18800	0.98

P = 18.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
405	**400**	**1.8**	3.67	**BK50-../DPE18LB4**	245	115	9400	485	335	2.1
280	**580**	**1.4**	5.26	"	"	130	10700	340	475	1.7
205	**790**	**1.05**	7.29	"	"	620	111000	245	660	1.25
205	**860**	**1.7**	7.29	**BK60-../DPE18LB4**	252	2800	14900	245	720	2.0
136	**1290**	**1.3**	10.82	"	"	3200	17000	164	1070	1.55
103	**1710**	**1.15**	14.41	"	"	3650	18600	123	1430	1.35
81	**2150**	**1.0**	18.36	"	"	4000	19900	97	1820	1.2
72	**2450**	**0.92**	20.54	"	"	4400	20600	87	2000	1.15
61	**2850**	**0.81**	24.45	"	"	4850	22000	73	2400	0.96
97	**1820**	**1.7**	15.16	**BK70-../DPE18LB4**	329	5600	25800	117	1510	2.0
86	**2050**	**1.7**	17.24	"	"	6500	29200	103	1710	2.0
68	**2550**	**1.6**	21.88	"	"	6500	30200	81	2150	1.9
60	**2900**	**1.45**	24.89	"	"	7000	31500	72	2450	1.75
48	**3650**	**1.25**	30.90	"	"	7500	33600	58	3000	1.5
42	**4200**	**1.15**	35.15	"	"	8000	35000	51	3450	1.35
37	**4750**	**1.05**	40.08	"	"	8300	36300	44.5	3950	1.25
32.5	**5400**	**0.95**	45.59	"	"	9000	37900	39	4500	1.15
27.5	**6400**	**0.81**	54.15	"	"	9900	40200	33	5300	0.98
103	**1710**	**2.5**	14.34	**BK80-../DPE18LB4**	443	7900	36200	124	1420	3.0
93	**1890**	**2.5**	15.88	"	"	8400	38600	112	1570	3.0
83	**2100**	**2.5**	17.79	"	"	9400	42100	100	1760	3.0
76	**2300**	**2.5**	19.35	"	"	9500	44000	92	1920	3.0
67	**2600**	**2.6**	22.19	"	"	10500	48500	80	2200	3.1
60	**2900**	**2.4**	24.85	"	"	11200	50400	72	2450	2.9
48.5	**3600**	**2.1**	30.56	"	"	11900	53400	58	3000	2.5
43	**4100**	**1.9**	34.22	"	"	12600	55400	52	3350	2.3
35.5	**4950**	**1.65**	41.78	"	"	13500	58700	42.5	4150	2.0
31.5	**5600**	**1.55**	46.80	"	"	14300	60900	38	4600	1.85
28	**6300**	**1.4**	53.21	"	"	14800	63100	33.5	5200	1.7
25	**7000**	**1.3**	59.60	"	"	15700	65500	30	5800	1.6

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 18.5 kW



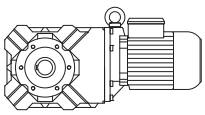
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
21	**8400**	**1.15**	70.72	**BK80-../DPE18LB4**	443	16600	68700	25.5	6900	1.4
19	**9200**	**1.1**	79.22	"	"	17600	71300	22.5	7800	1.3
16.5	**10700**	**0.97**	91.53	"	"	18300	74200	19.5	9000	1.15
14.5	**12100**	**0.87**	102.5	"	"	20500	75000	17.5	10000	1.05
36	**4900**	**3.0**	40.94	**BK90-../DPE18LB4**	698	21400	73100	43.5	4050	3.7
32.5	**5400**	**2.9**	45.80	"	"	22700	76300	39	4500	3.4
27	**6500**	**2.5**	54.98	"	"	24000	81000	32.5	5400	3.0
24	**7300**	**2.3**	61.52	"	"	25500	84600	29	6000	2.8
21.5	**8200**	**2.0**	69.27	"	"	27200	88900	26	6700	2.5
19	**9200**	**1.85**	77.51	"	"	30300	94400	23	7600	2.2
16.5	**10700**	**1.55**	91.19	"	"	33300	101000	19.5	9000	1.85
14.5	**12100**	**1.4**	102.0	"	"	36600	107000	17.5	10000	1.7
13	**13500**	**1.25**	117.0	"	"	39200	113000	15.5	11300	1.5
11.5	**15300**	**1.1**	130.9	"	"	42700	119400	14	12600	1.35
9.9	**17800**	**0.94**	149.5	"	"	45600	120000	12	14700	1.15
8.8	**20000**	**0.84**	167.2	"	"	49400	120000	11	16000	1.05
8.5	**20700**	**0.89**	174.7	**BK90Z-../DPE18LB4**	751	49400	120000	10.5	16800	1.1
7.6	**23200**	**0.8**	195.4	"	"	49400	120000	9.1	19400	0.95

P = 22 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
405	**475**	**1.5**	3.67	**BK50-../DPE18XB4**	263	115	9400	485	395	1.8
280	**690**	**1.2**	5.26	"	"	130	10700	340	560	1.45
205	**940**	**0.86**	7.29	"	"	620	111000	245	780	1.05
205	**1020**	**1.45**	7.29	**BK60-../DPE18XB4**	270	2800	14900	245	850	1.7
136	**1540**	**1.1**	10.82	"	"	3200	17000	164	1280	1.3
103	**2000**	**0.96**	14.41	"	"	3650	18600	123	1700	1.15
81	**2550**	**0.86**	18.36	"	"	4000	19900	97	2150	1.0
97	**2150**	**1.4**	15.16	**BK70-../DPE18XB4**	347	5600	25800	117	1790	1.7
86	**2400**	**1.45**	17.24	"	"	6500	29200	103	2000	1.75
68	**3050**	**1.35**	21.88	"	"	6500	30200	81	2550	1.6
60	**3500**	**1.2**	24.89	"	"	7000	31500	72	2900	1.45
48	**4350**	**1.05**	30.90	"	"	7500	33600	58	3600	1.25
42	**5000**	**0.95**	35.15	"	"	8000	35000	51	4100	1.15
37	**5600**	**0.87**	40.08	"	"	8300	36300	44.5	4700	1.05
32.5	**6400**	**0.8**	45.59	"	"	9000	37900	39	5300	0.97
103	**2000**	**2.1**	14.34	**BK80-../DPE18XB4**	461	7900	36200	124	1690	2.5
93	**2250**	**2.1**	15.88	"	"	8400	38600	112	1870	2.6
83	**2500**	**2.1**	17.79	"	"	9400	42100	100	2100	2.5
76	**2750**	**2.1**	19.35	"	"	9500	44000	92	2250	2.6
67	**3100**	**2.2**	22.19	"	"	10500	48500	80	2600	2.6
60	**3500**	**2.0**	24.85	"	"	11200	50400	72	2900	2.4
48.5	**4300**	**1.75**	30.56	"	"	11900	53400	58	3600	2.1
43	**4850**	**1.6**	34.22	"	"	12600	55400	52	4000	1.95
35.5	**5900**	**1.4**	41.78	"	"	13500	58700	42.5	4900	1.7
31.5	**6600**	**1.3**	46.80	"	"	14300	60900	38	5500	1.55
28	**7500**	**1.2**	53.21	"	"	14800	63100	33.5	6200	1.45
25	**8400**	**1.1**	59.60	"	"	15700	65500	30	7000	1.3
21	**10000**	**0.96**	70.72	"	"	16600	68700	25.5	8200	1.15
19	**11000**	**0.91**	79.22	"	"	17600	71300	22.5	9300	1.1
16.5	**12700**	**0.82**	91.53	"	"	18300	74200	19.5	10700	0.97

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

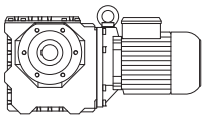
P = 22 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
48.5	**4300**	**3.1**	30.47	**BK90-../DPE18XB4**	716	19100	65900	59	3550	3.8
43.5	**4800**	**2.9**	34.09	"	"	20300	68800	52	4000	3.5
36	**5800**	**2.5**	40.94	"	"	21400	73100	43.5	4800	3.1
32.5	**6400**	**2.4**	45.80	"	"	22700	76300	39	5300	2.9
27	**7700**	**2.1**	54.98	"	"	24000	81000	32.5	6400	2.5
24	**8700**	**1.95**	61.52	"	"	25500	84600	29	7200	2.3
21.5	**9700**	**1.75**	69.27	"	"	27200	88900	26	8000	2.1
19	**11000**	**1.55**	77.51	"	"	30300	94400	23	9100	1.85
16.5	**12700**	**1.3**	91.19	"	"	33300	101000	19.5	10700	1.55
14.5	**14400**	**1.15**	102.0	"	"	36600	107000	17.5	12000	1.4
13	**16100**	**1.05**	117.0	"	"	39200	113000	15.5	13500	1.25
11.5	**18200**	**0.92**	130.9	"	"	42700	119400	14	15000	1.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

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Page

BS-series worm-geared motors 179-196
Selection

Description of worm-geared units
- Sizes
- Efficiency
- Bauer service factors (f_B) for worm-geared motors
- Continuous operation without switching frequency Z ≤1/h
- Switching duty
- Ambient temperature
- Bauer service factor
- Explanation of shock classification
- Key to abbreviations
- Selection tables, worm-geared motors

Sizes

Bauer BS-series worm-geared motors are normally supplied in eight frame sizes and with torques of 25 to 1,000 Nm. Higher torques are available on request. The gear unit is accommodated in a sturdy cast housing.

Efficiency

The efficiency of worm-geared motors depends on numerous factors, including lubrication, extent of wear, temperature and vibration. Calculated efficiency, therefore, is merely a guideline value. Please consult BAUER and state the boundary conditions if efficiency or self-locking capability are important factors for your application.

Bauer service factors (f_B) for worm-geared motors

Worm gears transmit torque by sliding friction only, which means that losses and temperature are inevitably higher than with helical-gear arrangements.
Of the numerous factors influencing the total loading of a worm-gear unit, the most important include:

- Mean torque (rated torque)
- Daily operating hours
- Severity of torque peaks (shock classification)
- Frequency of torque peaks (switching duty)
- Ambient temperature

These factors can be represented in a simplified and practical manner by **service factors**. The tables and explanations below attempt to provide an objective description of the **shock classification**, rather than a classification of the driven machinery. Experience has shown that, in addition to the torque shocks caused by the driven machinery (M_x/M_N), above all the power transmission components (clutches, chains etc.) plus the mass ratios play a decisive role in this.

See Bauer special imprint SD32 for more information.

Continuous operation without switching frequency Z ≤1/h

Factor f_1 for shock classification and operating time

Shock classification	Operating hours per day t_d ≤10 min	≤1 h	>1 h	>4 h	>8 h	>16 h
			≤4 h	≤8 h	≤16 h	≤24 h
I	0,7	0,8	0,9	1,0	1,25	1,4
II	0,9	1,0	1,12	1,25	1,6	1,8
III	1,25	1,4	1,6	1,8	2,2	2,5

Switching duty

Factor f_2 or shock classification and switching frequency

Switching frequency in single- shift operation t_d ≤8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	1,25	1,4	1,6
II	1,6	1,8	2,0
III	1,8	2,0	2,2

Switching frequency in multiple- shift operation t_d >8 h/d

Shock classification	1 <Z ≤100	100 <Z ≤1000	1000 <Z
I	1,4	1,6	1,8
II	1,8	2,0	2,2
III	2,0	2,2	2,5

Ambient temperature

Factor f_3 for increased ambient temperature

AT	-10°C .. +25°C	>25°C	>30°C	>35°C	>40°C	>45°C	>50°C	>55°C
	no Factor	1,1	1,2	1,3	1,4	1,5	1,6	Enquiry

Bauer service factor

Bauer service factor f_B = maximum value f_1, f_2, f_3 (at daily operating hours > 1h)

For example: Shock classification II for Z = 100 switching operations per hour and multiple-shift operation yields a service factor $f_B = f_2 = 1,8$

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Explanation of shock classification

Shock classification I:
Uniform without shock loads. All the following requirements must be satisfied:
- FI ≤1,3
- M_x/M_N ≤1,0
- Shock-absorbing power transmission components (e.g. highly resilient, zero-play coupling, φ N ≥5°)

Shock classification II:
Moderate shock loads. At least one of the following conditions applies:
- 1,3 <FI ≤2
- 1 ≤M_x/M_N ≤1,4
- Shock-neutral power transmission components (e.g. gear wheels, zero- playrigid coupling or resilient coupling with φ N <5 °)

Shock classification III:
Heavy shock loads. At least one of the following conditions applies:
- FI >2
- 1,4 <M_x/M_N ≤2,0
- Shock-amplifying power transmission components (e.g. coupling with play or chain drive)

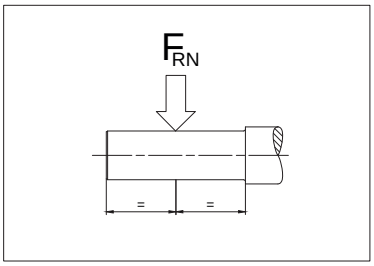
Key to abbreviations

Z	Switching duty number of switching operations per hour
t_d	Daily operating time in hours (h/d)
FI	Factor of inertia FI = $(J_{ext} + J_{rot})/J_{rot}$
J_{ext}	Mass moment of inertia of the machine to be driven, in relation to the motor's rotor shaft (kgm^2)
J_{rot}	Mass moment of inertia of the motor rotor (kgm^2)
M_x	Highest impact torque above the static torque which can occur during normal operation or in emergency situations
M_N	Required static load torque for the application
M_x/M_N	Relative torque - Factor
φ_N	Torsional offset of the resilient coupling under rated torque
UT	Ambient temperature (°C)

Selection tables, worm-geared motors

Key to abbreviations

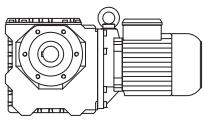
P	Rated output
n_2	Rated speed of the output shaft
i	Gear reduction ratio
M_2	Rated torque at the output shaft
f_B	Bauer Service factor
F_{RN}	Maximum permissible radial force with standard solid shaft (Code -.1 und -.2)



Use the selection tables to determine the size of geared motor required. The codes clearly define the Type of gear unit and output shaft (see chapter 13 "dimensional drawings worm-geared motors").

Motor power overload protection
Motor-power ratings, particularly in conjunction with four-stage and multi-stage gear units, are more than ample in some instances. Consequently, and in much the same way as with low-power motors, rated current is not a measure of gear loading and cannot be used to protect the gear unit against overloading. It is advisable to provide gears at risk from excessive load or blockage with a protective mechanism (e. g., slip clutch, slip hub, shear pin or an alternative).

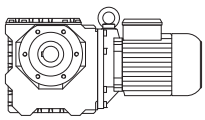
P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
300	**3.35**	**4.5**	4.60	**BS02-../DPE05LA4**	5.3	1000	-	365	2.75	5.5
260	**3.85**	**5.2**	5.40	"	"	1000	-	310	3.25	6.2
205	**4.8**	**5.2**	6.75	"	"	1000	-	250	3.9	6.4
168	**5.7**	**4.4**	8.25	"	"	1100	-	205	4.65	5.4
130	**7.2**	**3.5**	10.67	"	"	1250	-	157	5.9	4.2
103	**8.6**	**2.9**	13.50	"	"	1250	-	124	7.2	3.5
77	**11**	**2.3**	18.00	"	"	1250	-	93	9.1	2.7
63	**12.7**	**1.95**	22.00	"	"	1250	-	76	10.5	2.4
52	**13.8**	**1.8**	27.00	"	"	1250	-	62	11.6	2.2
42	**16.3**	**1.55**	33.00	"	"	1250	-	51	13.4	1.85
32.5	**21.5**	**1.1**	43.00	"	"	1250	-	39	18.2	1.3
26	**25**	**0.88**	54.00	"	"	1250	-	31	21	1.05
42	**16.6**	**3.3**	33.00	**BS03-../DPE05LA4**	5.4	1950	-	51	13.7	4.0
35.5	**20.5**	**2.7**	39.00	"	"	1950	-	43	17	3.2
28	**23.5**	**2.3**	50.00	"	"	1950	-	33.5	19.8	2.8
22.5	**26.5**	**1.8**	62.00	"	"	1950	-	27	22	2.2
18.5	**31.5**	**1.25**	75.00	"	"	1950	-	22.5	25.5	1.55
77	**10.5**	**3.2**	18.00	**BS04-../DPE05LA4**	5.8	1950	-	93	8.7	3.9
66	**13.1**	**2.8**	20.96	"	"	2100	-	80	10.8	3.4
57	**15.2**	**2.2**	24.25	"	"	2250	-	69	12.6	2.7
53	**15.3**	**2.5**	26.21	"	"	2250	-	64	12.7	3.0
44	**18.2**	**2.1**	31.50	"	"	2250	-	54	14.8	2.6
36	**21.5**	**1.7**	38.42	"	"	2250	-	43.5	18.1	2.0
29	**26.5**	**1.45**	47.86	"	"	2250	-	35	22	1.75
22	**32.5**	**1.1**	64.06	"	"	2250	-	26.5	27	1.35
19.5	**38.5**	**0.99**	71.18	"	"	2250	-	23.5	32	1.2
18	**38.5**	**0.99**	77.00	"	"	2250	-	22	31.5	1.2
15	**45**	**0.84**	93.92	"	"	2250	-	18	37.5	1.0
28.5	**28.5**	**3.1**	48.60	**BS06-../DPE05LA4**	10	3500	-	34.5	23.5	3.7
24	**33.5**	**2.7**	58.15	"	"	3500	-	29	28	3.3
22	**35**	**2.3**	64.06	"	"	3500	-	26.5	29	2.8
19.5	**41.5**	**2.3**	71.18	"	"	3500	-	23.5	34.5	2.7
18	**42.5**	**2.0**	77.00	"	"	3500	-	22	34.5	2.5
15.5	**51**	**1.9**	90.00	"	"	3500	-	19	42	2.3
13.5	**58**	**1.7**	103.1	"	"	3500	-	16.5	47.5	2.1
12	**62**	**1.5**	118.8	"	"	3500	-	14.5	51	1.85
11	**69**	**1.5**	129.0	"	"	3500	-	13	59	1.75
9.5	**78**	**1.35**	146.8	"	"	3500	-	11.5	64	1.65
8.0	**85**	**1.15**	174.0	"	"	3500	-	9.6	71	1.4
6.3	**107**	**0.92**	220.0	"	"	3500	-	7.6	88	1.1
5.5	**120**	**0.83**	252.0	"	"	3500	-	6.7	99	1.0
16.5	**51**	**2.9**	84.36	**BS10-../DPE06LA4**	23	5300	-	20	42	3.6
13.5	**54**	**3.0**	103.4	"	"	5600	-	16.5	44	3.6
12	**70**	**1.75**	119.6	"	"	6000	-	14	60	2.0
11	**66**	**2.5**	130.3	"	"	6000	-	13	56	2.9
9.1	**80**	**2.1**	152.7	"	"	6000	-	11	66	2.5
7.4	**99**	**1.7**	188.6	"	"	6000	-	8.9	82	2.1
6.4	**114**	**1.6**	216.6	"	"	6000	-	7.8	94	1.9
5.5	**133**	**1.35**	254.0	**BS10Z-../DPE06LA4**	24	6000	-	6.6	111	1.6
4.6	**154**	**1.25**	302.5	"	"	6000	-	5.6	126	1.5
3.9	**182**	**1.05**	360.3	"	"	6000	-	4.7	151	1.25
3.2	**215**	**0.88**	432.4	"	"	6000	-	3.9	179	1.05
1.5	**160***	**1.0**	969.9	**BS10G06-../DPE06LA4**	28	6000	-	1.8	160	1.0
1.2	**160***	**1.0**	1166	"	"	6000	-	1.5	160	1.0
1.1	**160***	**1.0**	1342	"	"	6000	-	1.3	160	1.0
0.95	**160***	**1.0**	1528	"	"	6000	-	1.1	160	1.0
0.85	**160***	**1.0**	1668	"	"	6000	-	1.1	160	1.0
0.75	**160***	**1.0**	1963	"	"	6000	-	0.9	160	1.0
0.6	**160***	**1.0**	2348	"	"	6000	-	0.75	160	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.12 kW



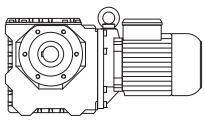
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
0.55	**160***	**1.0**	2635	**BS10G06-../DPE06LA4**	"	6000	-	0.65	160	1.0
0.48	**160***	**1.0**	2875	"	"	6000	-	0.6	160	1.0
0.42	**160***	**1.0**	3332	"	"	6000	-	0.55	160	1.0
0.38	**160***	**1.0**	3635	"	"	6000	-	0.46	160	1.0
0.34	**160***	**1.0**	4163	"	"	6000	-	0.41	160	1.0
0.29	**160***	**1.0**	4776	"	"	6000	-	0.35	160	1.0
0.27	**160***	**1.0**	5209	"	"	6000	-	0.33	160	1.0
0.23	**164***	**1.0**	6019	"	"	6000	-	0.28	164	1.0
0.22	**164***	**1.0**	6565	"	"	6000	-	0.26	164	1.0
0.19	**164***	**1.0**	7471	"	"	6000	-	0.23	164	1.0
0.16	**164***	**1.0**	8703	"	"	6000	-	0.2	164	1.0
8.7	**86**	**3.2**	159.4	**BS20-../DPE06LA4**	34	8000	-	10.5	72	3.8
7.6	**99**	**2.8**	183.0	"	"	8000	-	9.2	82	3.4
6.2	**118**	**2.5**	225.6	"	"	8000	-	7.5	97	3.0
5.4	**135**	**2.2**	257.8	**BS20Z-../DPE06LA4**	35	8000	-	6.5	112	2.6
4.6	**156**	**1.9**	300.1	"	"	8000	-	5.6	128	2.3
3.9	**182**	**1.75**	359.9	"	"	8000	-	4.7	151	2.1
3.3	**210**	**1.55**	430.8	"	"	8000	-	3.9	179	1.85
2.6	**240**	**1.5**	539.7	"	"	8000	-	3.1	200	1.85
2.3	**265**	**1.25**	619.2	"	"	8000	-	2.7	225	1.45
1.9	**325**	**0.95**	763.4	"	"	8000	-	2.2	280	1.1
1.7	**270***	**1.0**	831.7	**BS20G06-../DPE06LA4**	38	8000	-	2.1	270	1.0
1.4	**270***	**1.0**	1000	"	"	8000	-	1.7	270	1.0
1.1	**270***	**1.0**	1311	"	"	8000	-	1.3	270	1.0
0.9	**270***	**1.0**	1543	"	"	8000	-	1.1	270	1.0
0.85	**270***	**1.0**	1683	"	"	8000	-	1.0	270	1.0
0.7	**270***	**1.0**	2014	"	"	8000	-	0.85	270	1.0
0.6	**270***	**1.0**	2465	"	"	8000	-	0.7	270	1.0
0.49	**270***	**1.0**	2857	"	"	8000	-	0.6	270	1.0
0.45	**270***	**1.0**	3117	"	"	8000	-	0.55	270	1.0
0.39	**270***	**1.0**	3570	"	"	8000	-	0.47	270	1.0
0.34	**270***	**1.0**	4096	"	"	8000	-	0.41	270	1.0
0.29	**270***	**1.0**	4910	"	"	8000	-	0.35	270	1.0
0.24	**270***	**1.0**	5880	"	"	8000	-	0.29	270	1.0
0.19	**275***	**1.0**	7363	"	"	8000	-	0.23	275	1.0
0.18	**275***	**1.0**	8031	"	"	8000	-	0.21	275	1.0
0.15	**280***	**1.0**	9220	"	"	8000	-	0.19	280	1.0
3.9	**215**	**1.85**	359.6	**BS30Z-../DPE06LA4**	54	10000	-	4.7	180	2.2
3.6	**205**	**2.9**	390.2	"	"	10000	-	4.3	173	3.4
3.1	**235**	**2.6**	457.3	"	"	10000	-	3.7	198	3.0
2.6	**280**	**2.1**	539.3	"	"	10000	-	3.1	235	2.6
2.2	**310**	**1.85**	651.0	"	"	10000	-	2.6	260	2.2
1.8	**365**	**1.3**	804.1	"	"	10000	-	2.1	315	1.5
1.5	**435**	**1.05**	932.0	"	"	10000	-	1.8	360	1.25
1.4	**560**	**0.88**	1022	**BS30G06-../DPE06LA4**	56	10000	-	1.7	465	1.05
1.2	**490***	**1.0**	1176	"	"	10000	-	1.5	490	1.0
0.95	**490***	**1.0**	1461	"	"	10000	-	1.2	490	1.0
0.9	**490***	**1.0**	1576	"	"	10000	-	1.1	490	1.0
0.75	**490***	**1.0**	1886	"	"	10000	-	0.9	490	1.0
0.6	**490***	**1.0**	2308	"	"	10000	-	0.75	490	1.0
0.55	**490***	**1.0**	2518	"	"	10000	-	0.7	490	1.0
0.48	**490***	**1.0**	2919	"	"	10000	-	0.6	490	1.0
0.42	**490***	**1.0**	3344	"	"	10000	-	0.5	490	1.0
0.38	**490***	**1.0**	3647	"	"	10000	-	0.46	490	1.0
0.33	**490***	**1.0**	4184	"	"	10000	-	0.4	490	1.0
0.29	**510***	**1.0**	4905	"	"	10000	-	0.35	510	1.0
0.24	**520***	**1.0**	5783	"	"	10000	-	0.29	520	1.0
0.22	**520***	**1.0**	6308	"	"	10000	-	0.27	520	1.0
0.2	**520***	**1.0**	7179	"	"	10000	-	0.24	520	1.0
0.17	**520***	**1.0**	8362	"	"	10000	-	0.2	520	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

BS-series worm-geared motors

Selection - worm-geared motors

P = 0.12 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
2.3	**300**	**3.0**	612.1	**BS40Z-../DPE06LA4**	68	15000	-	2.8	245	3.7
1.9	**360**	**2.1**	736.5	"	"	15000	-	2.3	295	2.6
1.6	**420**	**1.75**	908.2	"	"	15000	-	1.9	355	2.1
1.5	**530**	**1.65**	965.5	**BS40G10-../DPE06LA4**	73	15000	-	1.8	445	2.0
1.2	**660**	**1.35**	1180	"	"	15000	-	1.5	530	1.65
0.95	**840**	**1.05**	1499	"	"	15000	-	1.2	660	1.35
0.8	**880***	**1.0**	1785	"	"	15000	-	0.95	880	1.0
0.65	**880***	**1.0**	2126	"	"	15000	-	0.8	880	1.0
0.6	**880***	**1.0**	2304	"	"	15000	-	0.75	880	1.0
0.55	**880***	**1.0**	2552	"	"	15000	-	0.7	880	1.0
0.48	**880***	**1.0**	2902	"	"	15000	-	0.6	880	1.0
0.43	**880***	**1.0**	3215	"	"	15000	-	0.55	880	1.0
0.37	**880***	**1.0**	3769	"	"	15000	-	0.45	880	1.0
0.33	**880***	**1.0**	4201	"	"	15000	-	0.4	880	1.0
0.3	**880***	**1.0**	4655	"	"	15000	-	0.36	880	1.0
0.26	**900***	**1.0**	5498	"	"	15000	-	0.31	900	1.0
0.23	**950***	**1.0**	6214	"	"	15000	-	0.27	950	1.0
0.21	**950***	**1.0**	6885	"	"	15000	-	0.25	950	1.0
0.18	**950***	**1.0**	7905	"	"	15000	-	0.22	950	1.0

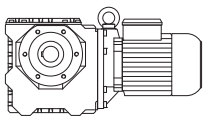
P = 0.18 kW

9

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
300	**5.0**	**3.0**	4.60	**BS02-../DPE07LA4**	9.3	1000	-	365	4.1	3.7
260	**5.8**	**3.4**	5.40	"	"	1000	-	310	4.85	4.1
205	**7.2**	**3.5**	6.75	"	"	1000	-	250	5.9	4.2
168	**8.5**	**2.9**	8.25	"	"	1100	-	205	7.0	3.6
130	**10.8**	**2.3**	10.67	"	"	1250	-	157	8.9	2.8
103	**13**	**1.9**	13.50	"	"	1250	-	124	10.8	2.3
77	**16.5**	**1.5**	18.00	"	"	1250	-	93	13.6	1.85
63	**19.1**	**1.3**	22.00	"	"	1250	-	76	15.8	1.6
52	**20.5**	**1.2**	27.00	"	"	1250	-	62	17.4	1.45
42	**24.5**	**1.0**	33.00	"	"	1250	-	51	20	1.25
73	**17.8**	**3.1**	19.00	**BS03-../DPE07LA4**	9.4	1950	-	88	14.8	3.7
56	**21**	**2.6**	25.00	"	"	1950	-	67	17.7	3.1
42	**24.5**	**2.2**	33.00	"	"	1950	-	51	20.5	2.7
35.5	**30.5**	**1.8**	39.00	"	"	1950	-	43	25.5	2.2
28	**35.5**	**1.55**	50.00	"	"	1950	-	33.5	29.5	1.85
22.5	**40**	**1.2**	62.00	"	"	1950	-	27	33.5	1.45
18.5	**47**	**0.85**	75.00	"	"	1950	-	22.5	38.5	1.05
129	**10.3**	**3.1**	10.73	**BS04-../DPE07LA4**	9.8	1600	-	156	8.5	3.8
106	**12.4**	**2.7**	13.09	"	"	1760	-	128	10.3	3.2
85	**15.5**	**2.3**	16.31	"	"	1970	-	103	12.8	2.7
77	**15.8**	**2.2**	18.00	"	"	1950	-	93	13.1	2.6
66	**19.7**	**1.9**	20.96	"	"	2100	-	80	16.3	2.3
57	**22.5**	**1.5**	24.25	"	"	2250	-	69	18.9	1.8
53	**23**	**1.65**	26.21	"	"	2250	-	64	19	2.0
44	**27**	**1.4**	31.50	"	"	2250	-	54	22	1.75
36	**32.5**	**1.15**	38.42	"	"	2250	-	43.5	27	1.35
29	**40**	**0.95**	47.86	"	"	2250	-	35	33	1.15
57	**24**	**3.2**	24.25	**BS06-../DPE07LA4**	14	2600	-	69	19.9	3.9
53	**23.5**	**3.3**	26.21	"	"	3000	-	64	19.6	3.9
44	**28.5**	**2.8**	31.50	"	"	3200	-	54	23	3.5
33.5	**36.5**	**2.4**	41.29	"	"	3500	-	40.5	30.5	2.8

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

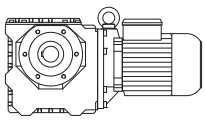
P = 0.18 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
28.5	**43**	**2.0**	48.60	**BS06-../DPE07LA4**	14	3500	-	34.5	35.5	2.5
24	**50**	**1.8**	58.15	"	"	3500	-	29	42	2.2
22	**53**	**1.5**	64.06	"	"	3500	-	26.5	44	1.8
19.5	**62**	**1.5**	71.18	"	"	3500	-	23.5	51	1.85
18	**63**	**1.35**	77.00	"	"	3500	-	22	52	1.65
15.5	**77**	**1.25**	90.00	"	"	3500	-	19	63	1.55
13.5	**87**	**1.15**	103.1	"	"	3500	-	16.5	71	1.4
12	**93**	**1.0**	118.8	"	"	3500	-	14.5	77	1.2
11	**104**	**1.0**	129.0	"	"	3500	-	13	88	1.2
9.5	**117**	**0.91**	146.8	"	"	3500	-	11.5	97	1.1
29	**44**	**3.3**	47.59	**BS10-../DPE07LA4**	26	4050	-	35.5	36	4.0
24.5	**51**	**2.9**	57.12	"	"	4350	-	29.5	43	3.5
23	**50**	**3.0**	60.74	"	"	4550	-	27.5	41.5	3.6
19.5	**65**	**2.5**	71.96	"	"	5000	-	23.5	54	3.0
16.5	**77**	**1.95**	84.36	"	"	5300	-	20	63	2.4
13.5	**81**	**2.0**	103.4	"	"	5600	-	16.5	66	2.4
12	**106**	**1.15**	119.6	"	"	6000	-	14	90	1.35
11	**100**	**1.65**	130.3	"	"	6000	-	13	84	1.95
9.1	**120**	**1.4**	152.7	"	"	6000	-	11	100	1.65
7.4	**148**	**1.15**	188.6	"	"	6000	-	8.9	123	1.4
6.4	**171**	**1.05**	216.6	"	"	6000	-	7.8	141	1.3
5.5	**200**	**0.9**	254.0	**BS10Z-../DPE07LA4**	27	6000	-	6.6	166	1.1
4.6	**230**	**0.83**	302.5	"	"	6000	-	5.6	190	1.0
14	**90**	**2.8**	101.1	**BS20-../DPE07LA4**	36	7100	-	17	74	3.4
13	**87**	**3.1**	106.3	"	"	7600	-	16	70	3.9
11	**103**	**2.6**	127.3	"	"	8000	-	13.5	84	3.2
8.7	**130**	**2.1**	159.4	"	"	8000	-	10.5	108	2.5
7.6	**149**	**1.9**	183.0	"	"	8000	-	9.2	123	2.3
6.2	**177**	**1.65**	225.6	"	"	8000	-	7.5	146	2.0
5.4	**200**	**1.5**	257.8	**BS20Z-../DPE07LA4**	38	8000	-	6.5	169	1.75
4.6	**235**	**1.3**	300.1	"	"	8000	-	5.6	193	1.55
3.9	**270**	**1.2**	359.9	"	"	8000	-	4.7	225	1.4
3.3	**315**	**1.05**	430.8	"	"	8000	-	3.9	265	1.25
2.6	**360**	**1.0**	539.7	"	"	8000	-	3.1	300	1.2
2.3	**400**	**0.83**	619.2	"	"	8000	-	2.7	340	0.97
6.4	**177**	**2.9**	216.4	**BS30-../DPE07LA4**	54	10000	-	7.8	145	3.6
5.3	**210**	**2.7**	261.6	**BS30Z-../DPE07LA4**	56	10000	-	6.4	177	3.2
4.6	**240**	**2.4**	306.6	"	"	10000	-	5.5	200	2.9
3.9	**325**	**1.2**	359.6	"	"	10000	-	4.7	270	1.45
3.6	**310**	**1.9**	390.2	"	"	10000	-	4.3	255	2.3
3.1	**350**	**1.7**	457.3	"	"	10000	-	3.7	295	2.0
2.6	**420**	**1.45**	539.3	"	"	10000	-	3.1	350	1.7
2.2	**465**	**1.25**	651.0	"	"	10000	-	2.6	395	1.45
1.8	**550**	**0.87**	804.1	"	"	10000	-	2.1	470	1.0
4.8	**265**	**2.7**	287.7	**BS40Z-../DPE07LA4**	70	15000	-	5.9	215	3.3
3.1	**345**	**2.9**	446.8	"	"	15000	-	3.8	280	3.5
2.7	**400**	**2.8**	520.8	"	"	15000	-	3.3	325	3.4
2.3	**455**	**2.0**	612.1	"	"	15000	-	2.8	370	2.5
1.9	**540**	**1.4**	736.5	"	"	15000	-	2.3	445	1.7
1.6	**630**	**1.2**	908.2	"	"	15000	-	1.9	530	1.4
1.5	**800**	**1.1**	965.5	**BS40G10-../DPE07LA4**	76	15000	-	1.8	660	1.35
1.2	**1000**	**0.88**	1180	"	"	15000	-	1.5	800	1.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

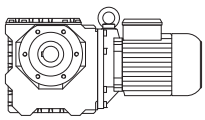
P = 0.25 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
310	**6.7**	**6.0**	4.60	**BS03-../DPE08MA4**	10	1070	-	375	5.6	7.1
240	**8.7**	**5.1**	6.00	"	"	1170	-	285	7.3	6.0
178	**11.5**	**4.2**	8.00	"	"	1320	-	215	9.5	5.1
142	**14.1**	**3.7**	10.00	"	"	1450	-	171	11.7	4.4
106	**17.5**	**3.1**	13.50	"	"	1600	-	127	14.6	3.8
75	**24**	**2.3**	19.00	"	"	1950	-	90	20	2.8
57	**28.5**	**1.95**	25.00	"	"	1950	-	69	23.5	2.3
43.5	**33**	**1.65**	33.00	"	"	1950	-	52	28	1.95
36.5	**41.5**	**1.35**	39.00	"	"	1950	-	44	34.5	1.6
28.5	**48.5**	**1.15**	50.00	"	"	1950	-	34.5	40	1.4
86	**22**	**3.3**	16.56	**BS06-../DPE08MA4**	16	2400	-	104	18.3	3.9
72	**26.5**	**2.8**	19.82	"	"	2500	-	87	21.5	3.5
59	**32**	**2.4**	24.25	"	"	2600	-	71	26.5	2.9
55	**31.5**	**2.4**	26.21	"	"	3000	-	66	26	3.0
45.5	**38**	**2.1**	31.50	"	"	3200	-	55	31.5	2.5
34.5	**49.5**	**1.75**	41.29	"	"	3500	-	41.5	41	2.1
29.5	**58**	**1.5**	48.60	"	"	3500	-	35.5	48	1.85
24.5	**69**	**1.3**	58.15	"	"	3500	-	29.5	57	1.6
22.5	**72**	**1.1**	64.06	"	"	3500	-	27	60	1.35
20	**84**	**1.1**	71.18	"	"	3500	-	24.5	69	1.35
18.5	**86**	**0.99**	77.00	"	"	3500	-	22.5	71	1.2
16	**104**	**0.94**	90.00	"	"	3500	-	19	87	1.15
14	**117**	**0.85**	103.1	"	"	3500	-	17	96	1.05
42.5	**42.5**	**3.2**	33.55	**BS10-../DPE08MA4**	27	3550	-	51	35.5	3.8
36	**49.5**	**2.8**	39.96	"	"	3800	-	43	41.5	3.4
30	**59**	**2.5**	47.59	"	"	4050	-	36	49.5	2.9
25	**70**	**2.1**	57.12	"	"	4350	-	30	58	2.6
23.5	**68**	**2.2**	60.74	"	"	4550	-	28.5	56	2.7
20	**88**	**1.8**	71.96	"	"	5000	-	24	73	2.2
17	**103**	**1.45**	84.36	"	"	5300	-	20.5	86	1.75
14	**109**	**1.45**	103.4	"	"	5600	-	17	89	1.8
11	**138**	**1.2**	130.3	"	"	6000	-	13.5	113	1.45
9.3	**164**	**1.0**	152.7	"	"	6000	-	11.5	132	1.25
7.6	**200**	**0.85**	188.6	"	"	6000	-	9.1	167	1.0
19	**82**	**3.3**	76.18	**BS20-../DPE08MA4**	37	6600	-	22.5	70	3.9
16.5	**95**	**2.8**	88.67	"	"	7000	-	19.5	80	3.4
14.5	**121**	**2.1**	101.1	"	"	7100	-	17	103	2.4
13.5	**116**	**2.3**	106.3	"	"	7600	-	16.5	95	2.8
11.5	**137**	**1.95**	127.3	"	"	8000	-	13.5	116	2.3
9.0	**175**	**1.55**	159.4	"	"	8000	-	11	143	1.9
7.8	**200**	**1.4**	183.0	"	"	8000	-	9.4	167	1.7
6.3	**240**	**1.2**	225.6	"	"	8000	-	7.6	200	1.45
5.6	**270**	**1.1**	257.8	**BS20Z-../DPE08MA4**	39	8000	-	6.7	225	1.3
4.8	**310**	**0.97**	300.1	"	"	8000	-	5.7	260	1.15
4.0	**370**	**0.86**	359.9	"	"	8000	-	4.8	305	1.05
9.4	**170**	**3.2**	151.1	**BS30-../DPE08MA4**	55	9500	-	11.5	139	3.9
7.7	**200**	**2.7**	186.7	"	"	10000	-	9.2	171	3.2
6.6	**235**	**2.2**	216.4	"	"	10000	-	8.0	196	2.7
5.5	**285**	**1.95**	261.6	**BS30Z-../DPE08MA4**	58	10000	-	6.6	235	2.4
4.7	**330**	**1.75**	306.6	"	"	10000	-	5.6	275	2.1
4.0	**440**	**0.9**	359.6	"	"	10000	-	4.8	365	1.1
3.7	**415**	**1.4**	390.2	"	"	10000	-	4.4	350	1.7
3.2	**475**	**1.25**	457.3	"	"	10000	-	3.8	400	1.5
2.7	**560**	**1.05**	539.3	"	"	10000	-	3.2	475	1.25
2.2	**650**	**0.89**	651.0	"	"	10000	-	2.7	530	1.1

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.25 kW



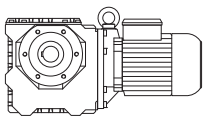
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
7.3	**240**	**2.9**	197.1	**BS40Z-../DPE08MA4**	71	15000	-	8.7	200	3.5
5.0	**350**	**2.0**	287.7	"	"	15000	-	6.0	290	2.5
4.0	**375**	**2.9**	356.8	"	"	15000	-	4.8	310	3.5
3.2	**470**	**2.1**	446.8	"	"	15000	-	3.9	385	2.6
2.8	**530**	**2.1**	520.8	"	"	15000	-	3.3	455	2.4
2.4	**600**	**1.5**	612.1	"	"	15000	-	2.8	520	1.75
2.0	**710**	**1.05**	736.5	"	"	15000	-	2.4	590	1.3
1.6	**880**	**0.84**	908.2	"	"	15000	-	1.9	740	1.0

P = 0.37 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
310	**10**	**4.0**	4.60	**BS03-../DPE08LA4**	12	1070	-	375	8.2	4.9
240	**12.9**	**3.4**	6.00	"	"	1170	-	285	10.9	4.0
178	**17**	**2.8**	8.00	"	"	1320	-	215	14.1	3.4
142	**20.5**	**2.5**	10.00	"	"	1450	-	171	17.3	3.0
106	**26**	**2.1**	13.50	"	"	1600	-	127	21.5	2.6
75	**35.5**	**1.55**	19.00	"	"	1950	-	90	29.5	1.85
57	**42.5**	**1.3**	25.00	"	"	1950	-	69	35	1.55
43.5	**49.5**	**1.1**	33.00	"	"	1950	-	52	41	1.35
36.5	**61**	**0.9**	39.00	"	"	1950	-	44	51	1.1
133	**21.5**	**3.0**	10.73	**BS06-../DPE08LA4**	17	1850	-	160	17.8	3.7
101	**28**	**2.4**	14.07	"	"	2200	-	122	23	3.0
86	**32.5**	**2.2**	16.56	"	"	2400	-	104	27	2.7
72	**39**	**1.9**	19.82	"	"	2500	-	87	32	2.3
59	**47.5**	**1.6**	24.25	"	"	2600	-	71	39.5	1.95
55	**46.5**	**1.65**	26.21	"	"	3000	-	66	39	1.95
45.5	**56**	**1.45**	31.50	"	"	3200	-	55	46.5	1.7
34.5	**73**	**1.2**	41.29	"	"	3500	-	41.5	61	1.4
29.5	**86**	**1.0**	48.60	"	"	3500	-	35.5	71	1.25
24.5	**102**	**0.89**	58.15	"	"	3500	-	29.5	85	1.05
66	**42.5**	**2.9**	21.61	**BS10-../DPE08LA4**	28	3000	-	80	35	3.6
63	**38.5**	**3.0**	22.60	"	"	3200	-	76	32	3.7
54	**51**	**2.5**	26.42	"	"	3250	-	65	42	3.1
46.5	**52**	**2.5**	30.63	"	"	3550	-	56	43.5	3.0
42.5	**63**	**2.1**	33.55	"	"	3550	-	51	52	2.6
36	**73**	**1.9**	39.96	"	"	3800	-	43	61	2.3
30	**88**	**1.65**	47.59	"	"	4050	-	36	73	2.0
25	**104**	**1.45**	57.12	"	"	4350	-	30	87	1.7
23.5	**100**	**1.5**	60.74	"	"	4550	-	28.5	83	1.8
20	**130**	**1.25**	71.96	"	"	5000	-	24	108	1.5
17	**153**	**0.98**	84.36	"	"	5300	-	20.5	127	1.2
14	**161**	**0.99**	103.4	"	"	5600	-	17	133	1.2
11	**205**	**0.8**	130.3	"	"	6000	-	13.5	167	0.98
28.5	**83**	**3.3**	50.44	**BS20-../DPE08LA4**	39	5700	-	34	69	3.9
24.5	**108**	**2.6**	58.74	"	"	5900	-	29.5	89	3.1
20.5	**129**	**2.3**	70.30	"	"	6300	-	24.5	108	2.8
19	**122**	**2.2**	76.18	"	"	6600	-	22.5	103	2.6
16.5	**141**	**1.9**	88.67	"	"	7000	-	19.5	119	2.3
14.5	**180**	**1.4**	101.1	"	"	7100	-	17	153	1.65
13.5	**172**	**1.55**	106.3	"	"	7600	-	16.5	141	1.9
11.5	**200**	**1.35**	127.3	"	"	8000	-	13.5	172	1.55
9.0	**255**	**1.1**	159.4	"	"	8000	-	11	210	1.3
7.8	**295**	**0.95**	183.0	"	"	8000	-	9.4	245	1.15
6.3	**355**	**0.82**	225.6	"	"	8000	-	7.6	295	0.98

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.37 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
17.5	**155**	**2.6**	83.48	**BS30-../DPE08LA4**	56	6800	-	20.5	132	3.1
16	**152**	**3.2**	90.59	"	"	7700	-	19	128	3.8
13.5	**177**	**2.9**	106.2	"	"	8200	-	16.5	145	3.5
11.5	**205**	**2.5**	125.2	"	"	8700	-	14	171	3.0
9.4	**250**	**2.2**	151.1	"	"	9500	-	11.5	205	2.6
7.7	**300**	**1.8**	186.7	"	"	10000	-	9.2	250	2.2
6.6	**350**	**1.5**	216.4	"	"	10000	-	8.0	290	1.8
5.5	**420**	**1.35**	261.6	**BS30Z-../DPE08LA4**	59	10000	-	6.6	350	1.6
4.7	**485**	**1.2**	306.6	"	"	10000	-	5.6	410	1.4
3.7	**620**	**0.95**	390.2	"	"	10000	-	4.4	520	1.15
3.2	**700**	**0.86**	457.3	"	"	10000	-	3.8	590	1.0
8.0	**285**	**2.9**	178.2	**BS40-../DPE08LA4**	69	15000	-	9.6	235	3.5
6.5	**340**	**2.3**	219.7	"	"	15000	-	7.8	285	2.8
5.7	**390**	**2.3**	249.6	**BS40Z-../DPE08LA4**	73	15000	-	6.9	320	2.8
5.0	**520**	**1.4**	287.7	"	"	15000	-	6.0	435	1.65
4.8	**460**	**2.3**	302.1	"	"	15000	-	5.7	390	2.7
4.0	**550**	**1.95**	356.8	"	"	15000	-	4.8	460	2.3
3.2	**690**	**1.45**	446.8	"	"	15000	-	3.9	570	1.75
2.8	**790**	**1.4**	520.8	"	"	15000	-	3.3	670	1.65
2.4	**890**	**1.0**	612.1	"	"	15000	-	2.8	760	1.2

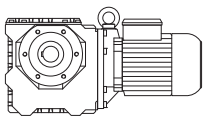
9

P = 0.55 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
310	**14.9**	**2.7**	4.60	**BS03-../DPE08XA4**	13	1070	-	375	12.3	3.3
240	**19.2**	**2.3**	6.00	"	"	1170	-	285	16.2	2.7
178	**25**	**1.9**	8.00	"	"	1320	-	215	21	2.3
142	**31**	**1.7**	10.00	"	"	1450	-	171	25.5	2.0
106	**38.5**	**1.45**	13.50	"	"	1600	-	127	32	1.7
75	**53**	**1.05**	19.00	"	"	1950	-	90	44	1.25
57	**63**	**0.87**	25.00	"	"	1950	-	69	52	1.05
215	**19.7**	**2.8**	6.67	**BS06-../DPE08XA4**	18	1550	-	260	16.3	3.4
160	**26.5**	**2.3**	8.93	"	"	1710	-	192	22	2.8
133	**31.5**	**2.1**	10.73	"	"	1850	-	160	26.5	2.5
101	**42**	**1.6**	14.07	"	"	2200	-	122	34.5	1.95
86	**48.5**	**1.5**	16.56	"	"	2400	-	104	40	1.8
72	**58**	**1.3**	19.82	"	"	2500	-	87	48	1.55
59	**71**	**1.1**	24.25	"	"	2600	-	71	59	1.3
55	**69**	**1.1**	26.21	"	"	3000	-	66	58	1.35
45.5	**84**	**0.95**	31.50	"	"	3200	-	55	69	1.15
114	**36.5**	**3.0**	12.49	**BS10-../DPE08XA4**	30	2400	-	137	30.5	3.5
84	**50**	**2.4**	16.92	"	"	2700	-	102	41	2.9
66	**63**	**2.0**	21.61	"	"	3000	-	80	52	2.4
63	**57**	**2.1**	22.60	"	"	3200	-	76	47.5	2.5
54	**75**	**1.75**	26.42	"	"	3250	-	65	63	2.1
46.5	**77**	**1.7**	30.63	"	"	3550	-	56	64	2.0
42.5	**93**	**1.45**	33.55	"	"	3550	-	51	78	1.75
36	**109**	**1.3**	39.96	"	"	3800	-	43	91	1.55
30	**131**	**1.1**	47.59	"	"	4050	-	36	109	1.35
25	**155**	**0.97**	57.12	"	"	4350	-	30	129	1.15
23.5	**149**	**1.0**	60.74	"	"	4550	-	28.5	123	1.2
20	**194**	**0.82**	71.96	"	"	5000	-	24	161	0.99

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.55 kW



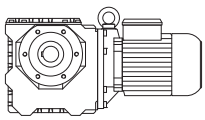
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
51	**80**	**3.1**	27.86	**BS20-../DPE08XA4**	40	4450	-	62	66	3.8
46.5	**81**	**3.1**	30.63	"	"	4750	-	56	67	3.7
43.5	**92**	**2.9**	32.87	"	"	4750	-	53	76	3.6
35.5	**106**	**2.5**	40.25	"	"	5300	-	42.5	88	3.0
34	**117**	**2.3**	42.08	"	"	5200	-	41	97	2.8
28.5	**123**	**2.2**	50.44	"	"	5700	-	34	103	2.6
24.5	**160**	**1.75**	58.74	"	"	5900	-	29.5	133	2.1
20.5	**192**	**1.55**	70.30	"	"	6300	-	24.5	160	1.9
19	**182**	**1.5**	76.18	"	"	6600	-	22.5	154	1.75
16.5	**210**	**1.3**	88.67	"	"	7000	-	19.5	177	1.55
14.5	**265**	**0.94**	101.1	"	"	7100	-	17	225	1.1
13.5	**255**	**1.05**	106.3	"	"	7600	-	16.5	210	1.3
11.5	**300**	**0.9**	127.3	"	"	8000	-	13.5	255	1.05
28.5	**141**	**3.2**	50.04	**BS30-../DPE08XA4**	57	5900	-	34.5	117	3.8
24.5	**165**	**2.8**	58.64	"	"	6900	-	29.5	137	3.4
20	**183**	**2.6**	71.17	"	"	7000	-	24.5	150	3.2
17.5	**230**	**1.8**	83.48	"	"	6800	-	20.5	197	2.1
16	**225**	**2.2**	90.59	"	"	7700	-	19	190	2.6
13.5	**260**	**1.95**	106.2	"	"	8200	-	16.5	215	2.4
11.5	**310**	**1.7**	125.2	"	"	8700	-	14	255	2.0
9.4	**370**	**1.45**	151.1	"	"	9500	-	11.5	305	1.75
7.7	**450**	**1.2**	186.7	"	"	10000	-	9.2	375	1.45
6.6	**520**	**1.0**	216.4	"	"	10000	-	8.0	430	1.2
5.5	**630**	**0.89**	261.6	**BS30Z-../DPE08XA4**	60	10000	-	6.6	520	1.1
4.7	**720**	**0.81**	306.6	"	"	10000	-	5.6	600	0.97
11.5	**305**	**3.2**	126.0	**BS40-../DPE08XA4**	70	14900	-	14	250	3.9
9.6	**355**	**2.7**	148.1	"	"	15000	-	12	280	3.5
8.0	**425**	**1.95**	178.2	"	"	15000	-	9.6	355	2.3
6.5	**500**	**1.6**	219.7	"	"	15000	-	7.8	420	1.9
5.7	**580**	**1.55**	249.6	**BS40Z-../DPE08XA4**	74	15000	-	6.9	475	1.9
5.0	**770**	**0.93**	287.7	"	"	15000	-	6.0	640	1.1
4.8	**680**	**1.55**	302.1	"	"	15000	-	5.7	580	1.85
4.0	**820**	**1.3**	356.8	"	"	15000	-	4.8	680	1.6
3.2	**1030**	**0.96**	446.8	"	"	15000	-	3.9	840	1.2
2.8	**1180**	**0.93**	520.8	"	"	15000	-	3.3	1000	1.1

P = 0.75 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
117	**48.5**	**2.2**	12.49	**BS10-../DPE09LA4**	36	2400	-	140	40.5	2.7
86	**66**	**1.8**	16.92	"	"	2700	-	103	55	2.2
68	**84**	**1.5**	21.61	"	"	3000	-	81	70	1.8
65	**76**	**1.55**	22.60	"	"	3200	-	77	64	1.85
55	**101**	**1.3**	26.42	"	"	3250	-	66	84	1.55
47.5	**104**	**1.25**	30.63	"	"	3550	-	57	86	1.5
43.5	**125**	**1.1**	33.55	"	"	3550	-	52	104	1.3
36.5	**147**	**0.95**	39.96	"	"	3800	-	44	122	1.15
30.5	**176**	**0.82**	47.59	"	"	4050	-	37	145	1.0
86	**67**	**3.3**	16.92	**BS20-../DPE09LA4**	46	3700	-	103	56	3.9
66	**87**	**2.6**	22.23	"	"	4100	-	79	73	3.2
63	**81**	**2.8**	23.13	"	"	4300	-	76	67	3.4
53	**105**	**2.4**	27.86	"	"	4450	-	63	88	2.8
47.5	**108**	**2.3**	30.63	"	"	4750	-	57	90	2.8
44.5	**123**	**2.2**	32.87	"	"	4750	-	53	104	2.6
36.5	**141**	**1.85**	40.25	"	"	5300	-	43.5	118	2.2

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 0.75 kW



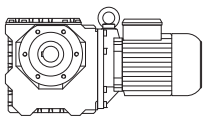
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
34.5	**157**	**1.7**	42.08	**BS20-../DPE09LA4**	46	5200	-	41.5	131	2.1
30	**179**	**1.5**	48.98	"	"	5500	-	36	149	1.8
29	**165**	**1.65**	50.44	"	"	5700	-	34.5	139	1.95
25	**210**	**1.35**	58.74	"	"	5900	-	30	179	1.55
21	**255**	**1.2**	70.30	"	"	6300	-	25	210	1.45
19.5	**240**	**1.15**	76.18	"	"	6600	-	23	205	1.3
16.5	**285**	**0.95**	88.67	"	"	7000	-	20	235	1.15
14	**335**	**0.81**	106.3	"	"	7600	-	16.5	285	0.95
43.5	**135**	**3.1**	33.55	**BS30-../DPE09LA4**	64	5200	-	52	112	3.8
38.5	**139**	**3.0**	37.92	"	"	5500	-	46	116	3.6
37	**156**	**2.8**	39.31	"	"	5500	-	44.5	130	3.3
29	**190**	**2.4**	50.04	"	"	5900	-	35	157	2.9
25	**220**	**2.1**	58.64	"	"	6900	-	30	183	2.5
20.5	**240**	**2.0**	71.17	"	"	7000	-	24.5	200	2.4
17.5	**315**	**1.3**	83.48	"	"	6800	-	21	260	1.55
16.5	**295**	**1.65**	90.59	"	"	7700	-	19.5	250	1.95
14	**345**	**1.5**	106.2	"	"	8200	-	16.5	295	1.75
12	**405**	**1.3**	125.2	"	"	8700	-	14	345	1.5
9.6	**495**	**1.1**	151.1	"	"	9500	-	12	395	1.35
7.8	**600**	**0.9**	186.7	"	"	10000	-	9.4	500	1.1
21	**260**	**2.9**	69.60	**BS40-../DPE09LA4**	77	11800	-	25	220	3.4
17	**290**	**3.1**	86.33	"	"	12900	-	20.5	240	3.8
13.5	**355**	**2.7**	108.1	"	"	14000	-	16.5	290	3.3
12	**395**	**2.5**	126.0	"	"	14900	-	14	340	2.9
9.8	**475**	**2.0**	148.1	"	"	15000	-	12	385	2.5
8.2	**560**	**1.45**	178.2	"	"	15000	-	9.8	475	1.7
6.6	**680**	**1.15**	219.7	"	"	15000	-	8.0	560	1.4
5.9	**760**	**1.2**	249.6	**BS40Z-../DPE09LA4**	80	15000	-	7.0	640	1.4
4.8	**940**	**1.15**	302.1	"	"	15000	-	5.8	770	1.4
4.1	**1100**	**0.98**	356.8	"	"	15000	-	4.9	920	1.15

P = 1.1 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
117	**71**	**1.5**	12.49	**BS10-../DPE09XA4**	40	2400	-	140	60	1.8
86	**97**	**1.25**	16.92	"	"	2700	-	103	81	1.5
68	**123**	**1.0**	21.61	"	"	3000	-	81	103	1.2
65	**111**	**1.05**	22.60	"	"	3200	-	77	94	1.25
55	**148**	**0.88**	26.42	"	"	3250	-	66	124	1.05
47.5	**152**	**0.86**	30.63	"	"	3550	-	57	127	1.0
114	**74**	**2.7**	12.77	**BS20-../DPE09XA4**	50	3350	-	137	62	3.2
86	**98**	**2.2**	16.92	"	"	3700	-	103	82	2.7
66	**128**	**1.8**	22.23	"	"	4100	-	79	107	2.1
63	**120**	**1.9**	23.13	"	"	4300	-	76	99	2.3
53	**154**	**1.6**	27.86	"	"	4450	-	63	130	1.9
47.5	**159**	**1.55**	30.63	"	"	4750	-	57	132	1.9
44.5	**181**	**1.5**	32.87	"	"	4750	-	53	152	1.8
36.5	**205**	**1.25**	40.25	"	"	5300	-	43.5	173	1.5
34.5	**230**	**1.15**	42.08	"	"	5200	-	41.5	192	1.4
30	**260**	**1.05**	48.98	"	"	5500	-	36	215	1.25
29	**240**	**1.15**	50.44	"	"	5700	-	34.5	200	1.35
25	**315**	**0.89**	58.74	"	"	5900	-	30	260	1.1
21	**375**	**0.8**	70.30	"	"	6300	-	25	315	0.95

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 1.1 kW



50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
70	**124**	**3.1**	20.94	**BS30-../DPE09XA4**	68	4300	-	84	103	3.7
61	**129**	**2.9**	24.06	"	"	4600	-	73	107	3.4
54	**161**	**2.5**	27.07	"	"	4750	-	65	134	3.0
47.5	**165**	**2.4**	30.63	"	"	5000	-	57	138	2.9
43.5	**198**	**2.1**	33.55	"	"	5200	-	52	165	2.5
38.5	**200**	**2.1**	37.92	"	"	5500	-	46	171	2.5
37	**225**	**1.9**	39.31	"	"	5500	-	44.5	191	2.3
29	**275**	**1.65**	50.04	"	"	5900	-	35	230	1.95
25	**320**	**1.45**	58.64	"	"	6900	-	30	265	1.75
20.5	**355**	**1.35**	71.17	"	"	7000	-	24.5	300	1.6
17.5	**460**	**0.89**	83.48	"	"	6800	-	21	385	1.05
16.5	**435**	**1.15**	90.59	"	"	7700	-	19.5	370	1.3
14	**510**	**1.0**	106.2	"	"	8200	-	16.5	430	1.2
12	**590**	**0.88**	125.2	"	"	8700	-	14	510	1.0
30.5	**265**	**3.1**	47.69	**BS40-../DPE09XA4**	81	9600	-	36.5	220	3.8
24.5	**300**	**2.9**	60.38	"	"	11200	-	29	255	3.4
21	**385**	**1.95**	69.60	"	"	11800	-	25	320	2.3
20	**365**	**2.4**	73.09	"	"	12100	-	24	305	2.9
17	**425**	**2.1**	86.33	"	"	12900	-	20.5	350	2.6
13.5	**520**	**1.85**	108.1	"	"	14000	-	16.5	425	2.2
12	**580**	**1.7**	126.0	"	"	14900	-	14	500	1.95
9.8	**690**	**1.4**	148.1	"	"	15000	-	12	560	1.75
8.2	**830**	**0.99**	178.2	"	"	15000	-	9.8	690	1.2
5.9	**1120**	**0.8**	249.6	**BS40Z-../DPE09XA4**	84	15000	-	7.0	940	0.96

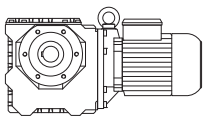
9

P = 1.5 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
117	**97**	**1.1**	12.49	**BS10-../DPE09XA4C**	43	2400	-	140	81	1.35
86	**133**	**0.9**	16.92	"	"	2700	-	103	111	1.1
114	**101**	**2.0**	12.77	**BS20-../DPE09XA4C**	53	3350	-	137	84	2.4
86	**134**	**1.65**	16.92	"	"	3700	-	103	112	1.95
66	**175**	**1.3**	22.23	"	"	4100	-	79	146	1.6
63	**163**	**1.4**	23.13	"	"	4300	-	76	135	1.7
53	**210**	**1.2**	27.86	"	"	4450	-	63	177	1.4
47.5	**215**	**1.15**	30.63	"	"	4750	-	57	180	1.4
44.5	**245**	**1.1**	32.87	"	"	4750	-	53	205	1.3
36.5	**280**	**0.93**	40.25	"	"	5300	-	43.5	235	1.1
34.5	**315**	**0.86**	42.08	"	"	5200	-	41.5	260	1.05
29	**330**	**0.82**	50.44	"	"	5700	-	34.5	275	0.98
110	**108**	**3.1**	13.29	**BS30-../DPE09XA4C**	71	3600	-	131	90	3.7
86	**138**	**2.6**	16.92	"	"	3950	-	103	115	3.1
70	**169**	**2.2**	20.94	"	"	4300	-	84	141	2.7
61	**176**	**2.1**	24.06	"	"	4600	-	73	147	2.5
54	**220**	**1.8**	27.07	"	"	4750	-	65	182	2.2
47.5	**225**	**1.8**	30.63	"	"	5000	-	57	188	2.1
43.5	**270**	**1.55**	33.55	"	"	5200	-	52	225	1.85
38.5	**275**	**1.55**	37.92	"	"	5500	-	46	230	1.85
37	**310**	**1.4**	39.31	"	"	5500	-	44.5	260	1.65
29	**380**	**1.2**	50.04	"	"	5900	-	35	315	1.45
25	**440**	**1.05**	58.64	"	"	6900	-	30	365	1.25
20.5	**485**	**0.99**	71.17	"	"	7000	-	24.5	405	1.2
16.5	**590**	**0.83**	90.59	"	"	7700	-	19.5	500	0.98

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 1.5 kW



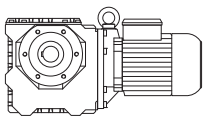
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
43.5	**260**	**3.0**	33.35	**BS40-../DPE09XA4C**	84	8300	-	53	215	3.6
38.5	**270**	**2.9**	38.13	"	"	9400	-	46	225	3.5
36	**310**	**2.6**	40.37	"	"	9000	-	43.5	260	3.1
30.5	**365**	**2.3**	47.69	"	"	9600	-	36.5	305	2.7
24.5	**415**	**2.1**	60.38	"	"	11200	-	29	350	2.5
21	**520**	**1.45**	69.60	"	"	11800	-	25	440	1.7
20	**500**	**1.75**	73.09	"	"	12100	-	24	415	2.1
17	**580**	**1.55**	86.33	"	"	12900	-	20.5	480	1.9
13.5	**710**	**1.35**	108.1	"	"	14000	-	16.5	580	1.65
12	**790**	**1.25**	126.0	"	"	14900	-	14	680	1.45
9.8	**950**	**1.0**	148.1	"	"	15000	-	12	770	1.25

P = 2.2 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
110	**158**	**2.1**	13.29	**BS30-../DPE11MA4**	77	3600	-	131	133	2.5
86	**200**	**1.8**	16.92	"	"	3950	-	103	169	2.1
70	**245**	**1.55**	20.94	"	"	4300	-	84	205	1.85
61	**255**	**1.45**	24.06	"	"	4600	-	73	215	1.7
54	**320**	**1.25**	27.07	"	"	4750	-	65	265	1.5
47.5	**330**	**1.2**	30.63	"	"	5000	-	57	275	1.45
43.5	**395**	**1.05**	33.55	"	"	5200	-	52	330	1.25
38.5	**405**	**1.05**	37.92	"	"	5500	-	46	340	1.25
37	**455**	**0.95**	39.31	"	"	5500	-	44.5	380	1.15
86	**205**	**3.3**	16.92	**BS40-../DPE11MA4**	95	6400	-	103	173	3.9
69	**245**	**2.9**	21.06	"	"	6900	-	83	205	3.5
62	**250**	**2.7**	23.59	"	"	7900	-	74	210	3.3
56	**305**	**2.4**	26.18	"	"	7500	-	67	255	2.9
47.5	**325**	**2.3**	30.63	"	"	8700	-	57	270	2.8
43.5	**385**	**2.0**	33.35	"	"	8300	-	53	315	2.5
38.5	**395**	**1.95**	38.13	"	"	9400	-	46	330	2.4
36	**460**	**1.75**	40.37	"	"	9000	-	43.5	380	2.1
30.5	**530**	**1.55**	47.69	"	"	9600	-	36.5	445	1.85
24.5	**600**	**1.45**	60.38	"	"	11200	-	29	510	1.7
20	**730**	**1.2**	73.09	"	"	12100	-	24	610	1.45
17	**850**	**1.05**	86.33	"	"	12900	-	20.5	700	1.3

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

P = 3 kW



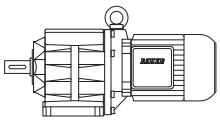
50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
110	**215**	**1.55**	13.29	**BS30-../DPE11LA4**	89	3600	-	131	181	1.85
86	**275**	**1.3**	16.92	"	"	3950	-	103	230	1.55
70	**335**	**1.15**	20.94	"	"	4300	-	84	280	1.35
61	**350**	**1.05**	24.06	"	"	4600	-	73	290	1.25
54	**440**	**0.91**	27.07	"	"	4750	-	65	365	1.1
47.5	**450**	**0.89**	30.63	"	"	5000	-	57	375	1.05
112	**215**	**2.9**	13.03	**BS40-../DPE11LA4**	107	5800	-	134	181	3.4
86	**280**	**2.4**	16.92	"	"	6400	-	103	235	2.9
69	**340**	**2.1**	21.06	"	"	6900	-	83	280	2.5
62	**340**	**2.0**	23.59	"	"	7900	-	74	285	2.4
56	**415**	**1.8**	26.18	"	"	7500	-	67	350	2.1
47.5	**445**	**1.7**	30.63	"	"	8700	-	57	370	2.0
43.5	**520**	**1.5**	33.35	"	"	8300	-	53	430	1.8
38.5	**540**	**1.45**	38.13	"	"	9400	-	46	450	1.75
36	**620**	**1.3**	40.37	"	"	9000	-	43.5	520	1.55
30.5	**730**	**1.15**	47.69	"	"	9600	-	36.5	610	1.35
24.5	**830**	**1.05**	60.38	"	"	11200	-	29	700	1.25
20	**1000**	**0.88**	73.09	"	"	12100	-	24	830	1.05

P = 4 kW

50 Hz			i	Type	m	F_{RN}	F_{RV}	60 Hz		
n_2	M_2	f_B						n_2	M_2	f_B
1/min	Nm				kg	N	N	1/min	Nm	
110	**285**	**1.15**	13.29	**BS30-../DPE11LA4C**	93	3600	-	131	240	1.4
86	**365**	**0.99**	16.92	"	"	3950	-	103	305	1.2
70	**450**	**0.84**	20.94	"	"	4300	-	84	375	1.0
112	**285**	**2.2**	13.03	**BS40-../DPE11LA4C**	111	5800	-	134	240	2.6
86	**375**	**1.8**	16.92	"	"	6400	-	103	315	2.1
69	**450**	**1.6**	21.06	"	"	6900	-	83	375	1.9
62	**455**	**1.5**	23.59	"	"	7900	-	74	380	1.8
56	**550**	**1.35**	26.18	"	"	7500	-	67	465	1.6
47.5	**590**	**1.25**	30.63	"	"	8700	-	57	495	1.5
43.5	**700**	**1.1**	33.35	"	"	8300	-	53	570	1.35
38.5	**720**	**1.1**	38.13	"	"	9400	-	46	600	1.3
36	**830**	**0.96**	40.37	"	"	9000	-	43.5	690	1.15
30.5	**970**	**0.86**	47.69	"	"	9600	-	36.5	810	1.0

The torques marked (*) are maximum permissible torques for service factor f_B=1,0.

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Page

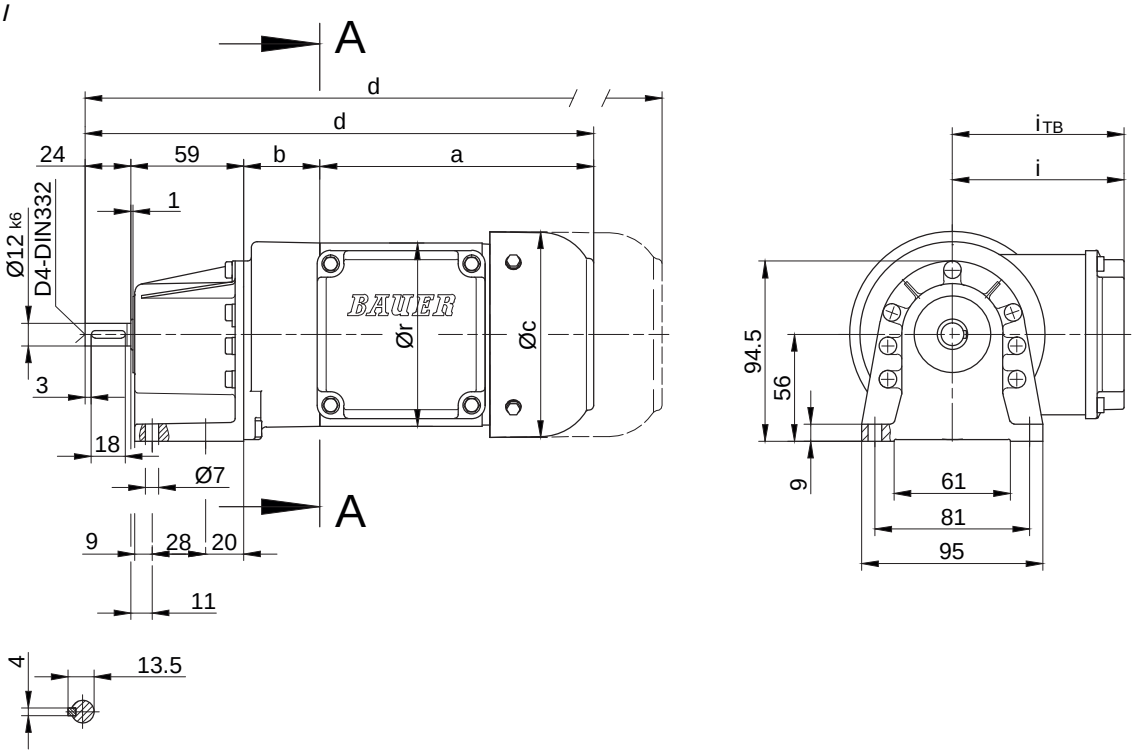
Dimensional drawings helical-geared motors 197-250

- **Standard**
- **Tandem Gearbox**

BG04

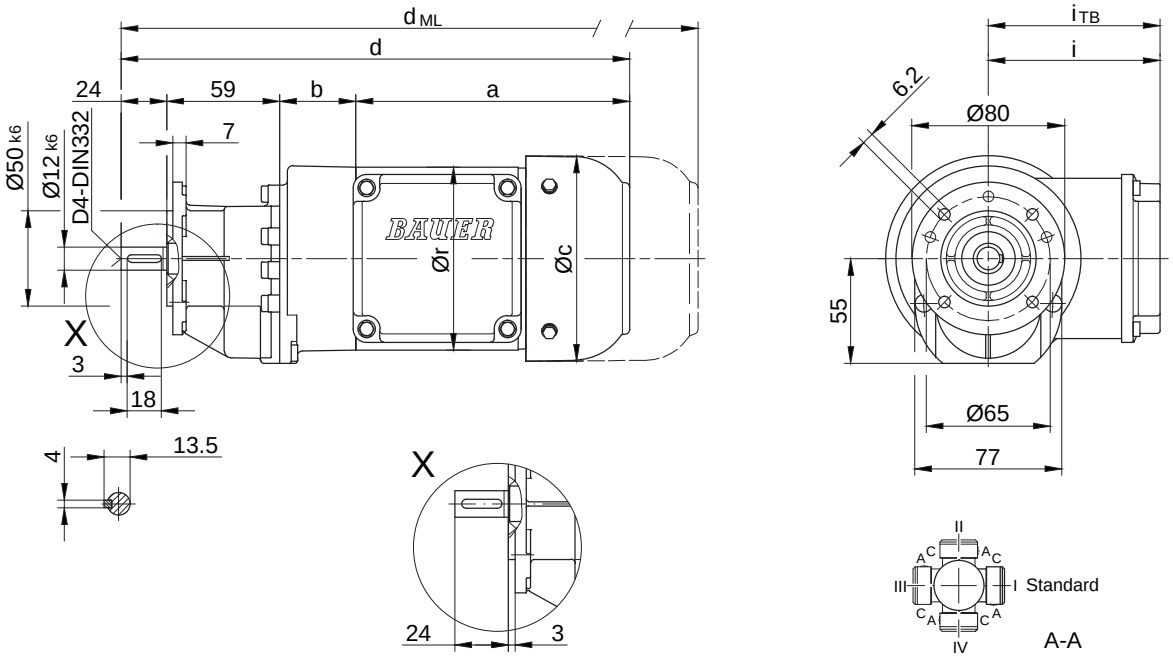
Foot mounting

Code -11/



Flange with clearance holes

Code -31/



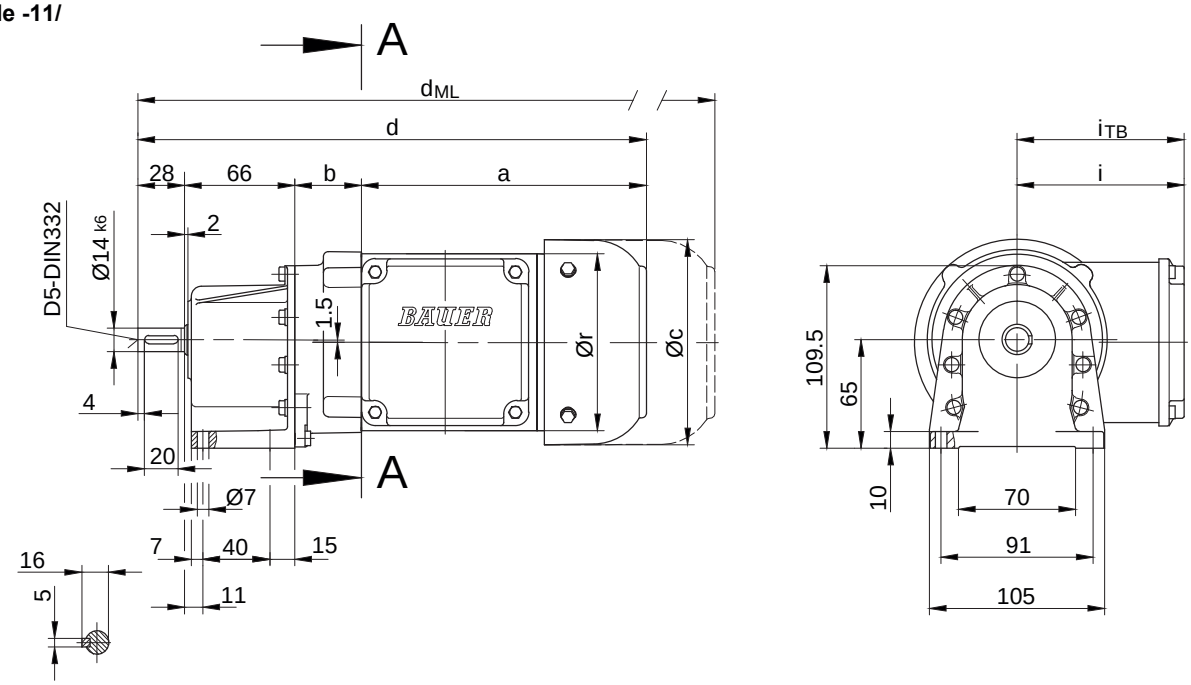
Type	a	b	c	d	i	r	Design with motor extensions				
							i_{TB}	E..	G	E..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG04-../D04..	143	40	111	266	90	96	112	309.5	328.5	371.5	-

The actual gearbox design can vary from the geometry shown.

BG05

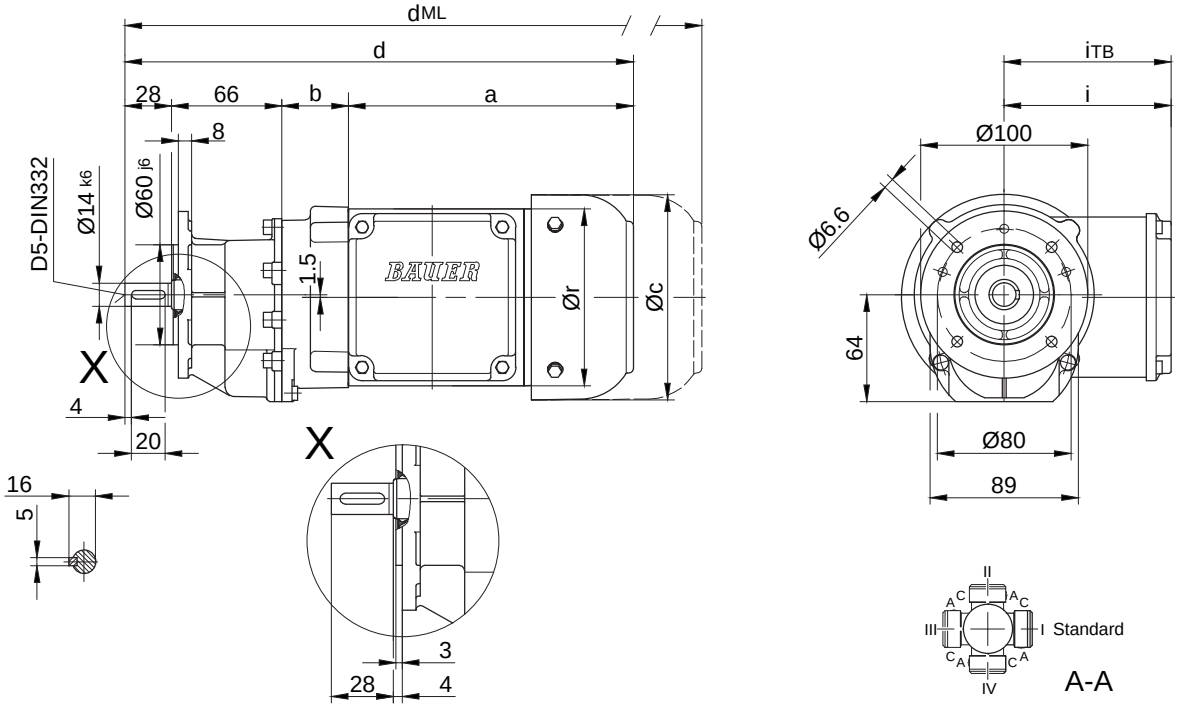
Foot mounting

Code -11/



Flange with clearance holes

Code -31/



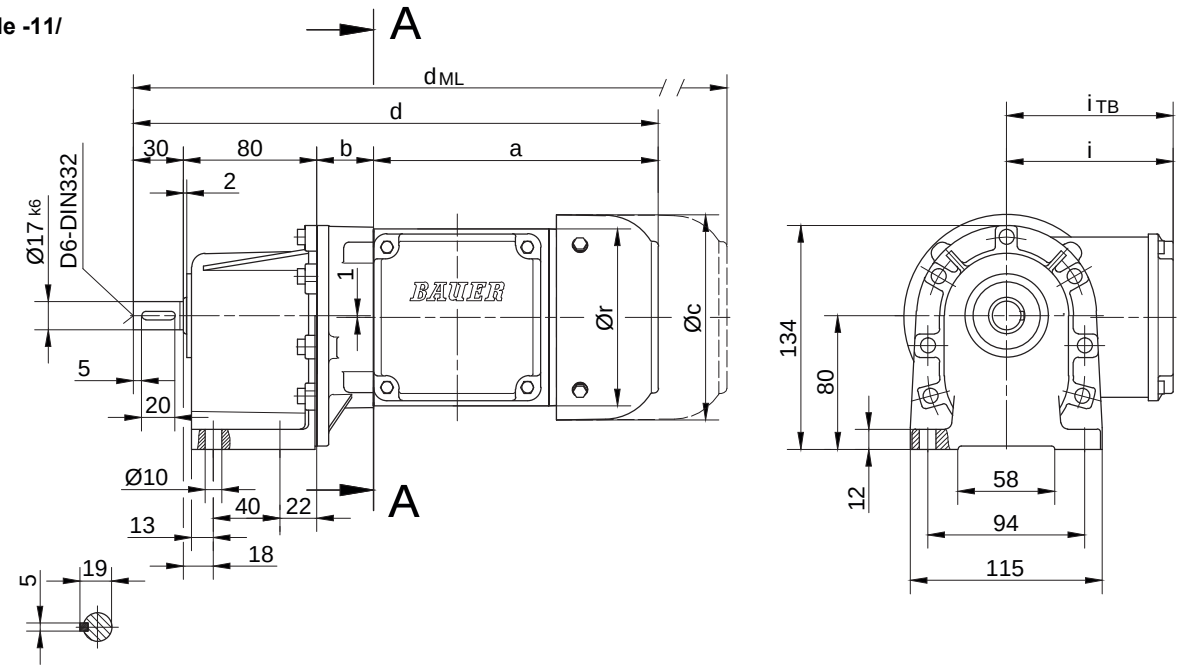
Type	a	b	c	d	i	r	Design with motor extensions				
							i_{TB}	E..	G	E..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG05-../D04..	143	38	111	275	90	96	112	318.5	337.5	380.5	-
BG05-../D05..	170	40	123	304	100	106	117	346	407	448.5	-
BG05-../D06..	170	40	123	304	100	121	119	346	407	448.5	-
BG05-../D07..	190	40	123	324	100	121	119	366	427	468.5	-

The actual gearbox design can vary from the geometry shown.

BG06

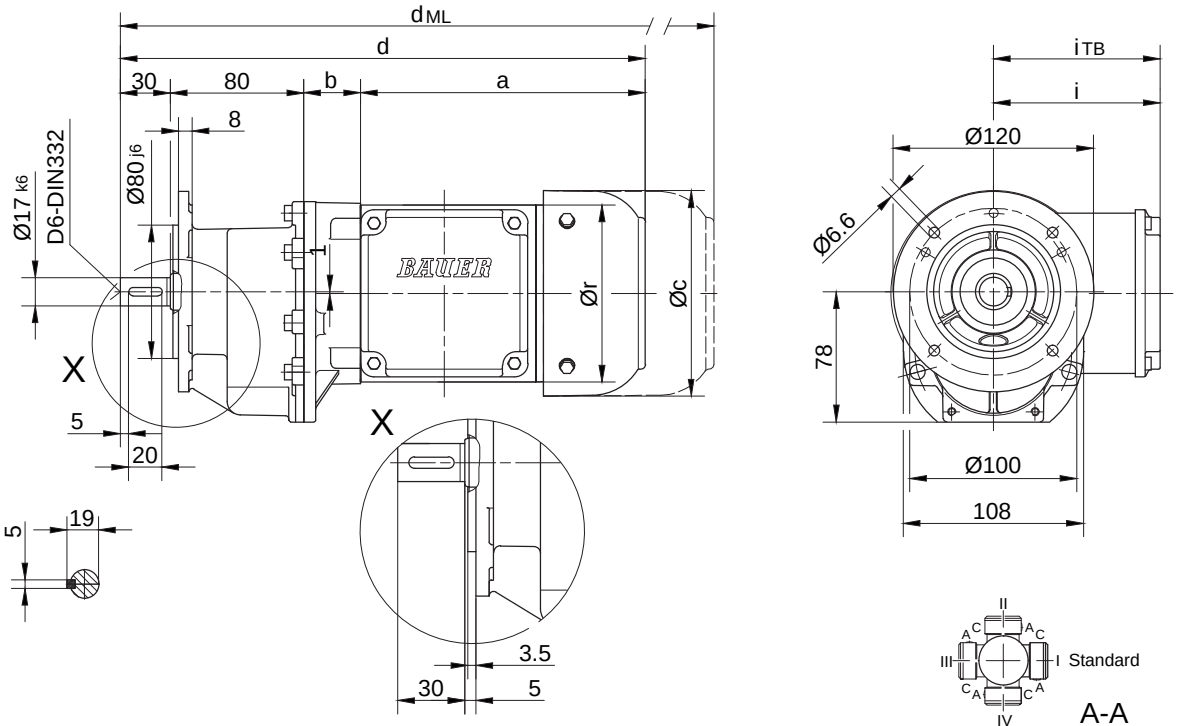
Foot mounting

Code -11/



Flange with clearance holes

Code -31/



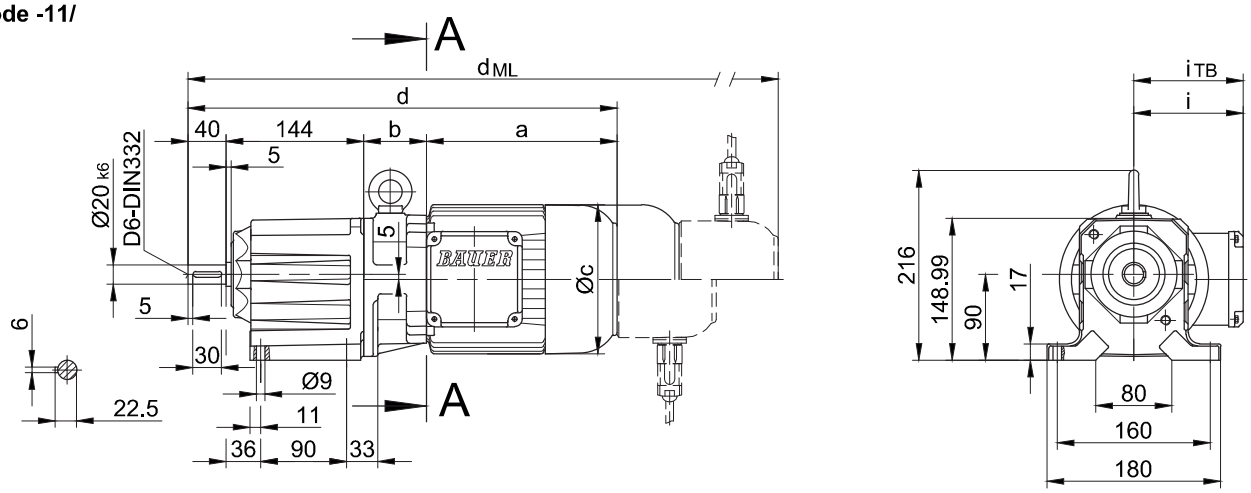
Type	a	b	c	d	i	r	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG06-../D04..	143	32	111	285	90	96	112	328.5	347.5	390.5	-
BG06-../D05..	170	34	123	314	100	106	117	356	417	458.5	-
BG06-../D06..	170	34	123	314	100	121	119	356	417	458.5	-
BG06-../D07..	190	34	123	334	100	121	119	376	437	478.5	-
BG06-../D..08..	200	78	156	388	115	156	136.5	454	495	561.5	454

The actual gearbox design can vary from the geometry shown.

BG10 - BG10Z

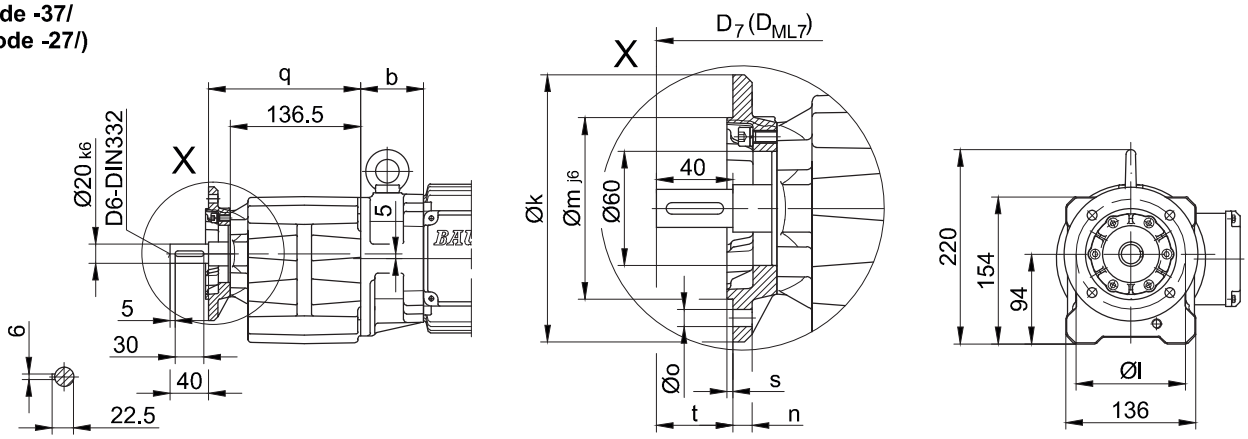
Foot mounting with clearance holes

Code -11/



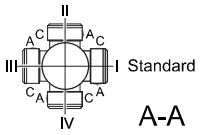
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG10(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	140	115	95	10	9	159.5	3	40	d+15.5	d_{ML}+15.5
small -27/	120	100	80	8	6.6	154.5	3	45	d+15.5	d_{ML}+15.5



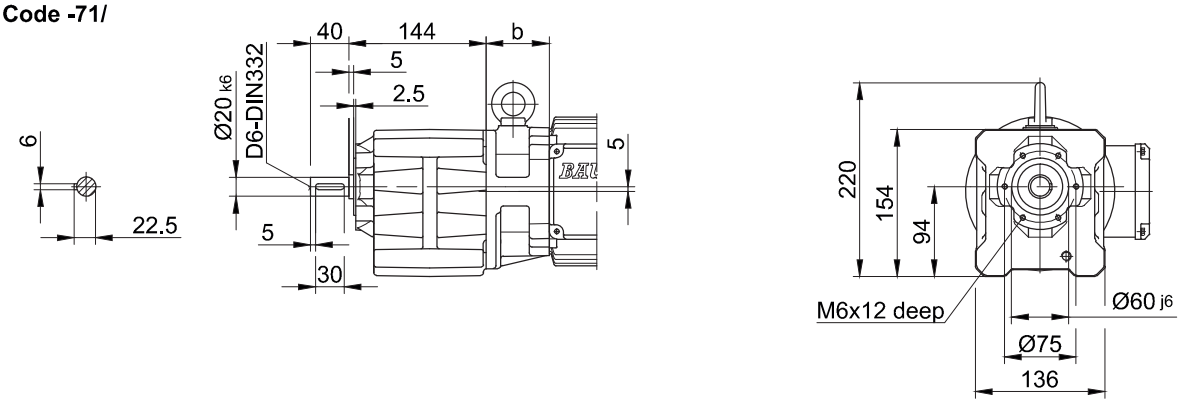
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG10Z-../D04..	143	86	111	413	90	112	456.5	475.5	518.5	-
BG10-../D05..	170	62	123	416	100	117	458	519	560.5	-
BG10Z../D05..	170	88	123	442	100	117	484	545	586.5	-
BG10-../D06..	170	62	123	416	100	119	458	519	560.5	-
BG10Z-../D06..	170	88	123	442	100	119	484	545	586.5	-
BG10-../D07..	190	62	123	436	100	119	478	539	580.5	-
BG10Z-../D07..	190	88	123	462	100	119	504	565	606.5	-
BG10-../D..08..	200	66	156	450	115	136.5	516	557	623.5	516
BG10Z-../D..08..	200	132	156	516	115	136.5	582	623	689.5	582
BG10-../D..09..	251	80.5	181	515.5	124	158	608.5	622.5	713	608.5

The actual gearbox design can vary from the geometry shown.

BG10 - BG10Z

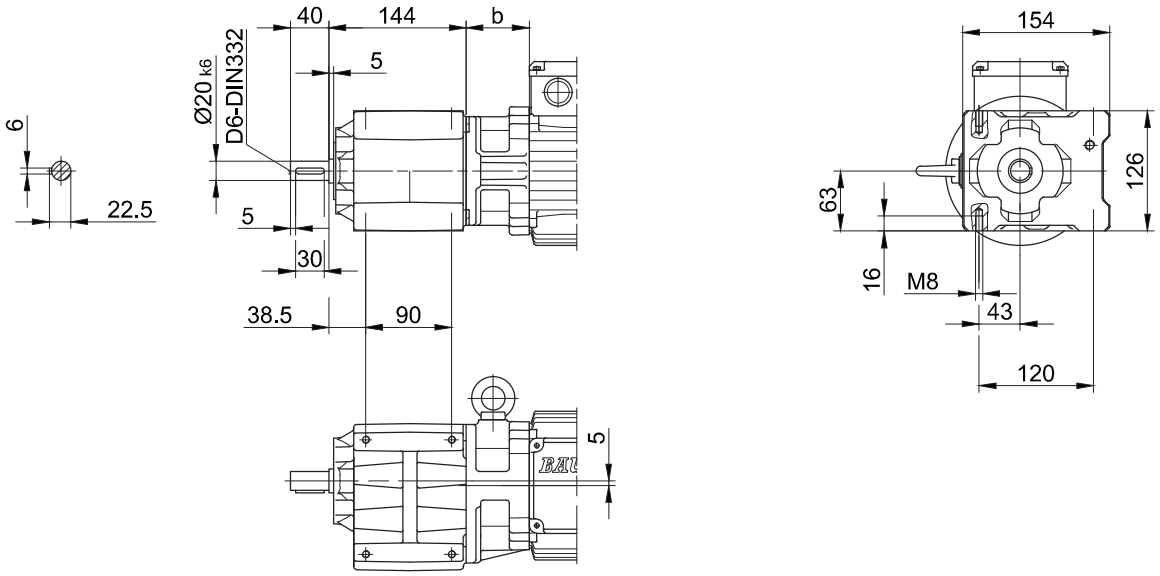
Flange with tapped holes

Code -71/



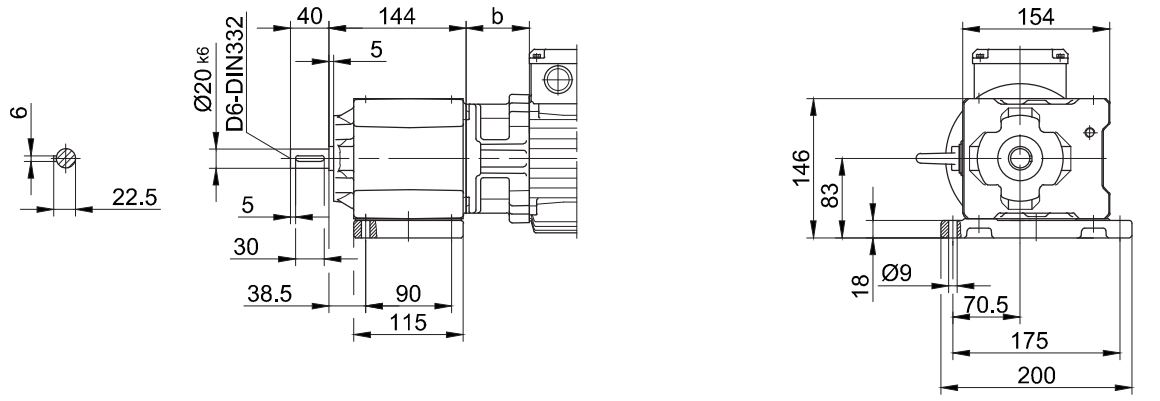
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/

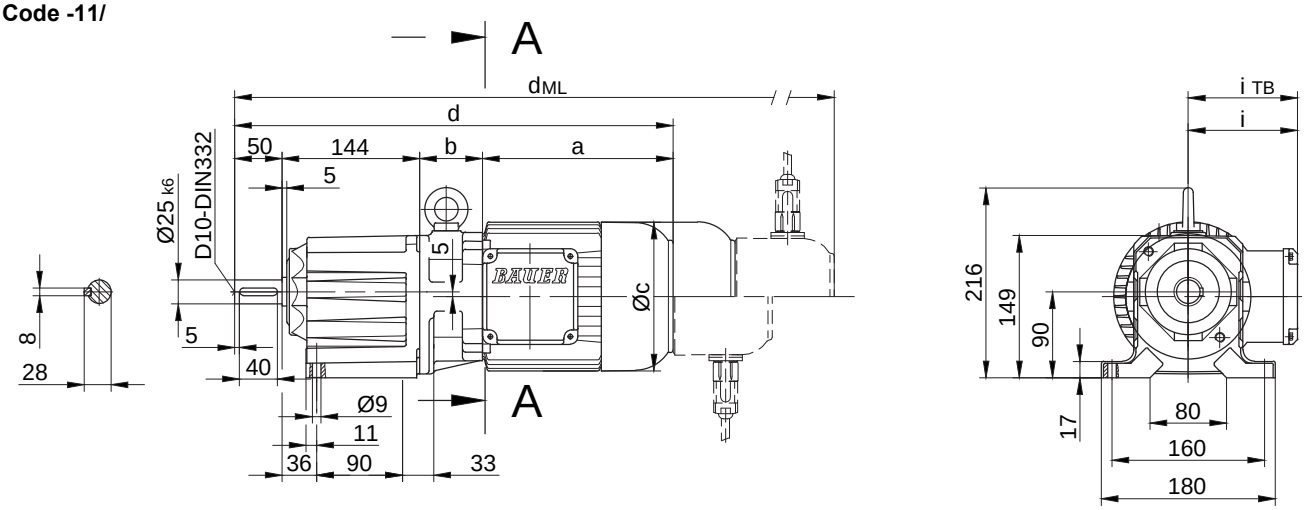


The actual gearbox design can vary from the geometry shown.

BG10X - BG10XZ

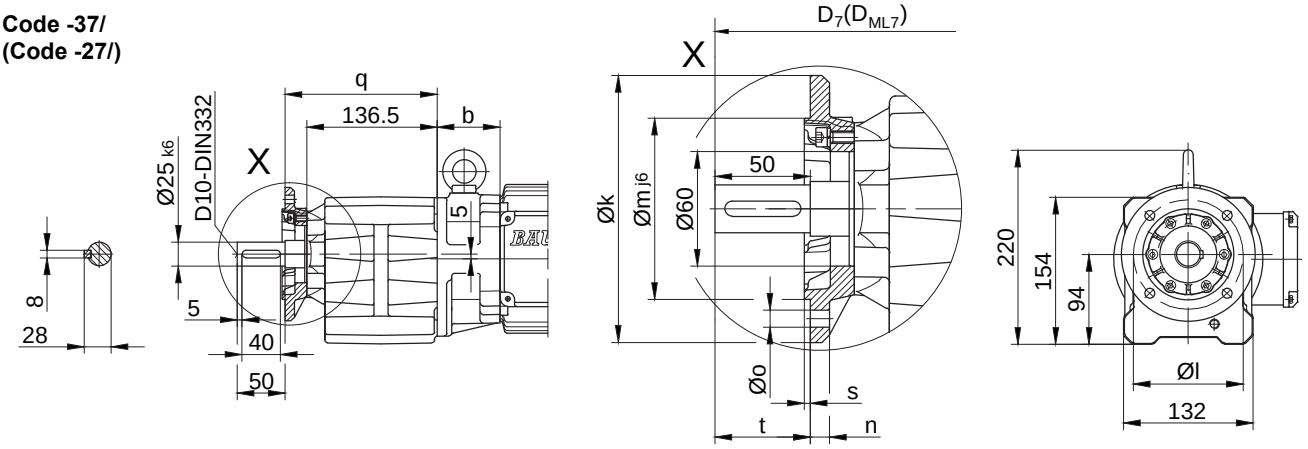
Foot mounting with clearance holes

Code -11/



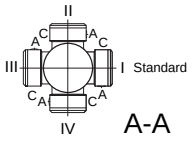
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG10X(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	Ø140	Ø115	Ø95	10	Ø9	159.5	3	50	d+15.5	d_{ML}+15.5
small -27/	Ø120	Ø100	Ø80	8	Ø6.6	154.5	3	55	d+15.5	d_{ML}+15.5



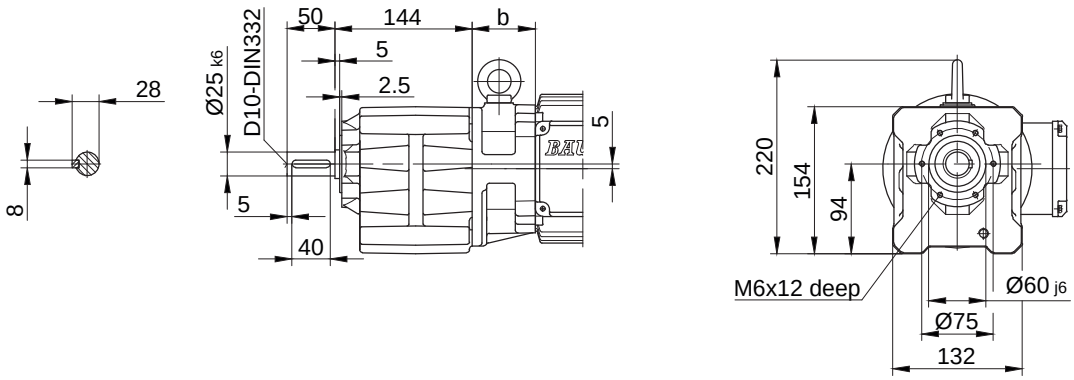
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	ES../ZS..G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG10XZ-.1/D04..	143	86	111	423	90	112	466.5	485.5	528.5	-
BG10X-.1/D05..	170	62	123	426	100	117	468	529	570.5	-
BG10XZ-.1/D05..	170	88	123	452	100	117	494	555	596.5	-
BG10X-.1/D06..	170	62	123	426	100	119	468	529	570.5	-
BG10XZ-.1/D06..	170	88	123	452	100	119	494	555	596.5	-
BG10X-.1/D07..	190	62	123	446	100	119	488	549	590.5	-
BG10XZ-.1/D07..	190	88	123	472	100	119	514	575	616.5	-
BG10X-.1/D..08..	200	66	156	460	115	136.5	526	567	633.5	526
BG10XZ-.1/D..08..	200	132	156	526	115	136.5	592	633	699.5	592
BG10X-.1/D..09..	251	80.5	176	525.5	124	158	618.5	632.5	723	618.5

The actual gearbox design can vary from the geometry shown.

BG10X - BG10XZ

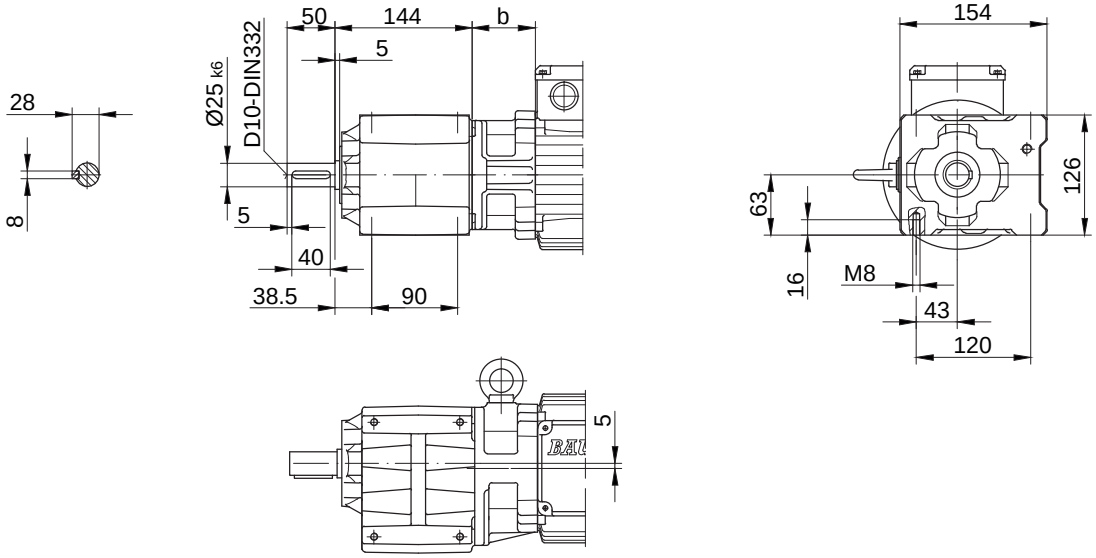
Flange with tapped holes

Code -71/



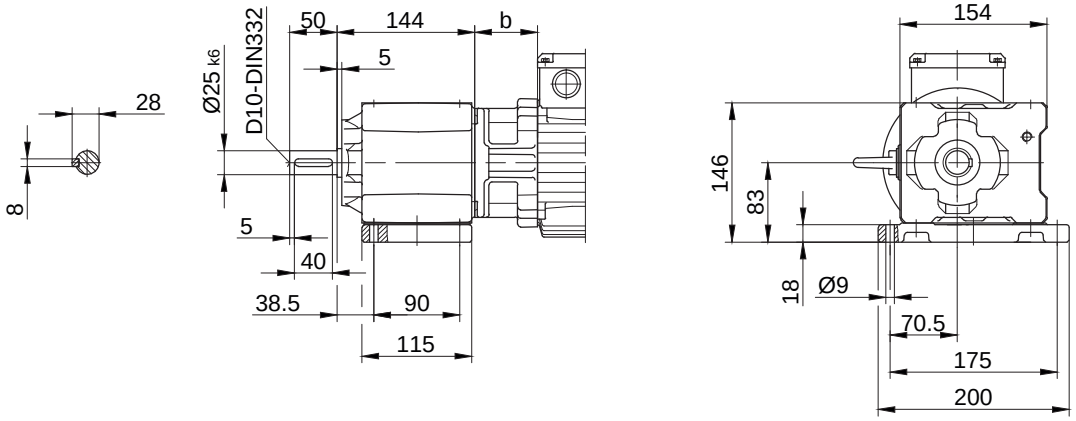
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/

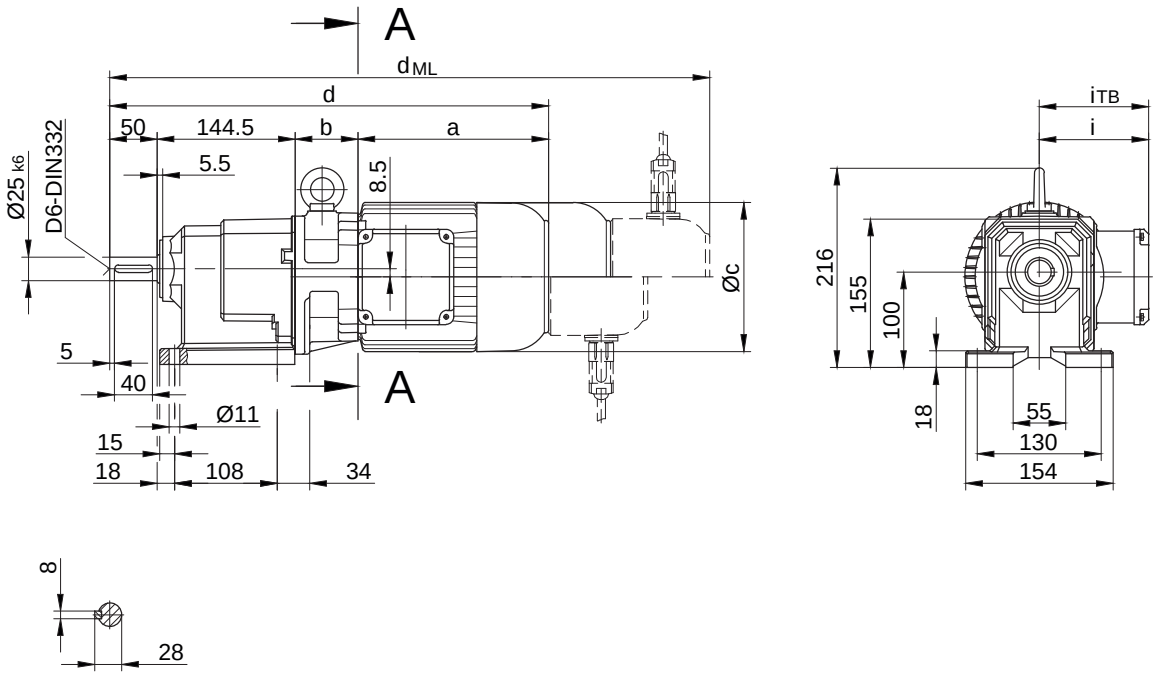


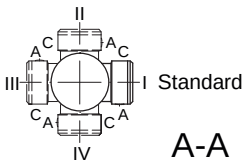
The actual gearbox design can vary from the geometry shown.

BG15

Foot mounting with clearance holes

Code -11/





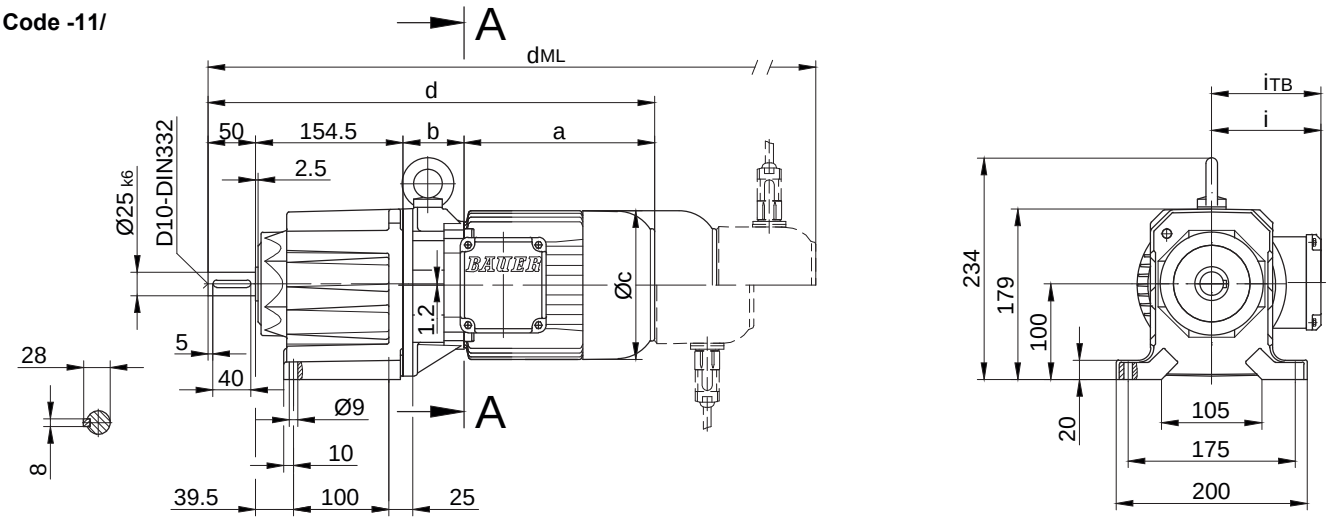
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG15-../D05..	170	62	123	426.5	100	129.5	468.5	529.5	571	-
BG15-../D06..	170	62	123	426.5	100	131.5	468.5	529.5	571	-
BG15-../D07..	190	62	123	446.5	100	131.5	488.5	549.5	591	-
BG15-../D..08..	200	66	156	460.5	115	149.5	526.5	567.5	634	527.5
BG15-../D..09..	251	80.5	181	526	124	164	619	633	723.5	619

The actual gearbox design can vary from the geometry shown.

BG20 - BG20Z

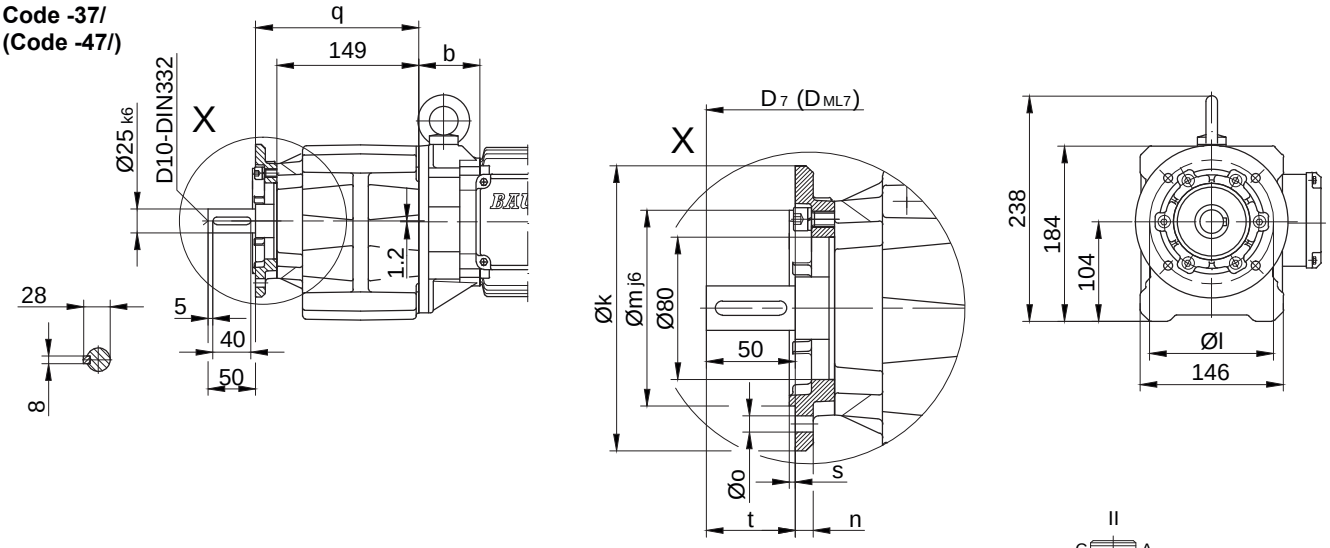
Foot mounting with clearance holes

Code -11/



Flange with clearance holes

Code -37/
(Code -47/)



Flange dimensions

BG20(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	160	130	110	10	9	171	3.5	50	d+16.5	d_{ML}+16.5
big -47/	200	165	130	12	11	178	3.5	43	d+16.5	d_{ML}+16.5

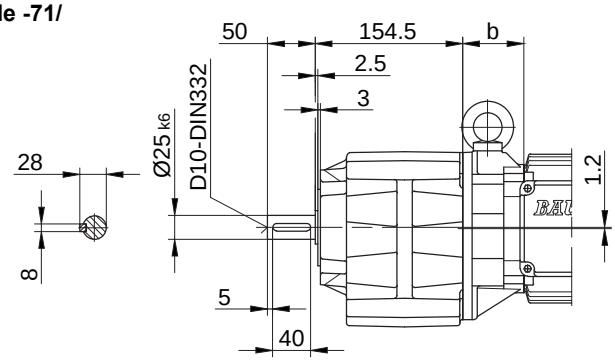
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG20Z-../D04..	143	100	111	447.5	90	112	491	510	553	-
BG20-../D05..	170	60	123	434.5	100	117	476.5	537.5	579	-
BG20Z-../D05..	170	102	123	476.5	100	117	518.5	579.5	621	-
BG20-../D06..	170	60	123	434.5	100	119	476.5	537.5	579	-
BG20Z-../D06..	170	102	123	476.5	100	119	518.5	579.5	621	-
BG20-../D07..	190	60	123	454.5	100	119	496.5	557.5	599	-
BG20Z-../D07..	190	102	123	496.5	100	119	538.5	599.5	641	-
BG20-../D..08..	200	64	156	468.5	115	136.5	534.5	575.5	642	534.5
BG20Z-../D..08..	200	146	156	550.5	115	136.5	616.5	657.5	724	616.5
BG20-../D..09..	251	78.5	181	534	124	158	627	641	731.5	627

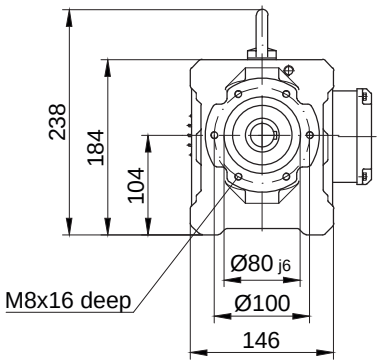
The actual gearbox design can vary from the geometry shown.

BG20 - BG20Z

Flange with tapped holes

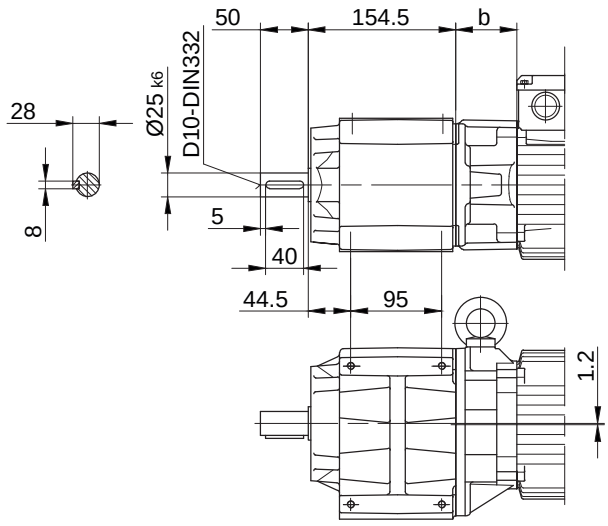
Code -71/

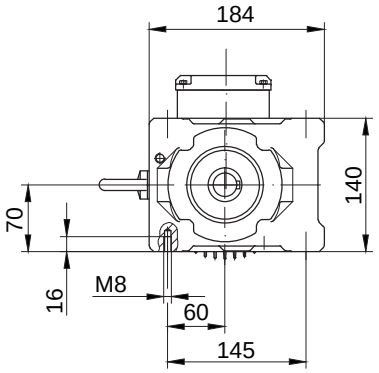




Foot with tapped holes left and right

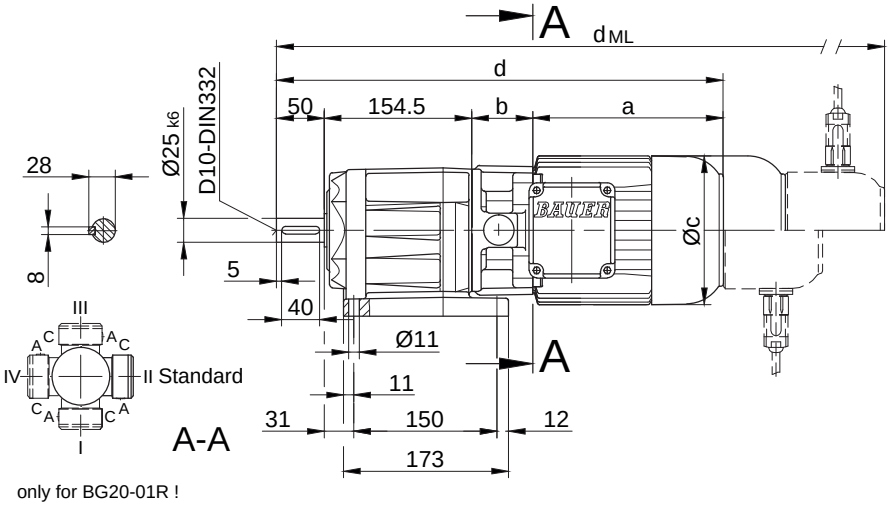
Code -61LR/



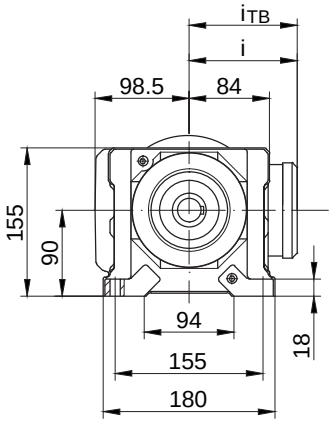


Foot mounting right with clearance holes

Code -01R



only for BG20-01R !



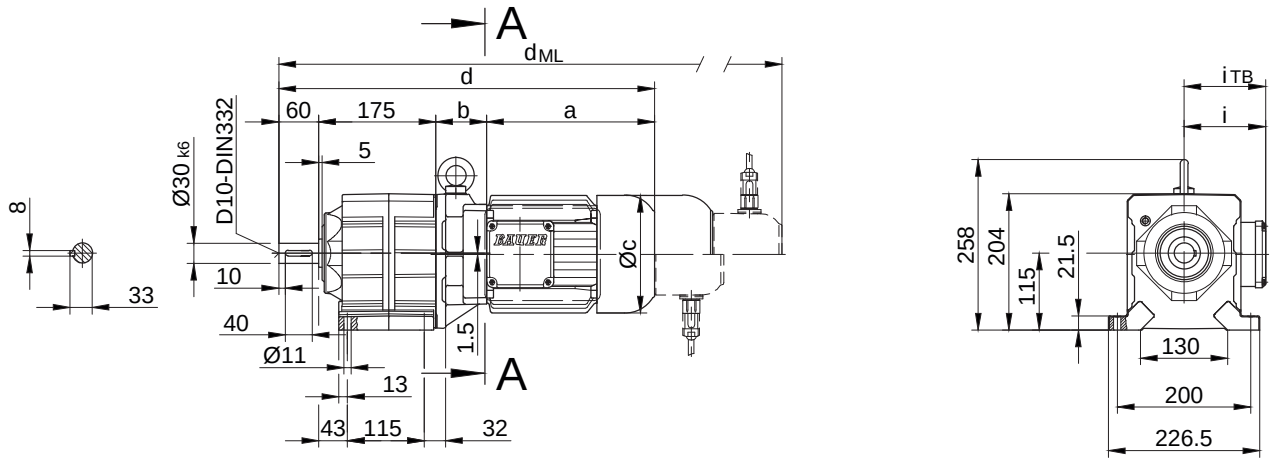
The actual gearbox design can vary from the geometry shown.

10

BG30 - BG30Z

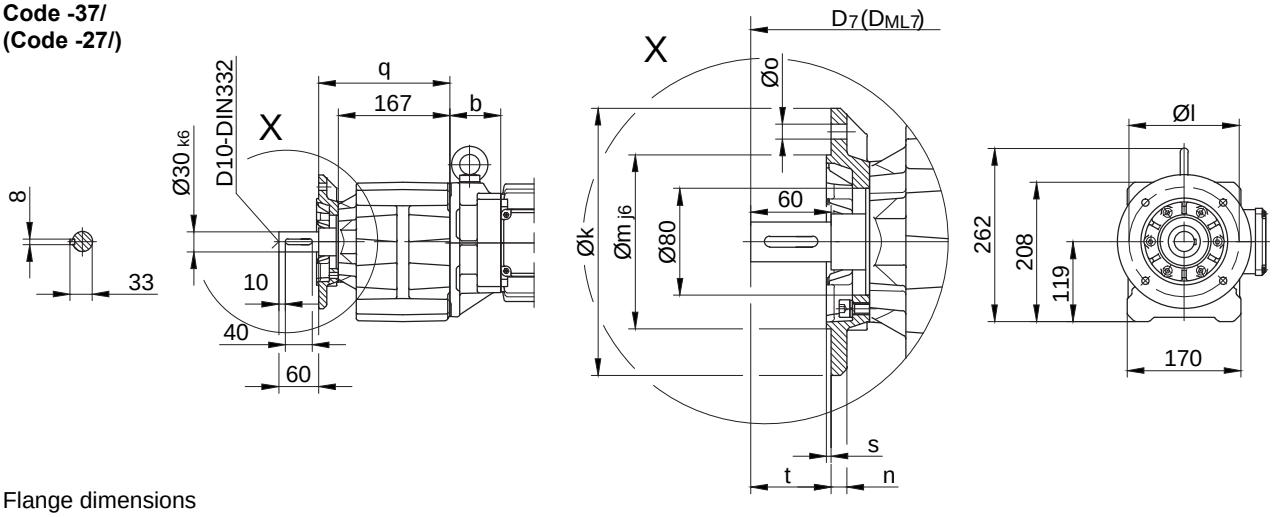
Foot mounting with clearance holes

Code -11/



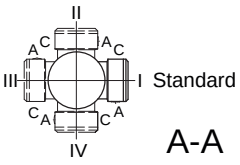
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG30(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	200	165	130	12	11	196	3.5	60	d+21	d_{ML}+21
small -27/	160	130	110	10	9	189	3.5	67	d+21	d_{ML}+21



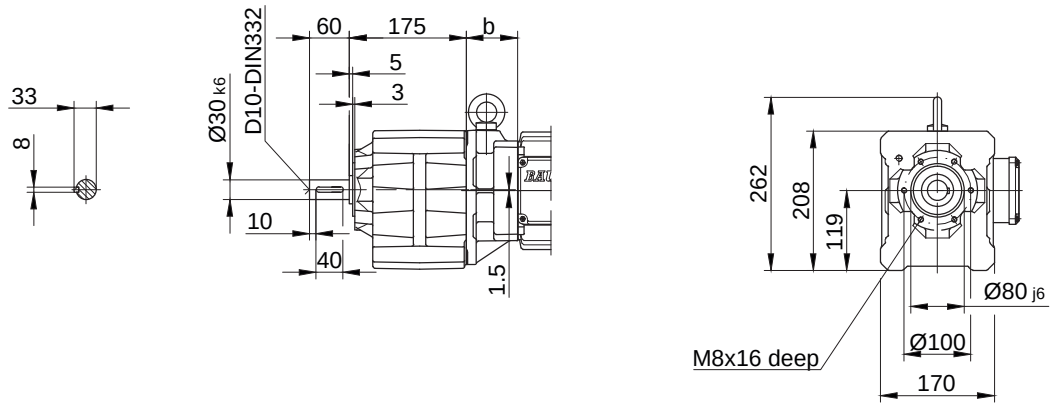
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG30-../D05..	170	58	123	464	100	117	505	566	607.5	-
BG30Z-../D05..	170	133.5	123	538.5	100	117	580.5	641.5	683	-
BG30-../D06..	170	58	123	464	100	119	505	566	607.5	-
BG30Z-../D06..	170	133.5	123	538.5	100	119	580.5	641.5	683	-
BG30-../D07..	190	58	123	483	100	119	525	586	627.5	-
BG30Z-../D07..	190	133.5	123	558.5	100	119	600.5	661.5	703	-
BG30-../D..08..	200	62	156	497	115	136.5	563	604	670.5	563
BG30Z-../D..08..	200	137.5	156	572.5	115	136.5	638.5	679.5	746	638.5
BG30-../D..09..	251	76.5	181	562.5	124	158	655.5	669.5	760	655.5
BG30Z-../D..09..	251	152	181	638	124	158	731	745	835.5	731
BG30-../D..11..	319	83	228	637	181	182	735	744	839.5	735

The actual gearbox design can vary from the geometry shown.

BG30 - BG30Z

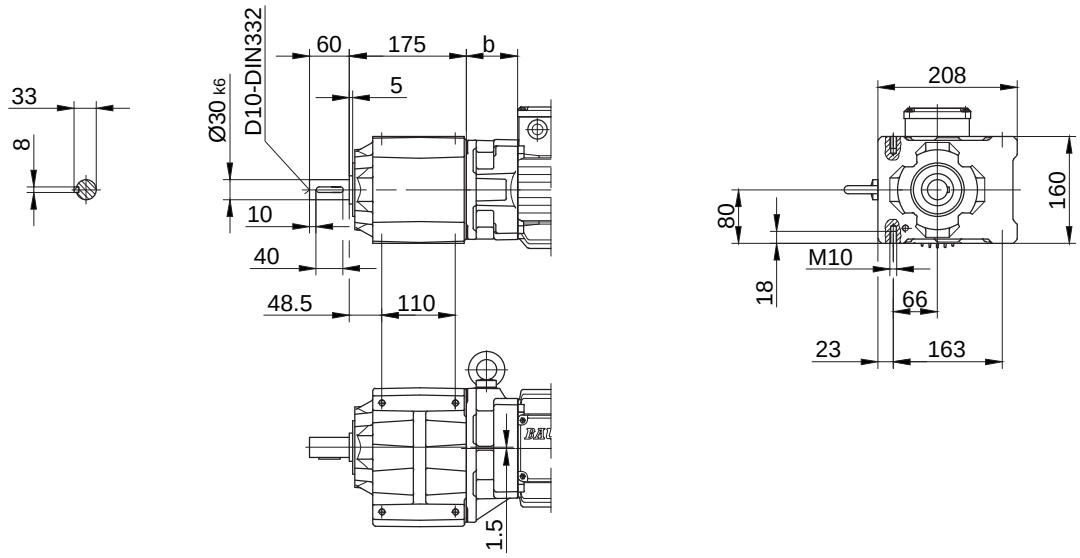
Flange with tapped holes

Code -71/



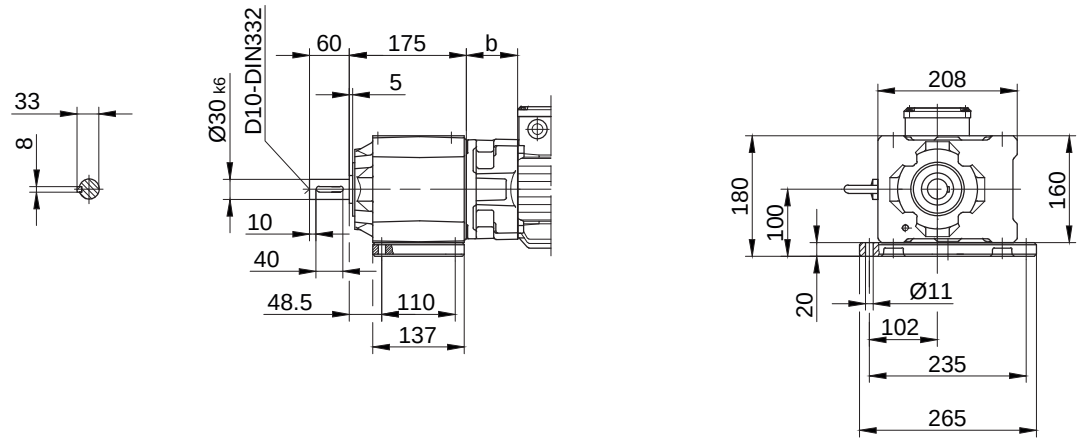
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/

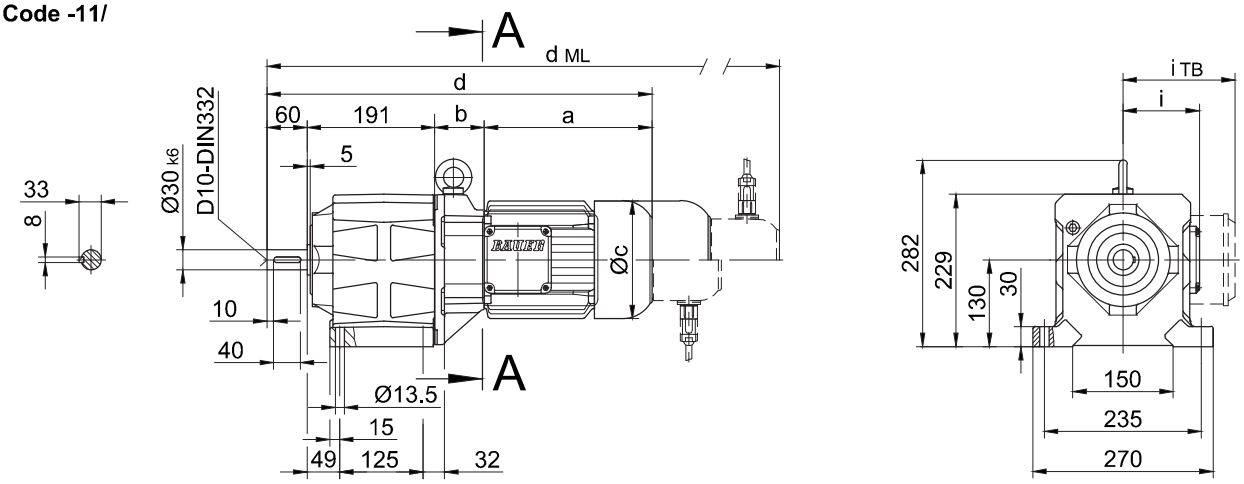


The actual gearbox design can vary from the geometry shown.

BG40 - BG40Z

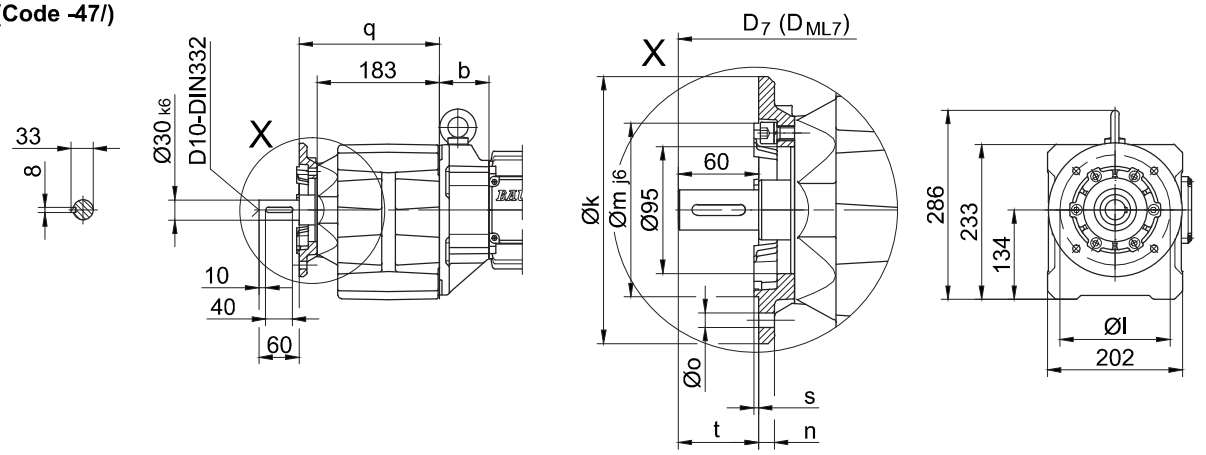
Foot mounting with clearance holes

Code -11/



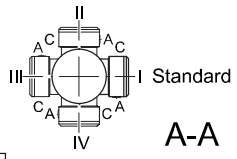
Flange with clearance holes

Code -37/
(Code -47/)



Flange dimensions

BG40(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	200	165	130	12	11	210	3.5	60	d+19	d_{ML}+19
big -47/	250	215	180	16	13.5	219	4	51	d+19	d_{ML}+19



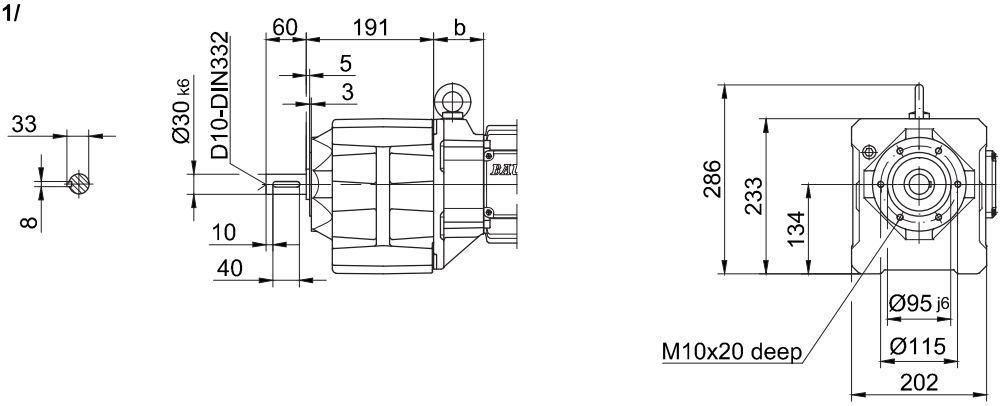
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG40Z-../D05..	170	138.5	123	559.5	100	117	601.5	662.5	704	-
BG40Z-../D06..	170	138.5	123	559.5	100	119	601.5	662.5	704	-
BG40Z-../D07..	190	138.5	123	579.5	100	119	621.5	682.5	724	-
BG40-../D..08..	200	60	156	511	115	136.5	577	618	684.5	577
BG40Z-../D..08..	200	142.5	156	593.5	115	136.5	659.5	700.5	767	659.5
BG40-../D..09..	251	74.5	181	576.5	124	158	669.5	683.5	774	669.5
BG40Z-../D..09..	251	157	181	659	124	158	752	766	856.5	752
BG40-../D..11..	319	81	228	651	181	181	749	758	853.5	749

The actual gearbox design can vary from the geometry shown.

BG40 - BG40Z

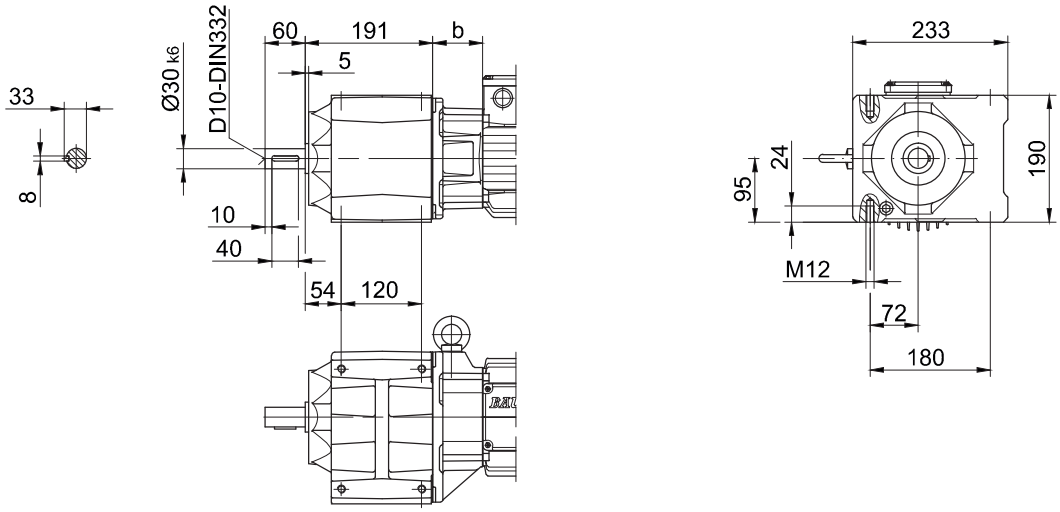
Flange with tapped holes

Code -71/



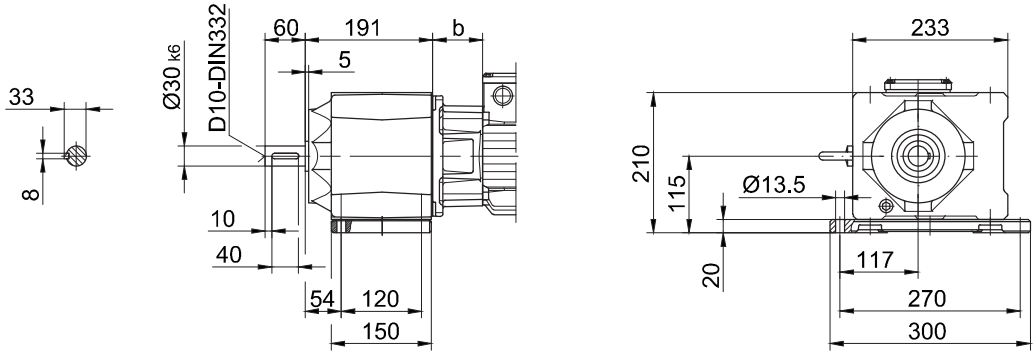
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/

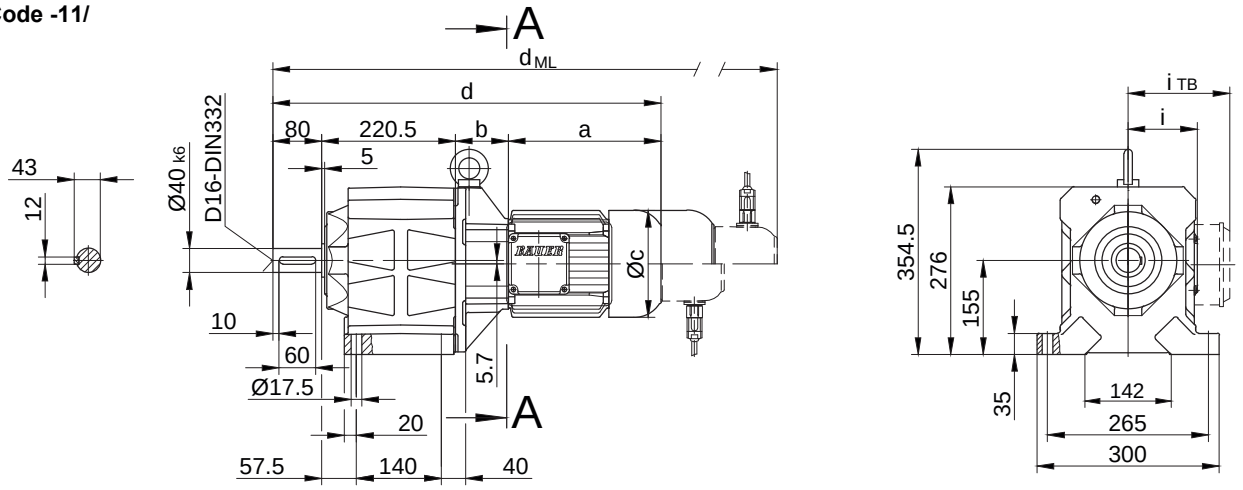


The actual gearbox design can vary from the geometry shown.

BG50 - BG50Z

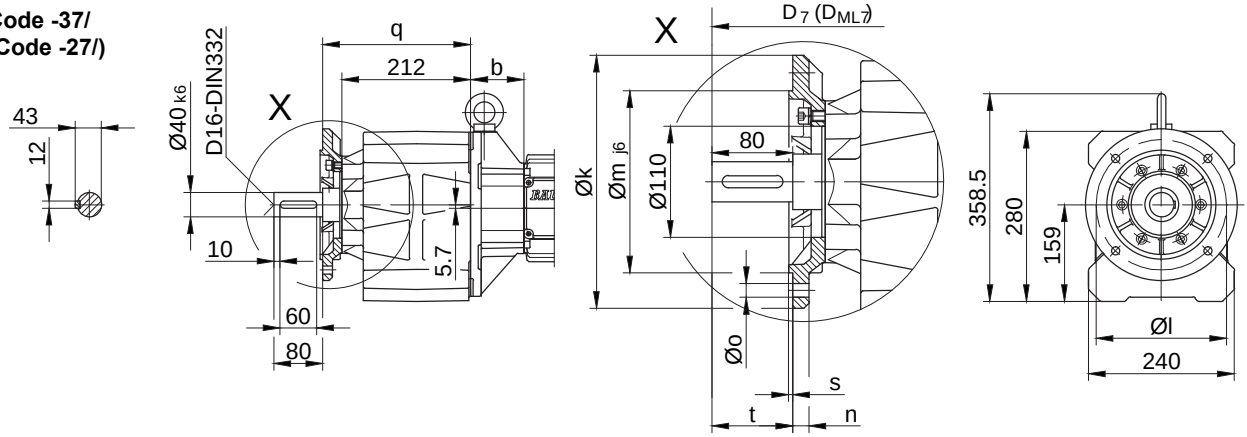
Foot mounting with clearance holes

Code -11/



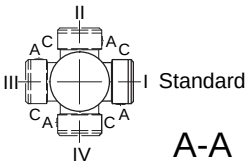
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG50(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	250	215	180	16	13.5	244	4	80	d+23.5	d_{ML}+23.5
small -27/	200	165	130	12	11	241	3.5	83	d+23.5	d_{ML}+23.5



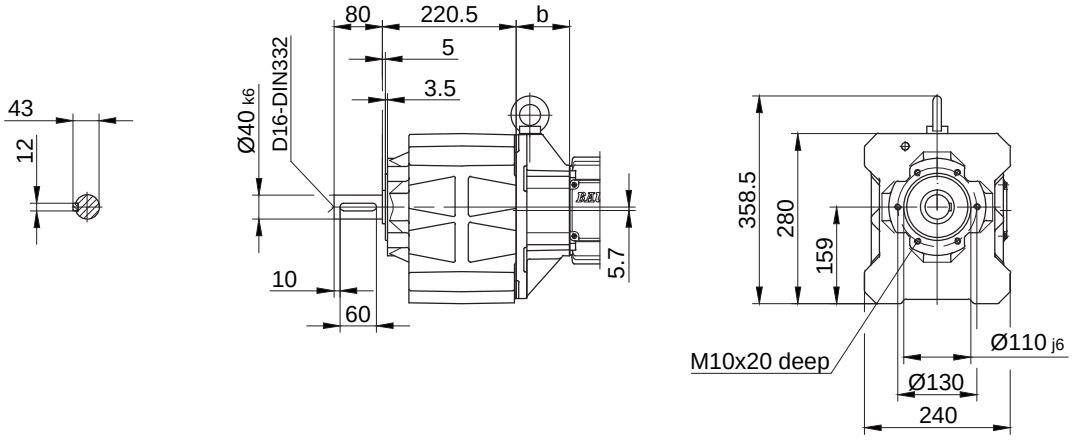
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG50Z-../D05..	170	155	123	625.5	100	117	667.5	728.5	771	-
BG50Z-../D06..	170	155	123	625.5	100	119	667.5	728.5	771	-
BG50Z-../D07..	190	155	123	645.5	100	119	687.5	748.5	769	-
BG50-../D..08..	200	73	156	573.5	115	136.5	639.5	680.5	746	639.5
BG50Z-../D..08..	200	159	156	659.5	115	136.5	725.5	766.5	832	725.5
BG50-../D..09..	251	87.5	181	639	124	158	732	746	833	732
BG50Z-../D..09..	251	173.5	181	725	124	158	818	832	919	818
BG50-../D..11..	319	94	228	713.5	181	181	811.5	820.5	917	811.5
BG50-../D..13..	393	107	258	800.5	218	218	911.5	907.5	1006	911.5
BG50-../D..16..	454.5	121	322	876	244	244	1019.5	983	1123.5	1019.5
BG50-../D..18..	542	143	368	985.5	288	288	1135	1092.5	1239	1135

The actual gearbox design can vary from the geometry shown.

BG50 - BG50Z

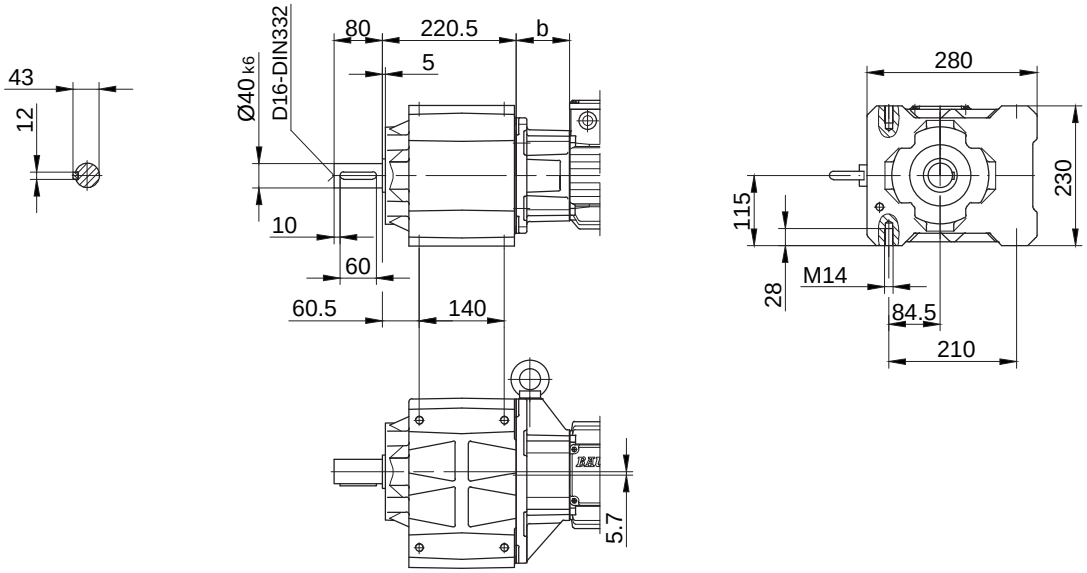
Flange with tapped holes

Code -71/



Foot with tapped holes left and right

Code -61LR/

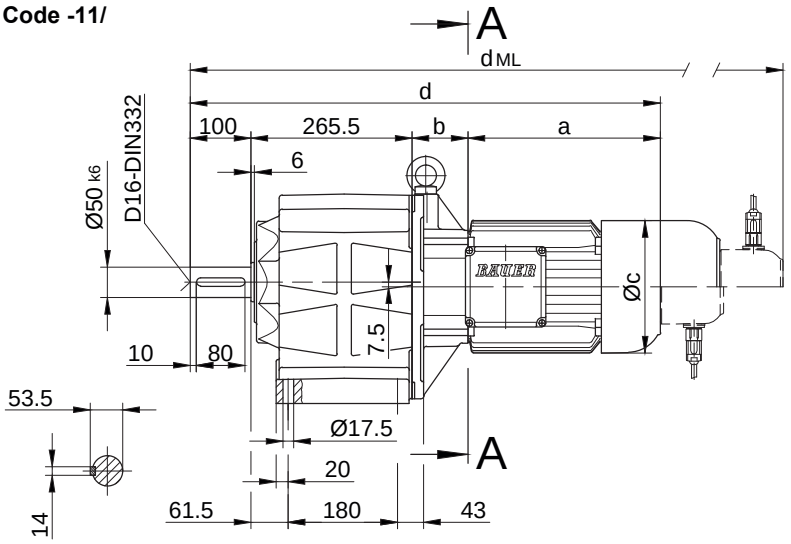


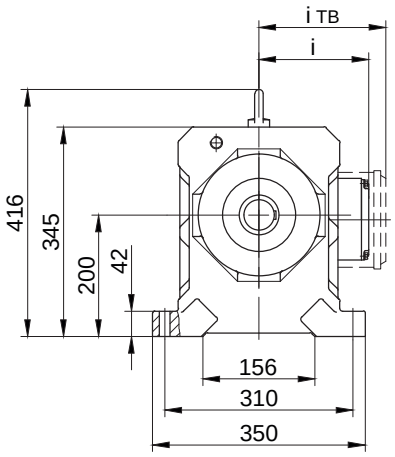
The actual gearbox design can vary from the geometry shown.

BG60 - BG60Z

Foot mounting with clearance holes

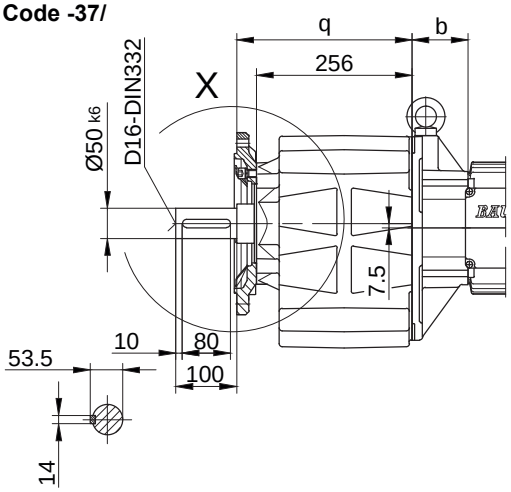
Code -11/

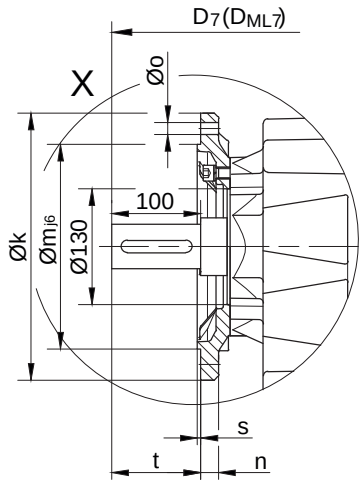


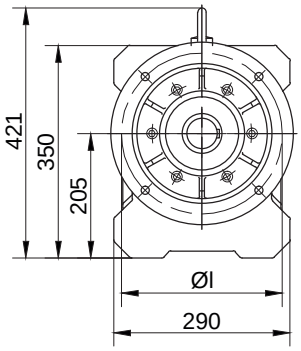


Flange with clearance holes

Code -37/

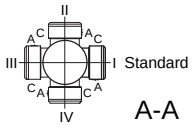






Flange dimensions

BG60(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	300	265	230	20	13.5	289	4	100	d+23.5	d_{ML}+23.5
small -27/	250	215	180	16	13.5	286	4	103	d+23.5	d_{ML}+23.5



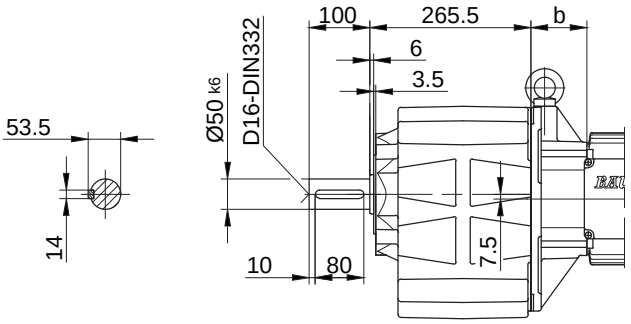
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG60Z-../D..08..	200	181	156	746.6	115	136.5	812.5	853.5	920	812.5
BG60-../D..09..	251	85.5	181	702	124	158	795	809	899.5	795
BG60Z-../D..09..	251	195.5	181	812	124	158	905	919	1009.5	905
BG60-../D..11..	319	92	228	776.5	181	181	874.5	883.5	979	874.5
BG60Z-../D..11..	319	202	228	886.5	181	181	984.5	993.5	1089	984.5
BG60-../D..13..	393	105	258	863.5	218	218	974.5	970.5	1079	974.5
BG60-../D..16..	454.5	119	322	939	244	244	1182.5	1046	1186.5	1182.5
BG60-../D..18..	542	272	368	1179.5	288	288	1329	1286.5	1433	1329

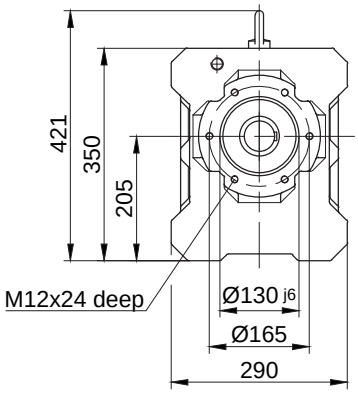
The actual gearbox design can vary from the geometry shown.

BG60 - BG60Z

Flange with tapped holes

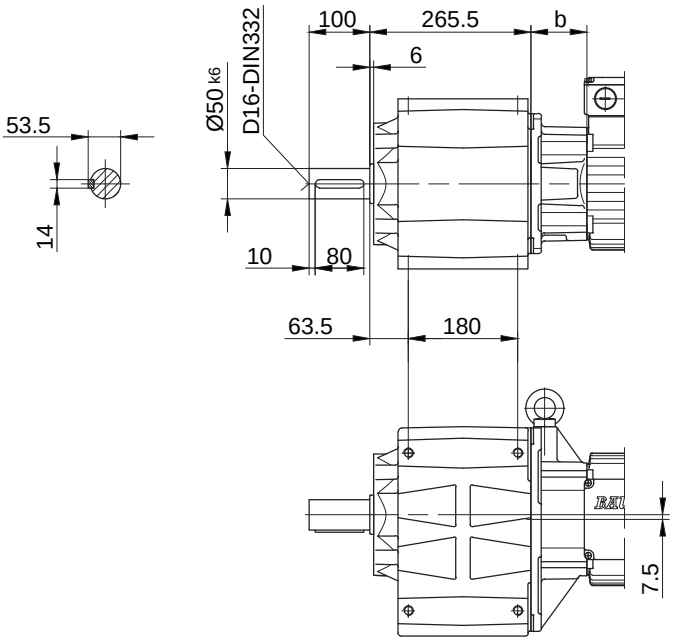
Code -71/

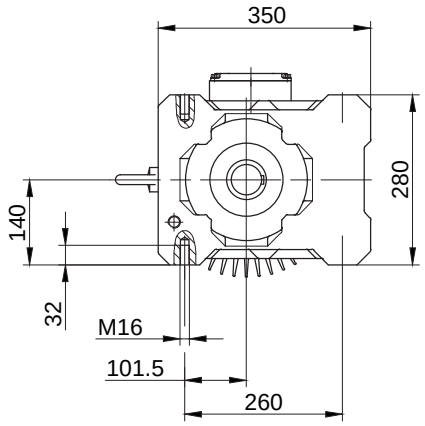




Foot with tapped holes left and right

Code -61LR/





10

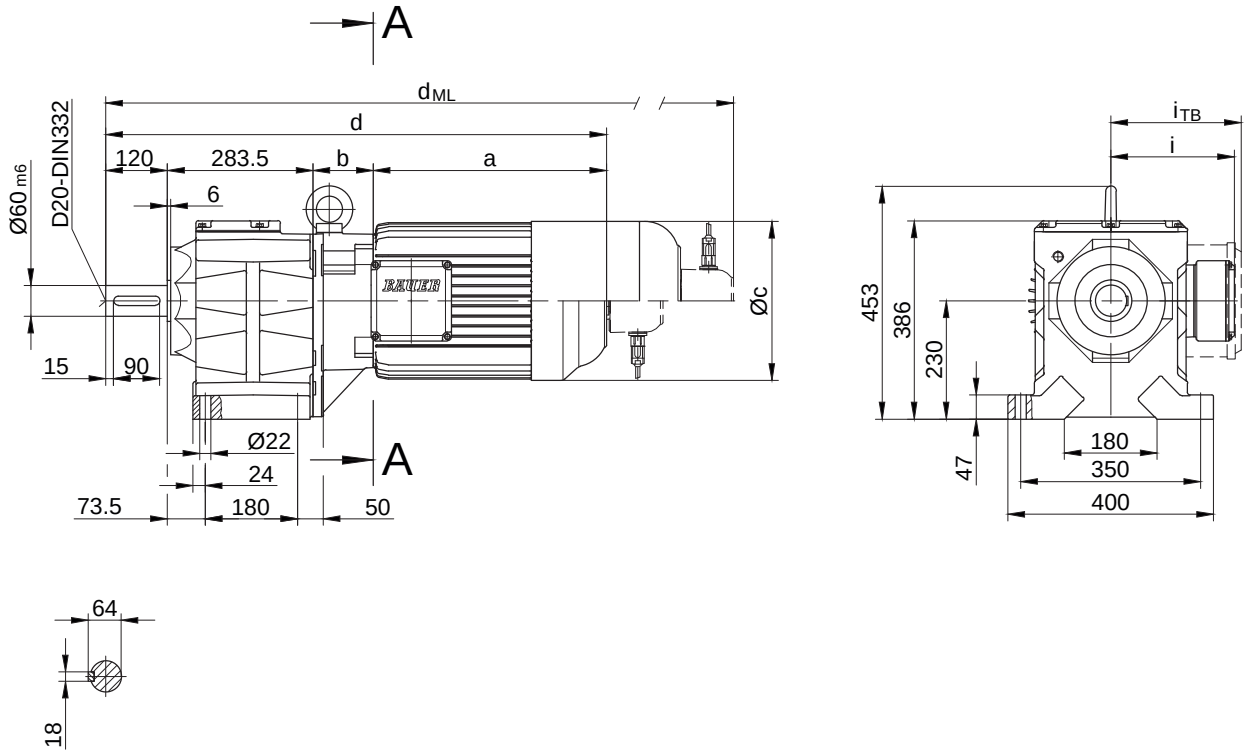
The actual gearbox design can vary from the geometry shown.

Dimension

BG70 - BG70Z

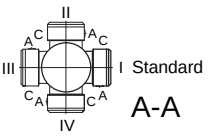
Foot mounting with clearance holes

Code -11/



Flange dimensions

BG70(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	350	300	250_{h6}	20	17.5	314	5	120	d+30.5	d_{ML}+30.5
small -27/	300	265	230_{j6}	20	13.5	322	4	112	d+30.5	d_{ML}+30.5



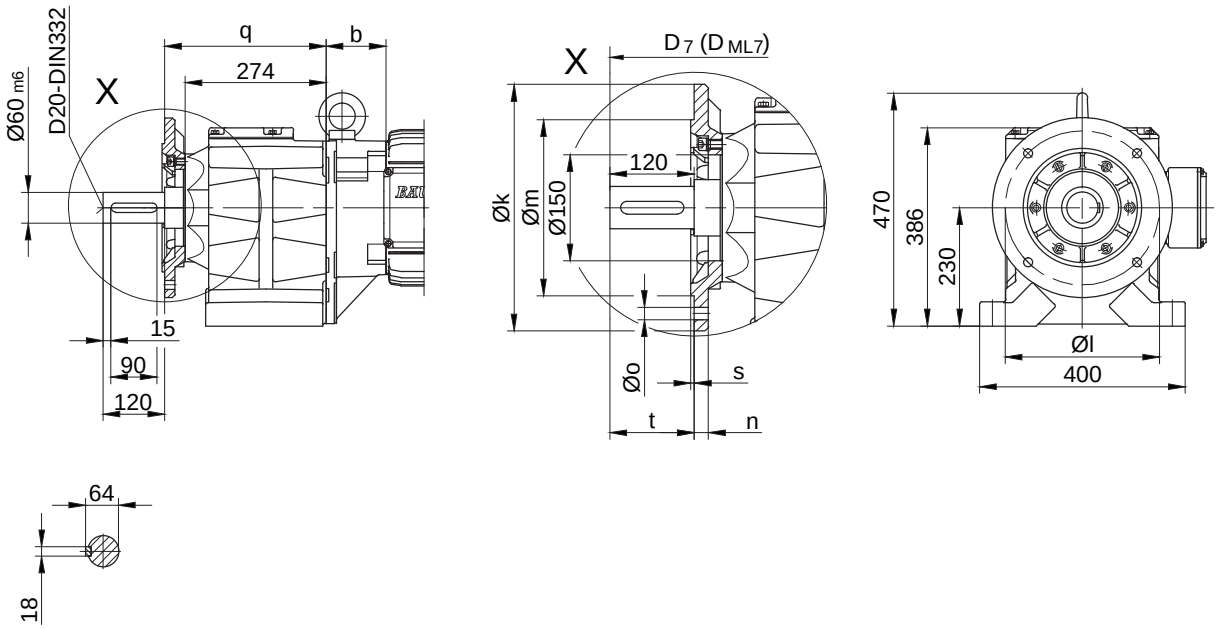
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG70Z-../D..08..	200	202	156	805.5	115	136.5	871.5	912.5	979	871
BG70-../D..09..	251	83.5	181	738	124	158	831	845	935.5	831
BG70Z-../D..09..	251	216.5	181	871	124	158	964	978	1068.5	964
BG70-../D..11..	319	90	228	812.5	181	181	910.5	919.5	1015	910.5
BG70Z-../D..11..	319	223	228	945.5	181	181	1043.5	1052.5	1148	1043.5
BG70-../D..13..	393	103	258	899.5	218	218	1010.5	1006.5	1115	1010.5
BG70Z-../D..13..	393	236	258	1032.5	218	218	1143.5	1139.5	1248	1143.5
BG70-../D..16..	454.5	117	322	975	244	244	1118.5	1082	1222.5	1118.5
BG70Z-../D..16..	454.5	250	322	1108	244	244	1251.5	1215	1355.5	1251.5
BG70-../D..18..	542	139	368	1084.5	288	288	1234	1191.5	1338	1234
BG70Z-../D..18..	542	272	368	1217.5	288	288	1367	1324.5	1471	1367

The actual gearbox design can vary from the geometry shown.

BG70 - BG70Z

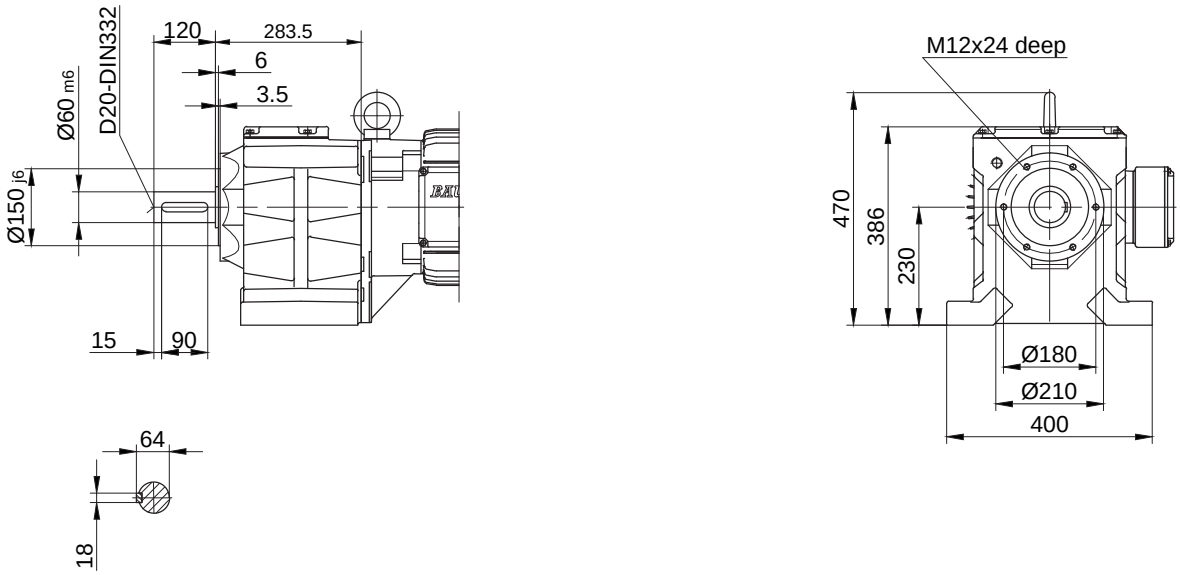
Flange with clearance holes

Code -37/
(Code -27/)



Flange with tapped holes

Code -71/

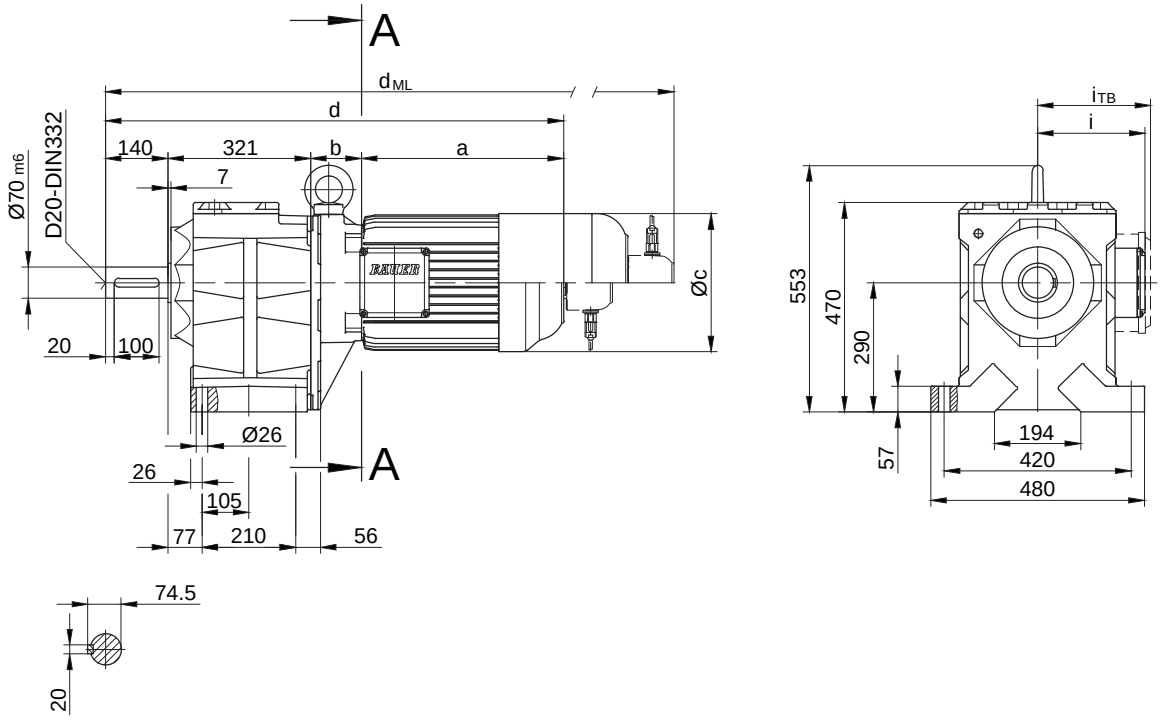


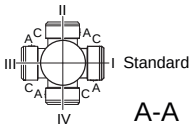
The actual gearbox design can vary from the geometry shown.

BG80 - BG80Z

Foot mounting with clearance holes

Code -11/





Flange dimensions

BG80(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	400	350	300	20	4 x 17.5	345	5	140	d+24	d_{ML}+24
small -27/	350	300	250	20	4 x 17.5	345	5	140	d+24	d_{ML}+24
big -47/	450	400	350	22	8 x 17.5	355	5	130	d+24	d_{ML}+24

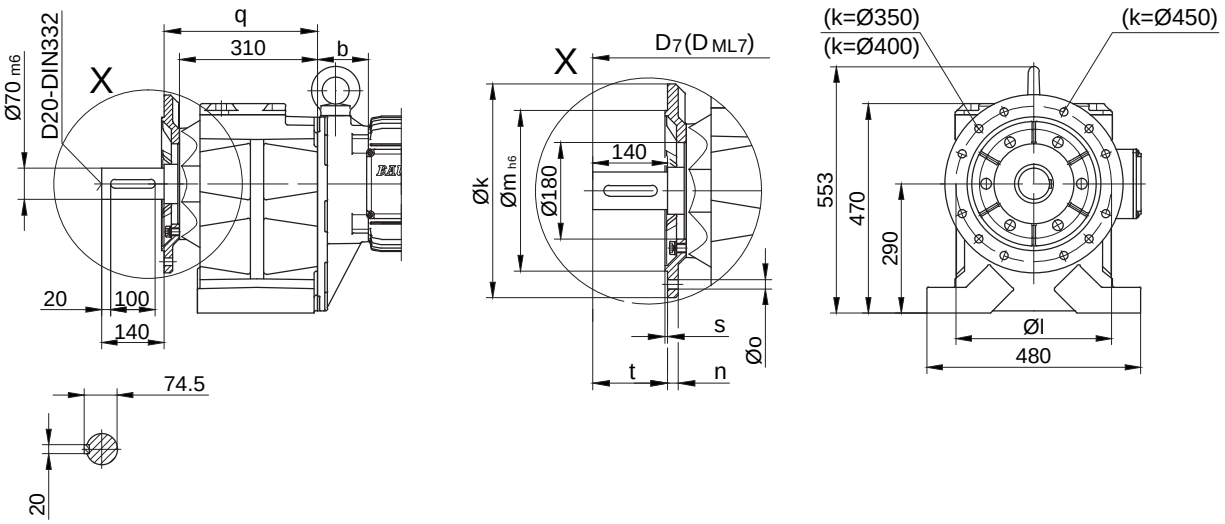
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG80Z-../D..09..	251	252.5	181	964.5	124	158	1057.5	1071.5	1162	1057.5
BG80-../D..11..	319	87	228	867	181	181	965	974	1069.5	965
BG80Z-../D..11..	319	259	228	1039	181	181	1137	1146	1241.5	1137
BG80-../D..13..	393	100	258	954	218	218	1065	1061	1169.5	1065
BG80Z-../D..13..	393	272	258	1126	218	218	1237	1233	1341.5	1237
BG80-../D..16..	454.5	114	322	1029.5	244	244	1173	1136.5	1277	1173
BG80Z-../D..16..	454.5	286	322	1201.5	244	244	1345	1308.5	1449	1345
BG80-../D..18..	542	136	368	1139	288	288	1288.5	1246	1392.5	1288.5
BG80Z-../D..18..	542	308	368	1311	288	288	1460.5	1418	1564.5	1460.5

The actual gearbox design can vary from the geometry shown.

BG80 - BG80Z

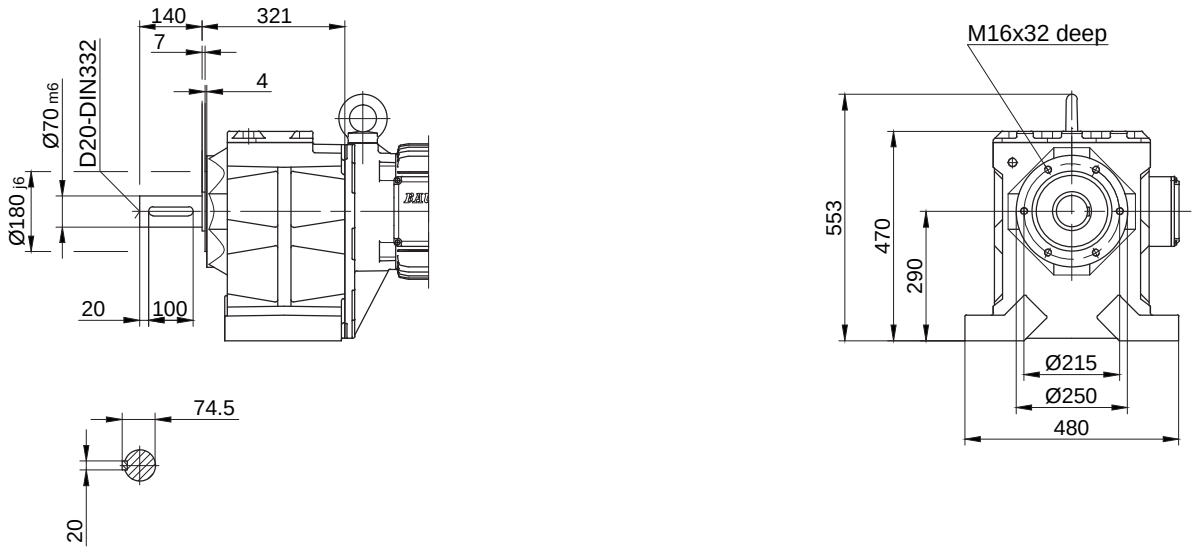
Flange with clearance holes

Code -37/
(Code -27/)
(Code -47/)



Flange with tapped holes

Code -71/



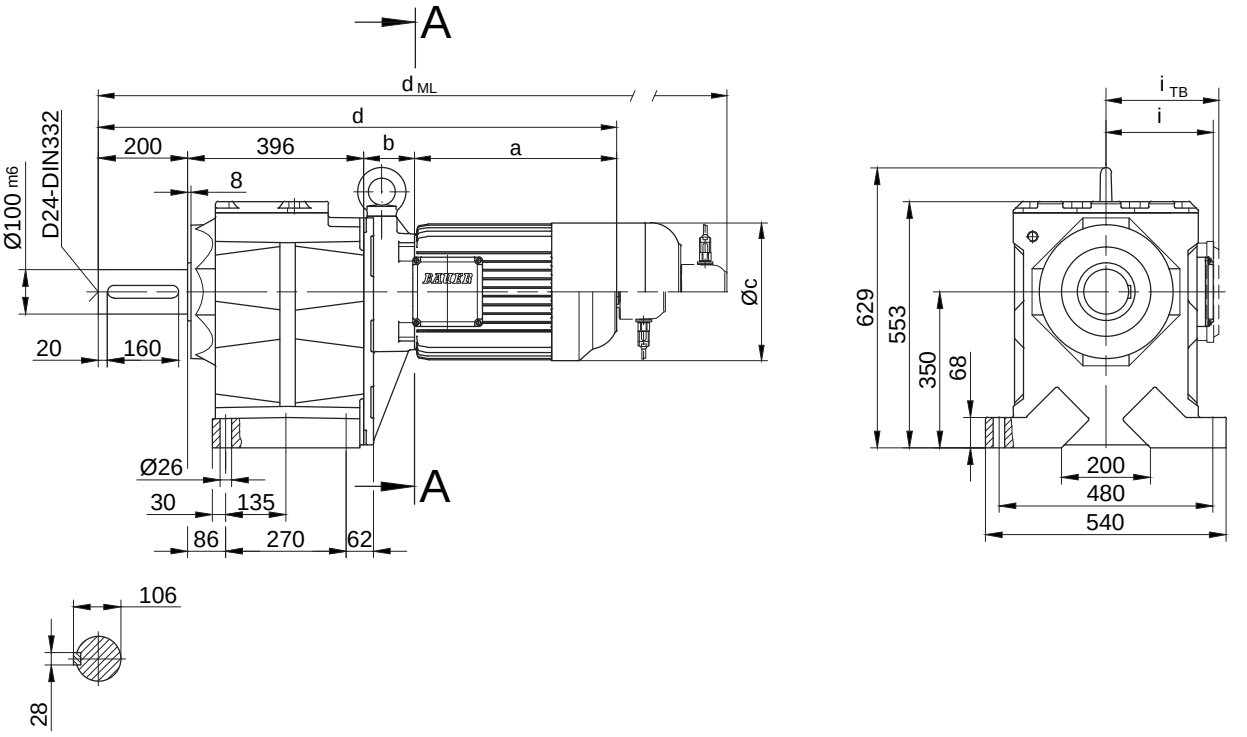
10

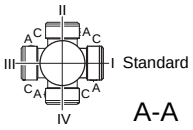
The actual gearbox design can vary from the geometry shown.

BG90 - BG90Z

Foot mounting with clearance holes

Code -11/





A-A

Flange dimensions

BG90(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	450	400	350	22	17.5	439	5	200	d+43	d_{ML}+43
big -47/	550	500	450	22	17.5	444	5	195	d+43	d_{ML}+43

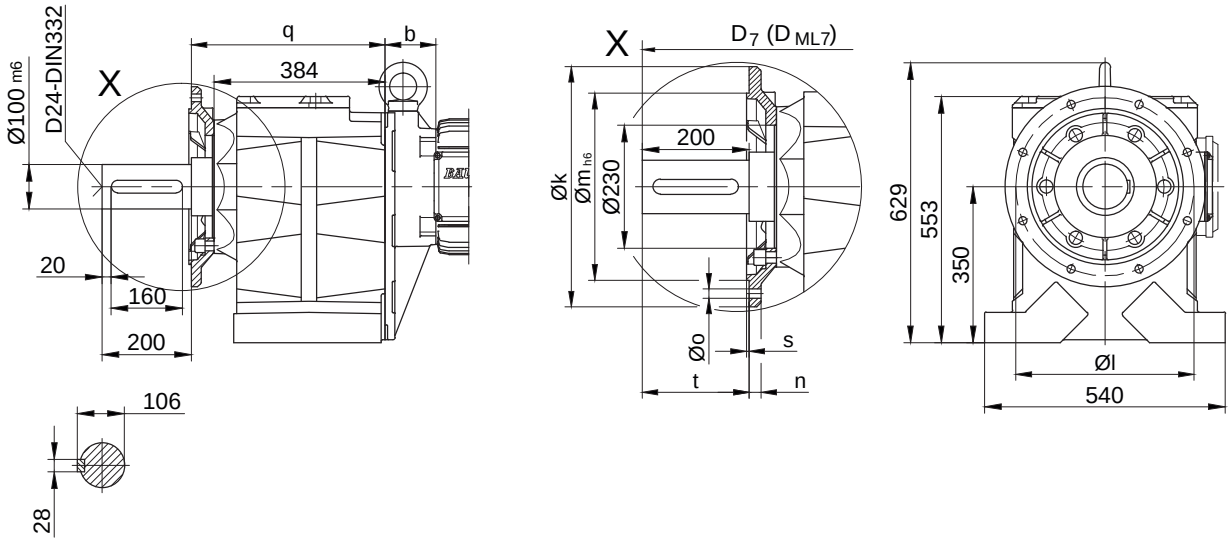
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG90Z-../D..09..	251	267	181	1114	124	158	1207	1221	1311	1207
BG90Z-../D..11..	319	273.5	228	1188.5	181	181	1286.5	1295.5	1388.5	1286.5
BG90-../D..13..	393	100	258	1015	218	218	1200	1196	1301	1200
BG90Z-../D..13..	393	286.5	258	1275.5	218	218	1386.5	1382.5	1487.5	1386.5
BG90-../D..16..	454.5	114	322	1164.5	244	244	1308	1271.5	1412	1308
BG90Z-../D..16..	454.5	300.5	322	1351	244	244	1494.5	1458	1598.5	1494.5
BG90-../D..18..	542	136	368	1274	288	288	1423.5	1381	1527.5	1423.5
BG90Z-../D..18..	542	322.5	368	1460.5	288	288	1610	1567.5	1714	1610

The actual gearbox design can vary from the geometry shown.

BG90 - BG90Z

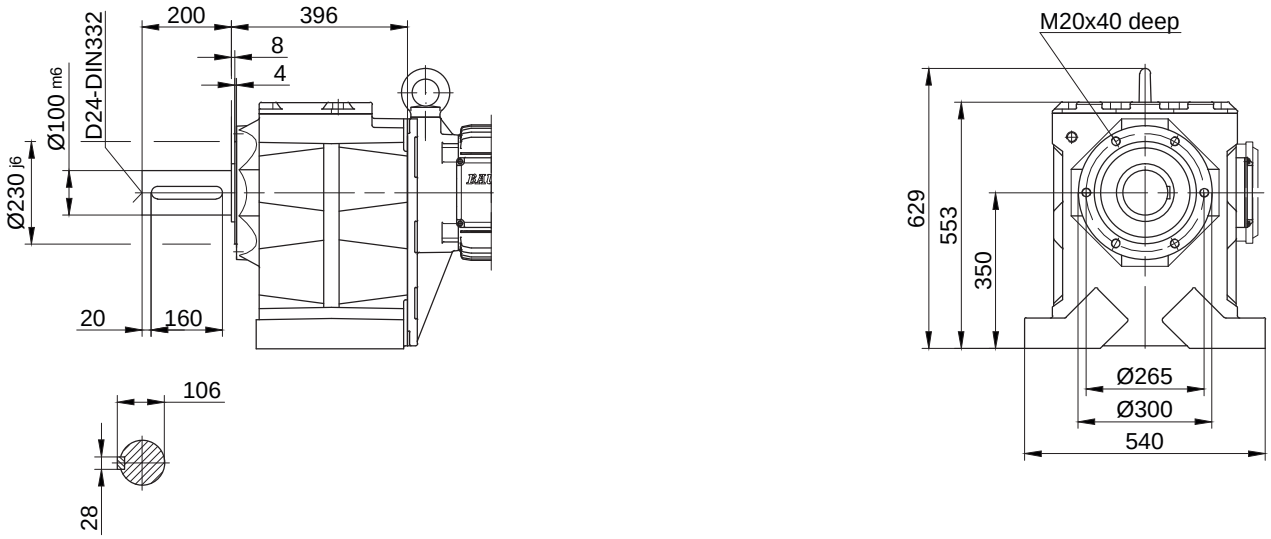
Flange with clearance holes

Code -37/
(Code -47/)



Flange with tapped holes

Code -71/

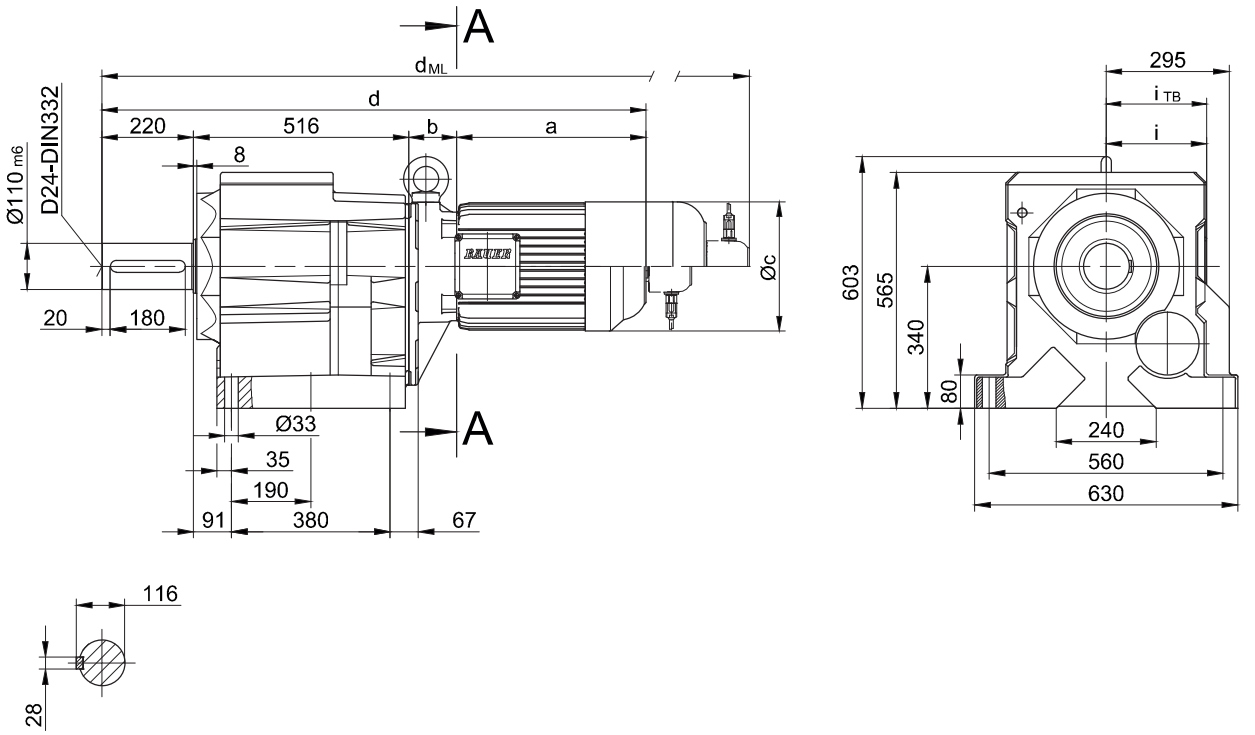


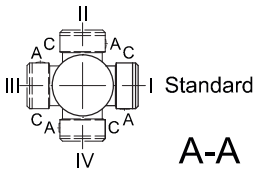
The actual gearbox design can vary from the geometry shown.

BG100 - BG100Z

Foot mounting with clearance holes

Code -11/





Flange dimensions

BG100(Z)	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	550	500	450	22	17.5	558	5	220	d+42	d_{ML}+42
big -47/	660	600	550	25	22	552	6	226	d+42	d_{ML}+42

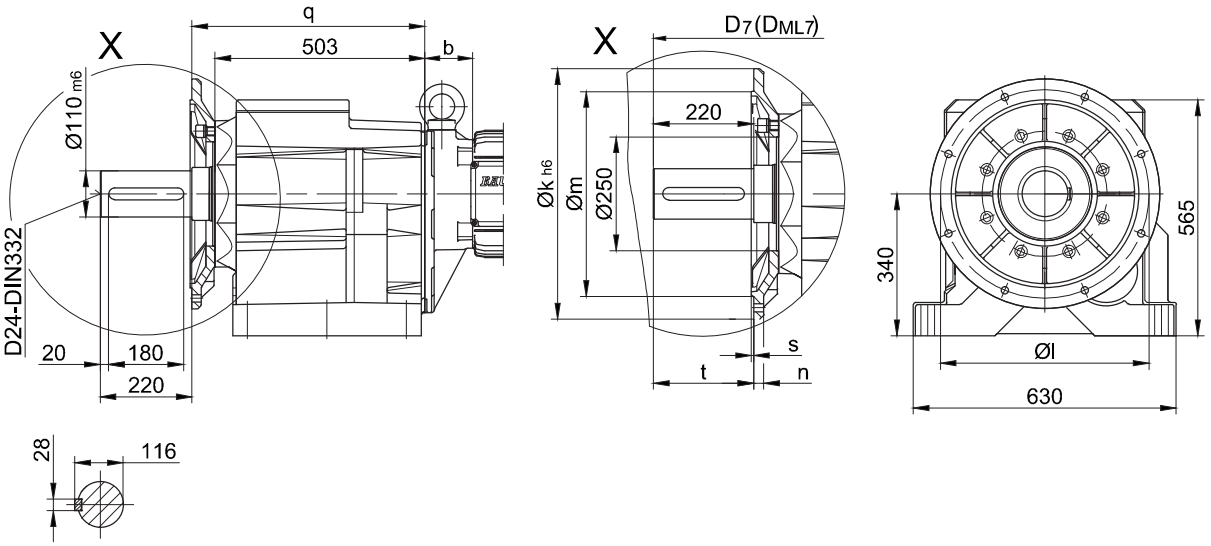
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG100Z-../D..09..	251	252.5	181	1239.5	124	158	1332.5	1346.5	1437	1332.5
BG100-../D..11..	319	87	228	1142	181	181	1240	1249	1344.5	1240
BG100Z-../D..11..	319	259	228	1314	181	181	1412	1421	1516.5	1412
BG100-../D..13..	393	100	258	1229	218	218	1340	1336	1444.5	1340
BG100Z-../D..13..	393	272	258	1401	218	218	1512	1508	1616.5	1512
BG100-../D..16..	454.5	114	322	1304.5	244	244	1448	1411.5	1552	1448
BG100Z-../D..16..	454.5	286	322	1476.5	244	244	1620	1583.5	1724	1620
BG100-../D..18..	542	136	368	1414	288	288	1563.5	1521	1667.5	1563.5
BG100Z-../D..18..	542	308	368	1586	288	288	1735.5	1693	1839.5	1735.5

The actual gearbox design can vary from the geometry shown.

BG100 - BG100Z

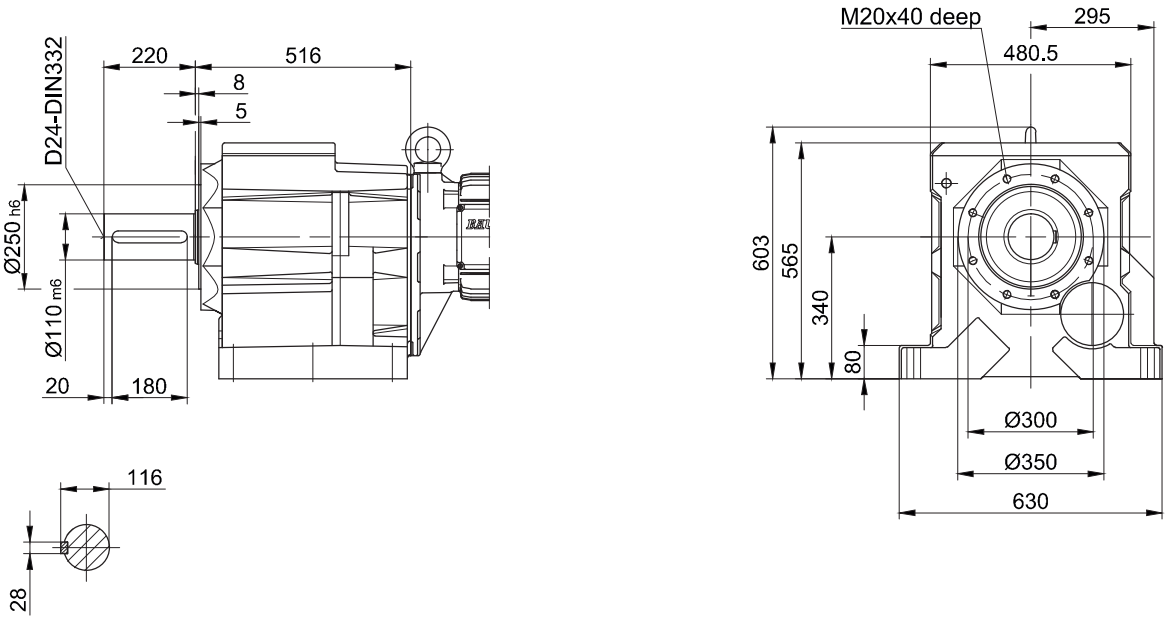
Flange with clearance holes

Code -37/
(Code -47/)



Flange with tapped holes

Code 71/

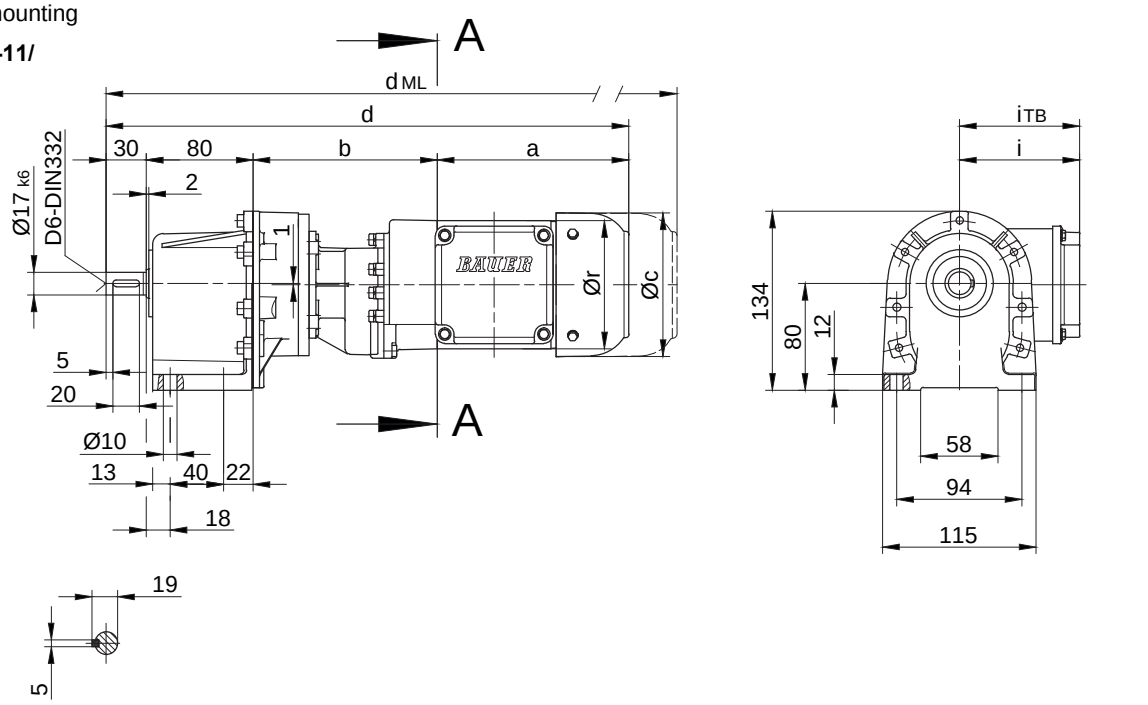


The actual gearbox design can vary from the geometry shown.

BG06G04

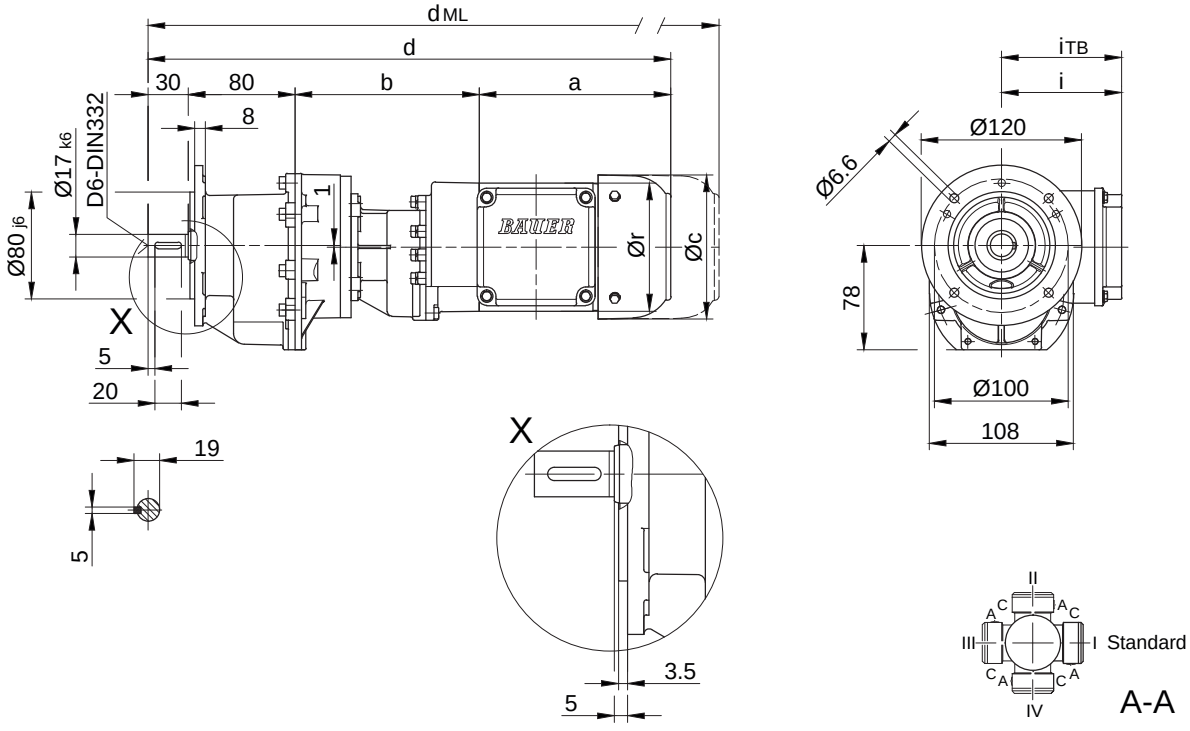
Foot mounting

Code -11/



Flange with clearance holes

Code -31/



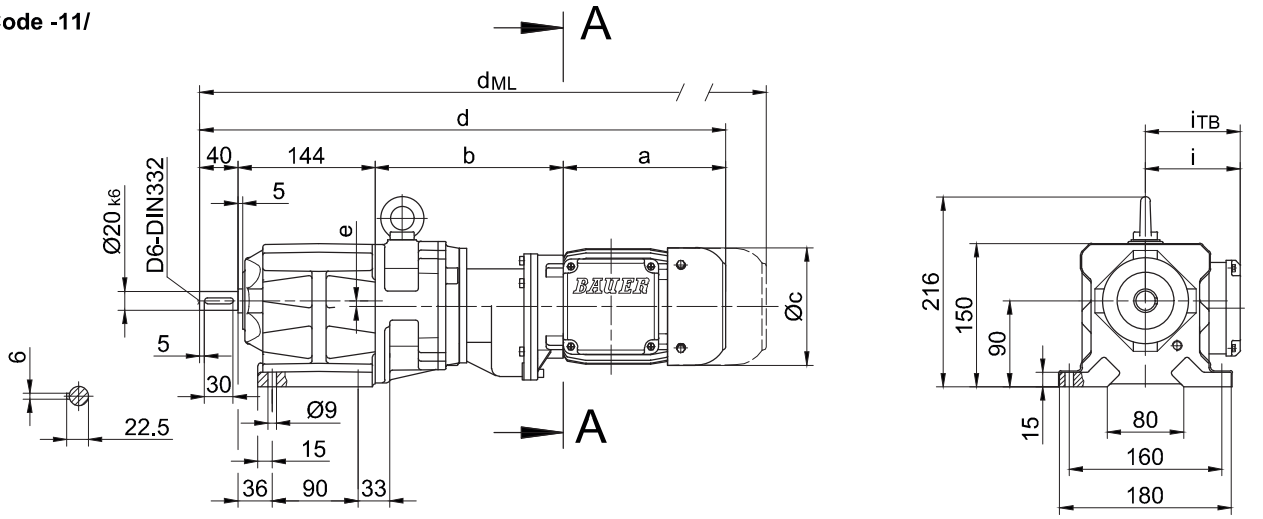
Type	a	b	c	d	i	r	Design with motor extensions				
							i_{TB}	E..	G	E..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG06G04-../D04..	143	135	111	388	90	96	112	431.5	450.5	493.5	-

The actual gearbox design can vary from the geometry shown.

BG10G06

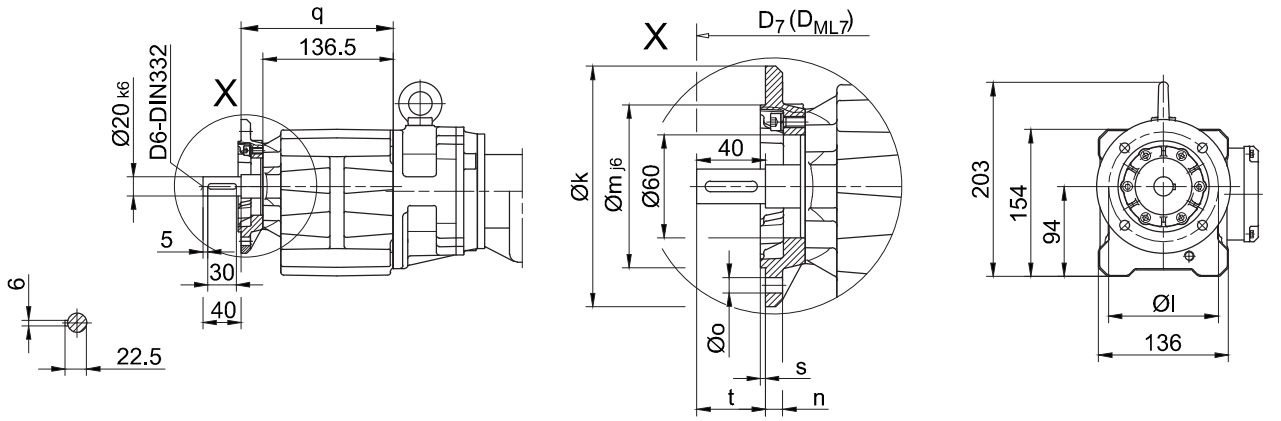
Foot mounting with clearance holes

Code -11/



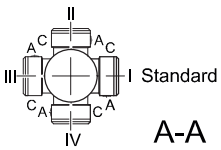
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG10G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	140	115	95	10	9	159.5	3	40	d+15.5	d_{ML}+15.5
small -27/	120	100	80	8	6.6	154.5	3	45	d+15.5	d_{ML}+15.5



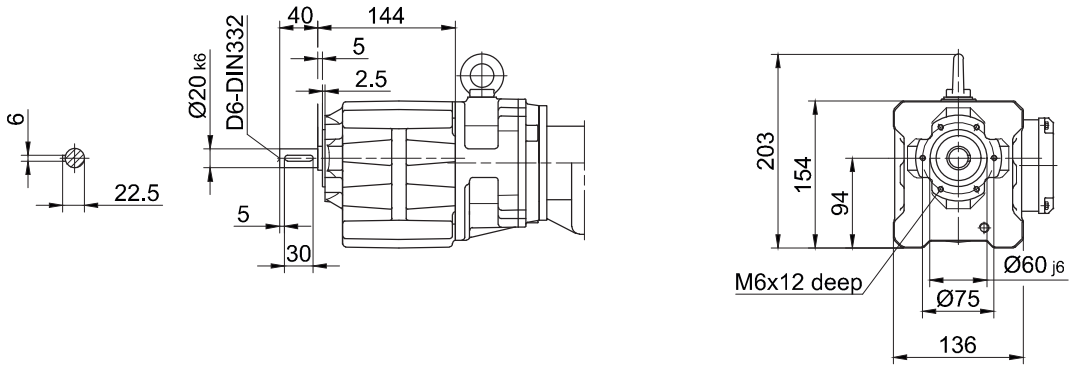
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG10G06-../D04..	143	195	111	522	6	90	112	565.5	584.5	627.5	-
BG10G06-../D05..	170	197	123	551	6	100	117	593	654	695.5	-
BG10G06-../D06..	170	197	123	551	6	100	119	593	654	695.5	-
BG10G06-../D07..	190	197	123	571	6	100	119	613	674	715.5	-
BG10G06-../D..08..	200	241	156	625	6	115	136.5	691	732	798.5	691

The actual gearbox design can vary from the geometry shown.

BG10G06

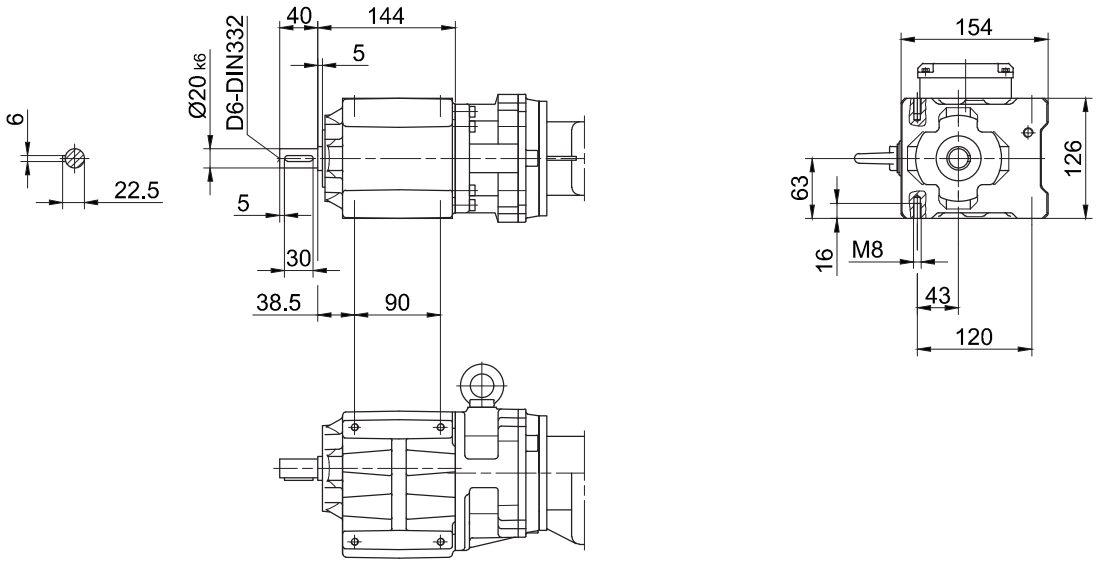
Flange with tapped holes

Code -71/



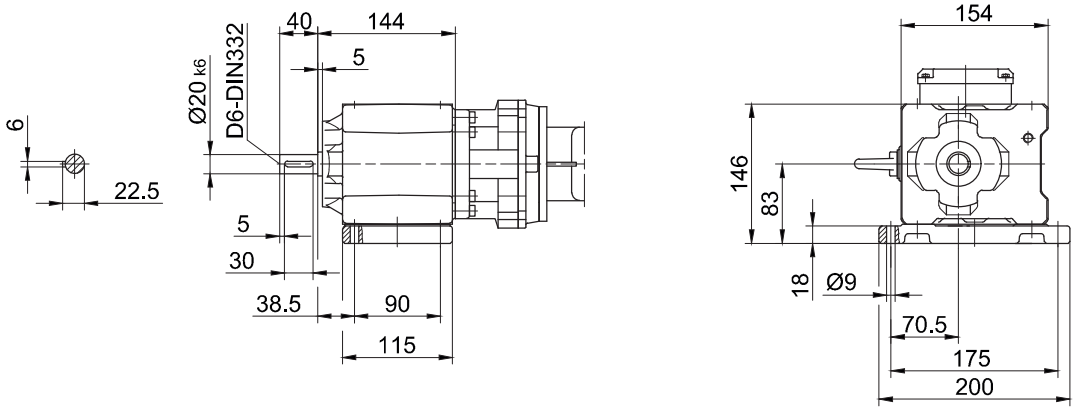
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/



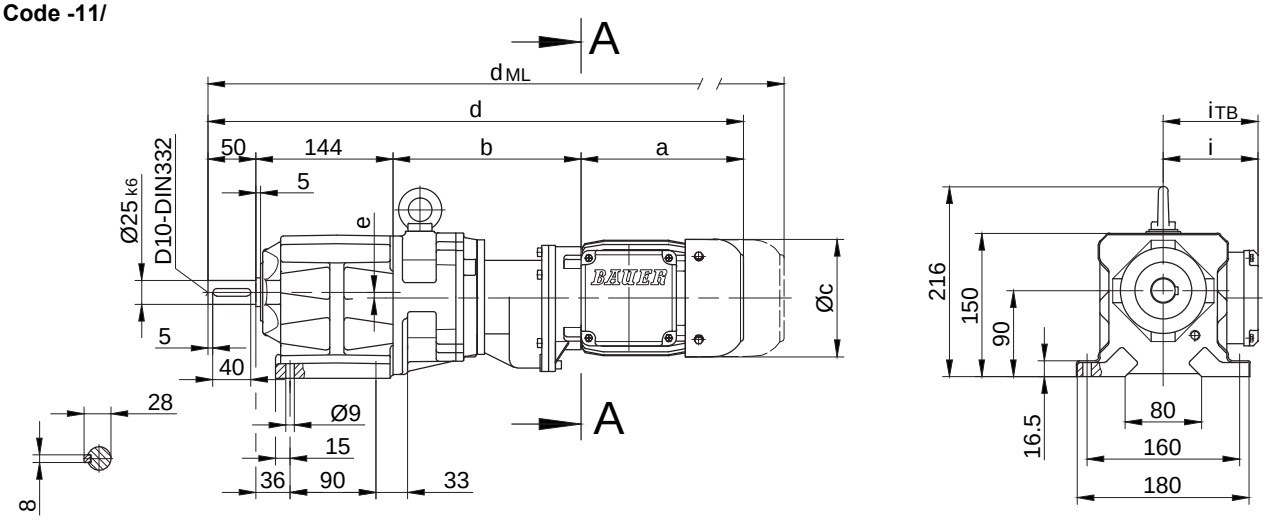
The actual gearbox design can vary from the geometry shown.

Dimension

BG10XG06

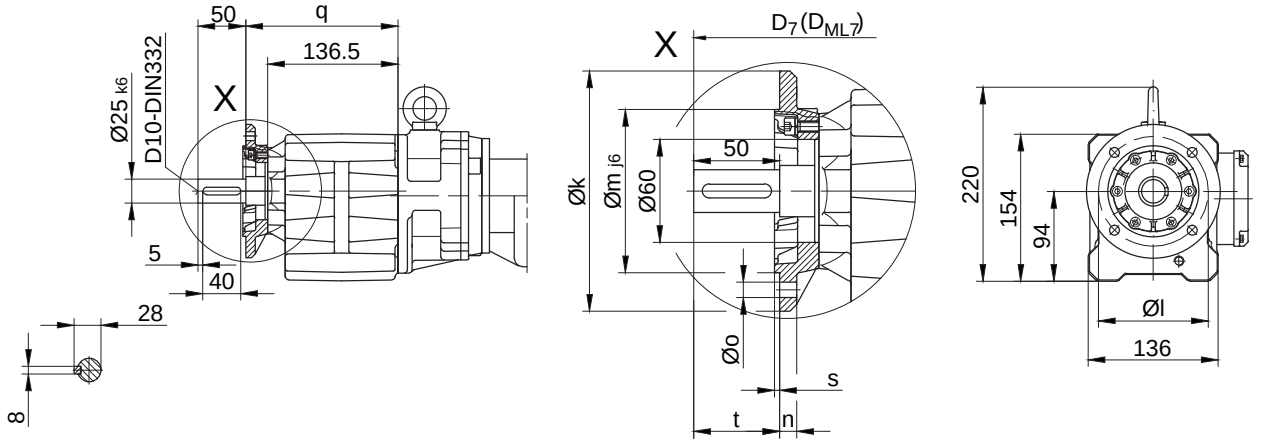
Foot mounting with clearance holes

Code -11/



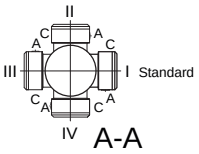
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG10XG..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	140	115	95	10	9	159.5	3	50	d+15.5	d_{ML}+15.5
small -27/	120	100	80	8	6.6	154.5	3	55	d+15.5	d_{ML}+15.5



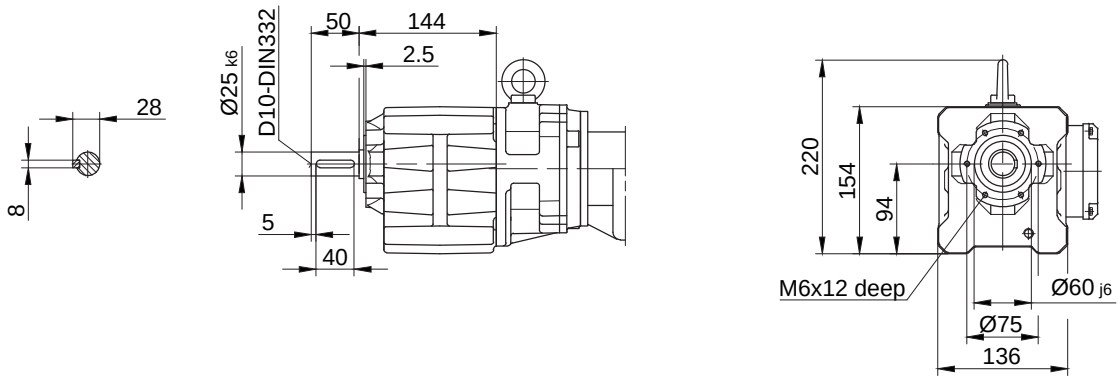
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG10XG06-../D04..	143	195	111	532	6	90	112	575.5	594.5	637.5	-
BG10XG06-../D05..	170	197	123	561	6	100	117	603	664	705.5	-
BG10XG06-../D06..	170	197	123	561	6	100	119	603	664	705.5	-
BG10XG06-../D07..	190	197	123	581	6	100	119	623	684	725.5	-
BG10XG06-../D..08..	200	241	156	635	6	115	136.5	701	742	808.5	701

The actual gearbox design can vary from the geometry shown.

BG10XG06

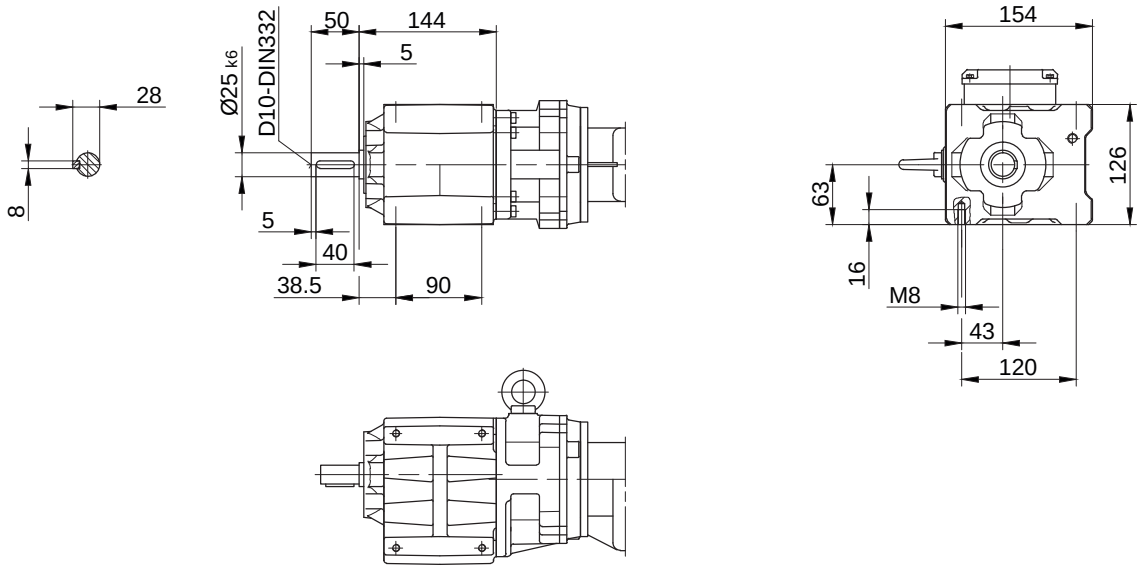
Flange with tapped holes

Code -71/



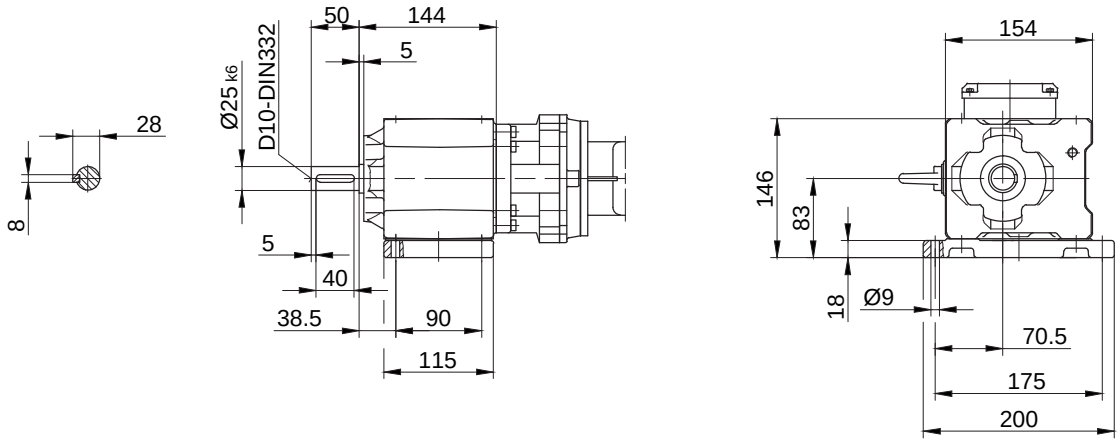
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/

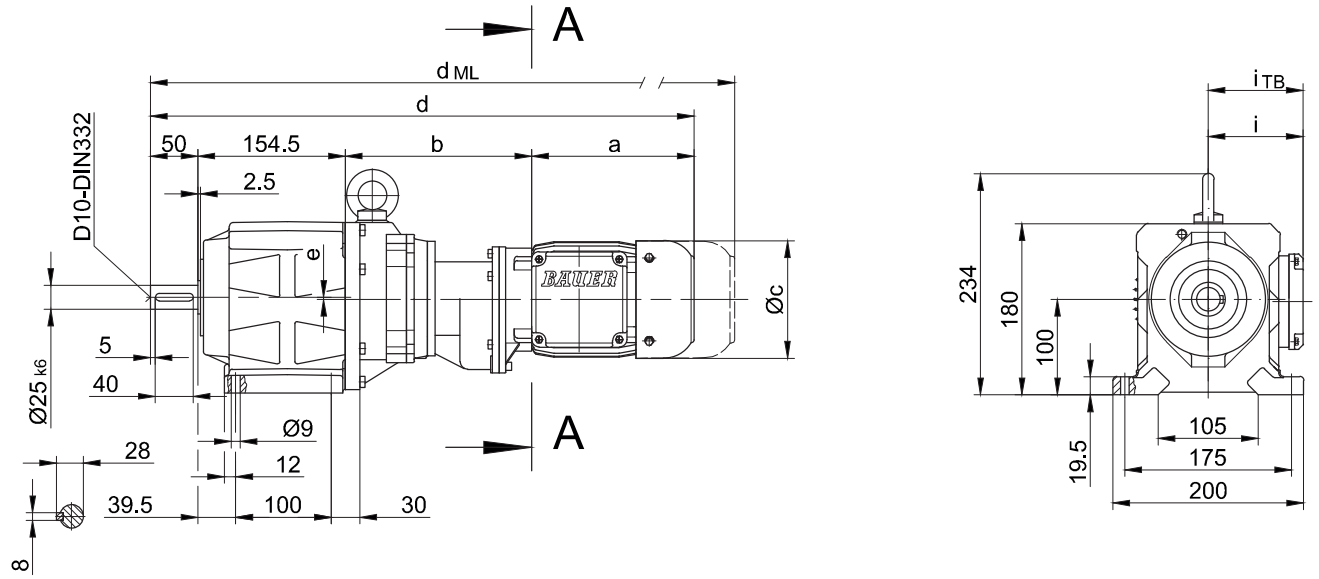


The actual gearbox design can vary from the geometry shown.

BG20G06

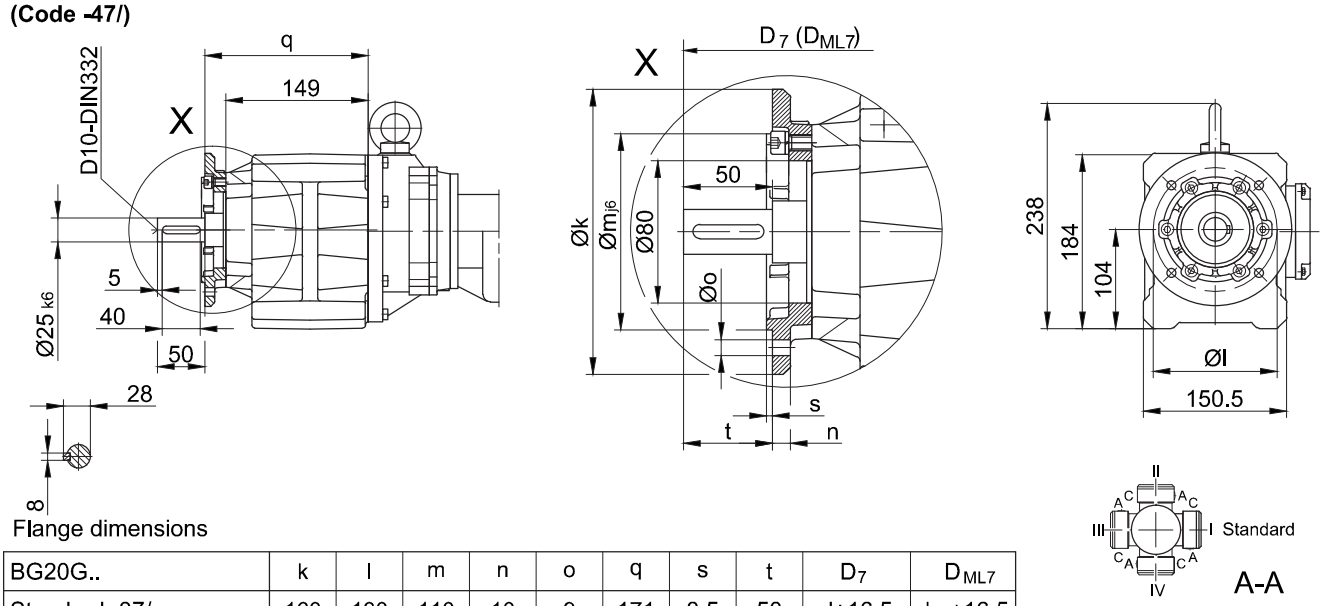
Foot mounting with clearance holes

Code -11/



Flange with clearance holes

Code -37/
(Code -47/)



Flange dimensions

BG20G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	160	130	110	10	9	171	3.5	50	d+16.5	d_{ML}+16.5
big -47/	200	165	130	12	11	178	3.5	43	d+16.5	d_{ML}+16.5

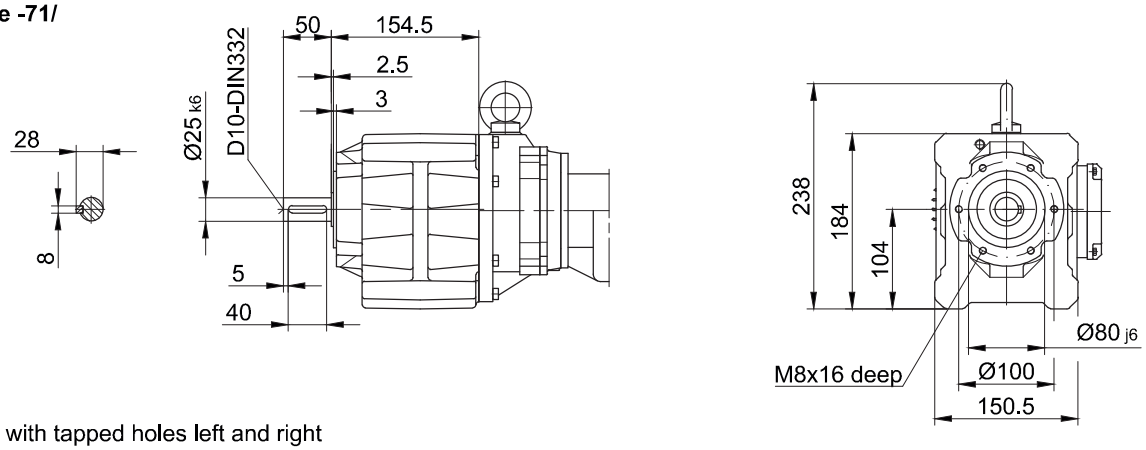
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG20G06-../D04..	143	193	111	540.5	2	90	112	584	603	646	-
BG20G06-../D05..	170	195	123	569.5	2	100	117	611.5	672.5	714	-
BG20G06-../D06..	170	195	123	569.5	2	100	119	611.5	672.5	714	-
BG20G06-../D07..	190	195	123	589.5	2	100	119	631.5	692.5	734	-
BG20G06-../D..08..	200	239	156	643.5	2	115	136.5	709.5	750.5	817	709.5

The actual gearbox design can vary from the geometry shown.

BG20G06

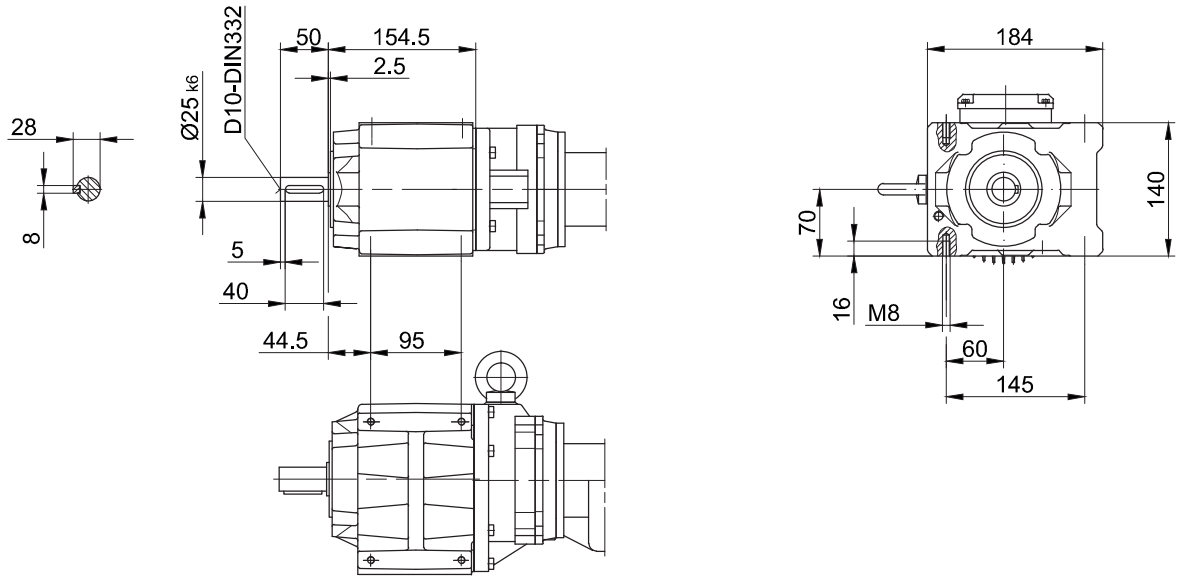
Fange with tapped holes

Code -71/



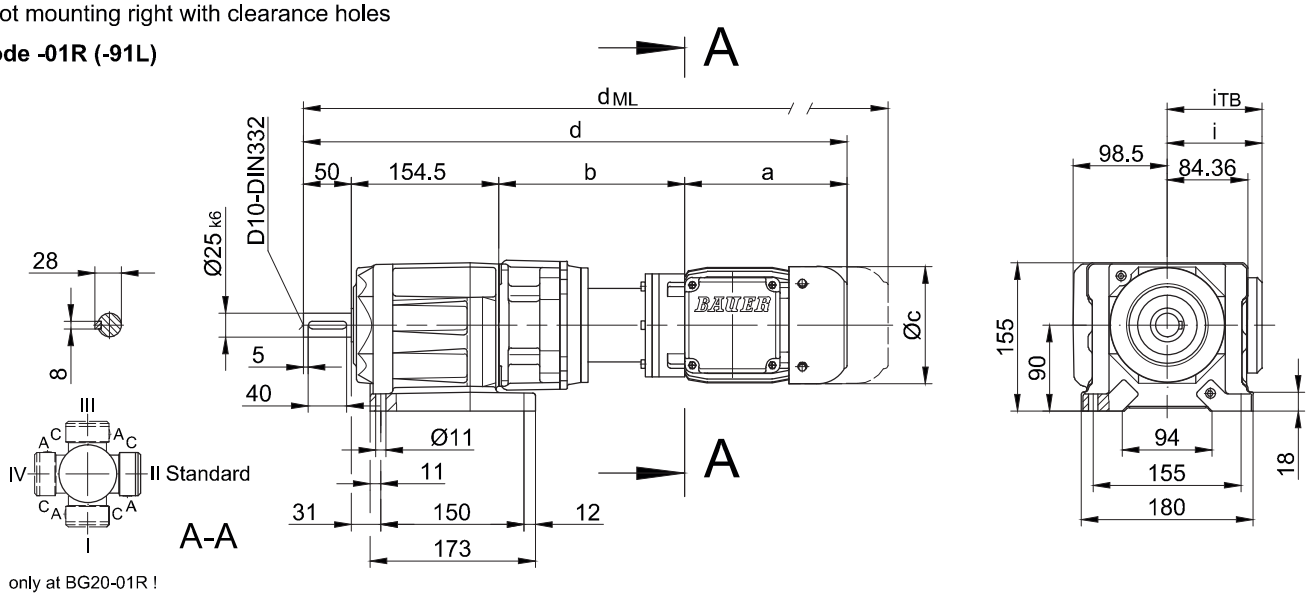
Foot with tapped holes left and right

Code -61LR/



Foot mounting right with clearance holes

Code -01R (-91L)

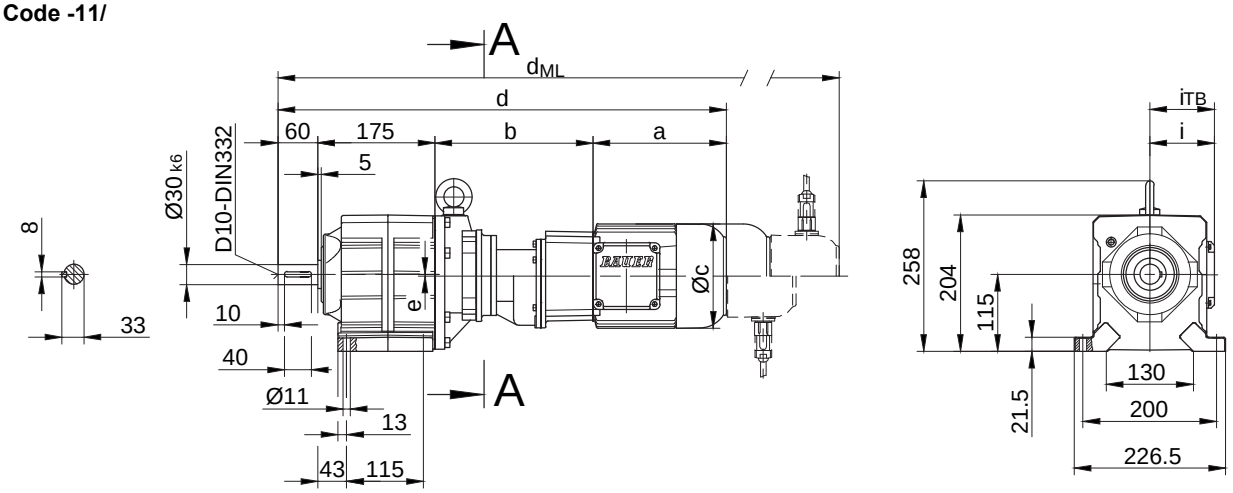


The actual gearbox design can vary from the geometry shown.

BG30G06

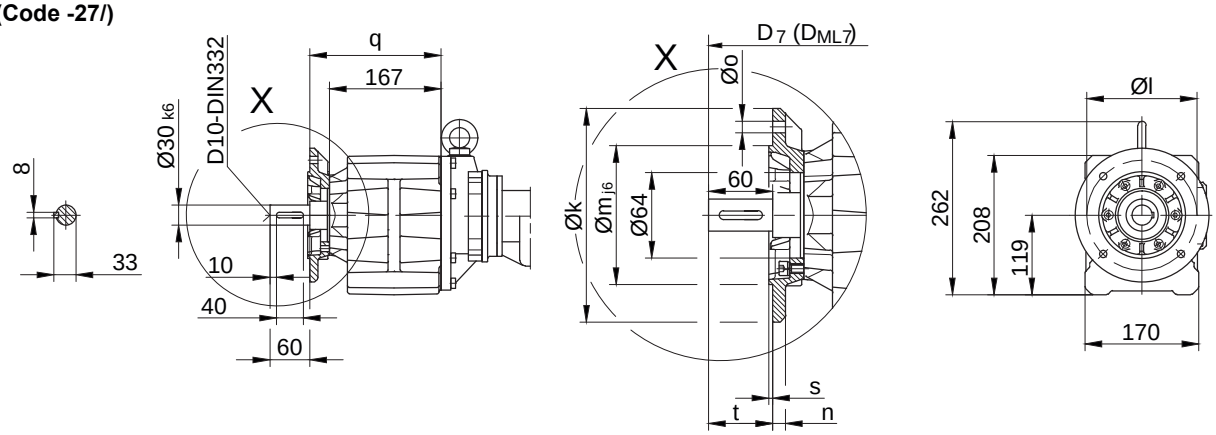
Foot mounting with clearance holes

Code -11/



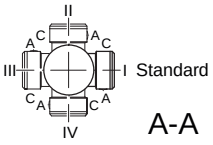
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG30G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	200	165	130	12	11	196	3.5	60	d+21	d_{ML}+21
small -27/	160	130	110	10	9	189	3.5	67	d+21	d_{ML}+21



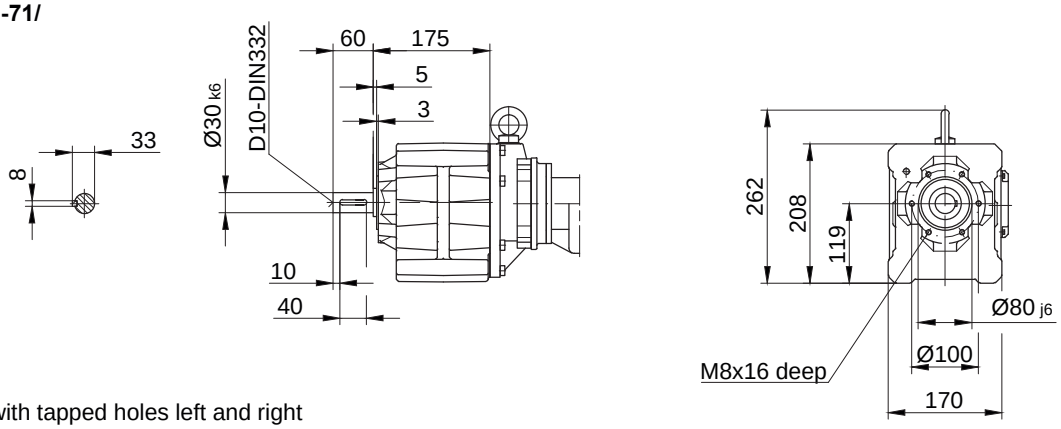
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG30G06-../D04..	143	191	111	569	3	90	112	612.5	631.5	674.5	-
BG30G06-../D05..	170	193	123	598	3	100	117	640	701	742.5	-
BG30G06-../D06..	170	193	123	598	3	100	119	640	701	742.5	-
BG30G06-../D07..	190	193	123	618	3	100	119	660	721	762.5	-
BG30G06-../D..08..	200	237	156	672	3	115	136.5	738	779	845.5	738

The actual gearbox design can vary from the geometry shown.

BG30G06

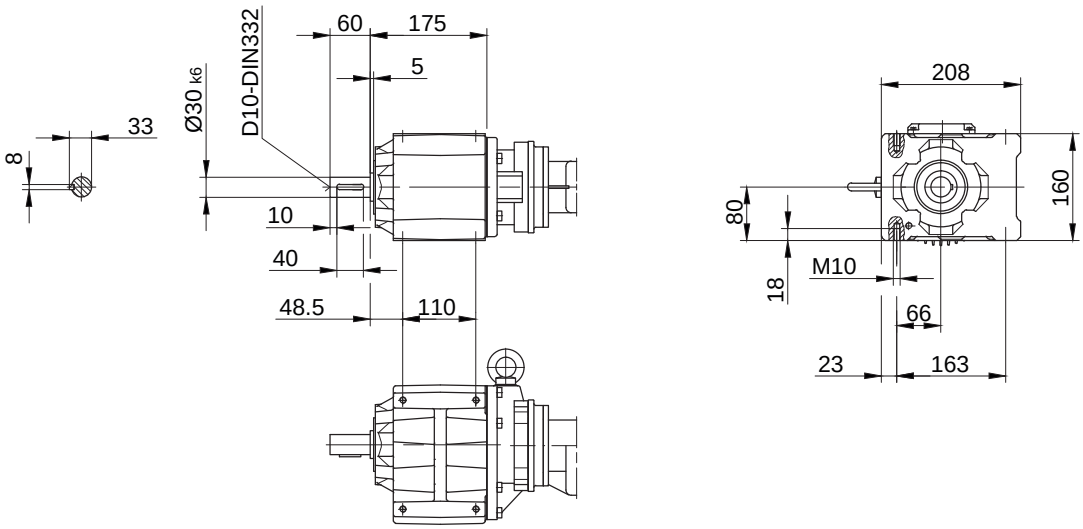
Flange with tapped holes

Code -71/



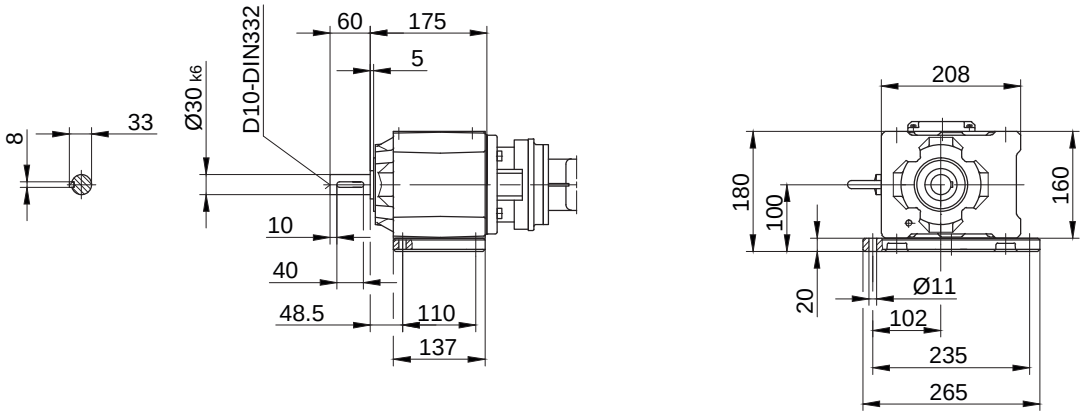
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/

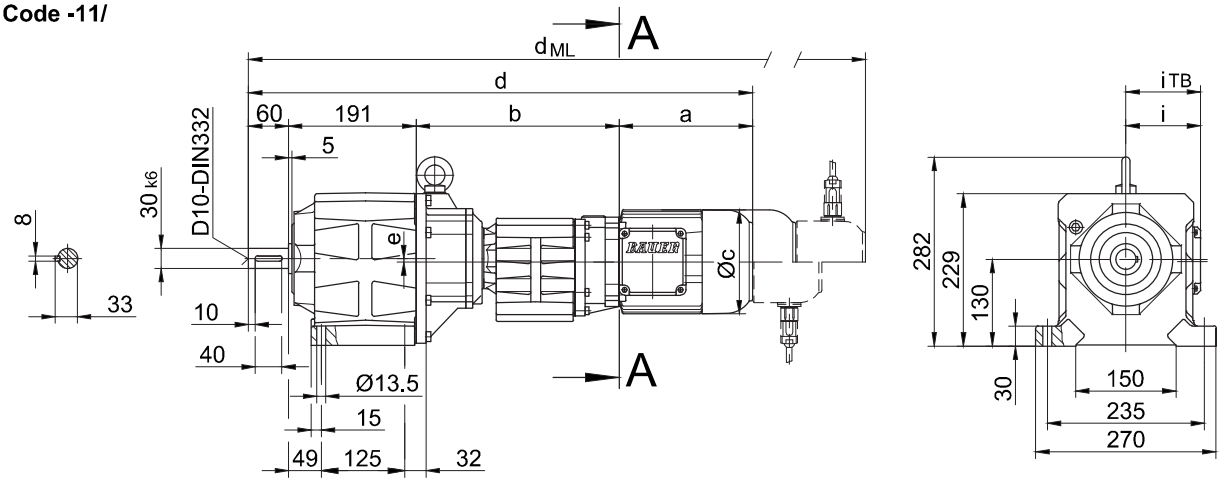


The actual gearbox design can vary from the geometry shown.

BG40G10

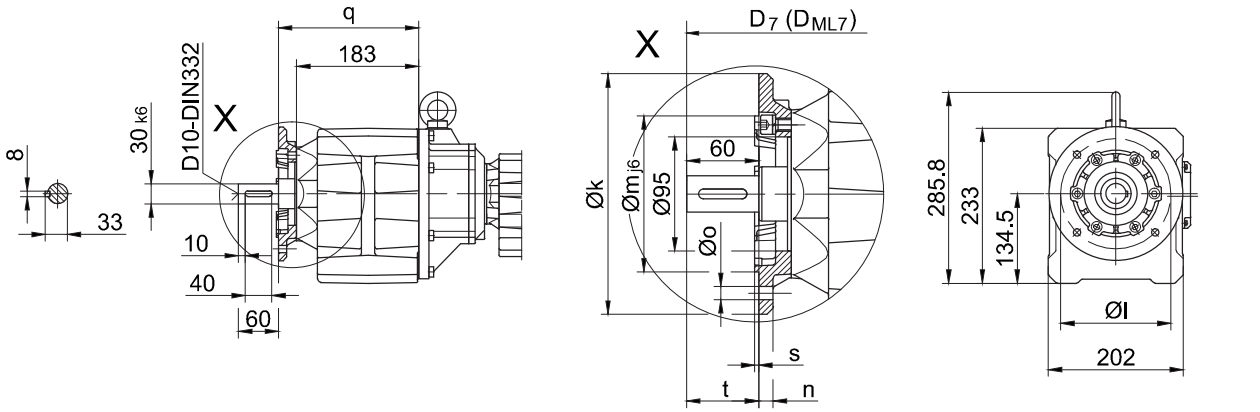
Foot mounting with clearance holes

Code -11/



Flange with clearance holes

Code -37/
(Code -47/)



Flange dimensions

BG40G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	200	165	130	12	11	210	3.5	60	d+19	d_{ML}+19
big -47/	250	215	180	16	13.5	219	4	51	d+19	d_{ML}+19

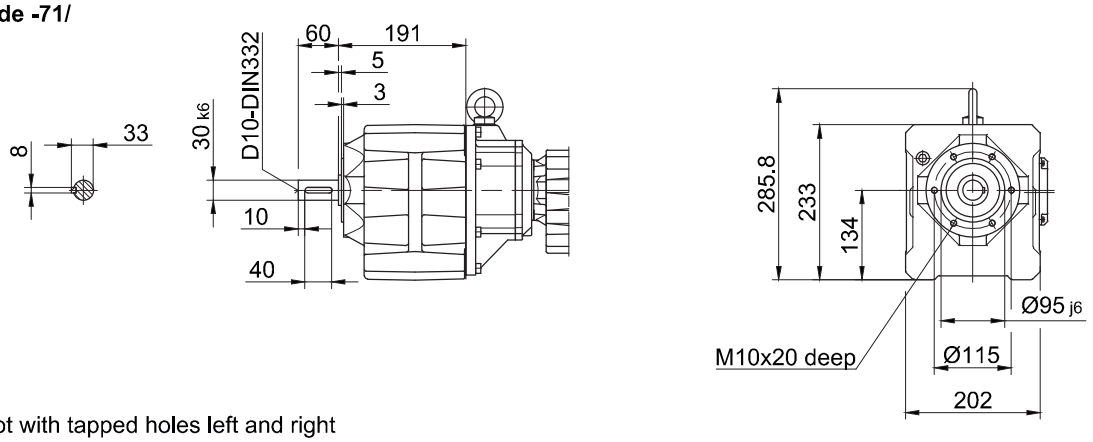
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG40G10-../D05..	170	300	123	721	5	100	117	763	824	865.5	-
BG40G10-../D06..	170	300	123	721	5	100	119	763	824	865.5	-
BG40G10-../D07..	190	300	123	741	5	100	119	783	844	887	-
BG40G10-../D..08..	200	304	156	755	5	115	136.5	821	862	928.5	821
BG40G10-../D..09..	251	318.5	181	820.5	5	124	158	913.5	927.5	1018	913.5

The actual gearbox design can vary from the geometry shown.

BG40G10

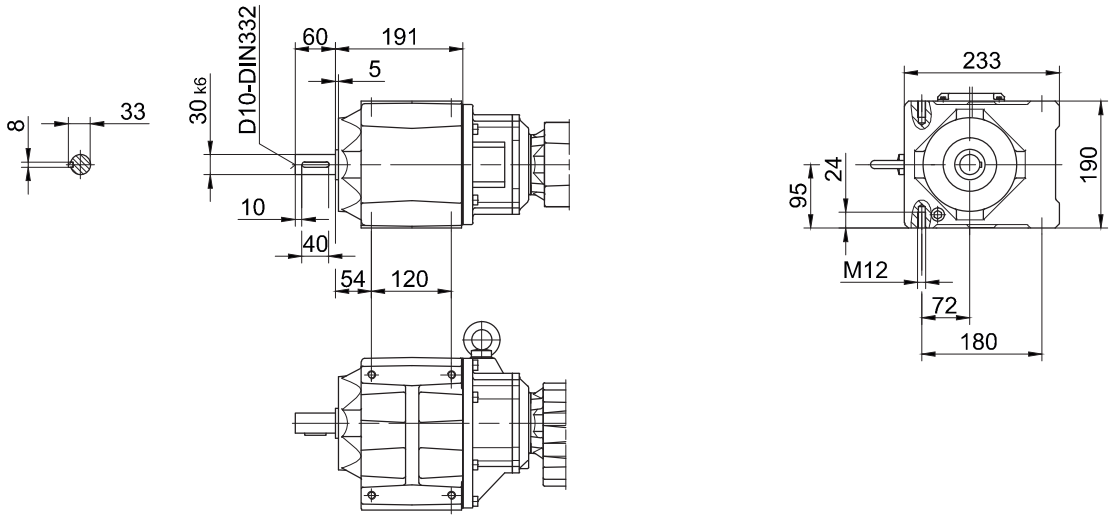
Flange with tapped holes

Code -71/



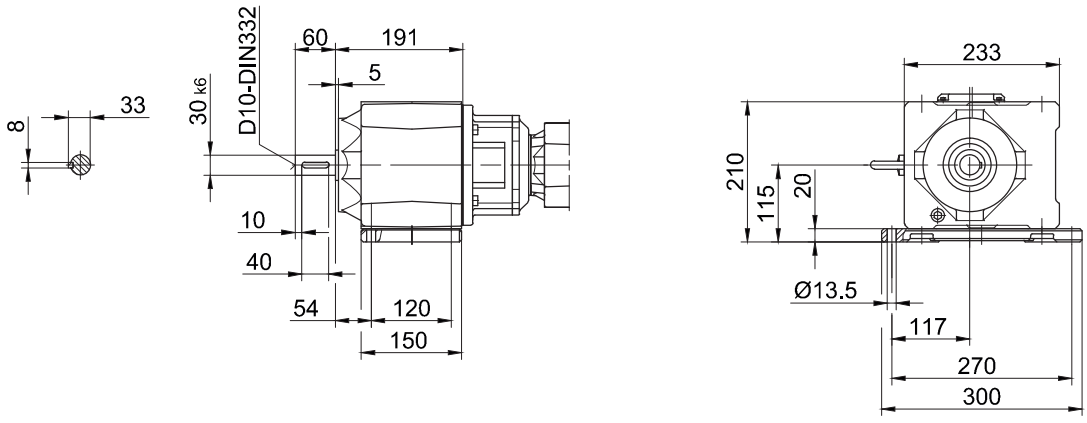
Foot with tapped holes left and right

Code -61LR/



Foot plate left

Code -91L/

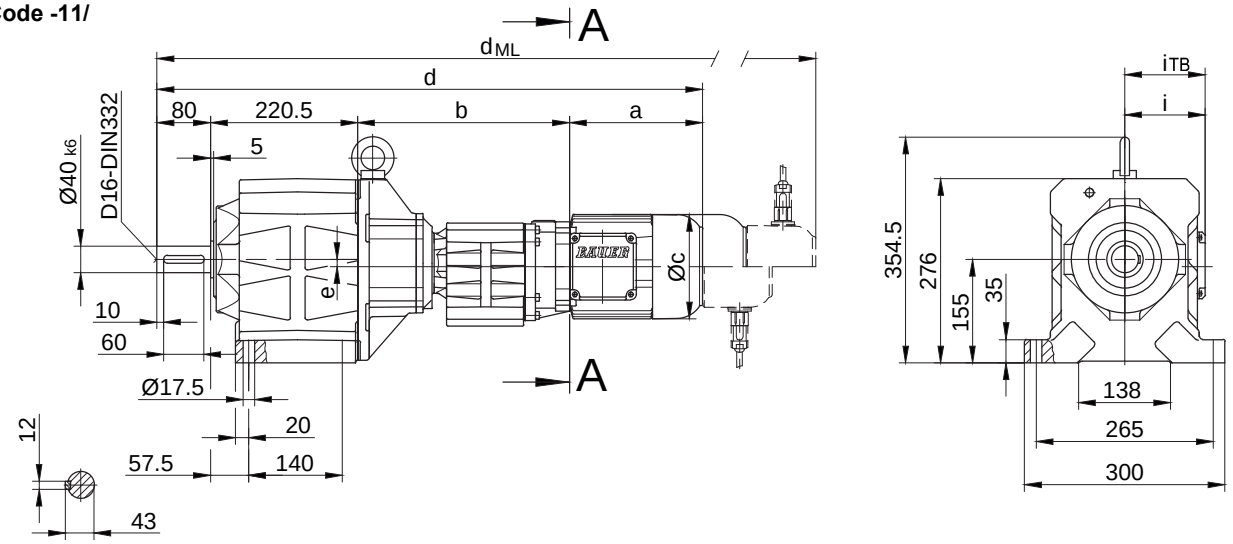


The actual gearbox design can vary from the geometry shown.

BG50G10

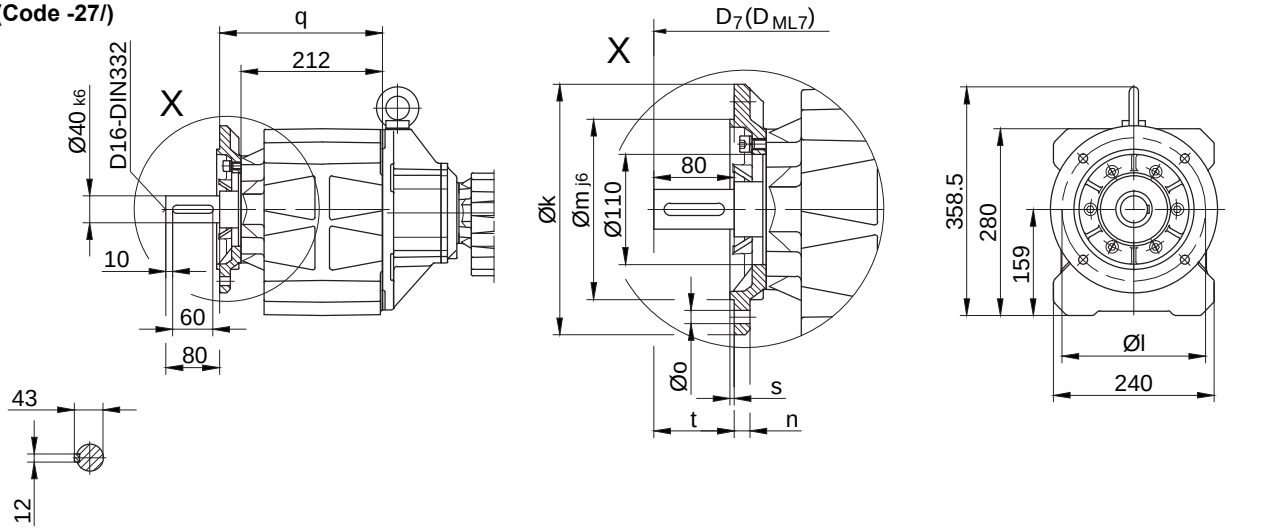
Foot mounting with clearance holes

Code -11/



Flange with clearance holes

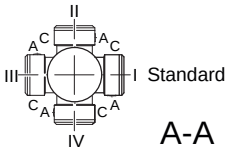
Code -37/
(Code -27/)



10

Flange dimensions

BG50G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	250	215	180	16	13.5	244	4	80	d+23.5	d_{ML}+23.5
small -27/	200	165	130	12	11	241	3.5	83	d+23.5	d_{ML}+23.5



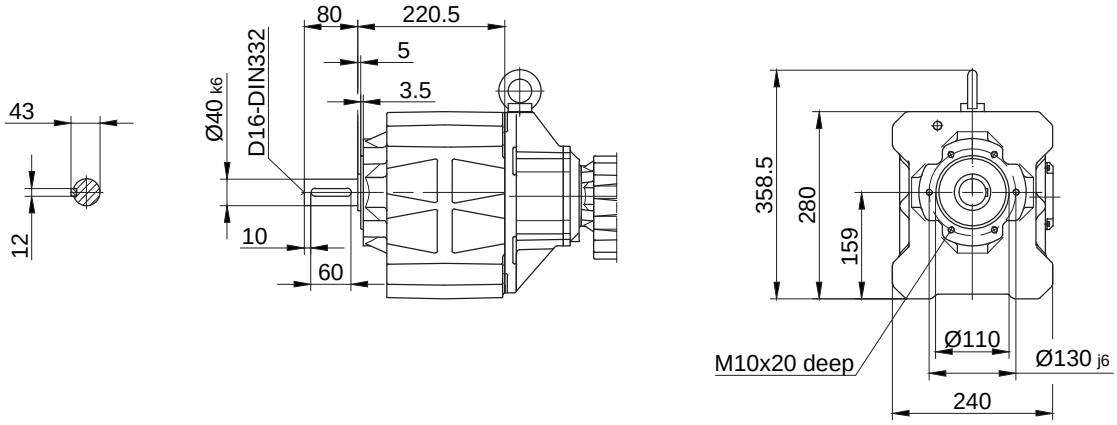
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG50G10-../D05..	170	313	123	783.5	11	100	117	825.5	886.5	928	-
BG50G10-../D06..	170	313	123	783.5	11	100	119	825.5	886.5	928	-
BG50G10-../D07..	190	313	123	803.5	11	100	119	845.5	906.5	948	-
BG50G10-../D..08..	200	317	156	817.5	11	115	136.5	883.5	924.5	991	883.5
BG50G10-../D..09..	251	331.5	181	883	11	124	158	976	990	1080.5	976

The actual gearbox design can vary from the geometry shown.

BG50G10

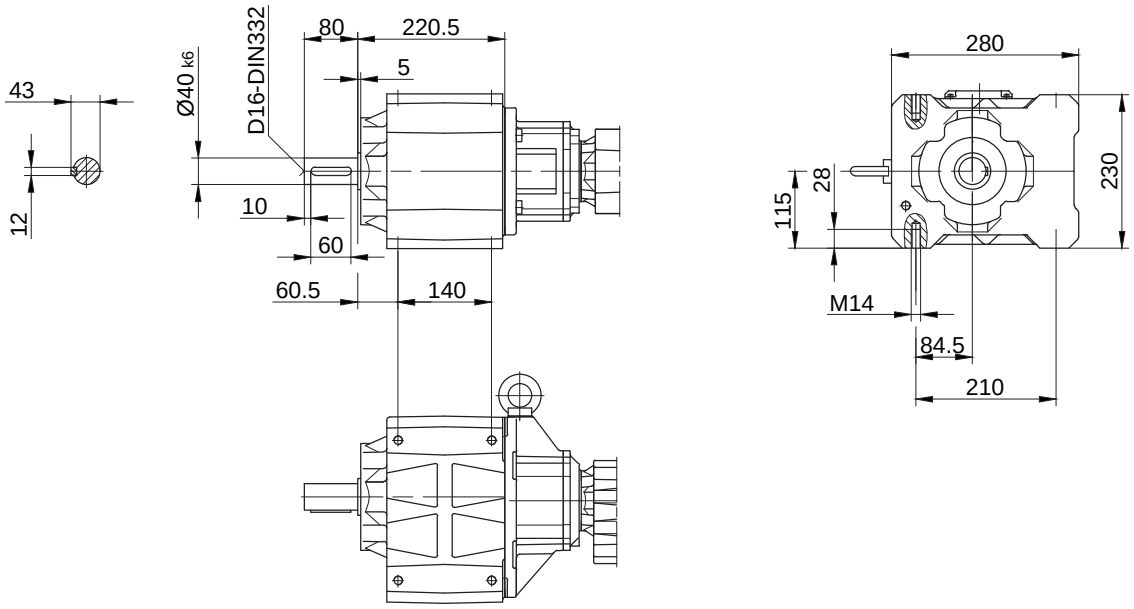
Flange with tapped holes

Code -71/



Foot with tapped holes left and right

Code -61LR/

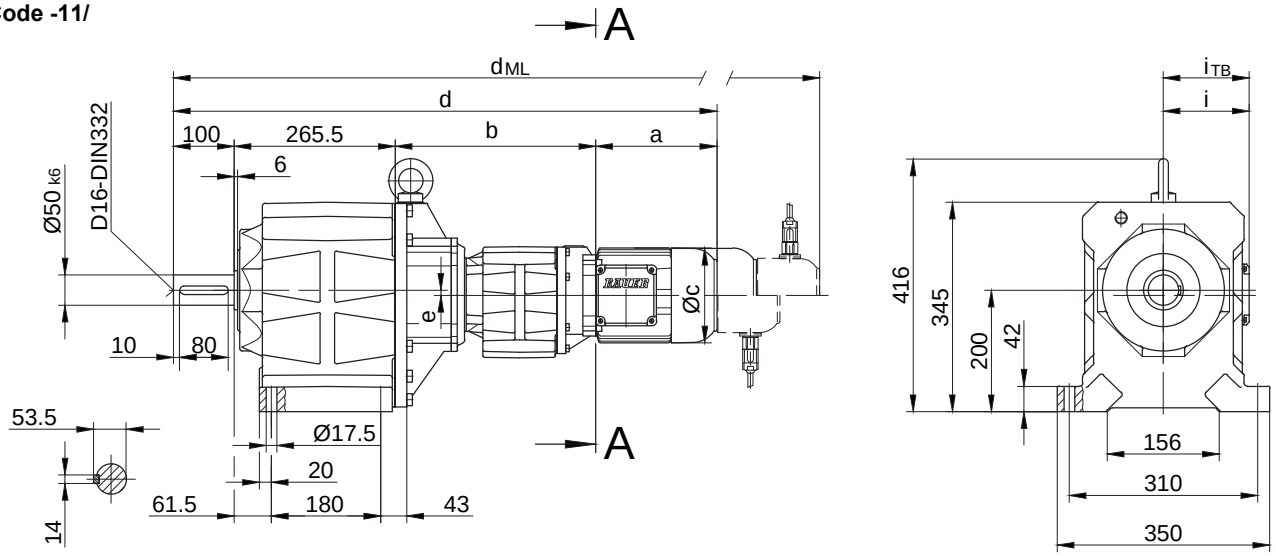


The actual gearbox design can vary from the geometry shown.

BG60G20

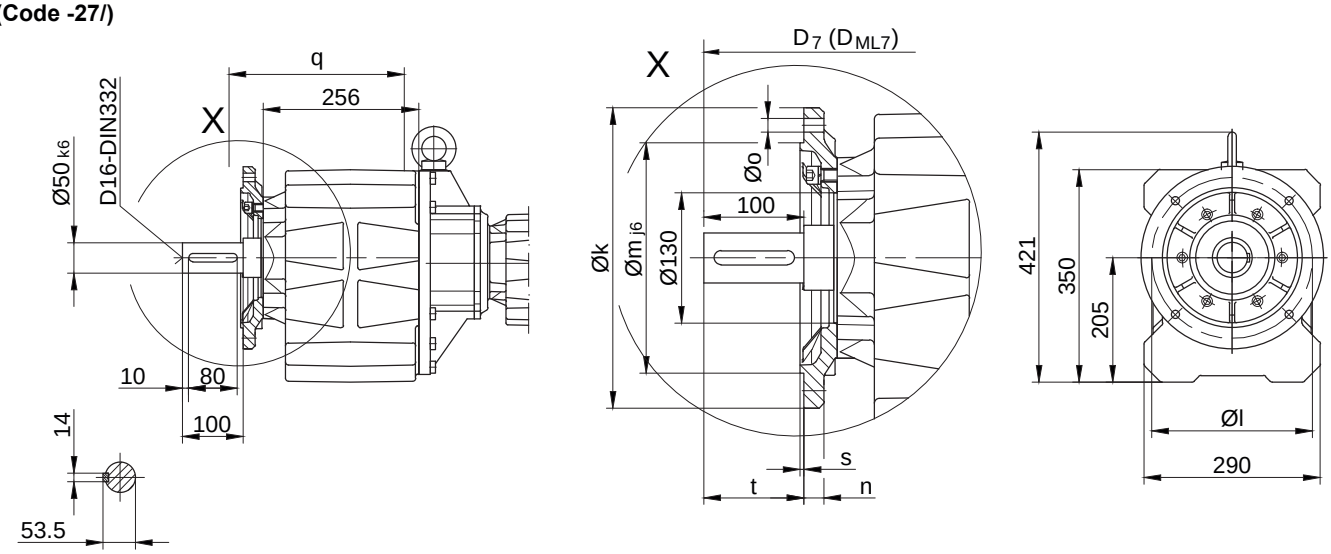
Foot mounting with clearance holes

Code -11/



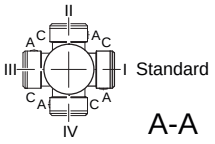
Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions

BG60G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	300	265	230	20	13.5	289	4	100	d+23.5	d_{ML}+23.5
small -27/	250	215	180	16	13.5	286	4	103	d+23.5	d_{ML}+23.5



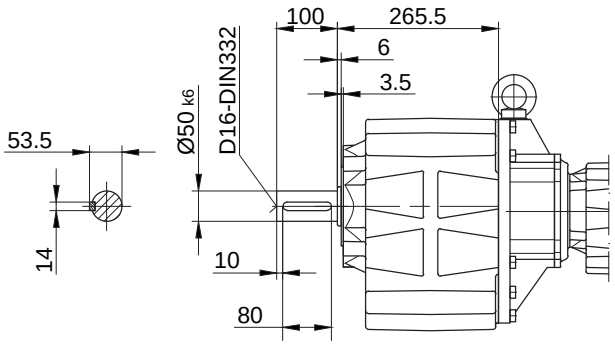
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG60G20-../D05..	170	326	123	861.5	8.5	100	117	903.5	964.5	1006	-
BG60G20-../D06..	170	326	123	861.5	8.5	100	119	903.5	964.5	1006	-
BG60G20-../D07..	190	326	123	881.5	8.5	100	119	923.5	984.5	1026	-
BG60G20-../D..08..	200	330	156	895.5	8.5	115	136.5	961.5	1002.5	1069	961.5
BG60G20-../D..09..	251	344.5	181	961	8.5	124	158	1054	1068	1158.5	1054

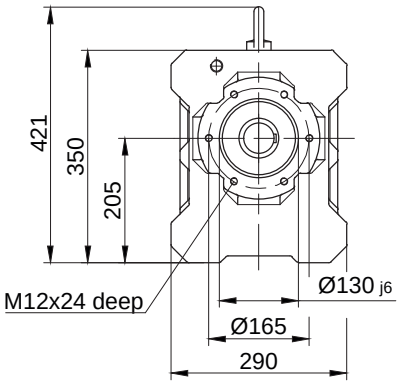
The actual gearbox design can vary from the geometry shown.

BG60G20

Flange with tapped holes

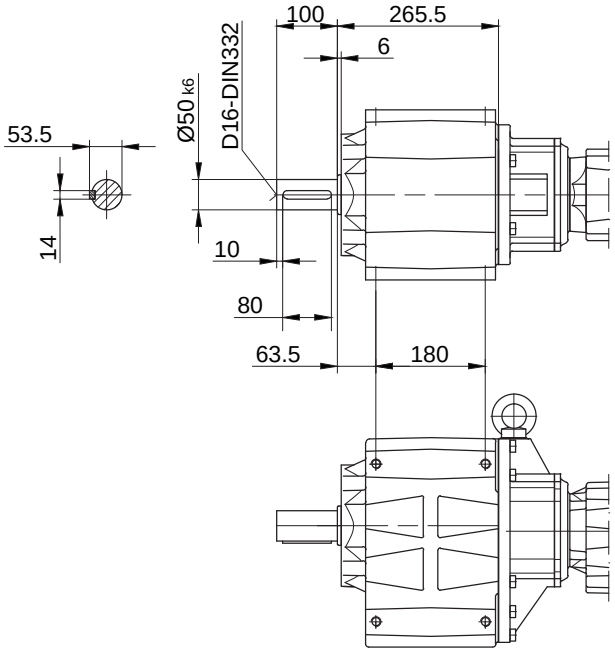
Code -71/

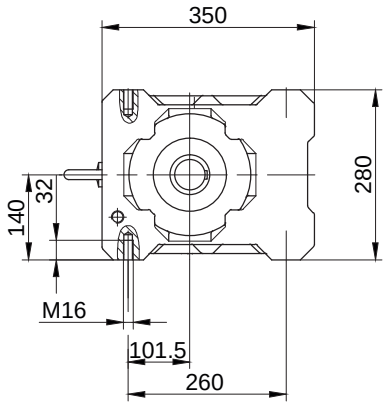




Foot with tapped holes left and right

Code -61LR/



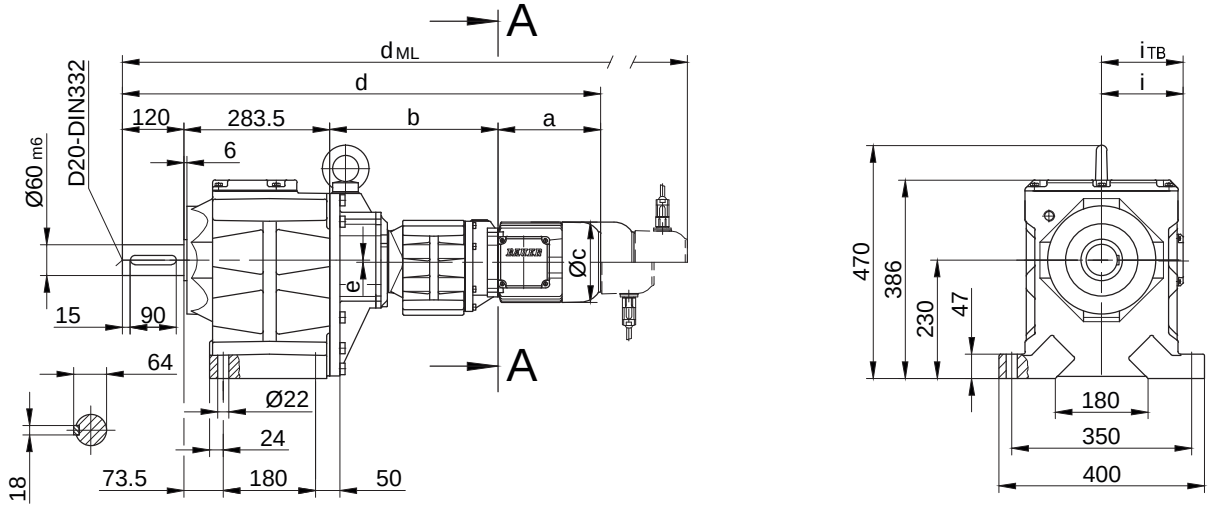


The actual gearbox design can vary from the geometry shown.

BG70G20

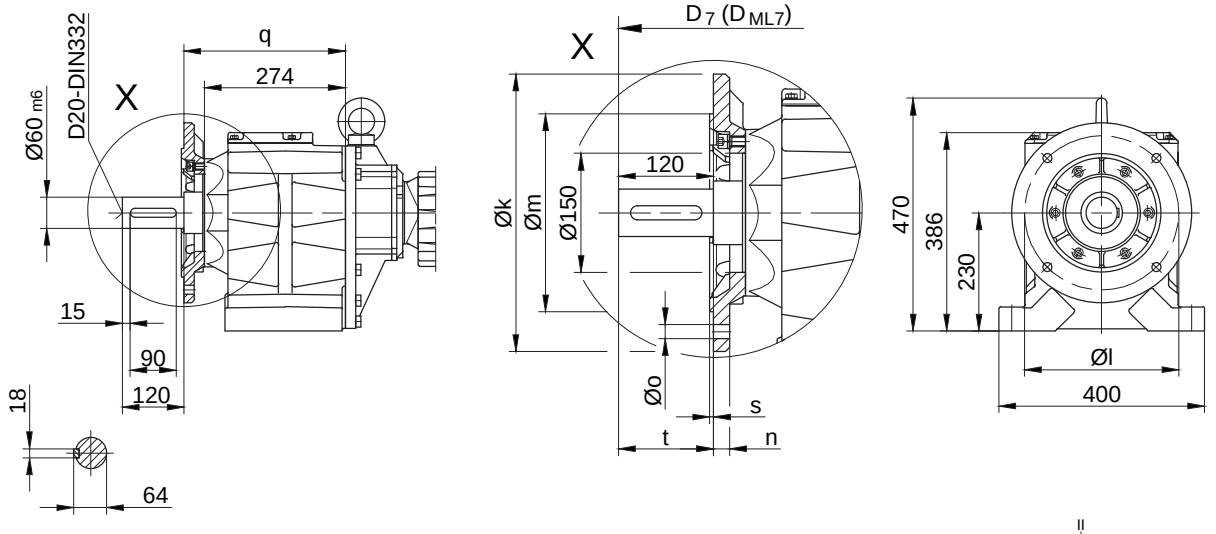
Foot mounting with clearance holes

Code -11/

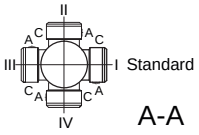


Flange with clearance holes

Code -37/
(Code -27/)



Flange dimensions



BG70G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	350	300	250_{h6}	20	17.5	314	5	120	d+30.5	d_{ML}+30.5
small -27/	300	265	230_{j6}	20	13.5	322	4	112	d+30.5	d_{ML}+30.5

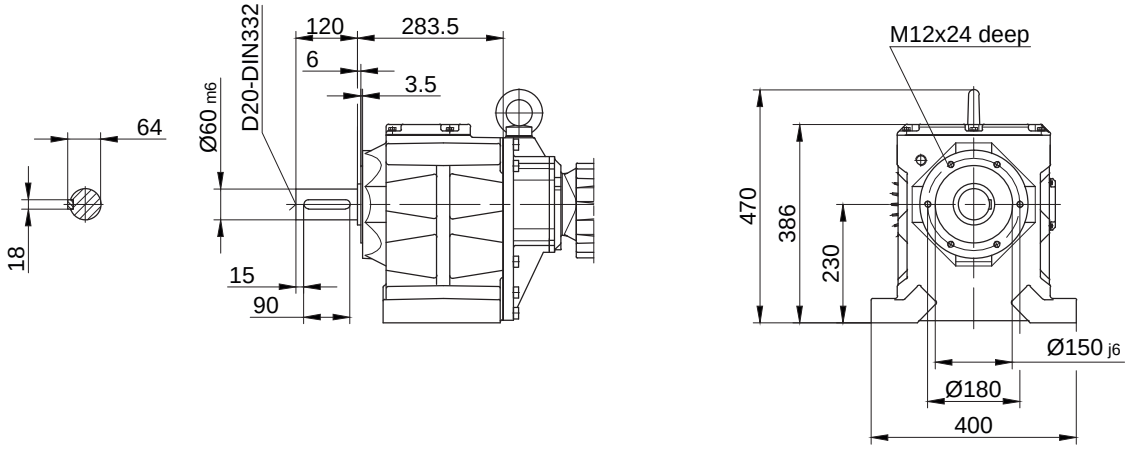
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG70G20-../D05..	170	324	123	897.5	1	100	117	939.5	1000.5	1042	-
BG70G20-../D06..	170	324	123	897.5	1	100	119	939.5	1000.5	1042	-
BG70G20-../D07..	190	324	123	917.5	1	100	119	959.5	1020.5	1062	-
BG70G20-../D..08..	200	328	156	931.5	1	115	136.5	997.5	1038.5	1105	997.5
BG70G20-../D..09..	251	342.5	181	997	1	124	158	1090	1104	1194.5	1090

The actual gearbox design can vary from the geometry shown.

BG70G20

Flange with tapped holes

Code -71/

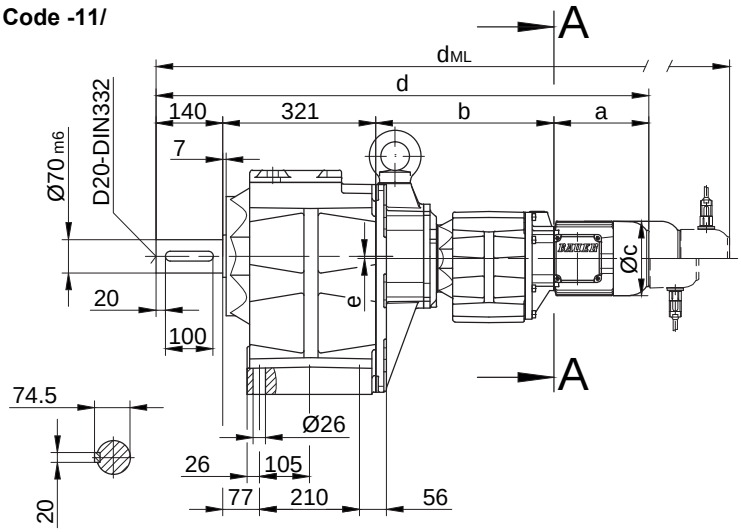


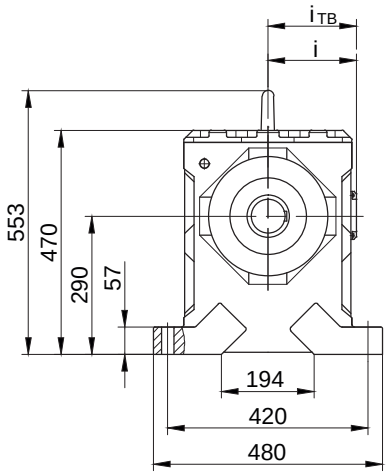
The actual gearbox design can vary from the geometry shown.

BG80G40

Foot mounting with clearance holes

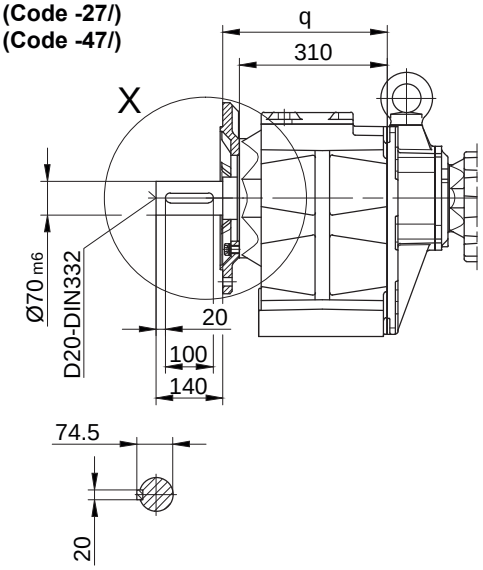
Code -11/

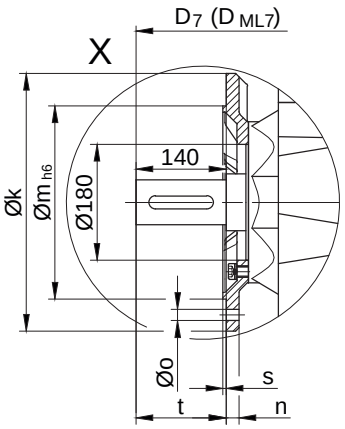


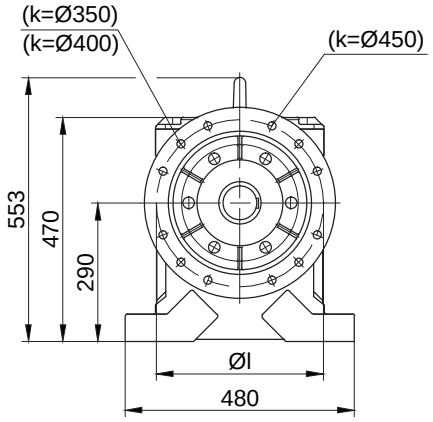


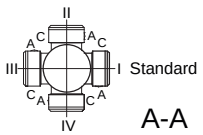
Flange with clearance holes

Code -37/
(Code -27/)
(Code -47/)









Flange dimensions

BG80G..	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	400	350	300	20	4 x Ø17.5	345	5	140	d+24	d_{ML}+24
small -27/	350	300	250	20	4 x Ø17.5	345	5	140	d+24	d_{ML}+24
big -47/	450	400	350	22	8 x Ø17.5	355	5	130	d+24	d_{ML}+24

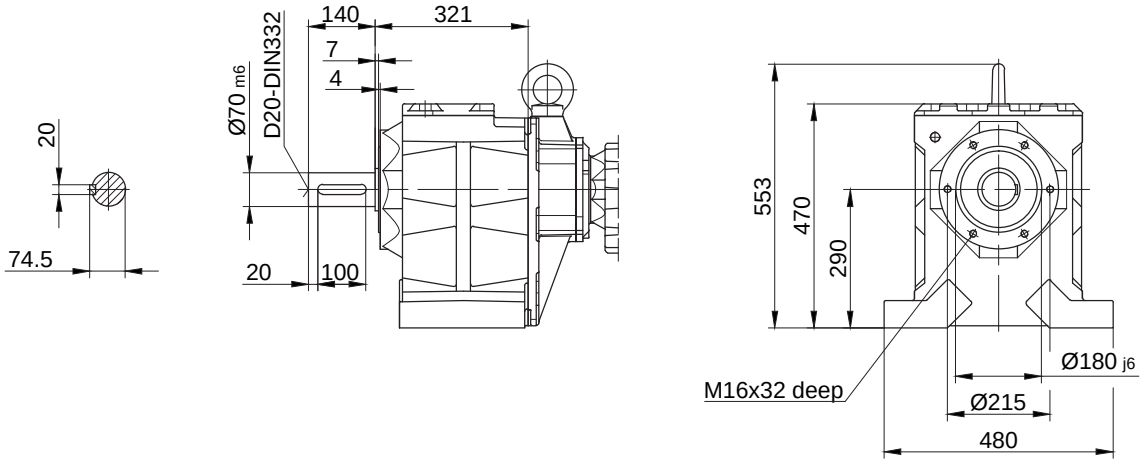
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	ES..	G	ES../ZS..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG80G40-../D..08..	200	373	156	1034	-	115	136.5	1100	1141	1207.5	1100
BG80G40-../D..09..	251	387.5	181	1099.5	-	124	158	1192.5	1206.5	1297	1192.5
BG80G40-../D..11..	319	394	228	1174	-	181	181	1272	1281	1376.5	1272

The actual gearbox design can vary from the geometry shown.

BG80G40

Flange with tapped holes

Code -71/

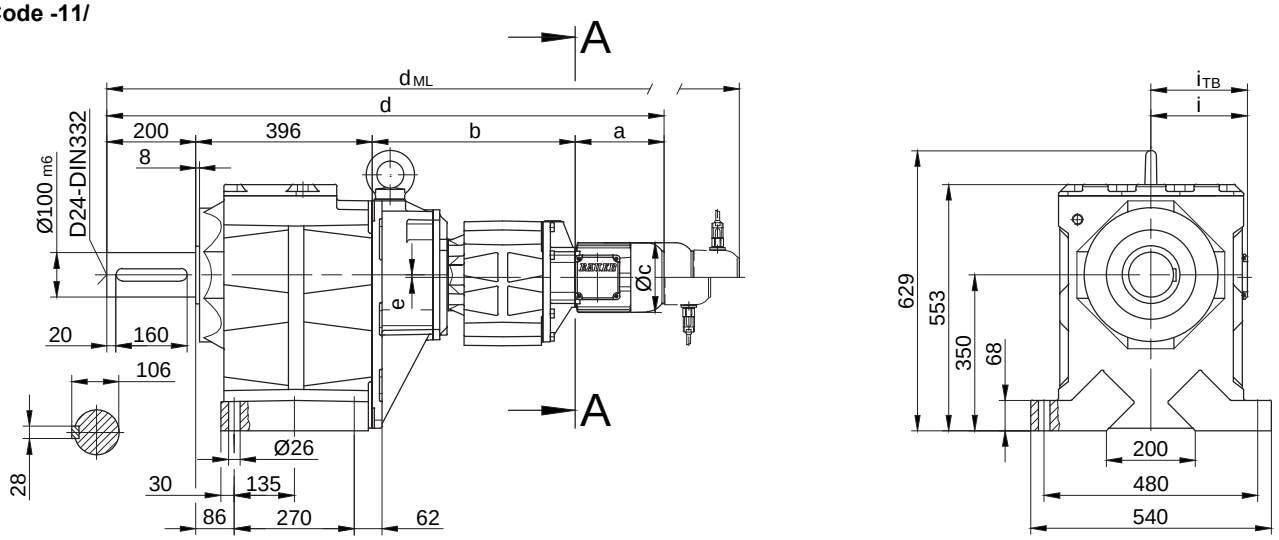


The actual gearbox design can vary from the geometry shown.

BG90G50

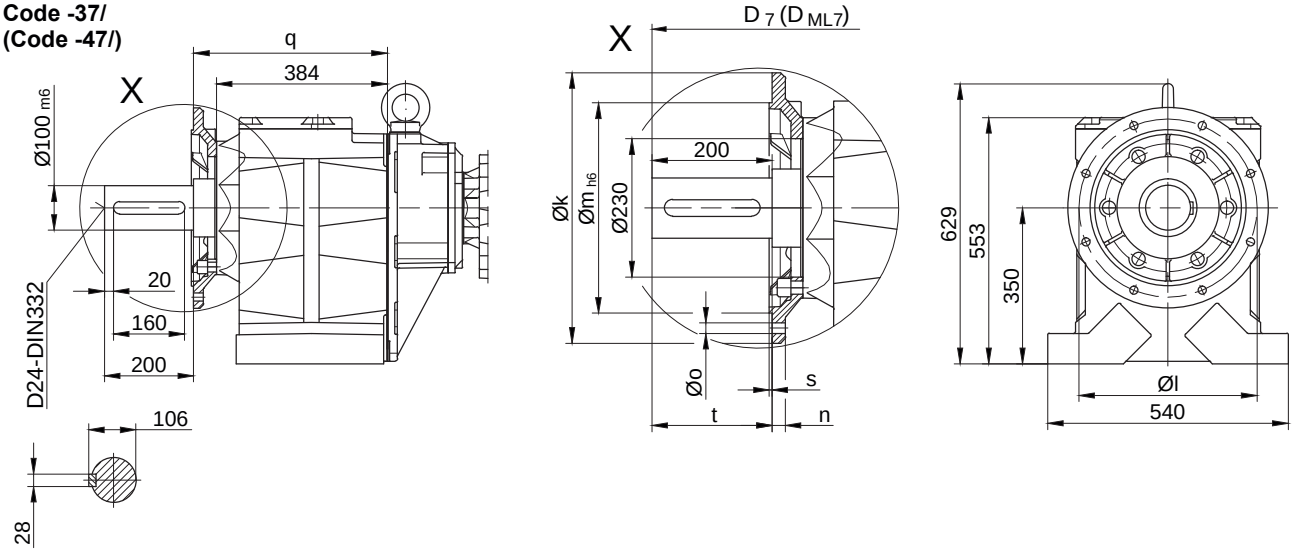
Foot mounting with clearance holes

Code -11/



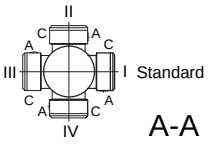
Flange with clearance holes

Code -37/
(Code -47/)



Flange dimensions

BG90G...	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	450	400	350	22	17.5	439	5	200	d+43	d_{ML}+43
big -47/	550	500	450	22	17.5	444	5	195	d+43	d_{ML}+43



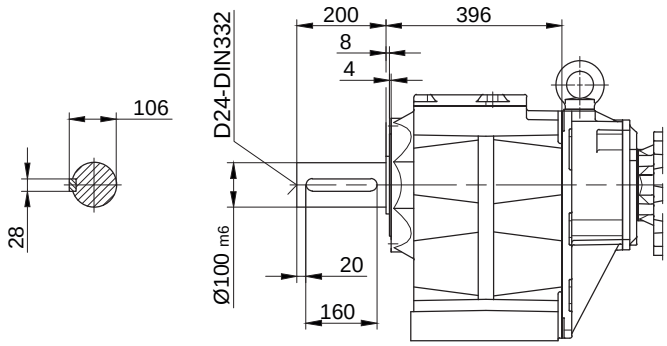
A-A

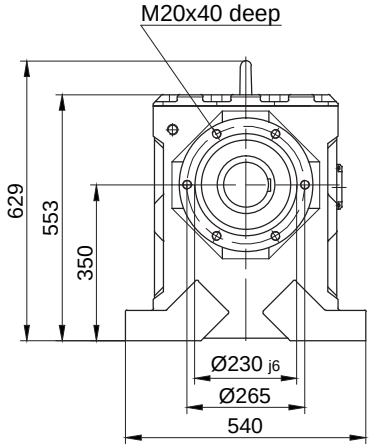
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG90G50-../D..08..	200	456	156	1252	6	115	136.5	1318	1359	1425.5	1318
BG90G50-../D..09..	251	470.5	181	1317.5	6	124	158	1410.5	1424.5	1514	1410.5
BG90G50-../D..11..	319	477	228	1392	6	181	181	1490	1499	1594.5	1490
BG90G50-../D..13..	393	490	258	1479	6	218	218	1590	1586	1694.5	1590
BG90G50-../D..16..	454.5	504	322	1554.5	6	244	244	1698	1661.5	1802	1698
BG90G50-../D..18..	542	535	368	1673	6	244	244	1822.5	1780	1926.5	1822.5

The actual gearbox design can vary from the geometry shown.

BG90G50

Flange with tapped holes
Code -71/





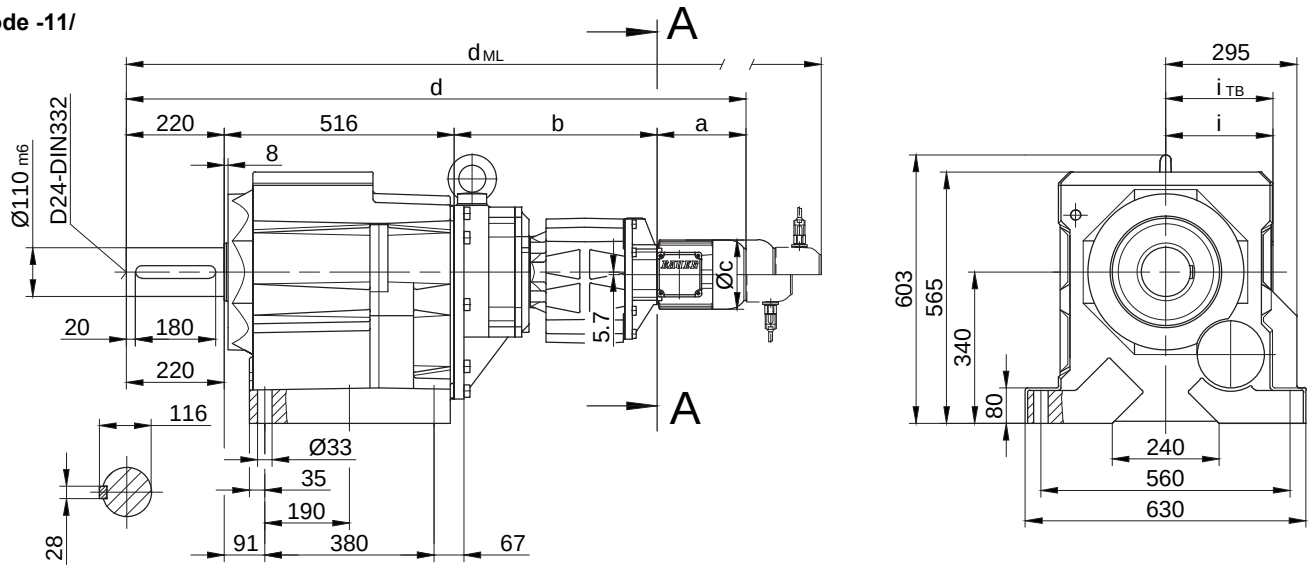
The actual gearbox design can vary from the geometry shown.

Dimension

BG100G50

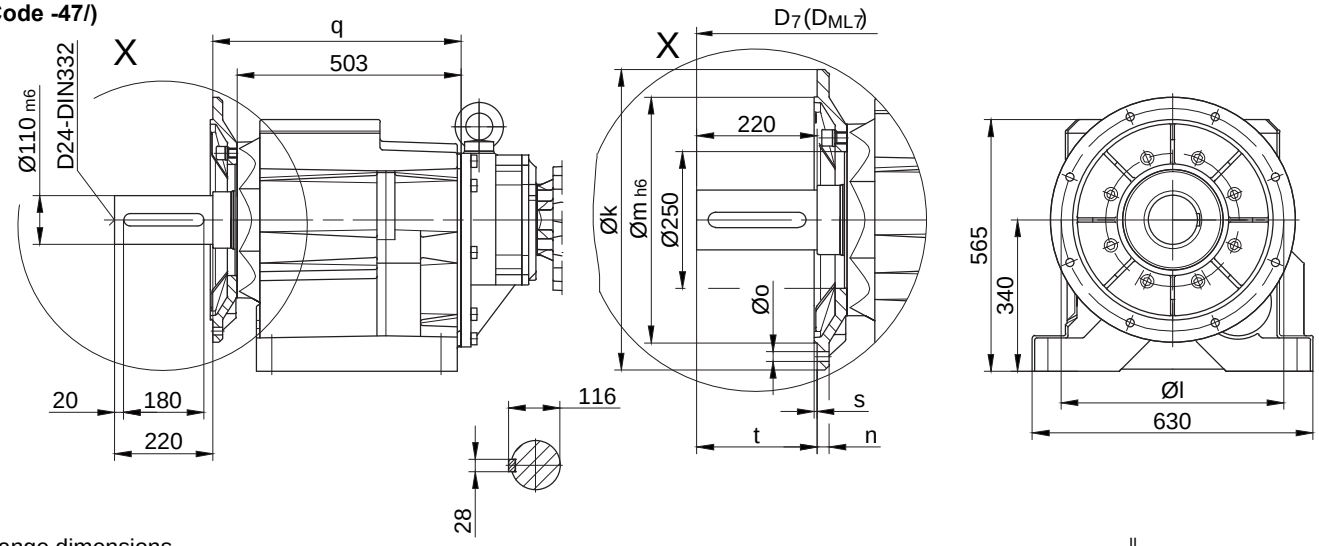
Foot mounting with clearance holes

Code -11/



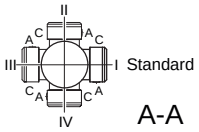
Flange with clearance holes

Code -37/
(Code -47/)



Flange dimensions

BG100G...	k	l	m	n	o	q	s	t	D_7	D_{ML7}
Standard -37/	550	500	450	22	17.5	558	5	220	d+42	d_{ML}+42
big -47/	660	600	550	25	22	552	6	226	d+42	d_{ML}+42



A-A

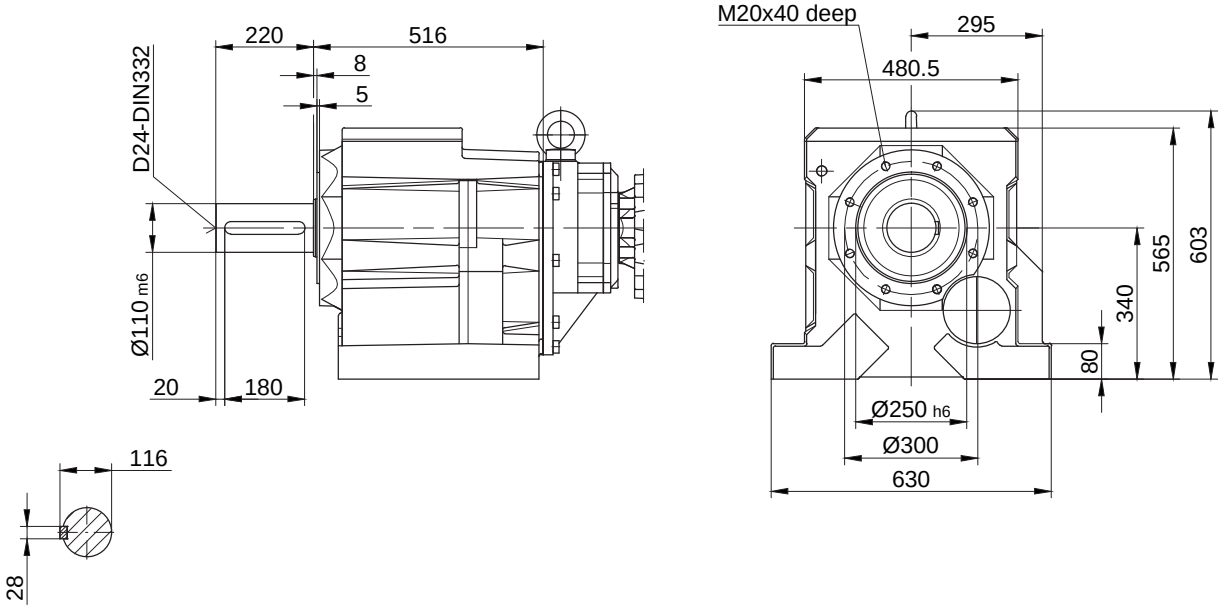
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BG100G50-../D..08..	200	456	156	1392	115	136.5	1458	1499	1565.5	1458
BG100G50-../D..09..	251	470.5	181	1457.5	124	158	1550.5	1564.5	1655	1550.5
BG100G50-../D..11..	319	477	228	1532	181	181	1630	1639	1734.5	1630
BG100G50-../D..13..	393	490	258	1619	218	218	1730	1726	1834.5	1730
BG100G50-../D..16..	454.5	504	322	1694.5	244	244	1838	1801.5	1942	1838
BG100G50-../D..18..	542	535	368	1813	288	288	1962.5	1920	2066.5	1962.5

The actual gearbox design can vary from the geometry shown.

BG100G50

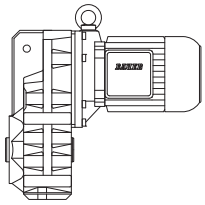
Flange with tapped holes

Code 71/



The actual gearbox design can vary from the geometry shown.

11



Page

Dimensional drawings shaft-mounted-geared motors 251-302
- **Standard**
- **Tandem Gearbox**

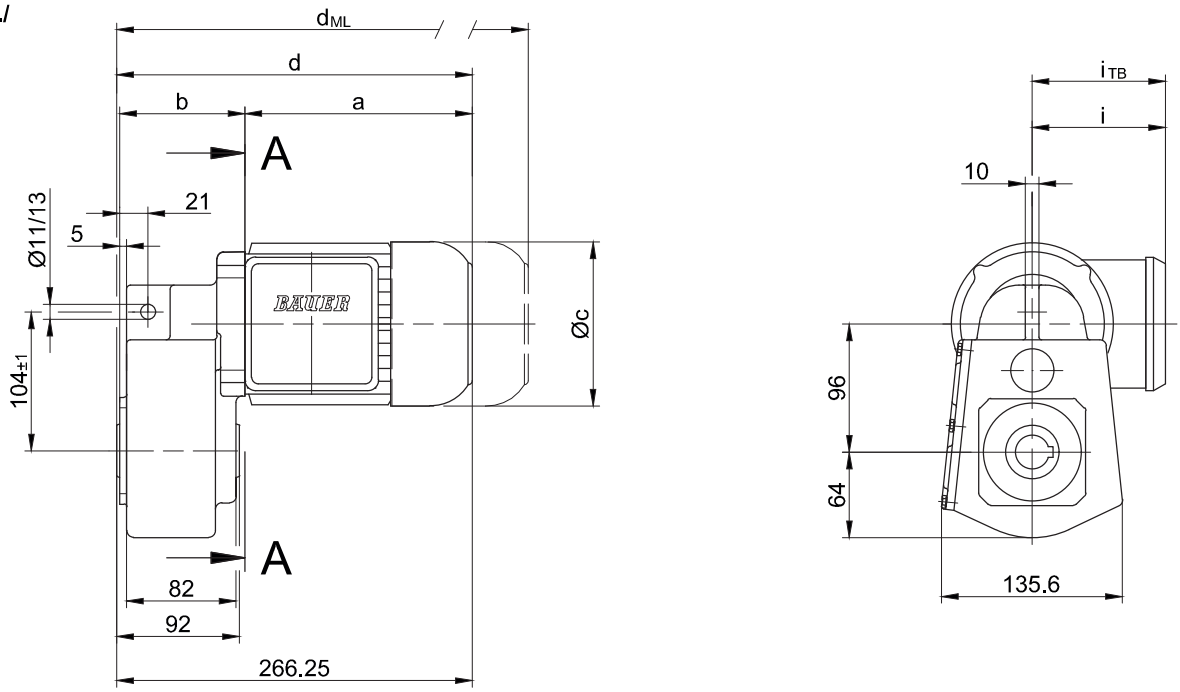
Additional Dimension Sheet

- Splined shaft acc. DIN 5480
- Shrink disc (SSV)
- Shrink disc connection with cover (SSV)
- Hole pattern side (H)
- Rubber buffer for torque restraint
- Assembly tools for hollow shaft
- Assembly tools for splined shaft
- Shaft cap (VK)
- Shaft cover (VD)

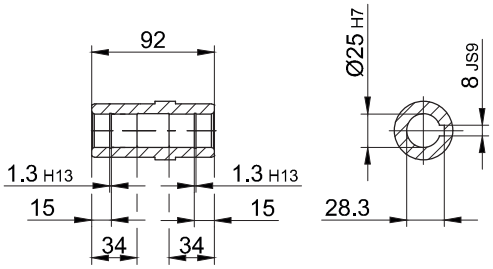
BF06

With torque arm

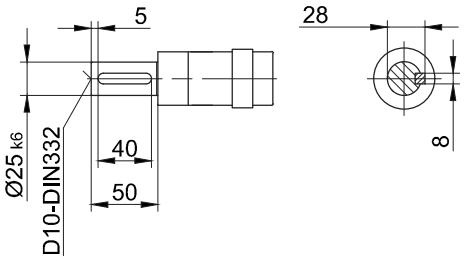
Code -0./

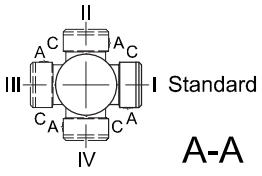


Code -.4/



Code -.1/





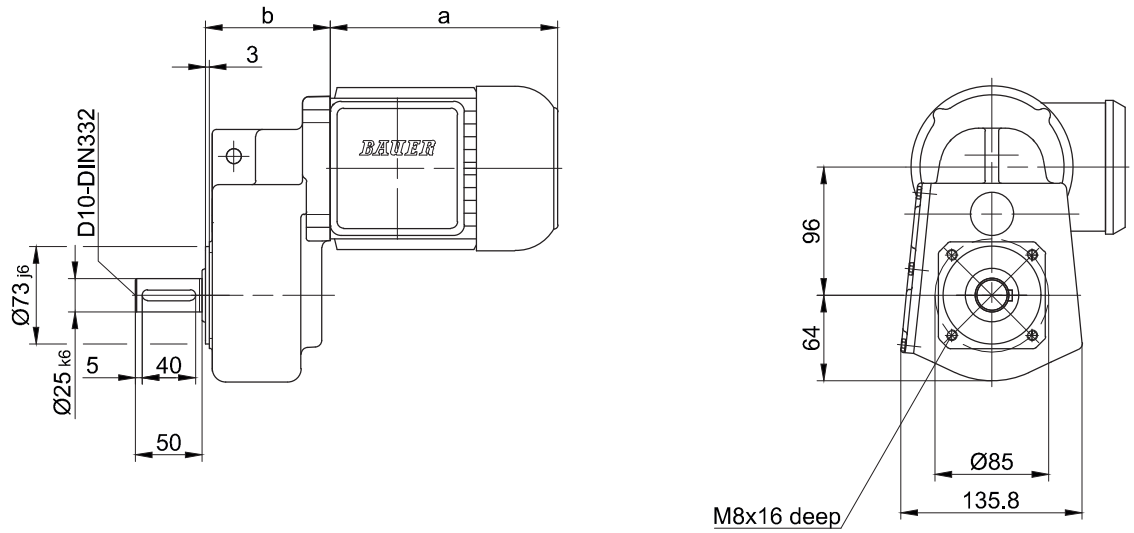
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF06-../D05..	170	93.5	123	266	100	117	308	369	410.5	-
BF06-../D06..	170	93.5	123	266	100	119	308	369	410.5	-
BF06-../D07..	190	94.5	123	286	100	119	328	389	430.5	-
BF06-../D08..	200	141	156	343.5	115	136.5	409.5	450.5	517.5	409.5

The actual gearbox design can vary from the geometry shown.

BF06

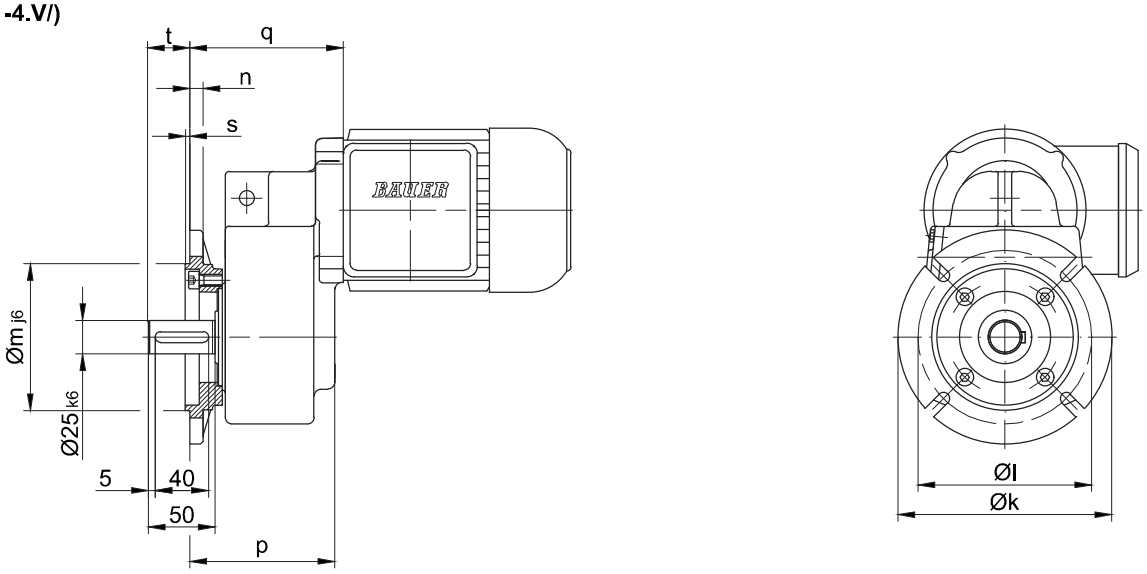
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3.V/
(Code -4.V/)



Flange dimensions

BF06	k	l	m	n	o	p	$q_{1)}$	$q_{2)}$	s	t
Standard -3./	140	115	95	10	9	108.5	115	163	3	31.5
big -4./	160	130	110	10	9	108.5	115	163	3.5	31.5

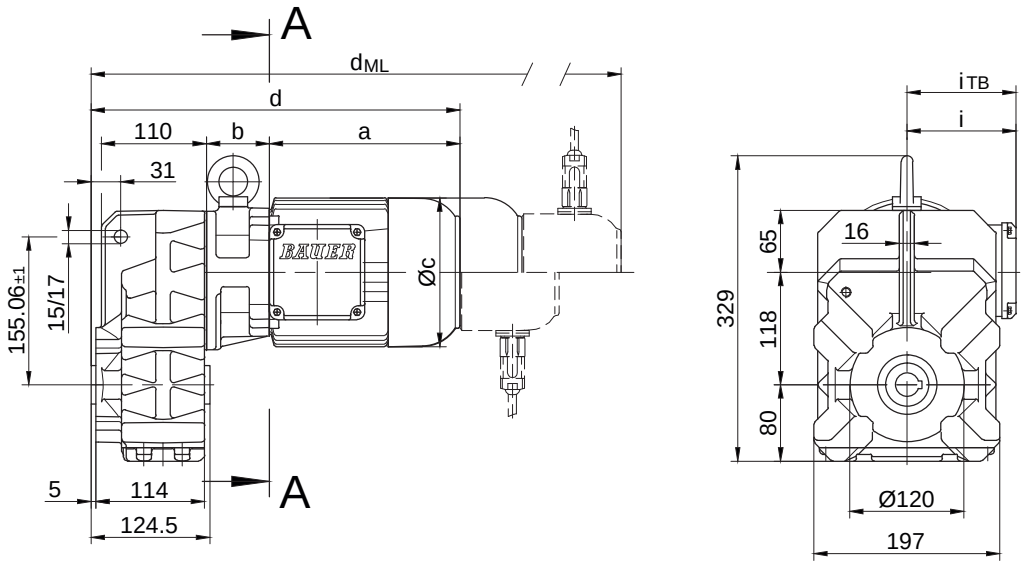
1) only for motor sizes D05; D06; D07
2) only at motor size D08..

The actual gearbox design can vary from the geometry shown.

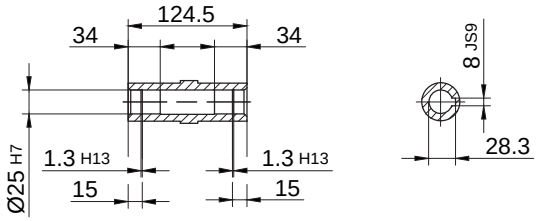
BF10 - BF10Z

With torque arm

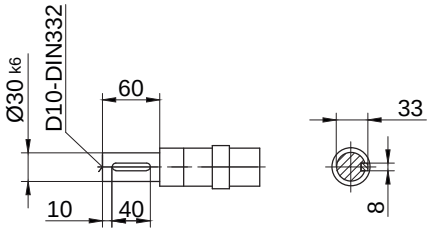
Code -0./



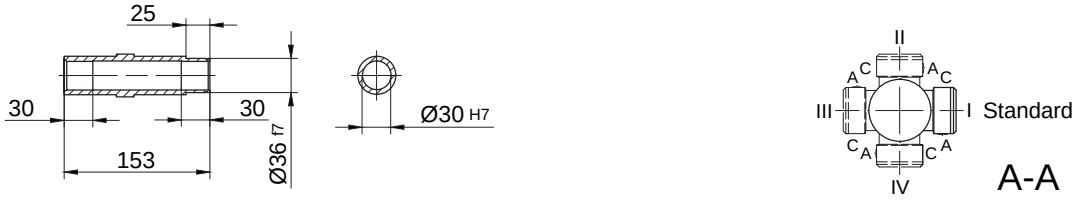
Code -.4/



Code -.1/



Code -.5/

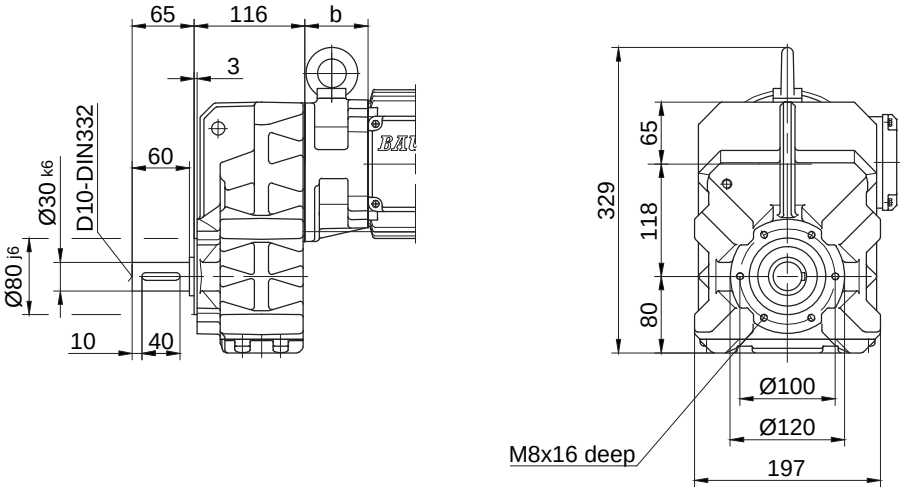


Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF10Z-../D04..	143	86	111	350	90	112	393.5	412.5	455.5	-
BF10-../D05..	170	62	123	353	100	117	395	456	497.5	-
BF10Z-../D05..	170	88	123	379	100	117	421	482	523.5	-
BF10-../D06..	170	62	123	353	100	119	395	456	497.5	-
BF10Z-../D06..	170	88	123	379	100	119	421	482	523.5	-
BF10-../D07..	190	62	123	373	100	119	415	476	517.5	-
BF10Z-../D07..	190	88	123	399	100	119	441	502	543.5	-
BF10-../D..08..	200	66	156	387	115	136.5	453	494	560.5	453
BF10Z-../D..08..	200	132	156	453	115	136.5	519	560	526.5	519
BF10-../D..09..	251	80.5	181	452.5	124	158	545.5	559.5	650	545.5

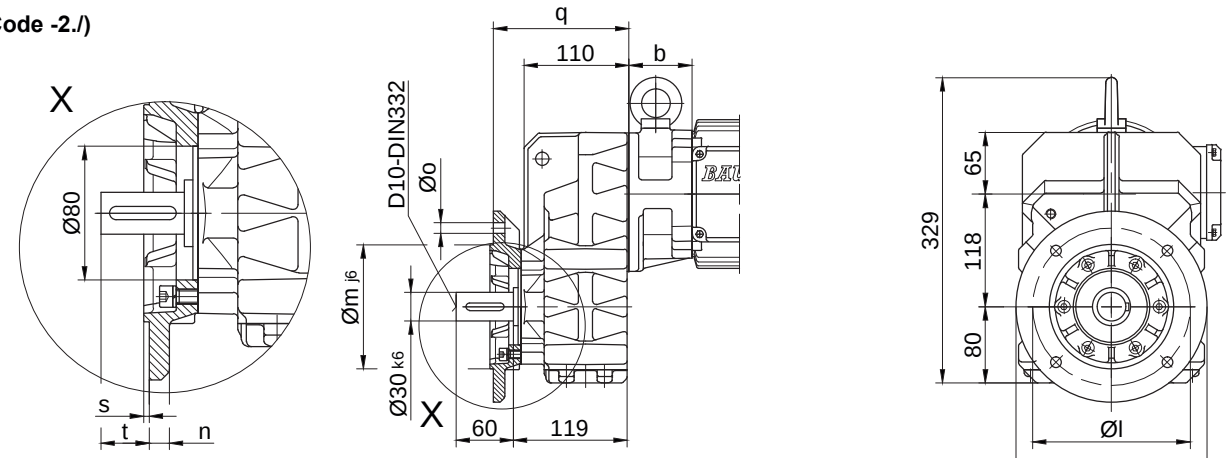
The actual gearbox design can vary from the geometry shown.

BF10 - BF10Z

Flange with tapped holes
Code -7./



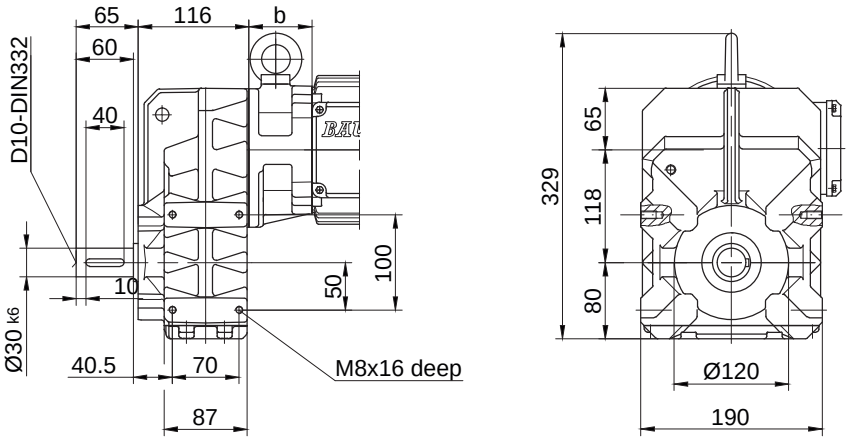
Flange with clearance holes
Code -3./
(Code -2./)



Flange dimensions

BF10(Z)	k	l	m	n	o	q	s	t
Standard -3./	200	165	130	12	11	142	3.5	39
small -2./	160	130	110	10	9	135	3.5	46

Foot with tapped holes left and right
Code -6.LR/

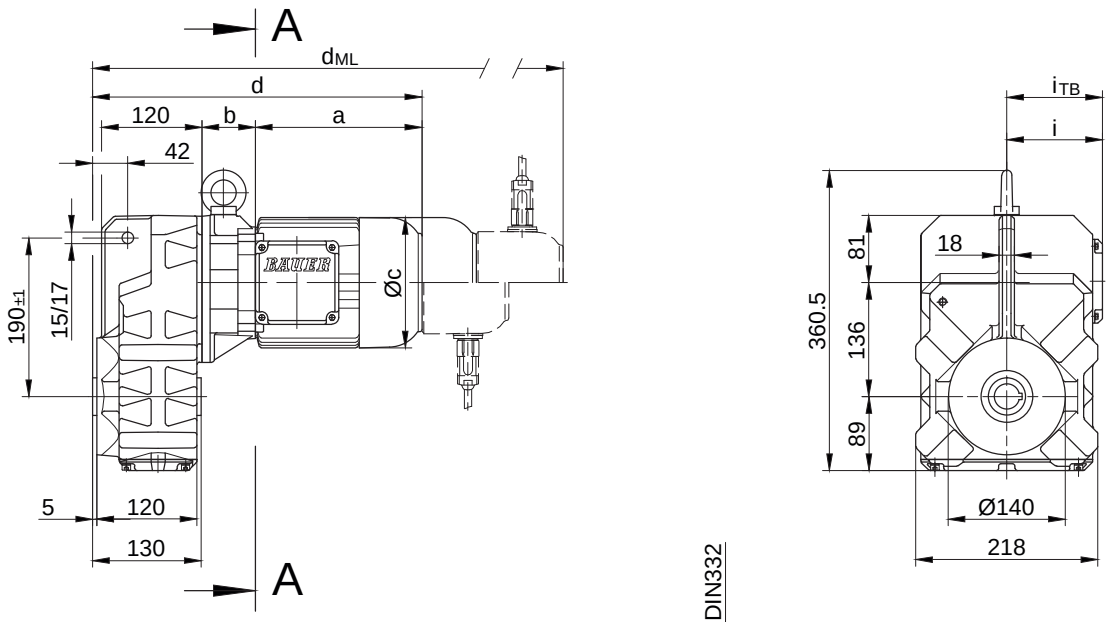


The actual gearbox design can vary from the geometry shown.

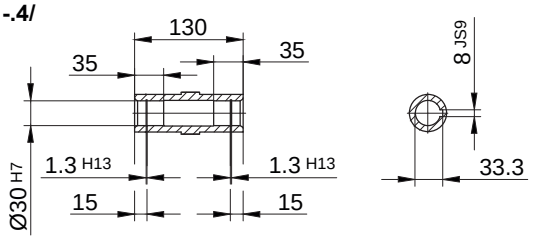
BF20 - BF20Z

With torque arm

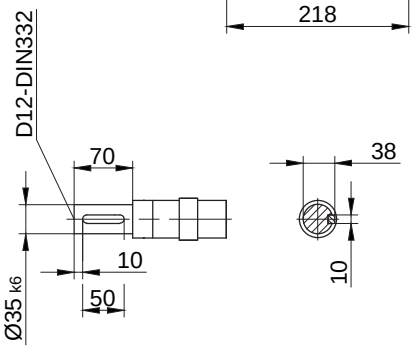
Code -0./



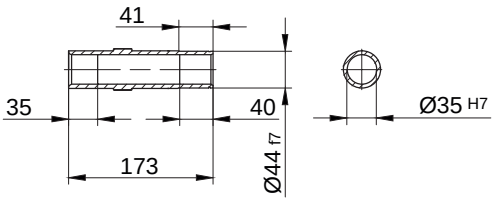
Code -.4/

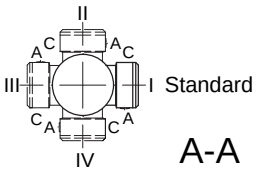


Code -.1/



Code -.5/





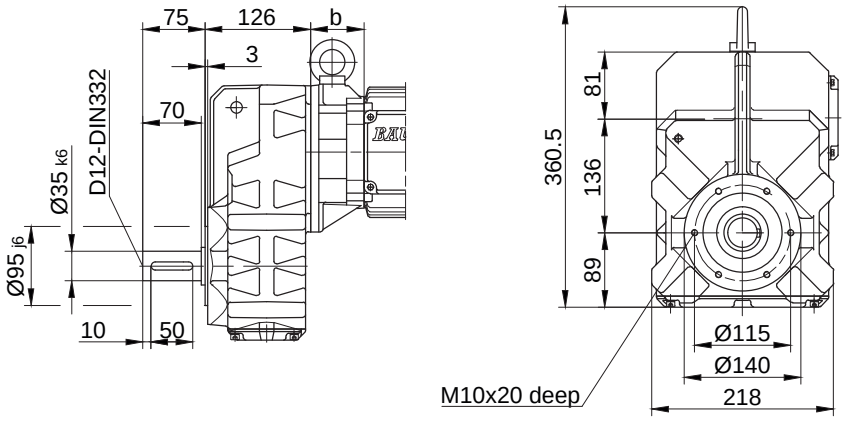
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF20Z-../D04..	143	100	111	374	90	112	417.5	436.5	479.5	-
BF20-../D05..	170	60	123	361	100	117	403	464	505.5	-
BF20Z-../D05..	170	102	123	403	100	117	445	506	547.5	-
BF20-../D06..	170	60	123	361	100	119	403	464	505.5	-
BF20Z-../D06..	170	102	123	403	100	119	445	506	547.5	-
BF20-../D07..	190	60	123	381	100	119	423	484	525.5	-
BF20Z-../D07..	190	102	123	423	100	119	466	526	567.5	-
BF20-../D..08..	200	64	156	395	115	136.5	461	502	568.5	461
BF20Z-../D..08..	200	146	156	477	115	136.5	543	584	650.5	543
BF20-../D..09..	251	78.5	181	460.5	124	158	553.5	567.5	658	553.5

The actual gearbox design can vary from the geometry shown.

BF20 - BF20Z

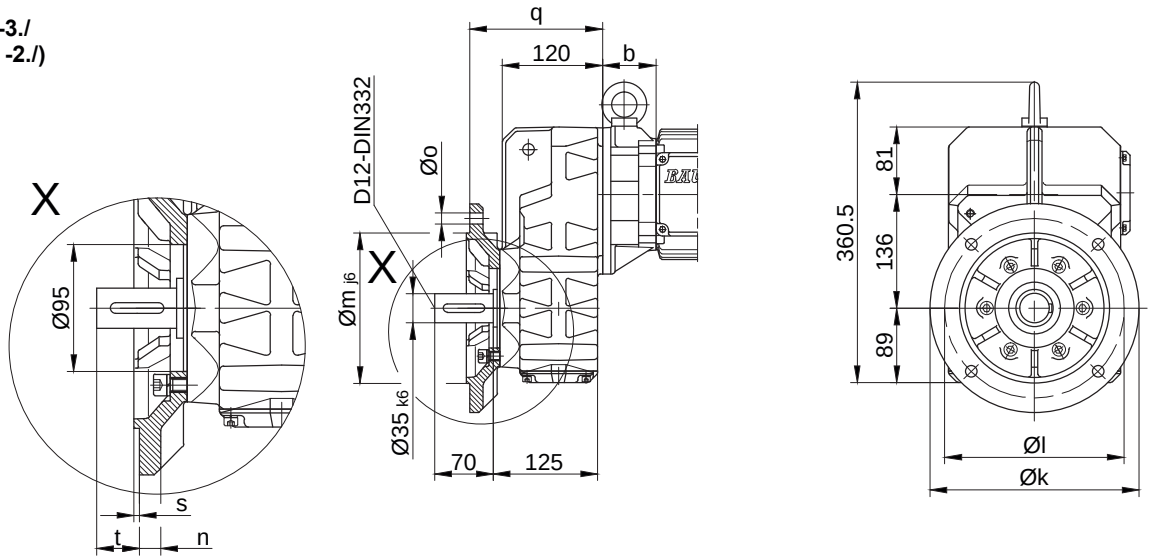
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

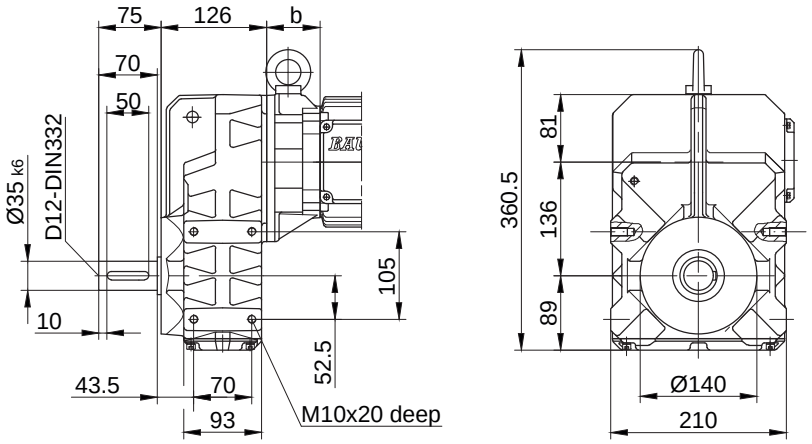


Flange dimensions

BF20(Z)	k	l	m	n	o	q	s	t
Standard -3./	250	215	180	16	13.5	159	4	42
small -2./	200	165	130	12	11	150	3.5	51

Foot with tapped holes left and right

Code -6.LR/

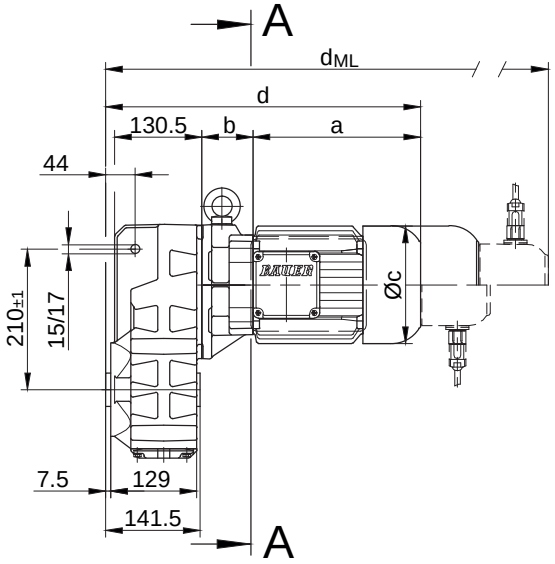


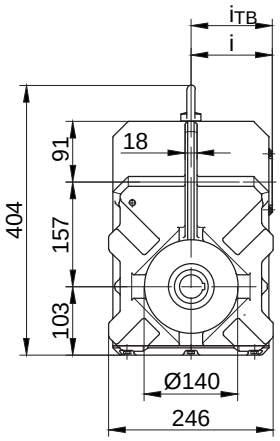
The actual gearbox design can vary from the geometry shown.

BF30 - BF30Z

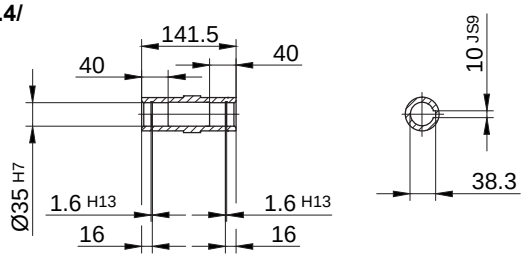
With torque arm

Code -0./

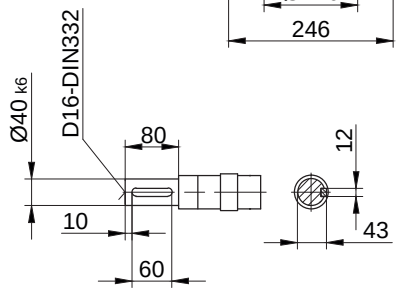




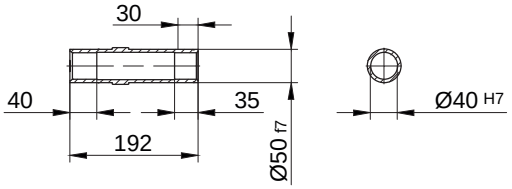
Code -.4/

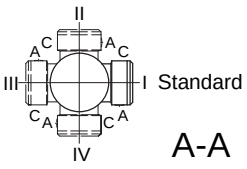


Code -.1/



Code -.5/





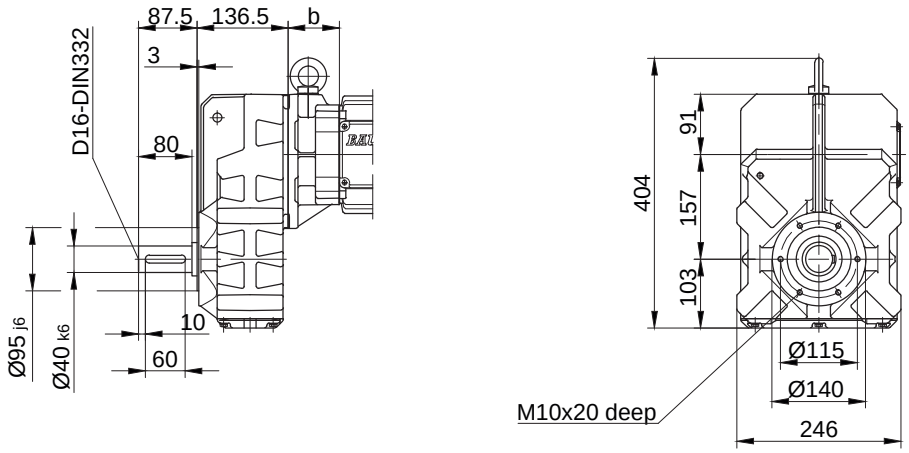
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF30-../D05..	170	58	123	372	100	117	414	475	516.5	-
BF30Z-../D05..	170	133.5	123	447.5	100	117	489.5	550.5	592	-
BF30-../D06..	170	58	123	372	100	119	414	475	516.5	-
BF30Z-../D06..	170	133.5	123	447.5	100	119	489.5	550.5	592	-
BF30-../D07..	190	58	123	392	100	119	434	495	536.5	-
BF30Z-../D07..	190	133.5	123	467.5	100	119	509.5	570.5	612	-
BF30-../D..08..	200	62	156	406	115	136.5	472	513	579.5	472
BF30Z-../D..08..	200	137.5	156	481.5	115	136.5	547.5	588.5	655	547.5
BF30-../D..09..	251	76.5	181	471.5	124	158	564.5	578.5	669	564.5
BF30Z-../D..09..	251	152	181	547	124	158	640	654	744.5	640
BF30-../D..11..	319	83	228	546	181	181	644	653	748.5	644

The actual gearbox design can vary from the geometry shown.

BF30 - BF30Z

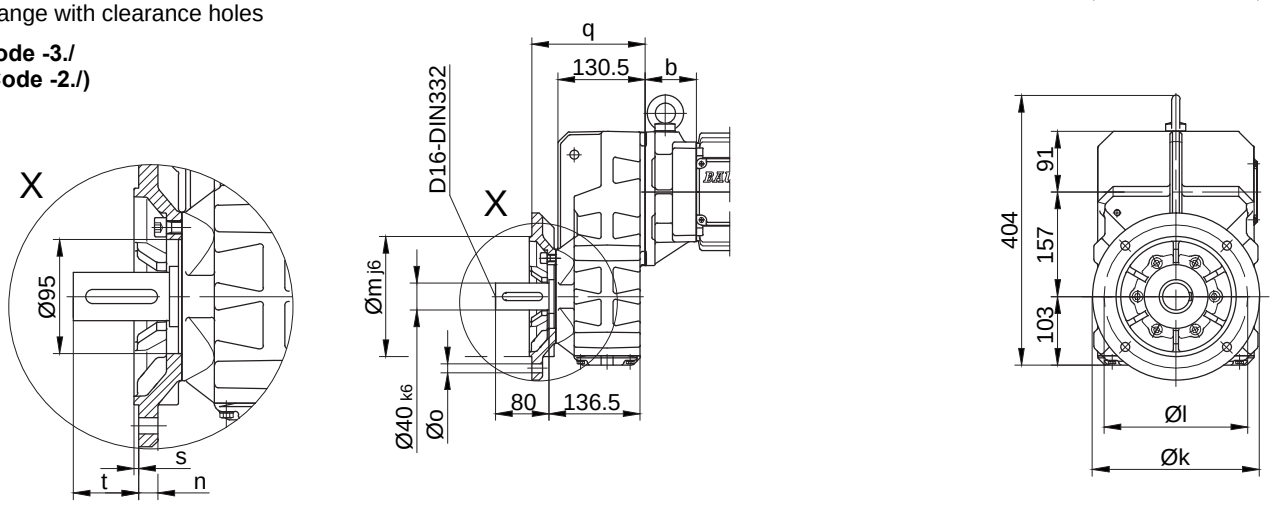
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

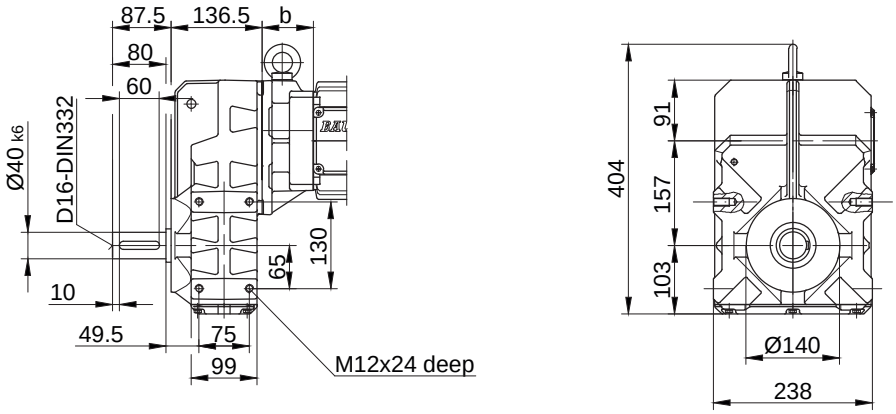


Flange dimensions

BF30(Z)	k	l	m	n	o	q	s	t
Standard -3./	250	215	180	16	13.5	169.5	4	54.5
small -2./	200	165	130	12	11	160.5	3.5	63.5

Foot with tapped holes left and right

Code -6.LR/

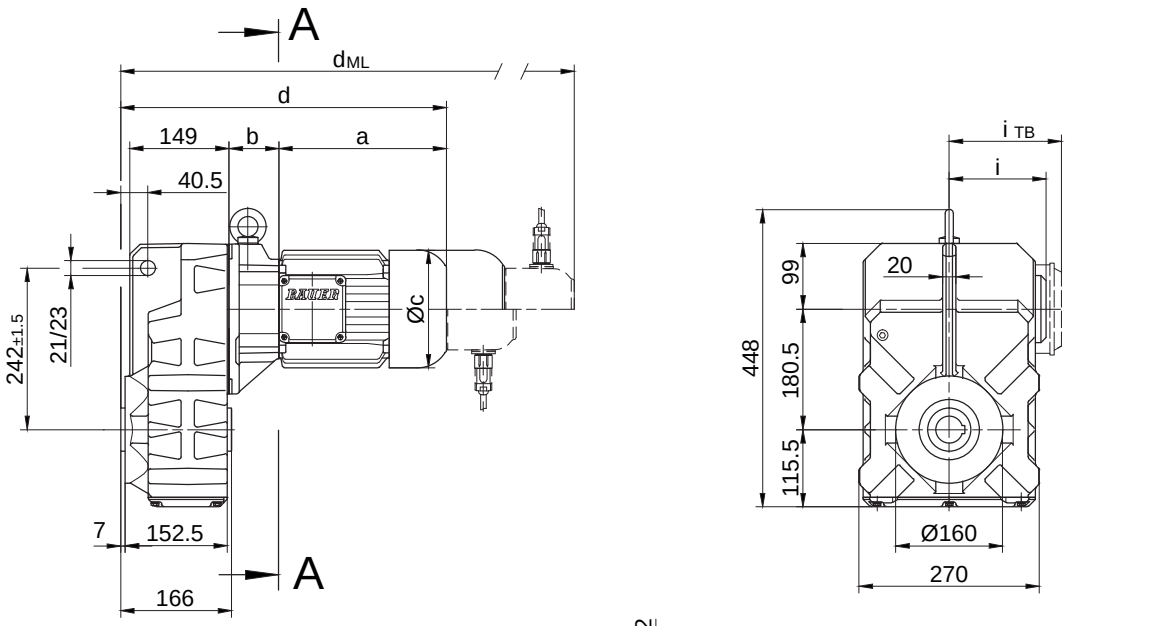


The actual gearbox design can vary from the geometry shown.

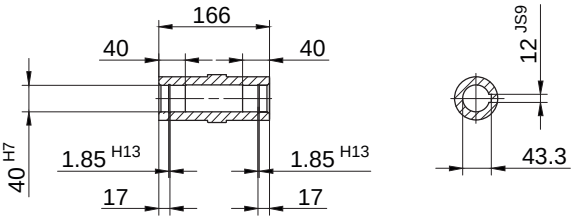
BF40 - BF40Z

With torque arm

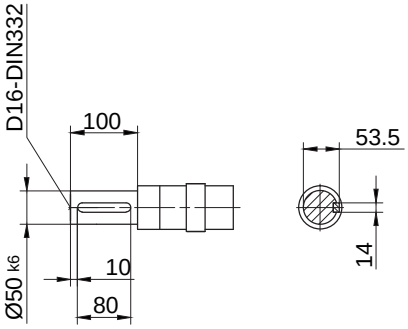
Code -0./



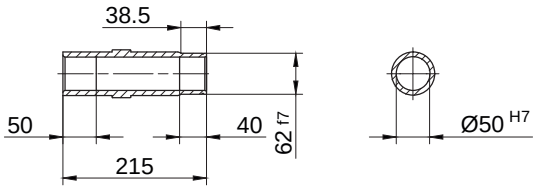
Code -.4/

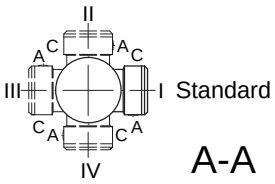


Code -.1/



Code -.5/





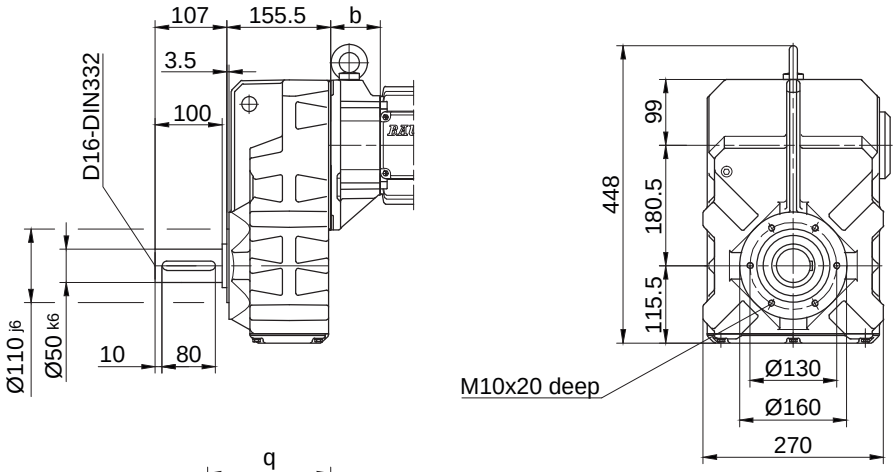
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF40Z-../D05..	170	138.5	123	471	100	117	513	574	615.5	-
BF40Z-../D06..	170	138.5	123	471	100	119	513	574	615.5	-
BF40Z-../D07..	190	138.5	123	491	100	119	533	594	637.5	-
BF40-../D..08..	200	60	156	422.5	115	136.5	488.5	529.5	596	488.5
BF40Z-../D..08..	200	142.5	156	505	115	136.5	571	612	678.5	571
BF40-../D..09..	251	74.5	181	488	124	158	581	595	685.5	581
BF40Z-../D..09..	251	157	181	570.5	124	158	663.5	677.5	768	663.5
BF40-../D..11..	319	81	228	562.5	181	181	660.5	669.5	765	660.5

The actual gearbox design can vary from the geometry shown.

BF40 - BF40Z

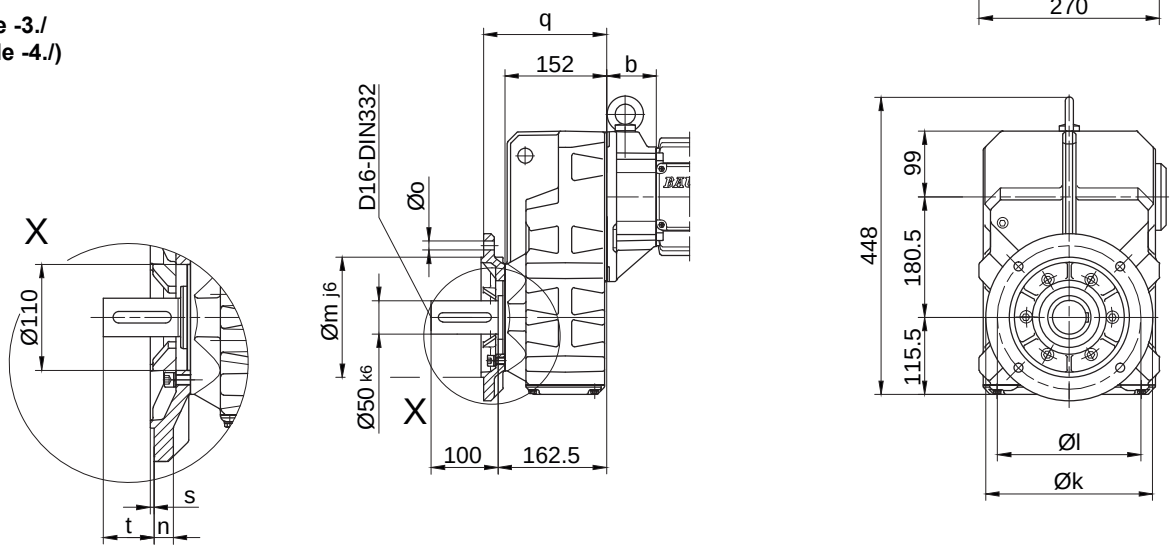
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -4./)

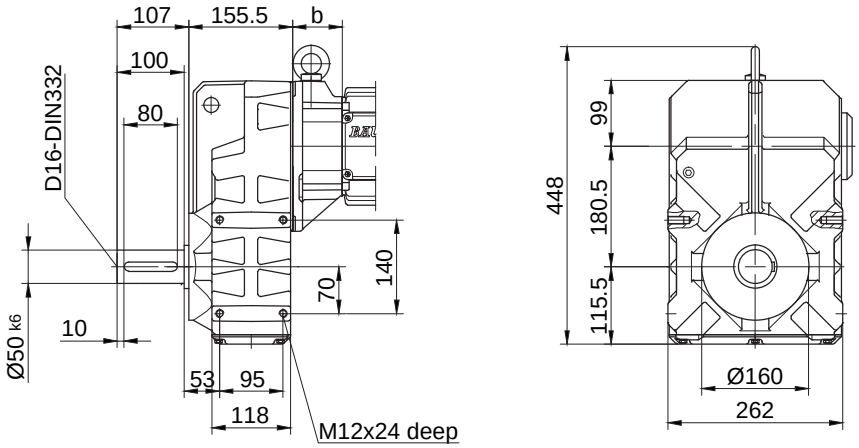


Flange dimensions

BF40(Z)	k	l	m	n	o	q	s	t
Standard -3./	250	215	180	16	13.5	184	4	78.5
big -4./	300	265	230	20	13.5	190	4	72.5

Foot with tapped holes left and right

Code -6.LR/

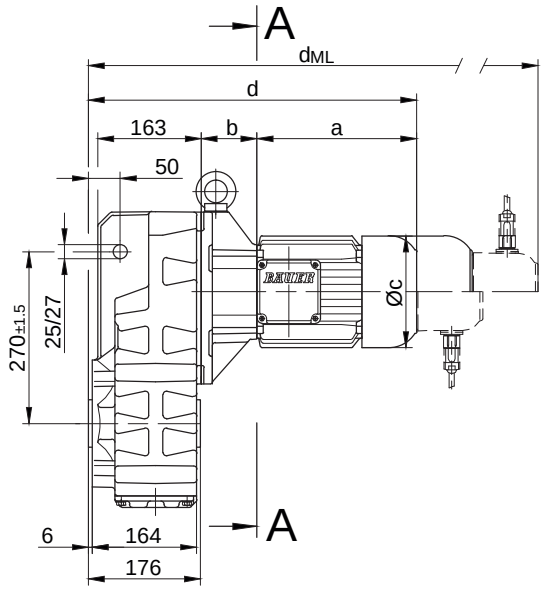


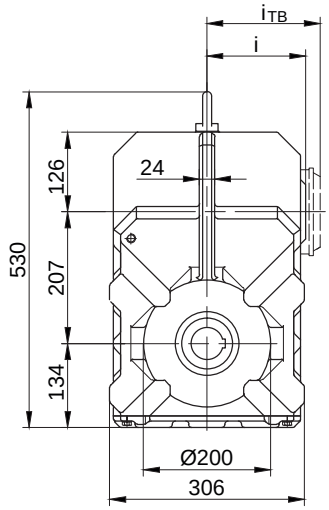
The actual gearbox design can vary from the geometry shown.

BF50 - BF50Z

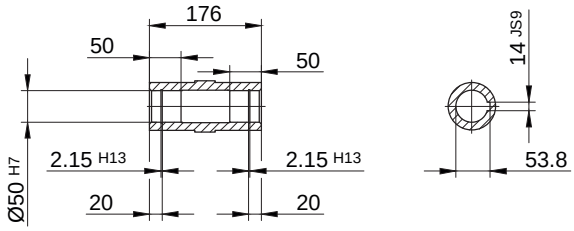
With torque arm

Code -0./

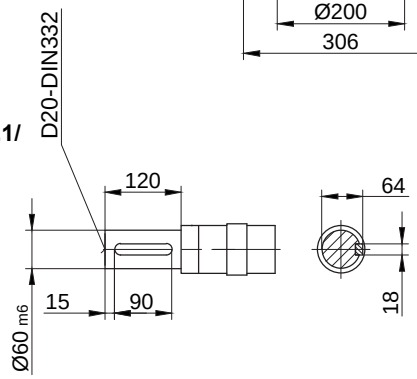




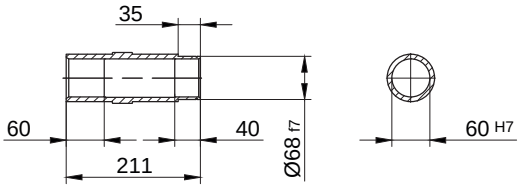
Code -.4/

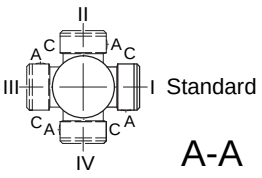


Code -.1/



Code -.5/





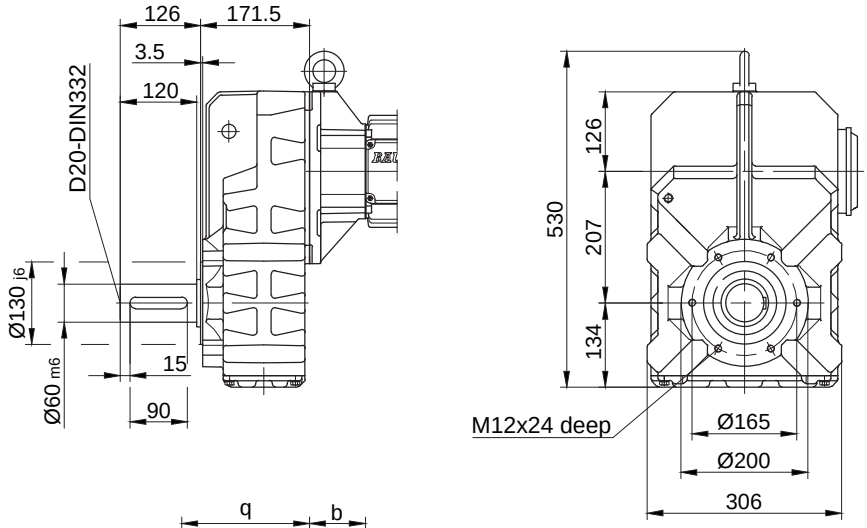
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES../ZS	G	E../ES../ZS-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF50Z-../D05..	170	155	123	502.5	100	117	544.5	605.5	647	-
BF50Z-../D06..	170	155	123	502.5	100	119	544.5	605.5	647	-
BF50Z-../D07..	190	155	123	522.5	100	119	464.5	625.5	667	-
BF50-../D..08..	200	73	156	450.5	115	136.5	516.5	557.5	624	516.5
BF50Z-../D..08..	200	159	156	536	115	136.5	602.5	643.5	710	602.5
BF50-../D..09..	251	87.5	181	516	124	158	609	623	713.5	609
BF50Z-../D..09..	251	173.5	181	602	124	158	695	709	799.5	695
BF50-../D..11..	319	94	228	590.5	181	181	688.5	697.5	793	688.5
BF50-../D..13..	393	107	258	677.5	218	218	788.5	784.5	893	788.5
BF50-../D..16..	454.5	121	322	753	244	244	896.5	860	1000.5	896.5
BF50-../D..18..	542	143	368	862.5	288	288	1012	969.5	1115.5	1012

The actual gearbox design can vary from the geometry shown.

BF50 - BF50Z

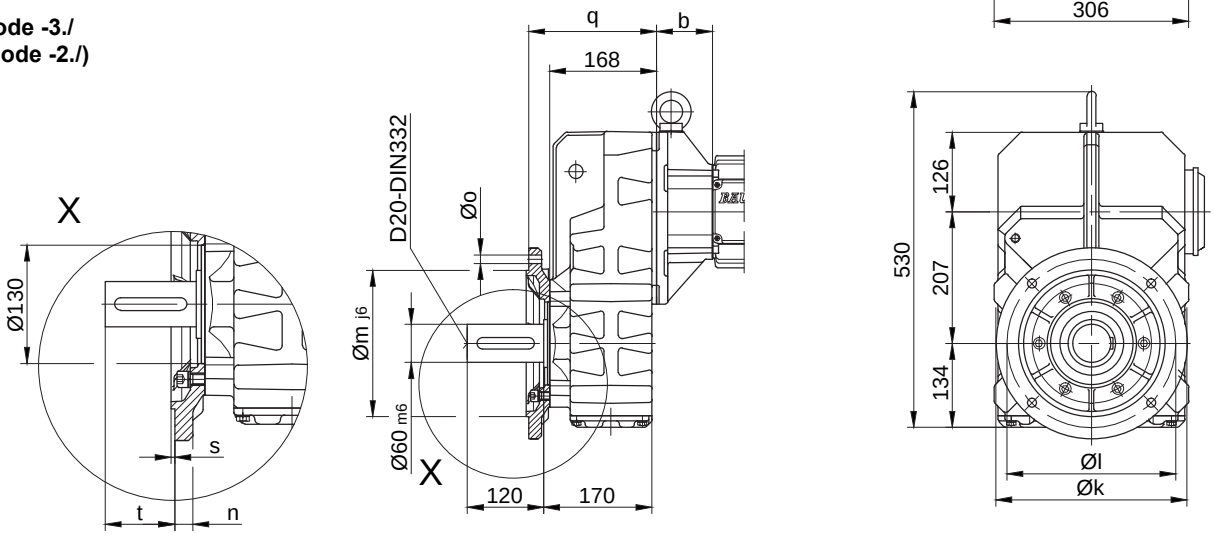
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

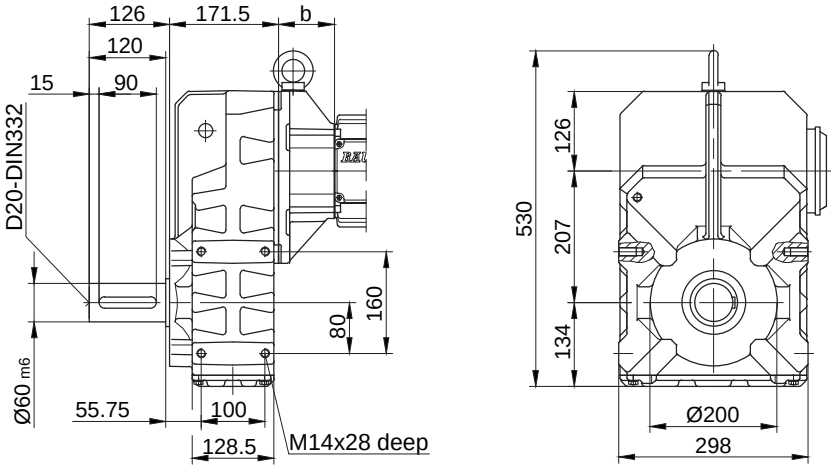


Flange dimensions

BF50(Z)	k	l	m	n	o	q	s	t
Standard -3./	300	265	230	20	13.5	201	4	96.5
small -2./	250	215	180	16	13.5	198	4	99.5

Foot with tapped holes left and right

Code -6.LR/

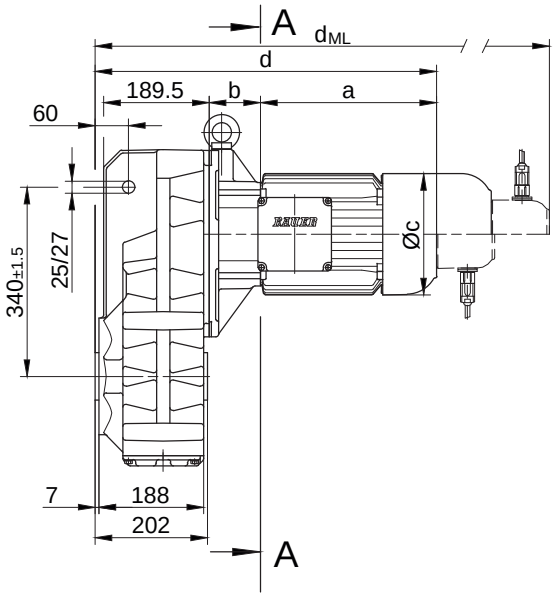


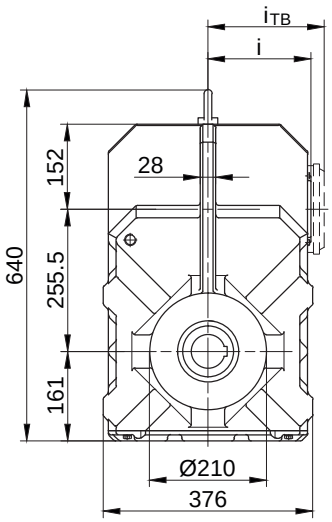
The actual gearbox design can vary from the geometry shown.

BF60 - BF60Z

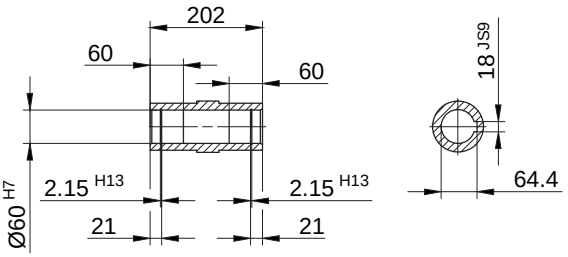
With torque arm

Code -0./

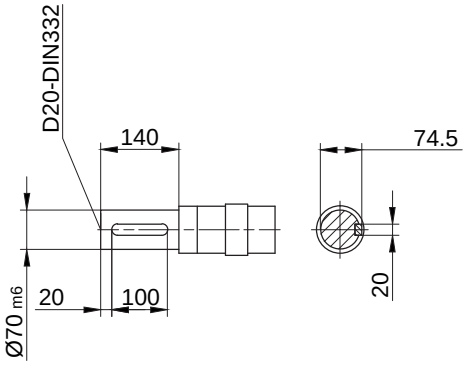




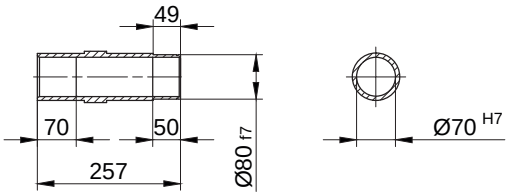
Code -.4/

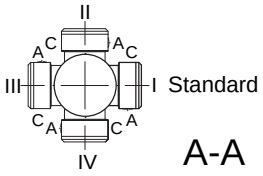


Code -.1/



Code -.5/





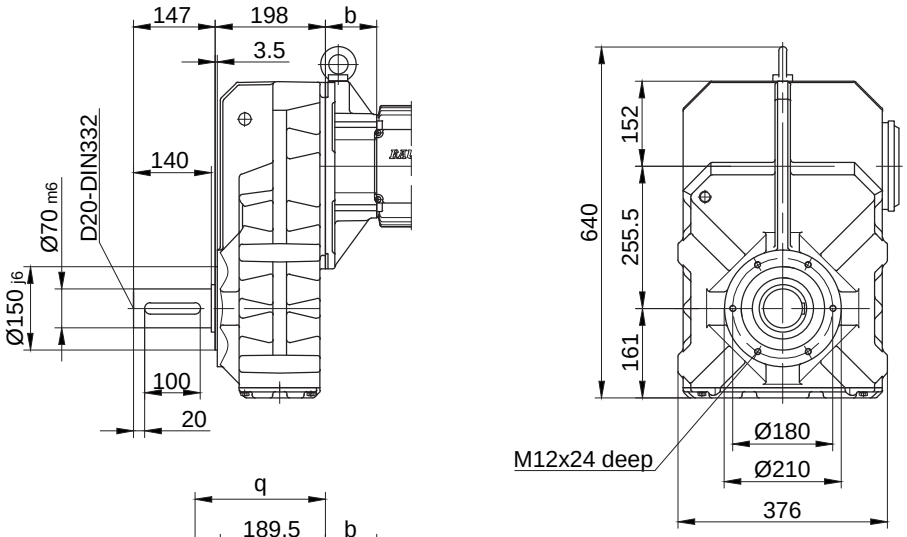
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF60Z-../D..08..	200	181	156	586	115	136.5	652	693	759.5	652
BF60-../D..09..	251	85.5	181	541.5	124	158	634.5	648.5	739	634.5
BF60Z-../D..09..	251	195.5	181	651.5	124	158	744.5	758.5	849	744.5
BF60-../D..11..	319	92	228	616	181	181	714	723	818.5	714
BF60Z-../D..11..	319	202	228	726	181	181	824	833	928.5	824
BF60-../D..13..	393	105	258	703	218	218	814	810	918.5	814
BF60-../D..16..	454.5	119	322	778.5	244	244	922	885.5	1026	922
BF60-../D..18..	542	141	368	888	288	288	1037.5	995	1141.5	1037.5

The actual gearbox design can vary from the geometry shown.

BF60 - BF60Z

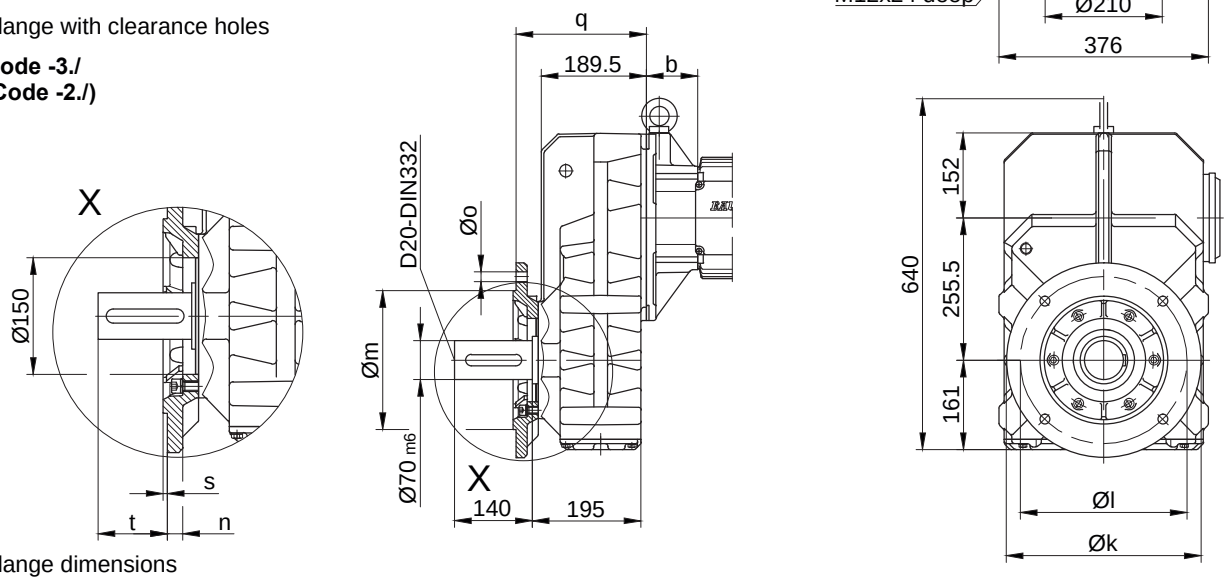
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

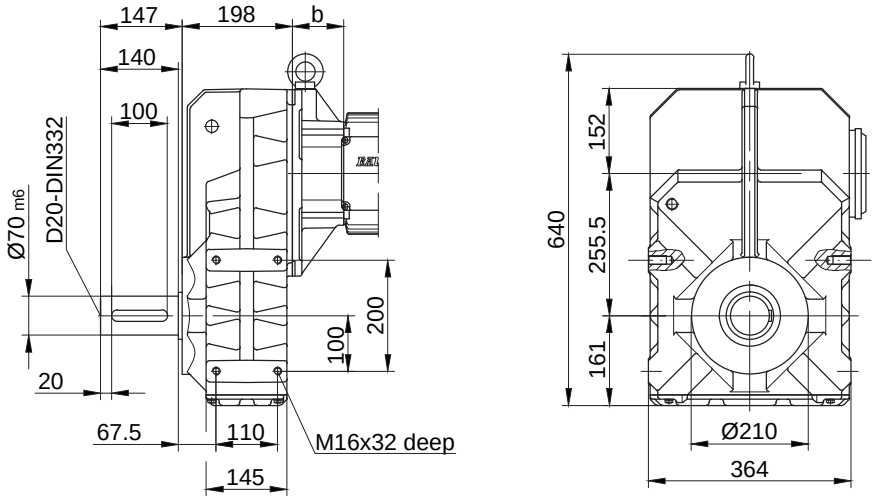


Flange dimensions

BF60(Z)	k	l	m	n	o	q	s	t
Standard -3./	350	300	250_{h6}	20	17.5	234.5	5	110.5
small -2./	300	265	230_{j6}	20	13.5	242.5	4	102.5

Foot with tapped holes left and right

Code -6.LR/

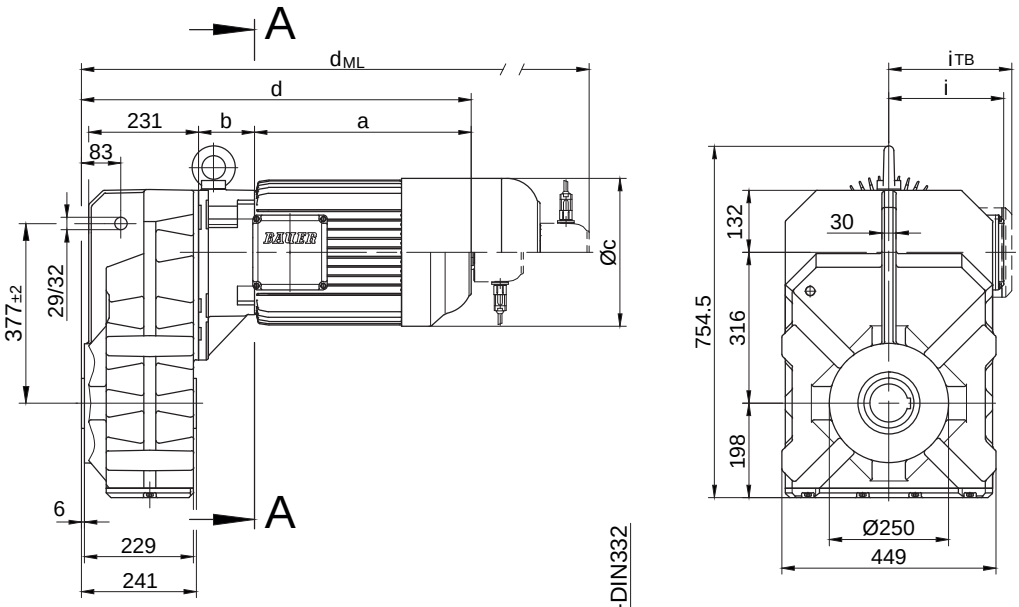


The actual gearbox design can vary from the geometry shown.

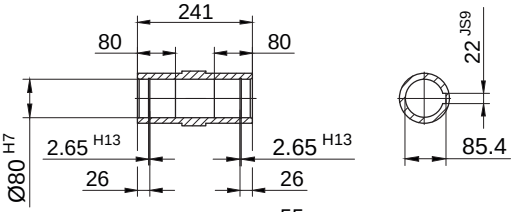
BF70 - BF70Z

With torque arm

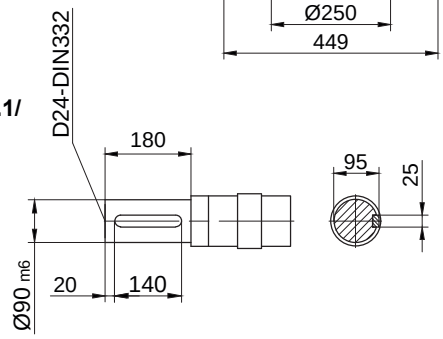
Code -0./



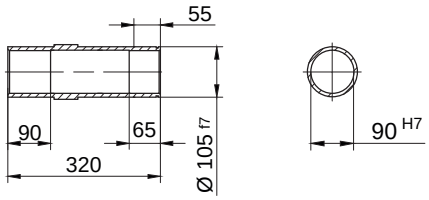
Code -.4/



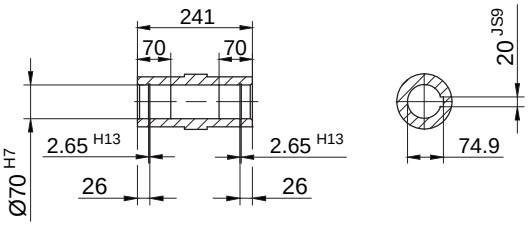
Code -.1/

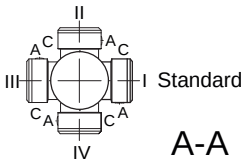


Code -.5/



Code -.4/K70



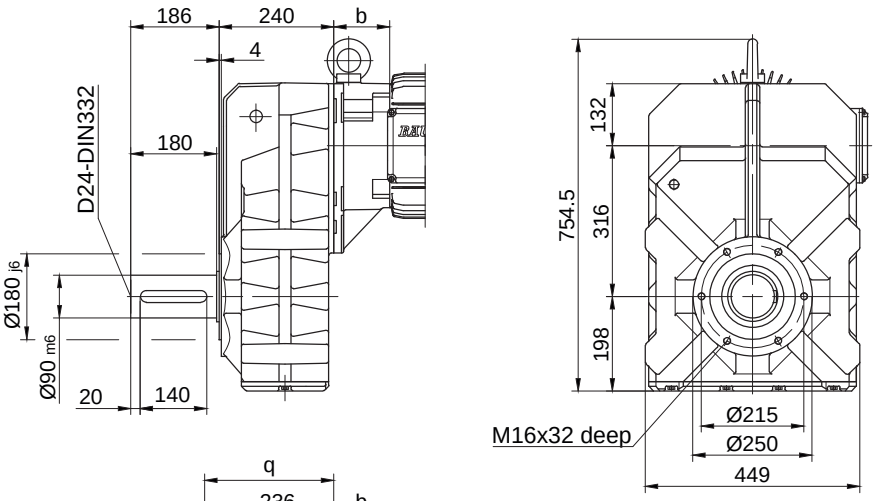


Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF70Z-../D..08..	200	202	156	648	115	136.5	714	755	821.5	714
BF70-../D..09..	251	83.5	181	580.5	124	158	673.5	687.5	778	673.5
BF70Z-../D..09..	251	216.5	181	713.5	124	158	806.5	820.5	911	806.5
BF70-../D..11..	319	90	228	655	181	181	753	762	857.5	753
BF70Z-../D..11..	319	223	228	788	181	181	886	895	990.5	886
BF70-../D..13..	393	103	258	742	218	218	853	849	957.5	853
BF70Z-../D..13..	393	236	258	875	218	217	986	982	1090.5	986
BF70-../D..16..	454.5	117	322	817.5	244	243	961	924.5	1064.5	961
BF70Z-../D..16..	454.5	250	322	950.5	244	243	1094	1057.5	1198	1094
BF70-../D..18..	542	139	368	927	288	288	1076.5	1034	1180.5	1076.5
BF70Z-../D..18..	542	272	368	1060	288	288	1209.5	1167	1313.5	1209.5

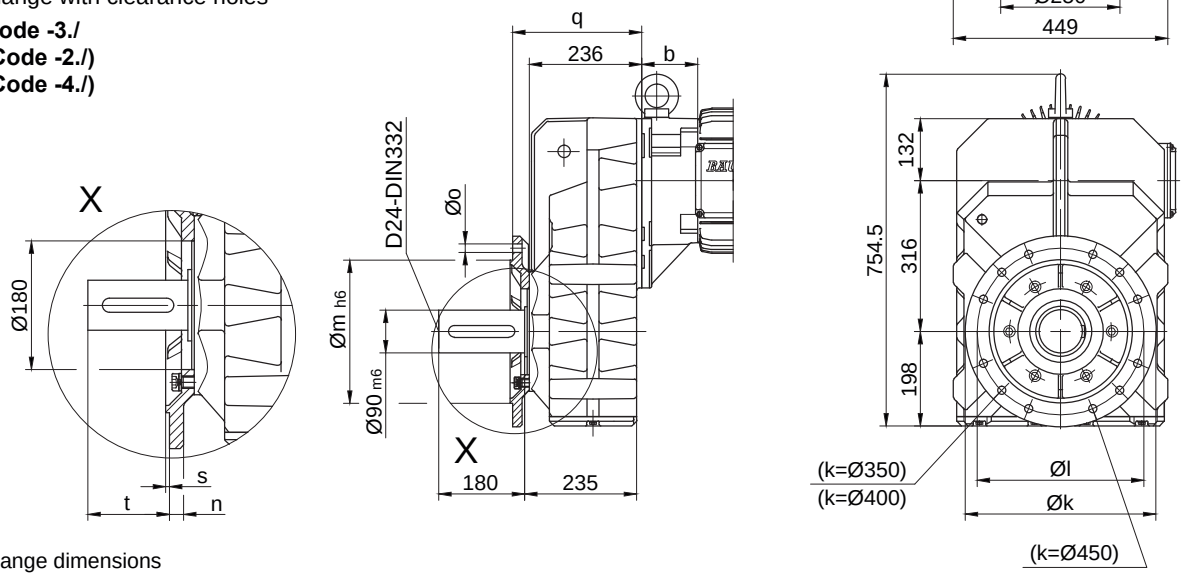
The actual gearbox design can vary from the geometry shown.

BF70 - BF70Z

Flange with tapped holes
Code -7./



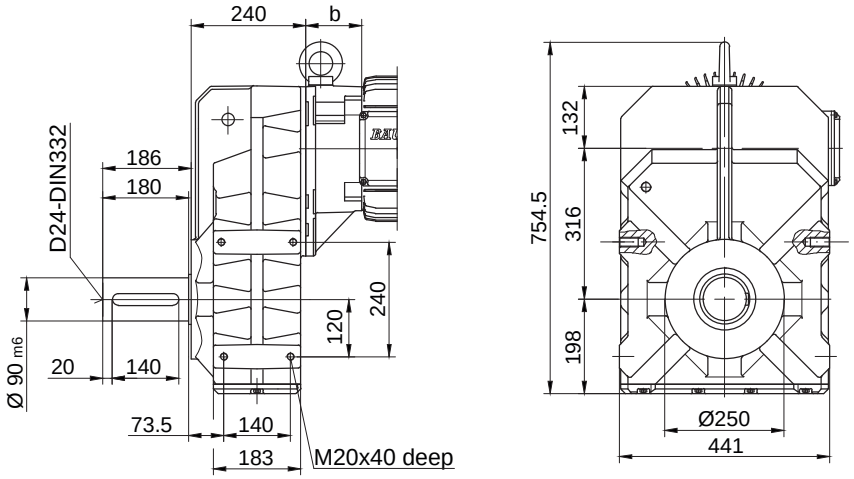
Flange with clearance holes
Code -3./
(Code -2./)
(Code -4./)



Flange dimensions

BF70(Z)	k	l	m	n	o	q	s	t
Standard -3./	400	350	300	20	4xØ17.5	271	5	155
small -2./	350	300	250	20	4xØ17.5	271	5	155
big -4./	450	400	350	22	8xØ17.5	281	5	145

Foot with tapped holes left and right
Code -6.LR/

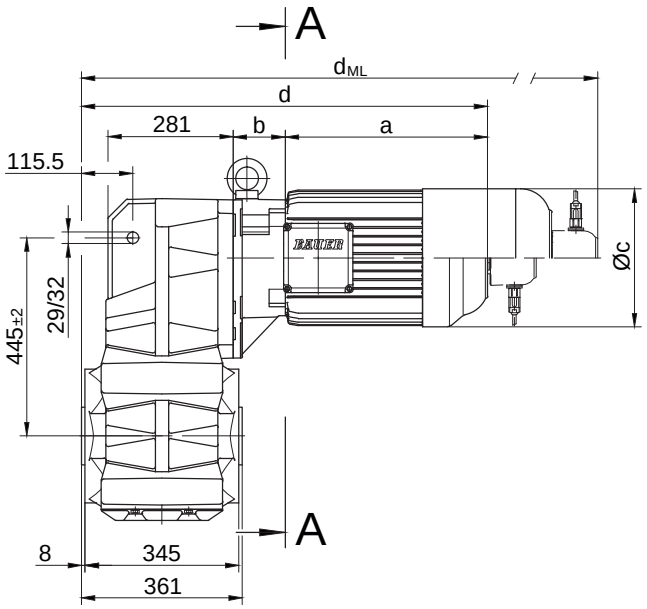


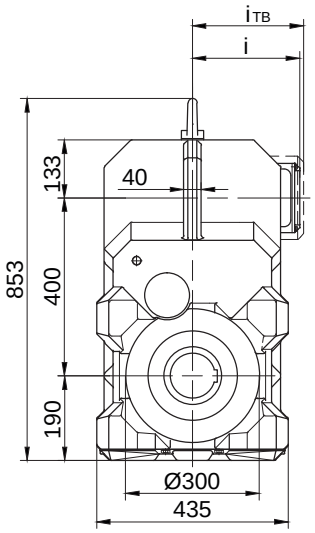
The actual gearbox design can vary from the geometry shown.

BF80 - BF80Z

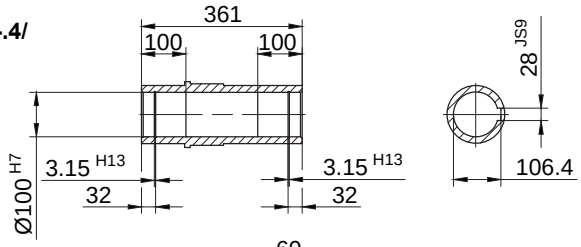
With torque arm

Code -0./

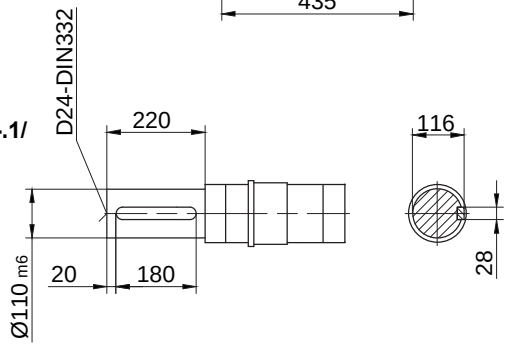




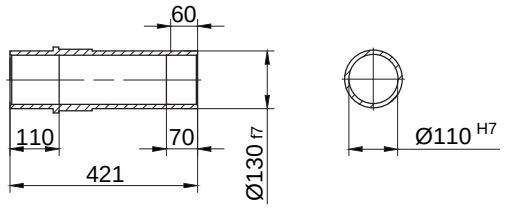
Code -.4/

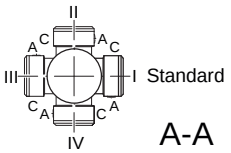


Code -.1/



Code -.5/





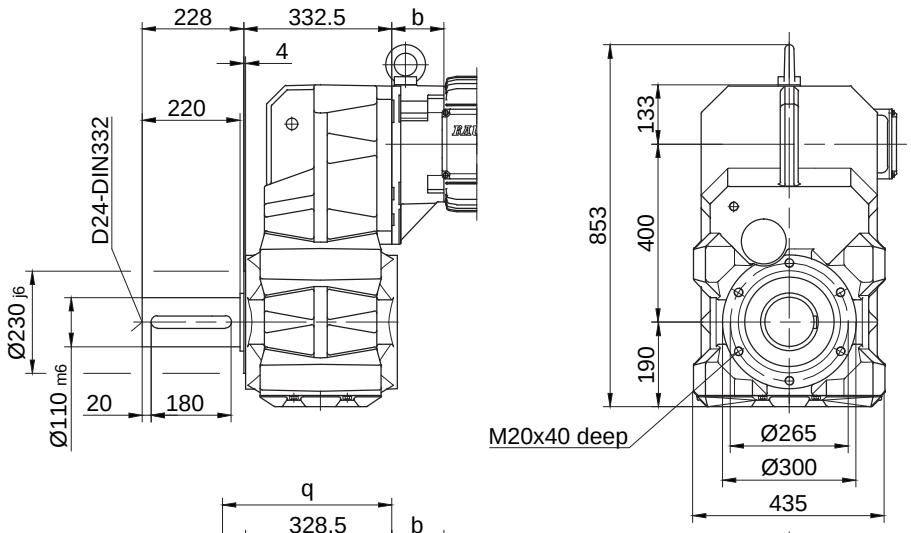
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF80Z-../D..08..	200	202	156	742.5	115	136.5	808.5	849.5	916	808.5
BF80-../D..09..	251	83.5	181	675	124	158	768	782	872.5	768
BF80Z-../D..09..	251	216.5	181	808	124	158	901	915	1005.5	901
BF80-../D..11..	319	90	228	749.5	181	181	847.5	856.5	952	847.5
BF80Z-../D..11..	319	223	228	882.5	181	181	980.5	989.5	1085	980.5
BF80-../D..13..	393	103	258	836.5	218	218	947.5	943.5	1052	947.5
BF80Z-../D..13..	393	236	258	969.5	218	218	1080.5	1076.5	1185	1080.5
BF80-../D..16..	454.5	117	322	912	244	244	1055.5	1019	1159.5	1055.5
BF80Z-../D..16..	454.5	250	322	1045	244	244	1188.5	1152	1292.5	1188.5
BF80-../D..18..	542	139	368	1021.5	288	288	1171	1128.5	1275	1171
BF80Z-../D..18..	542	272	368	1154.5	288	288	1304	1261.5	1408	1304

The actual gearbox design can vary from the geometry shown.

BF80 - BF80Z

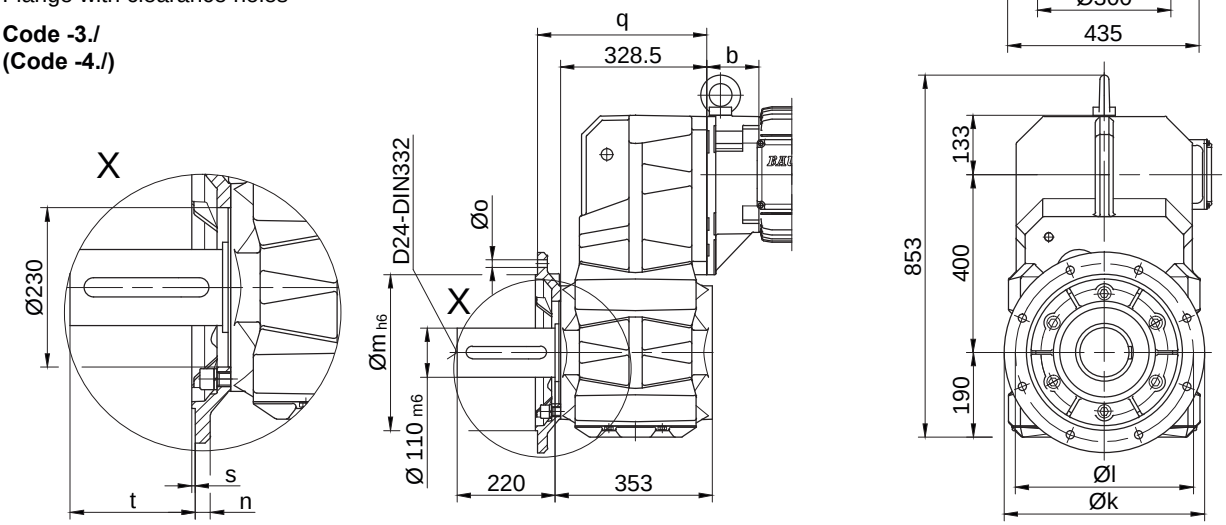
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -4./)

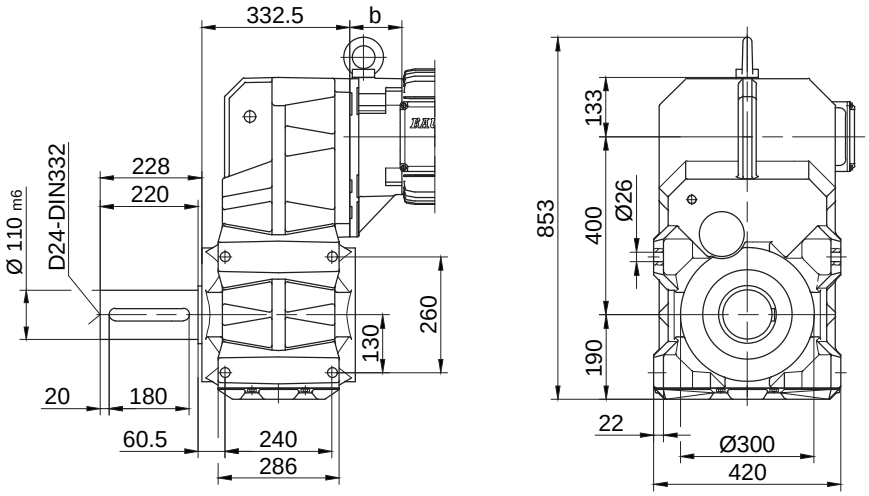


Flange dimensions

BF80(Z)	k	l	m	n	o	q	s	t
Standard -3./	450	400	350	22	17.5	383.5	5	177
big -4./	550	500	450	22	17.5	388.5	5	172

Foot with clearance holes left and right

Code -1.LR/

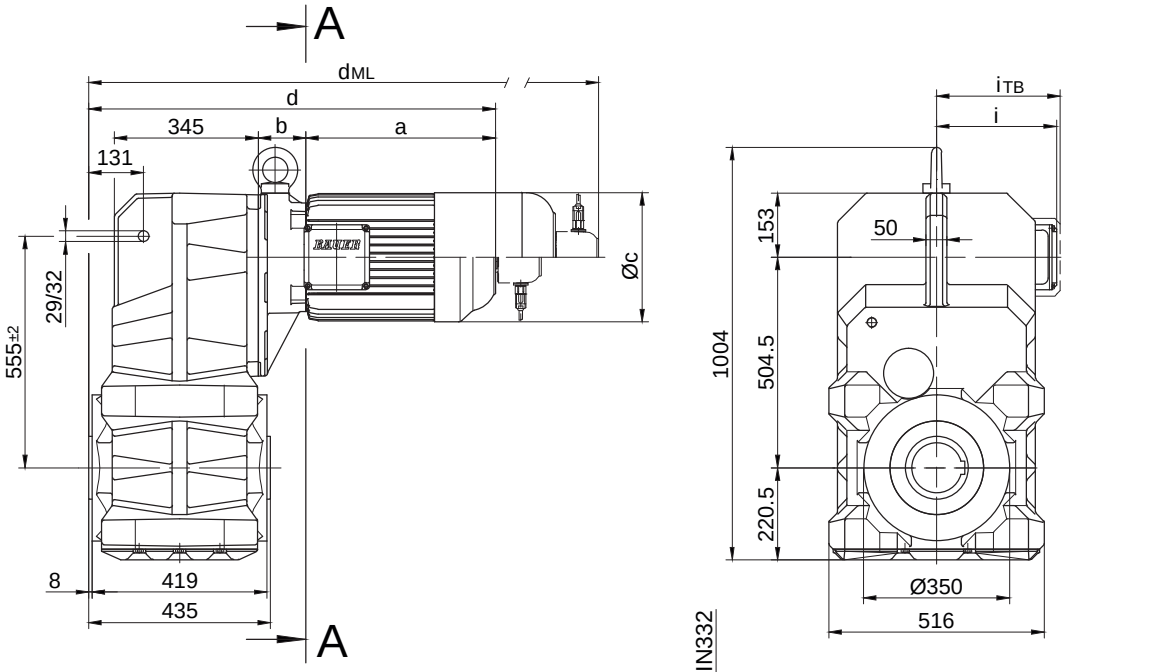


The actual gearbox design can vary from the geometry shown.

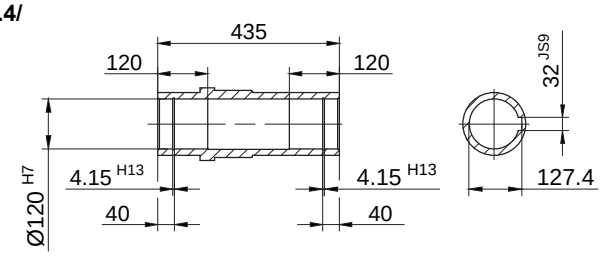
BF90 - BF90Z

With torque arm

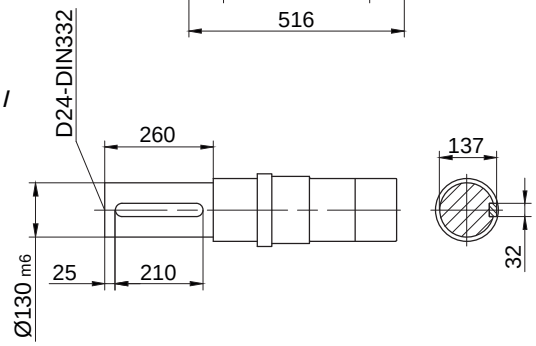
Code -0./



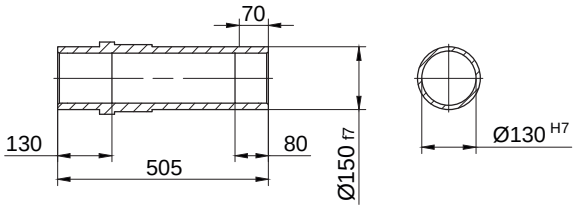
Code -.4/

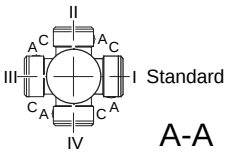


Code -.1/



Code -.5/





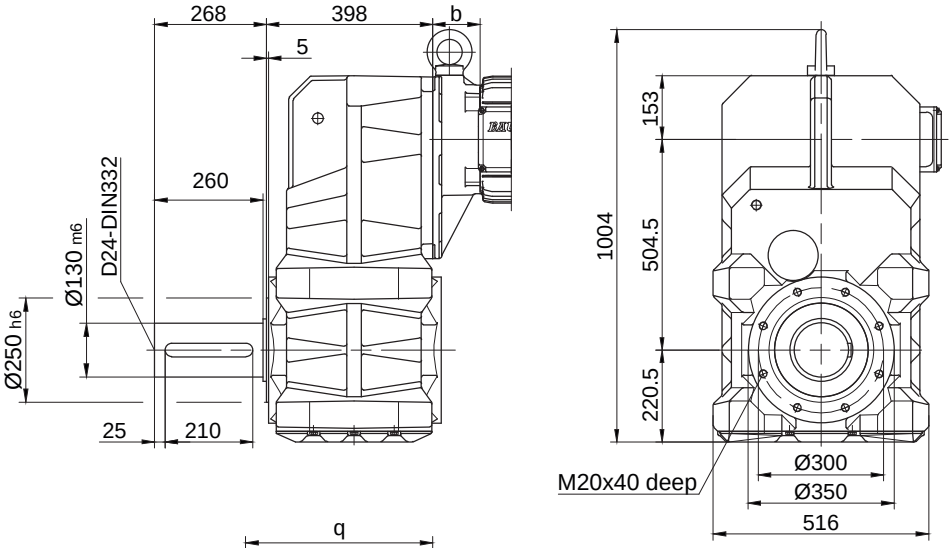
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF90Z-../D..09..	251	252.5	181	909.5	124	158	1002.5	1016.5	1107	1002.5
BF90-../D..11..	319	87	228	812	181	181	910	919	1014.5	910
BF90Z-../D..11..	319	259	228	984	181	181	1082	1091	1186.5	1082
BF90-../D..13..	393	100	258	899	218	218	997	1006	1101.5	997
BF90Z-../D..13..	393	272	258	1071	218	218	1182	1176	1286.5	1182
BF90-../D..16..	454.5	114	322	974.5	244	244	1118	1081.5	1222	1118
BF90Z-../D..16..	454.5	286	322	1146.5	244	244	1290	1253.5	1394	1290
BF90-../D..18..	542	136	368	1084	288	288	1233.5	1191	1337.5	1233.5
BF90Z-../D..18..	542	308	368	1254	288	288	1403.5	1361	1507.5	1403.5

The actual gearbox design can vary from the geometry shown.

BF90 - BF90Z

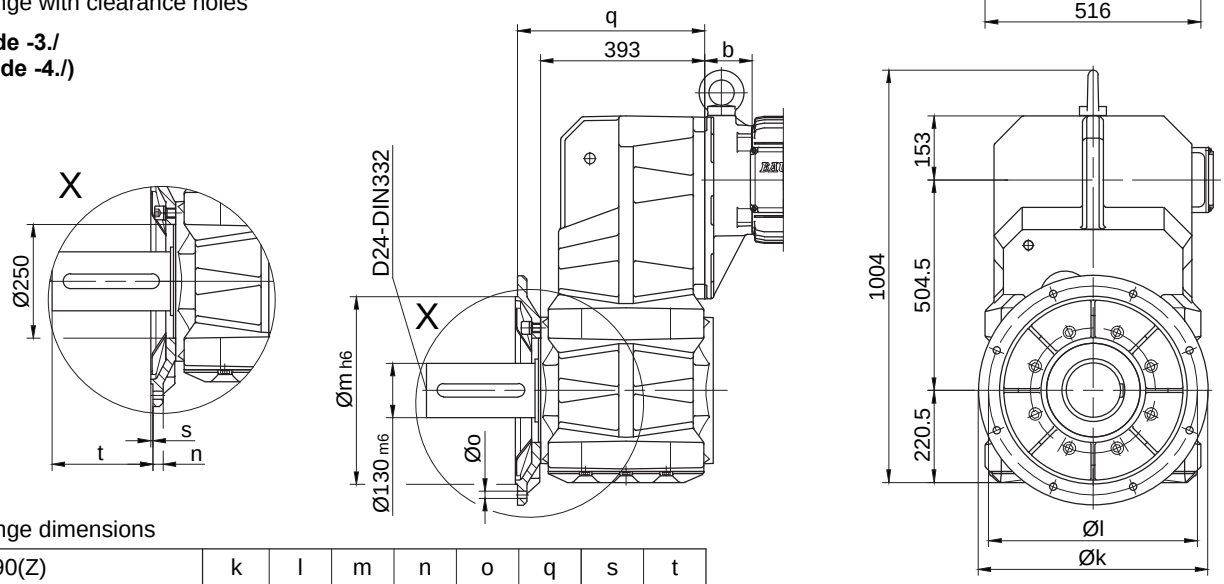
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -4./)

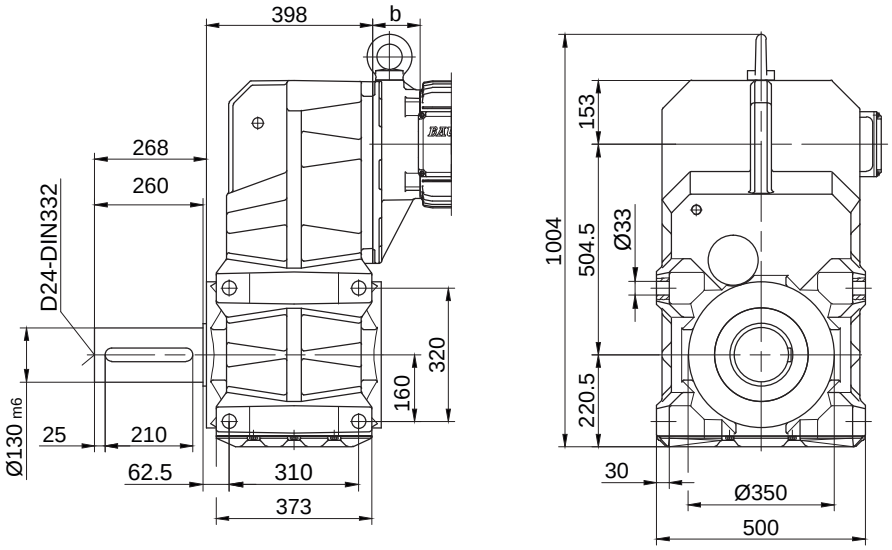


Flange dimensions

BF90(Z)	k	l	m	n	o	q	s	t
Standard -3./	550	500	450	22	17.5	448	5	218
big -4./	660	600	550	25	22	442	6	224

Foot with clearance holes left and right

Code -1.LR/

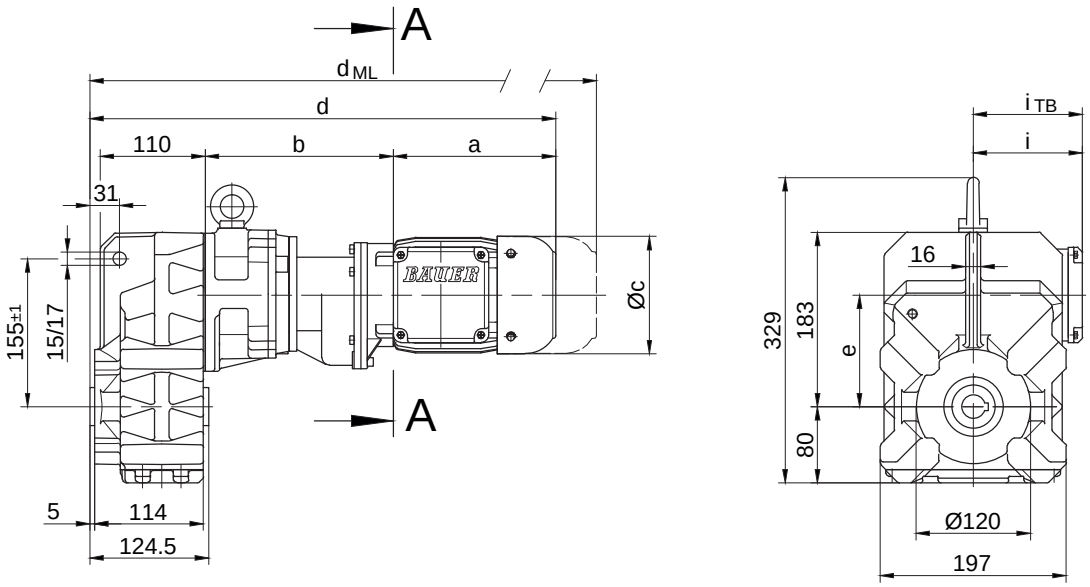


The actual gearbox design can vary from the geometry shown.

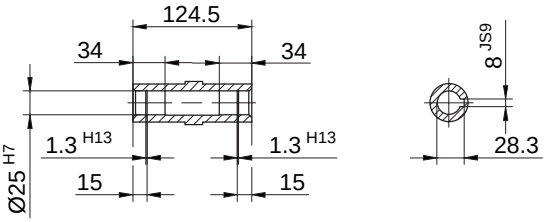
BF10G06

With torque arm

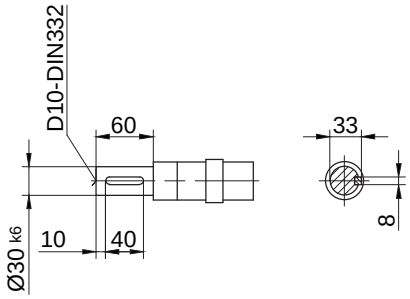
Code -0./



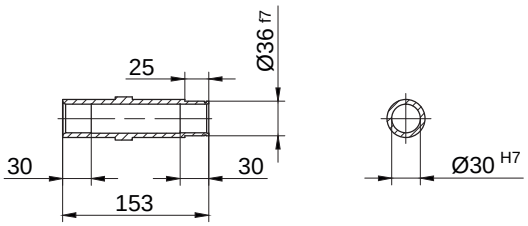
Code -.4/

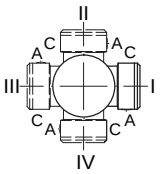


Code -.1/



Code -.5/





Standard

A-A

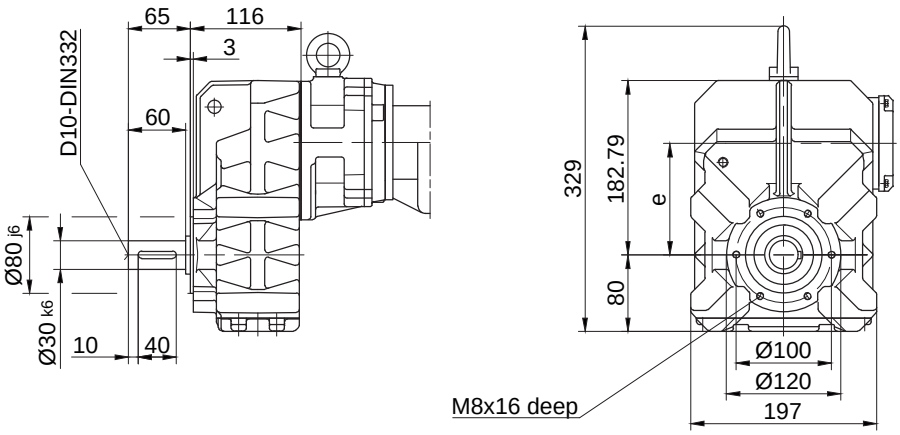
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF10G06-../D04..	143	195	111	459	117	90	112	502.5	521.5	564.5	-
BF10G06-../D05..	170	197	123	488	117	100	117	530	591	632.5	-
BF10G06-../D06..	170	197	123	488	117	100	119	530	591	632.5	-
BF10G06-../D07..	190	197	123	508	117	100	119	550	611	652.5	-
BF10G06-../D..08..	200	241	156	562	117	115	136.5	628	669	735.5	628

The actual gearbox design can vary from the geometry shown.

BF10G06

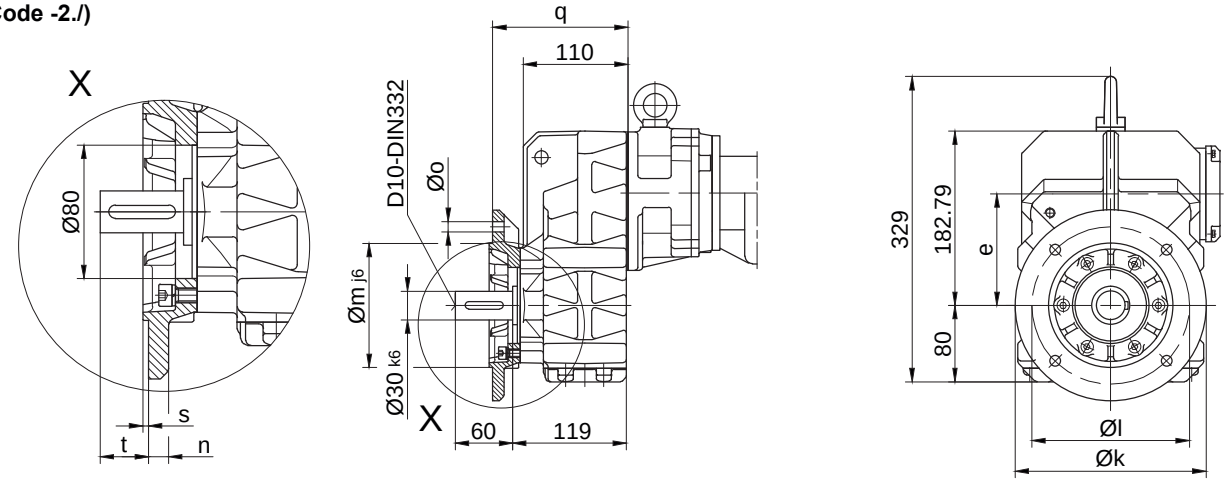
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

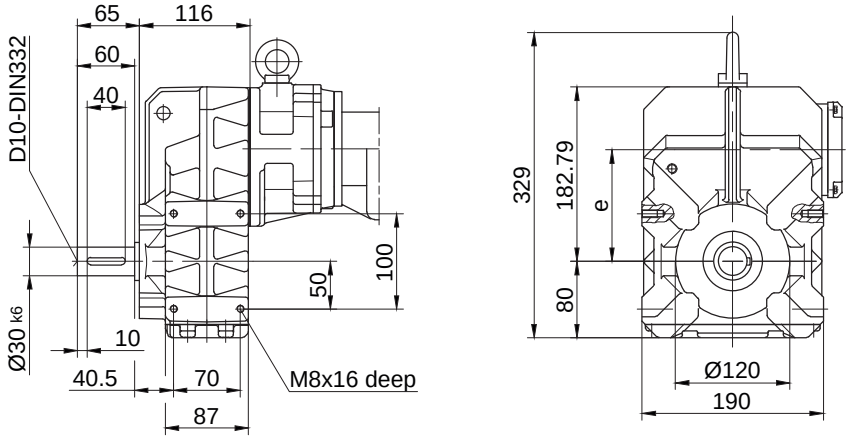


Flange dimensions

BF10G..	k	l	m	n	o	q	s	t
Standard -3./	200	165	130	12	11	142	3.5	39
small -2./	160	130	110	10	9	135	3.5	46

Foot with tapped holes left and right

Code -6.LR/

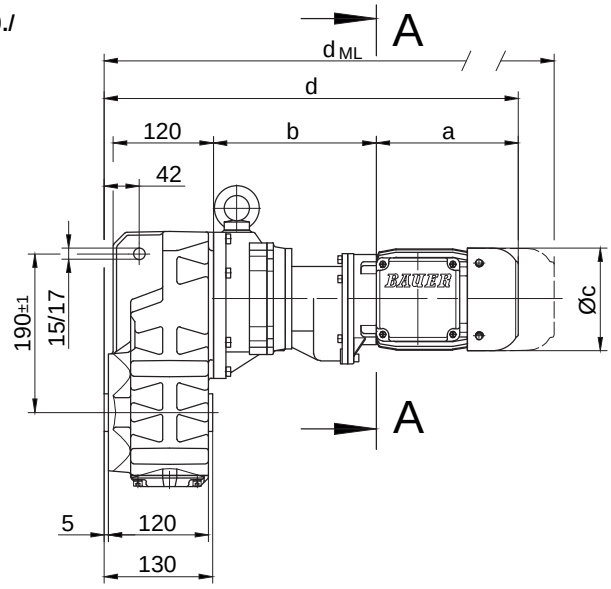


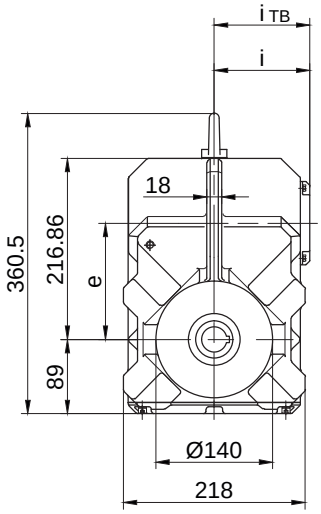
The actual gearbox design can vary from the geometry shown.

BF20G06

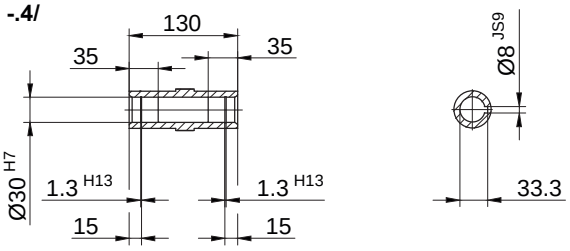
With torque arm

Code -0./

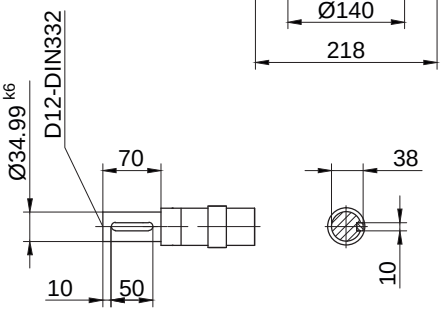




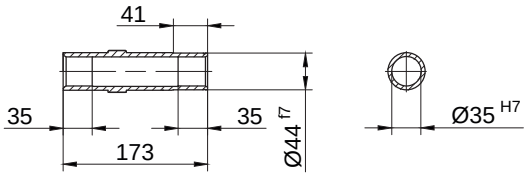
Code -.4/

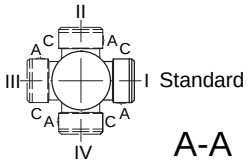


Code -.1/



Code -.5/





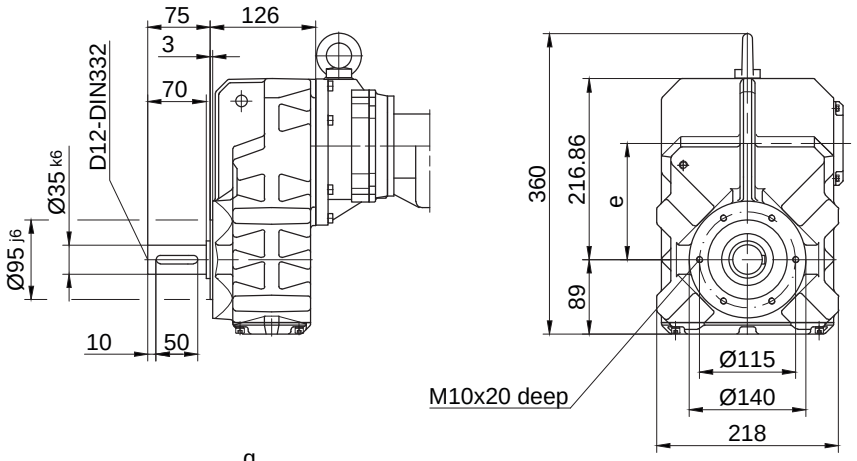
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF20G06-../D04..	143	193	111	467	135	90	112	510.5	529.5	572.5	-
BF20G06-../D05..	170	195	123	496	135	100	117	538	599	640.5	-
BF20G06-../D06..	170	195	123	496	135	100	119	538	599	640.5	-
BF20G06-../D07..	190	195	123	516	135	100	119	558	619	660.5	-
BF20G06-../D..08..	200	239	156	570	135	115	136.5	636	677	743.5	636

The actual gearbox design can vary from the geometry shown.

BF20G06

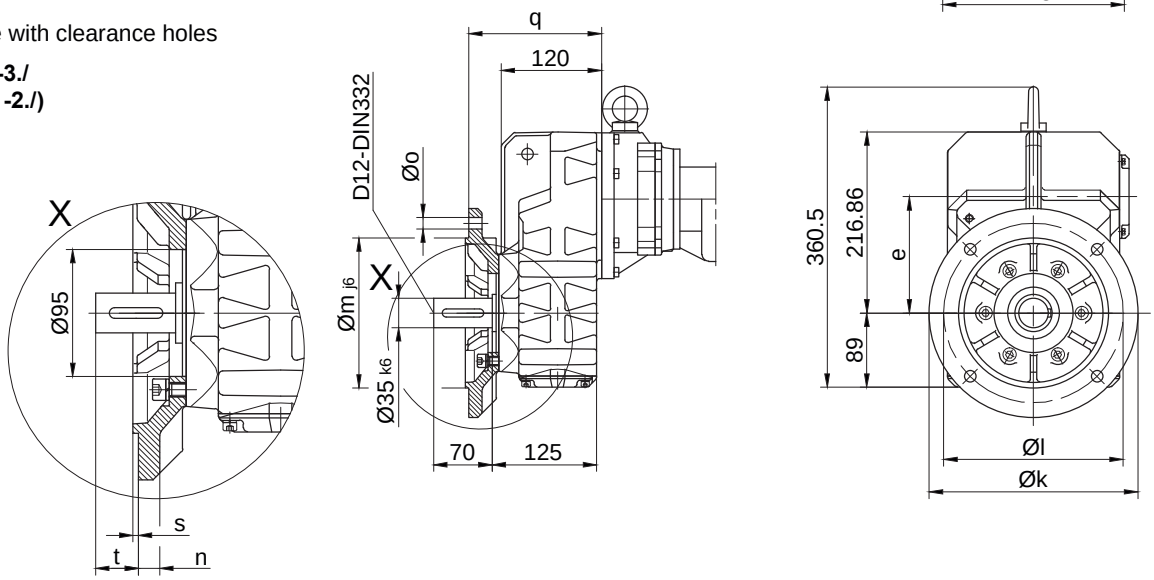
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

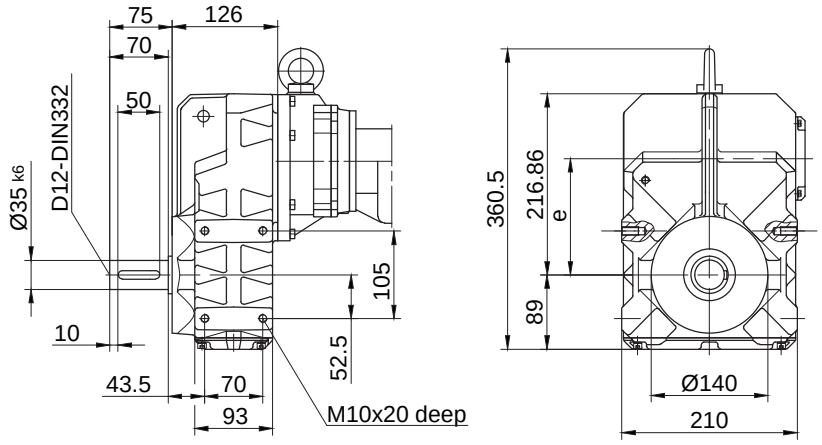


Flange dimensions

BF20G..	k	l	m	n	o	q	s	t
Standard -3./	250	215	180	16	13.5	159	4	42
small -2./	200	165	130	12	11	150	3.5	51

Foot with tapped holes left and right

Code -6.LR/

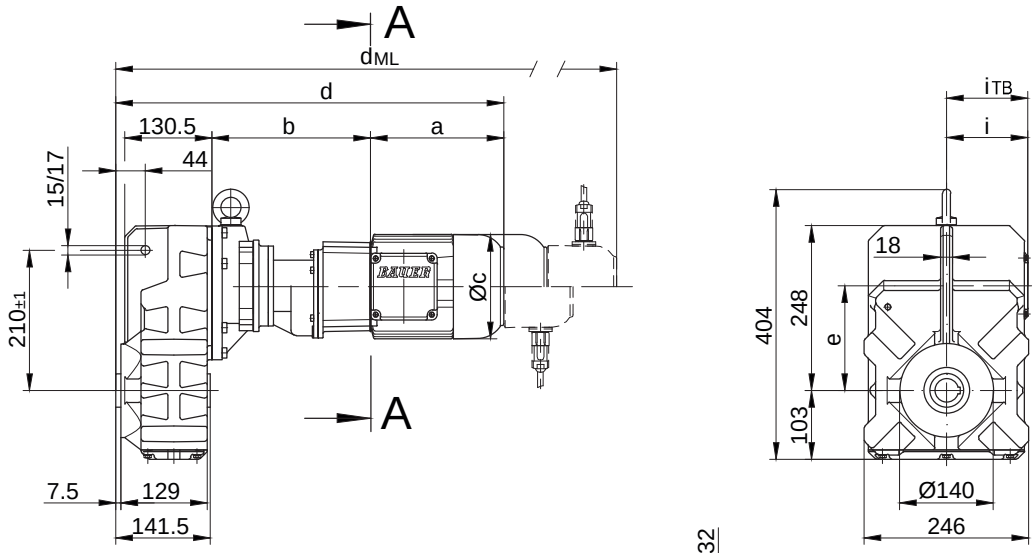


The actual gearbox design can vary from the geometry shown.

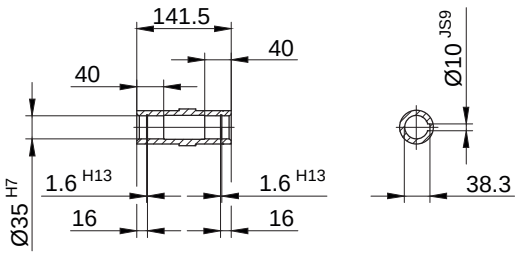
BF30G06

With torque arm

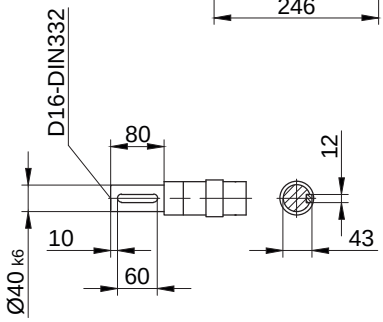
Code -0./



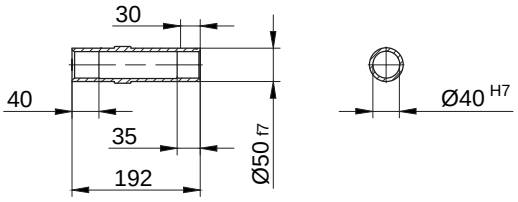
Code -.4/

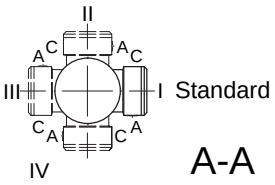


Code -.1/



Code -.5/





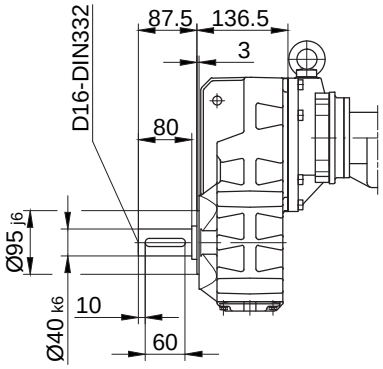
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF30G06-../D04..	143	191	111	478	156	90	112	521.5	540.5	583.5	-
BF30G06-../D05..	170	193	123	507	156	100	117	549	610	651.5	-
BF30G06-../D06..	170	193	123	507	156	100	119	549	610	651.5	-
BF30G06-../D07..	190	193	123	527	156	100	119	569	630	671.5	-
BF30G06-../D..08..	200	237	156	581	156	115	136.5	647	688	754.5	647

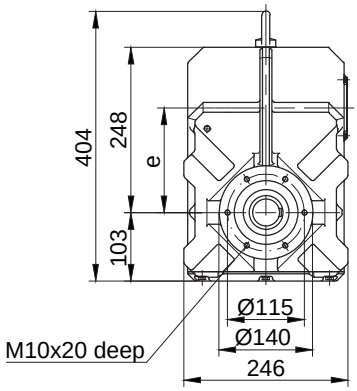
The actual gearbox design can vary from the geometry shown.

BF30G06

Flange with tapped holes

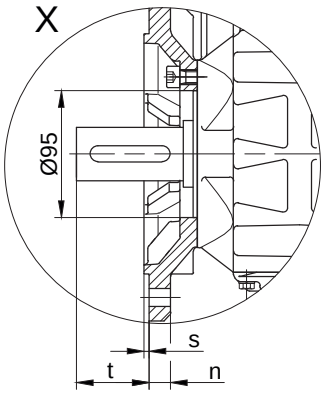
Code -7./

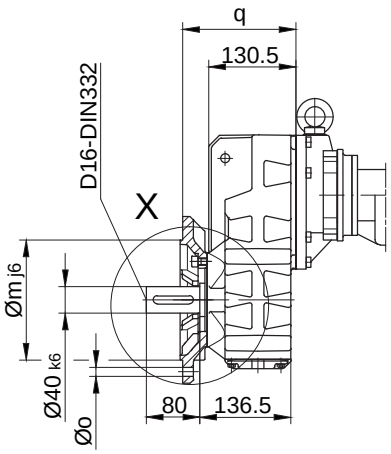


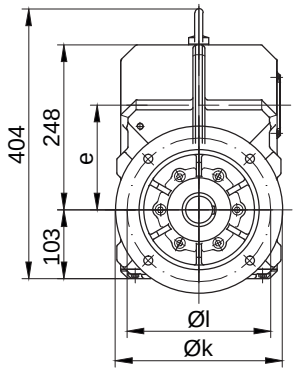


Flange with clearance holes

Code -3./
(Code -2./)





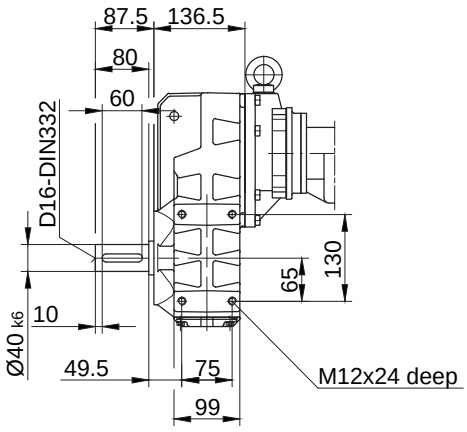


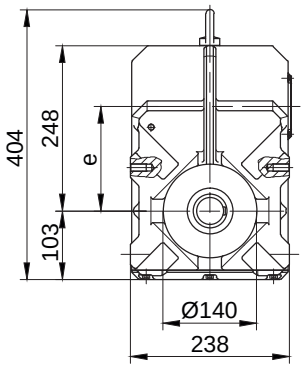
Flange dimensions

BF30G..	k	l	m	n	o	q	s	t
Standard -3./	250	215	180	16	13.5	169.5	4	54.5
small -2./	200	165	130	12	11	160.5	3.5	63.5

Foot with tapped holes left and right

Code -6.LR/





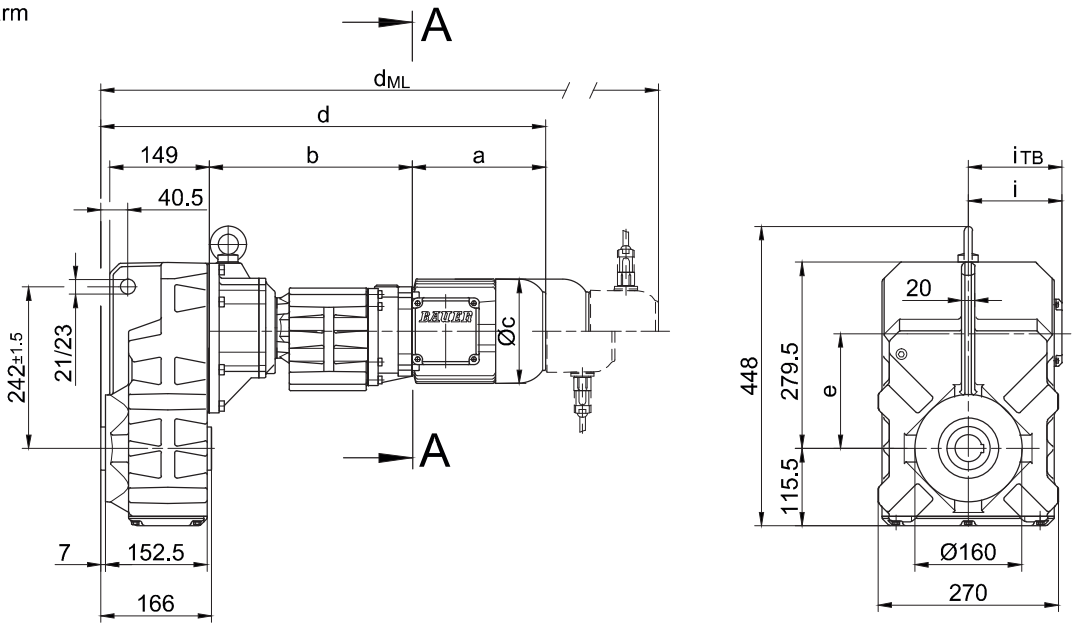
The actual gearbox design can vary from the geometry shown.

Dimension

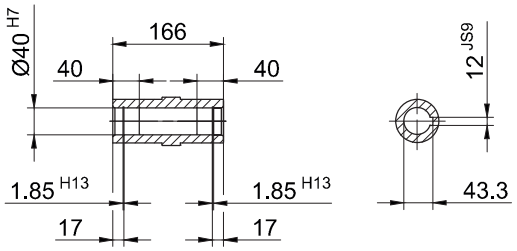
BF40G10

With torque arm

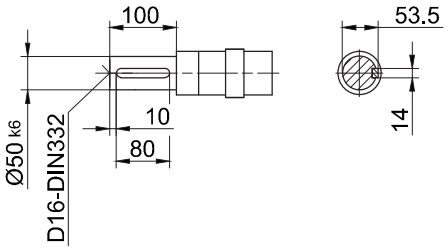
Code -0./



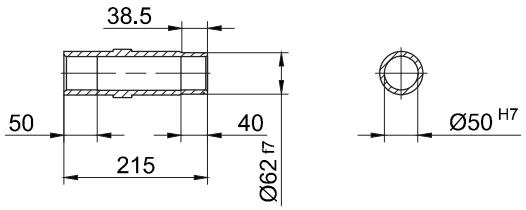
Code -.4/

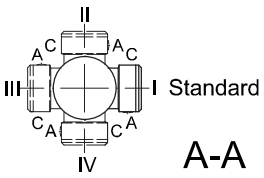


Code -.1/



Code -.5/





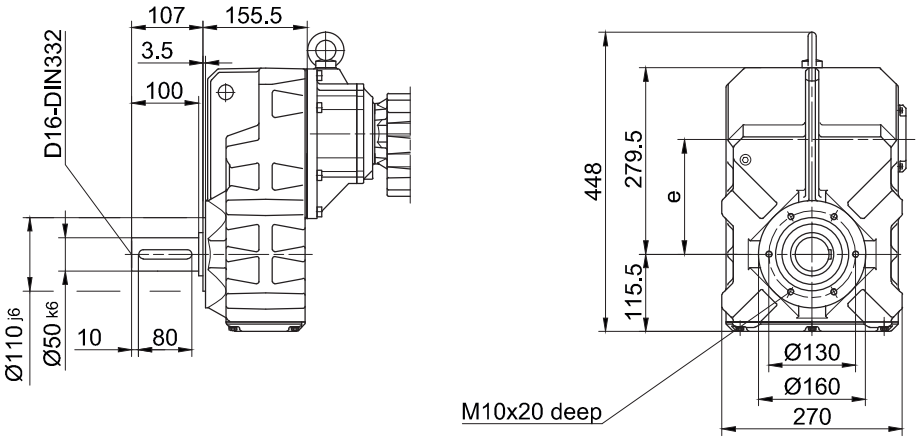
Type	a	b	c	d	e	i	i_{TB}	Design with motor extensions			
								E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF40G10-../D05..	170	300	123	632.5	176	100	117	674.5	735.5	777	-
BF40G10-../D06..	170	300	123	632.5	176	100	119	674.5	735.5	777	-
BF40G10-../D07..	190	300	123	652.5	176	100	119	694.5	755.5	797	-
BF40G10-../D..08..	200	304	156	666.5	176	115	136.5	732.5	773.5	840	732.5
BF40G10-../D..09..	251	318.5	181	732	176	124	158	825	839	929.5	825

The actual gearbox design can vary from the geometry shown.

BF40G10

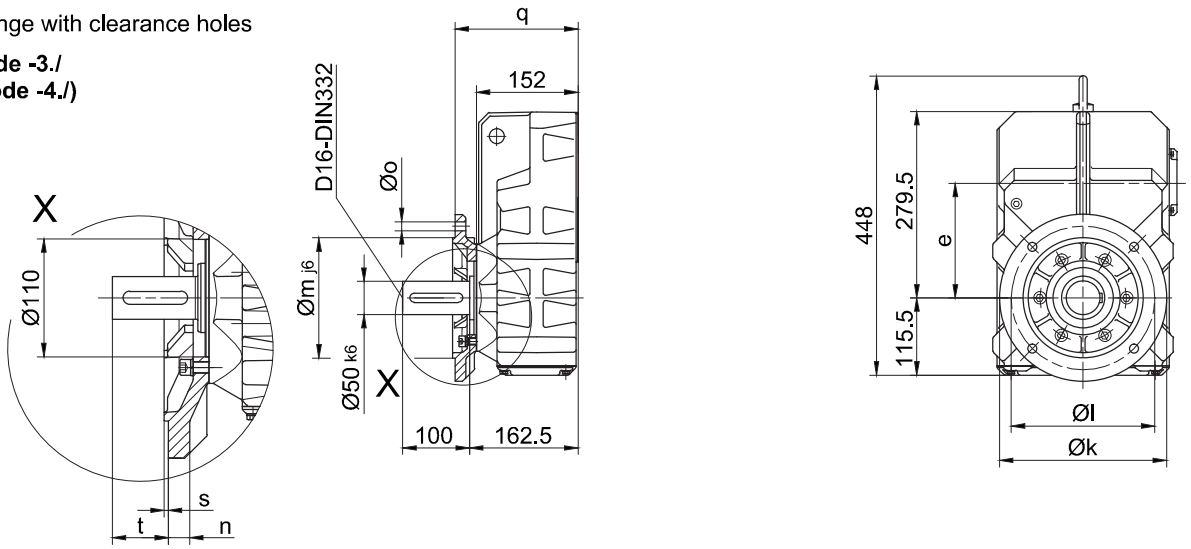
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -4./)

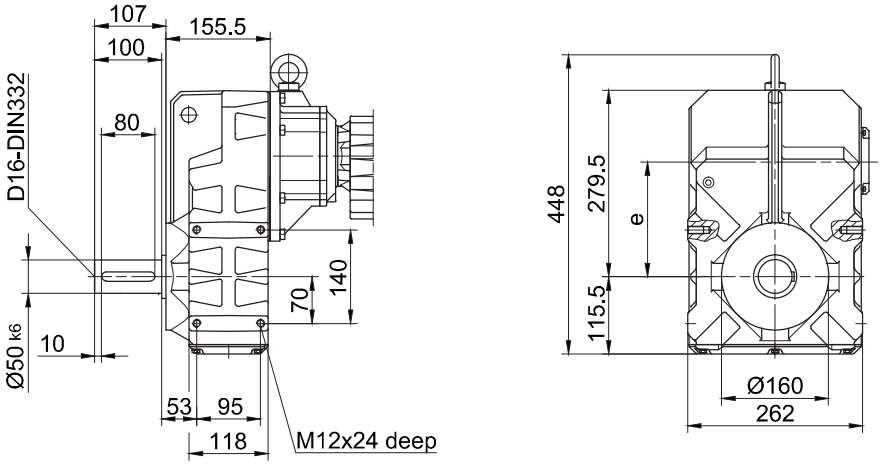


Flange dimensions

BF40G..	k	I	m	n	o	q	s	t
Standard -3./	250	215	180	16	13.5	184	4	78.5
big- 4./	300	265	230	20	13.5	190	4	72.5

Foot with tapped holes left and right

Code -6.LR/

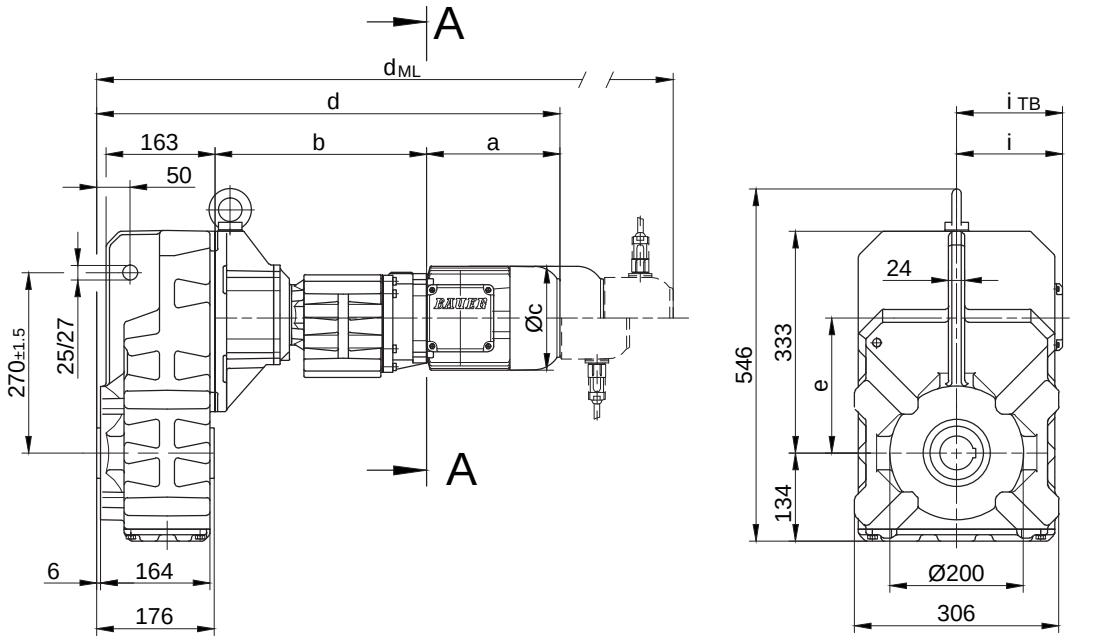


The actual gearbox design can vary from the geometry shown.

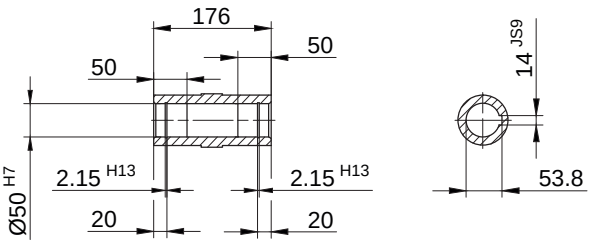
BF50G10

With torque arm

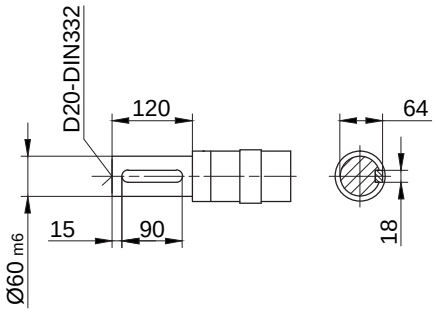
Code -0./



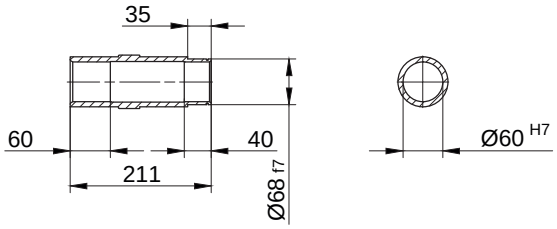
Code -.4/

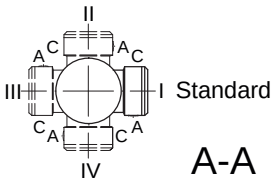


Code -.1/



Code -.5/





A-A

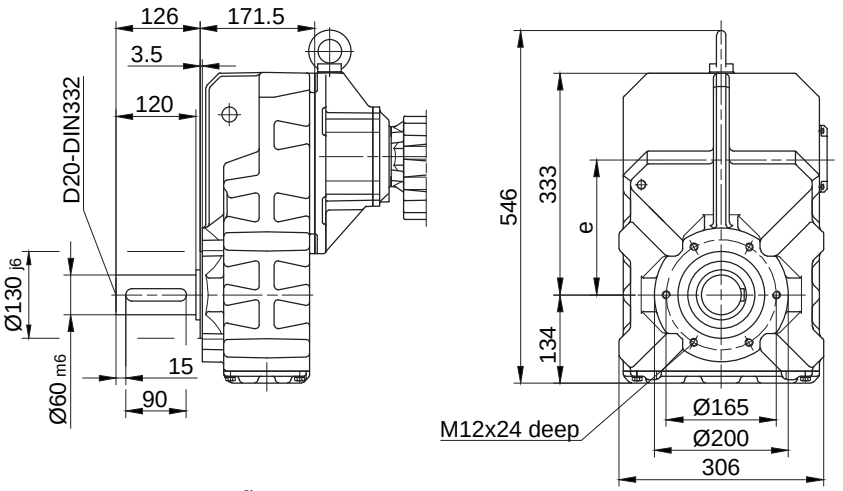
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF50G10-../D05..	170	313	123	660.5	202	100	117	702.5	763.5	805	-
BF50G10-../D06..	170	313	123	660.5	202	100	119	702.5	763.5	805	-
BF50G10-../D07..	190	313	123	680.5	202	100	119	722.5	783.5	825	-
BF50G10-../D..08..	200	317	156	694.5	202	115	136.5	760.5	801.5	868	760.5
BF50G10-../D..09..	251	331.5	181	760	202	124	158	853	867	957.5	853

The actual gearbox design can vary from the geometry shown.

BF50G10

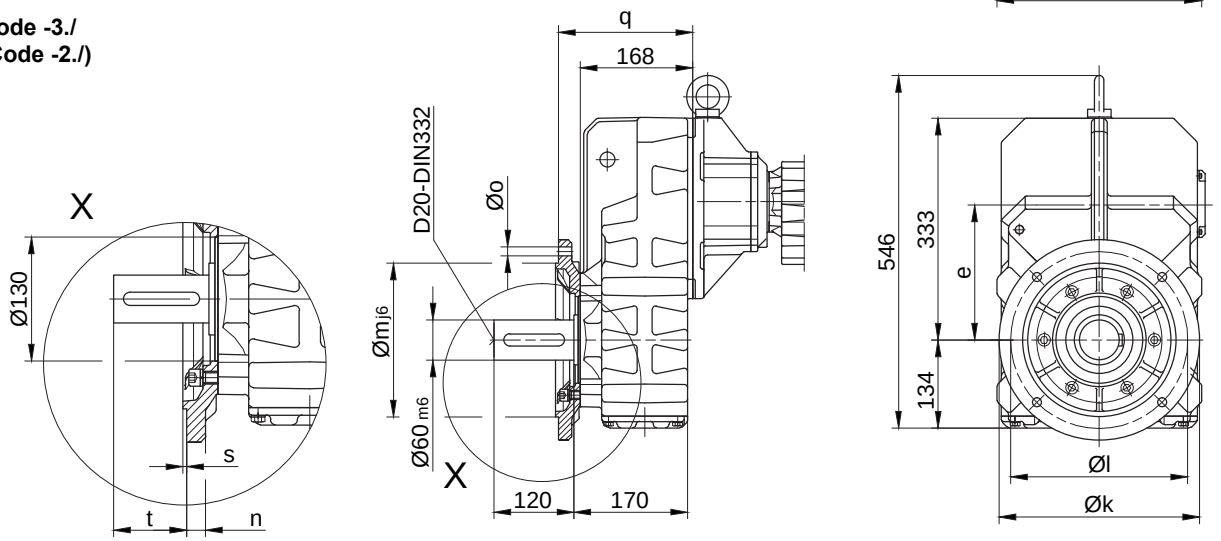
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

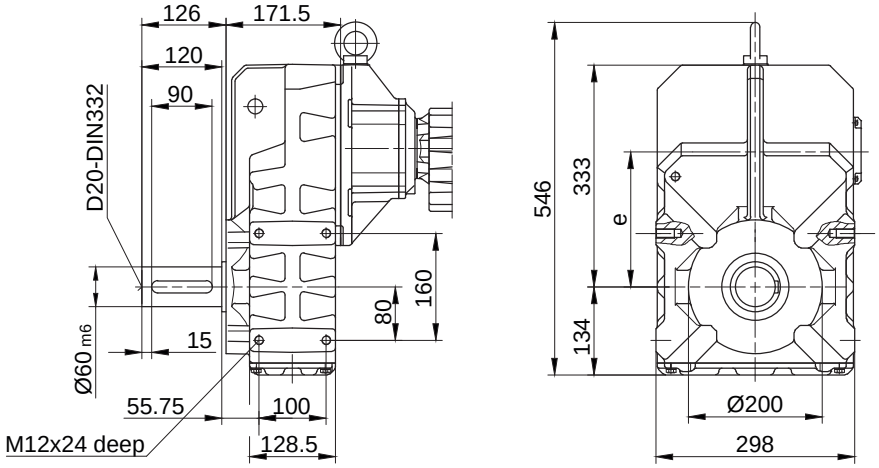


Flange dimensions

BF50G..	k	l	m	n	o	q	s	t
Standard -3./	300	265	230	20	13.5	201	4	96.5
small -2./	250	215	180	16	13.5	198	4	99.5

Foot with tapped holes left and right

Code -6.LR/

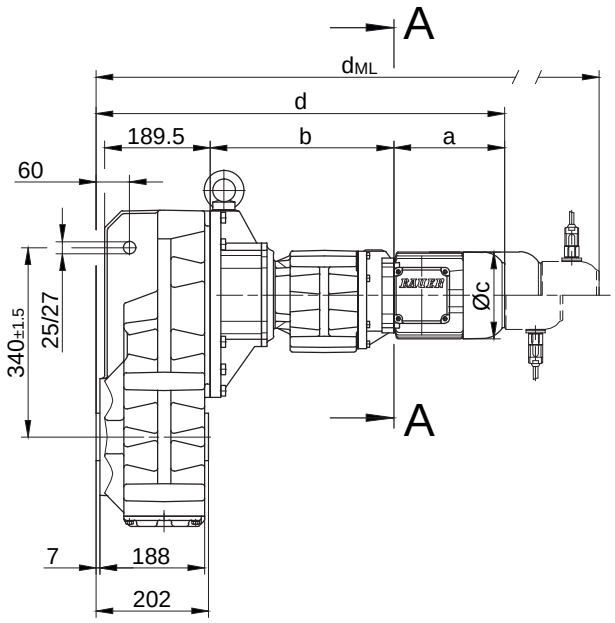


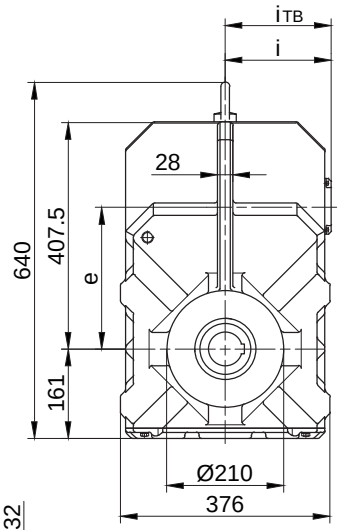
The actual gearbox design can vary from the geometry shown.

BF60G20

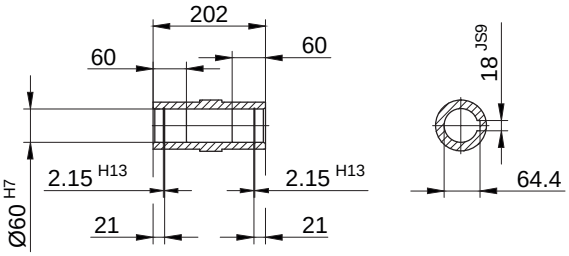
With torque arm

Code -0./

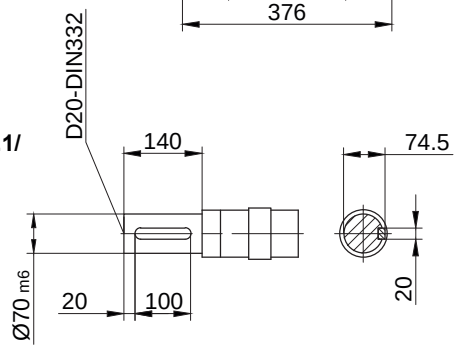




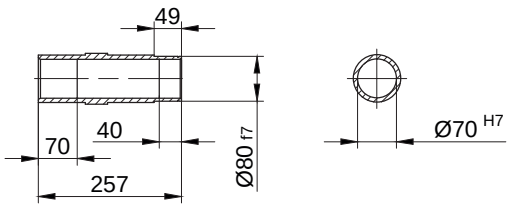
Code -.4/

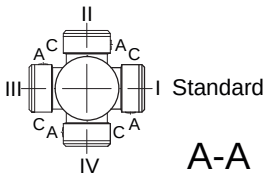


Code -.1/



Code -.5/





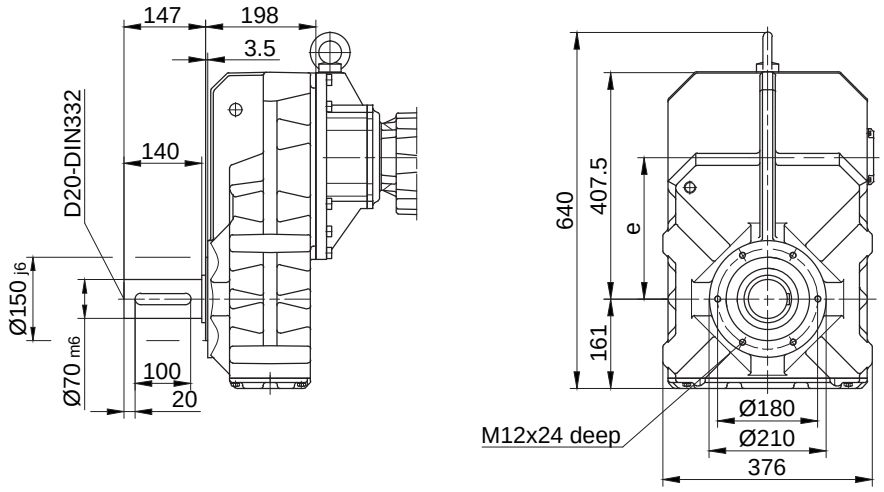
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF60G20-../D05..	170	326	123	701	254	100	117	743	804	845.5	-
BF60G20-../D06..	170	326	123	701	254	100	119	743	804	845.5	-
BF60G20-../D07..	190	326	123	721	254	100	119	763	824	865.5	-
BF60G20-../D..08..	200	330	156	735	254	115	136.5	801	842	908.5	801
BF60G20-../D..09..	251	344.5	181	800.5	254	124	158	893.5	907.5	998	893.5

The actual gearbox design can vary from the geometry shown.

BF60G20

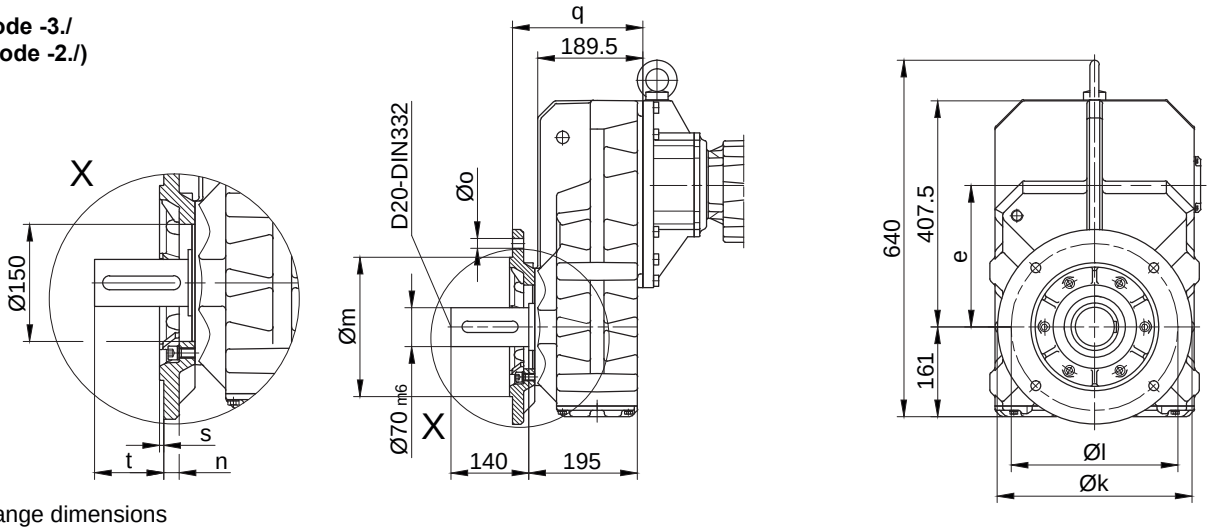
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)

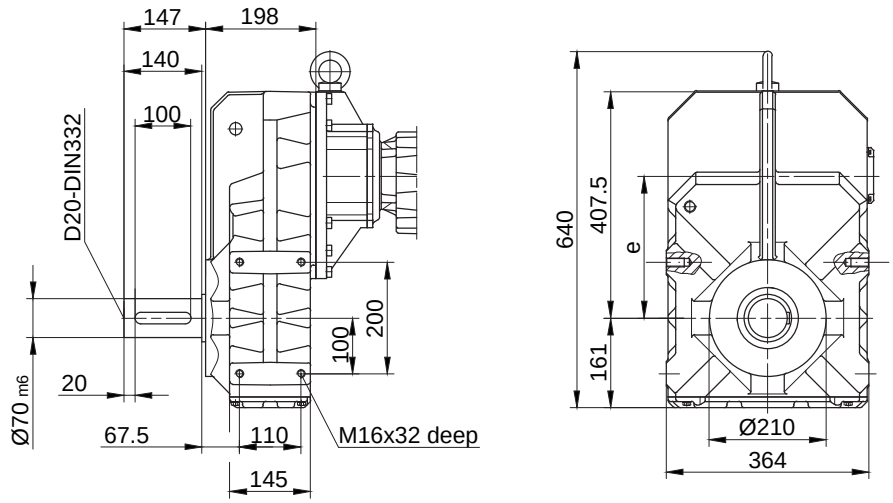


Flange dimensions

BF60G..	k	l	m	n	o	q	s	t
Standard -3./	350	300	250 h6	20	17.5	234.5	5	110.5
small -2./	300	265	230 j6	20	13.5	242.5	4	102.5

Foot with tapped holes left and right

Code -6.LR/

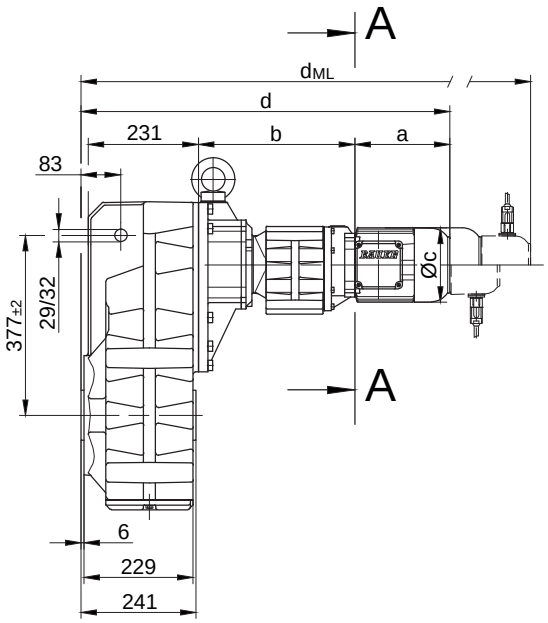


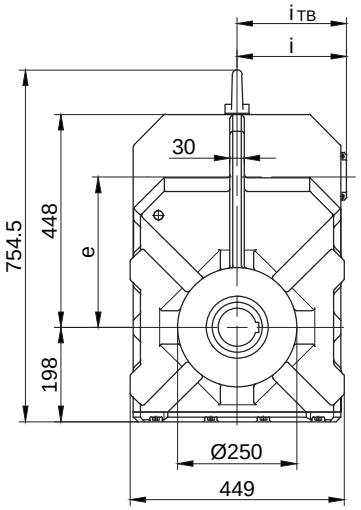
The actual gearbox design can vary from the geometry shown.

BF70G20

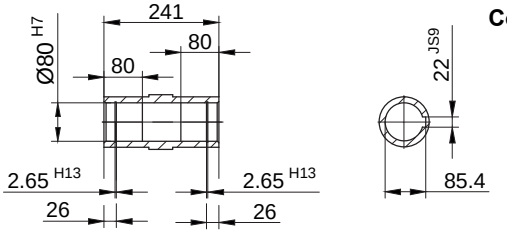
With torque arm

Code -0./

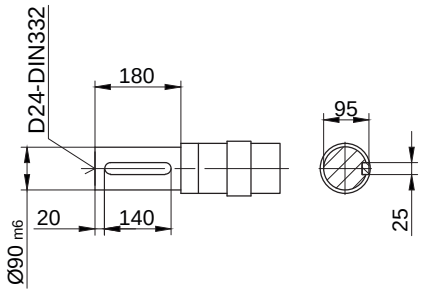




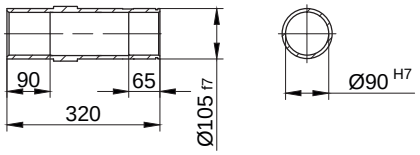
Code -.4/



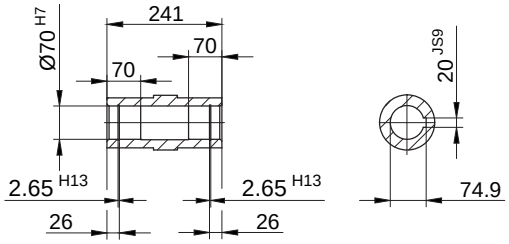
Code -.1/

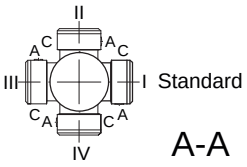


Code -.5/



Code -.4/K70





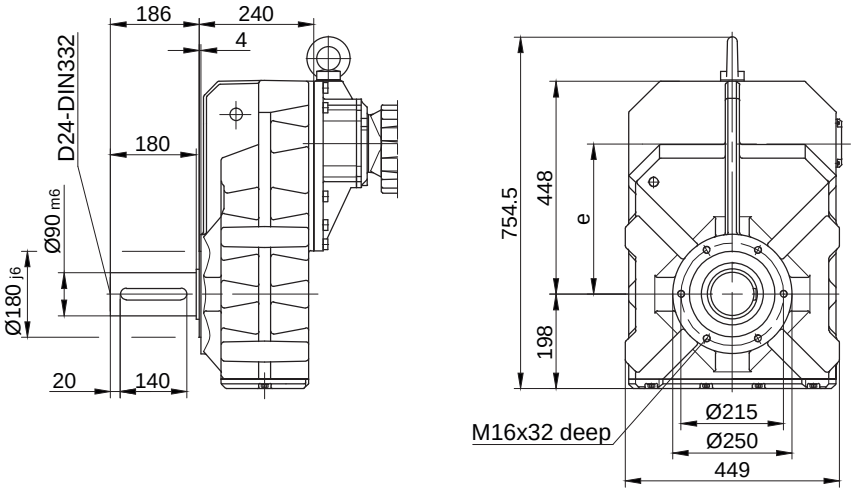
Type	a	b	c	d	e	i	i_{TB}	Design with motor extensions			
								E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF70G20-../D05..	170	324	123	740	315	100	117	782	843	884.5	-
BF70G20-../D06..	170	324	123	740	315	100	119	782	843	884.5	-
BF70G20-../D07..	190	324	123	760	335	100	119	802	863	904.5	-
BF70G20-../D..08..	200	328	156	774	315	115	136.5	840	881	947.5	840
BF70G20-../D..09..	251	342.5	181	839.5	315	124	158	932.5	946.5	1037	932.5

The actual gearbox design can vary from the geometry shown.

BF70G20

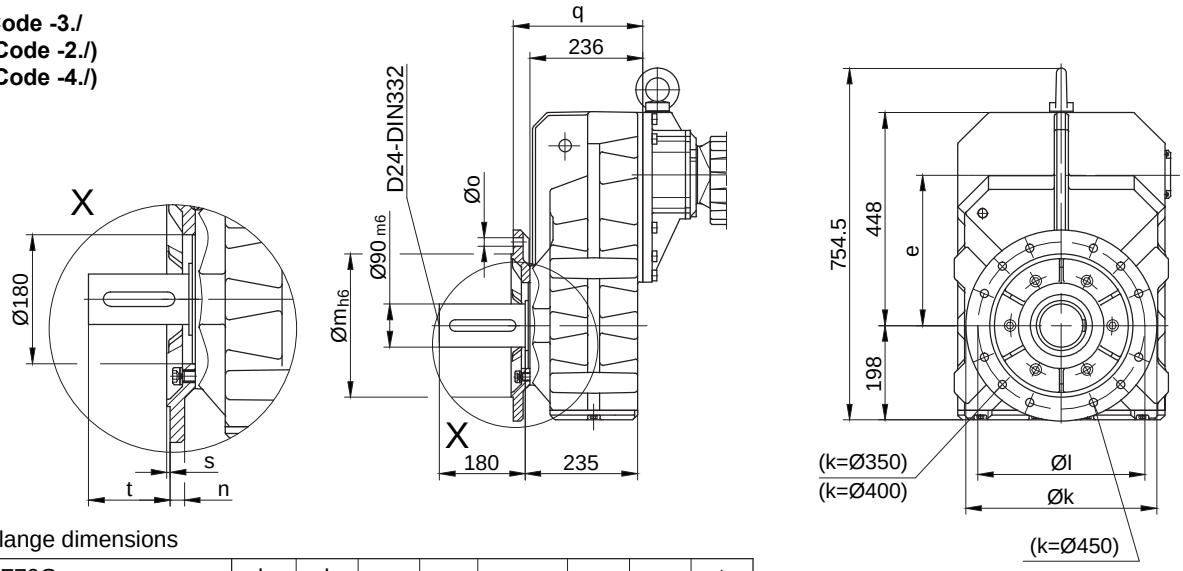
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -2./)
(Code -4./)

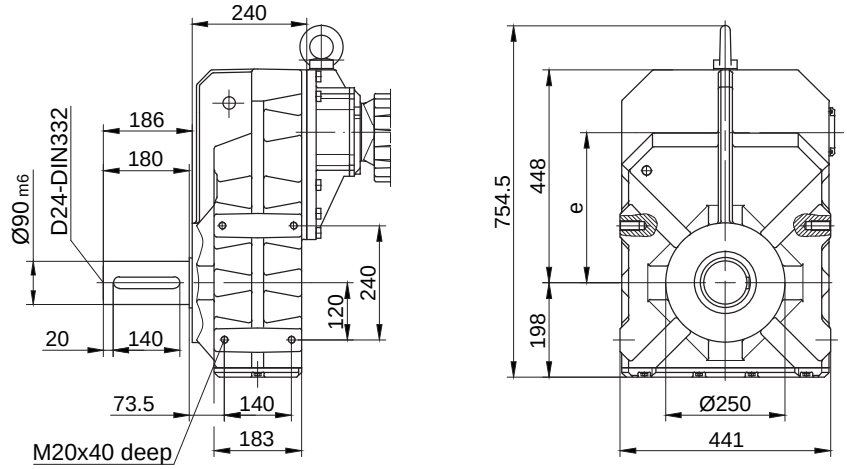


Flange dimensions

BF70G..	k	l	m	n	o	q	s	t
Standard -3./	400	350	300	20	4x17.5	271	5	155
small -2./	350	300	250	20	4x17.5	271	5	155
big -4./	450	400	350	22	8x17.5	281	5	145

Foot with tapped holes left and right

Code -6.LR/

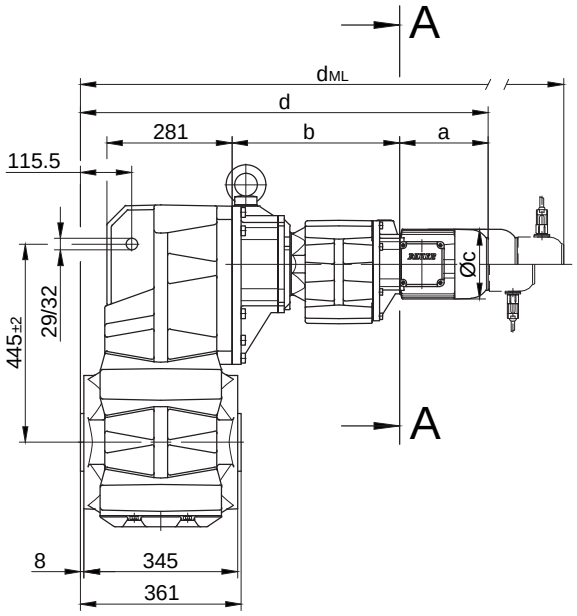


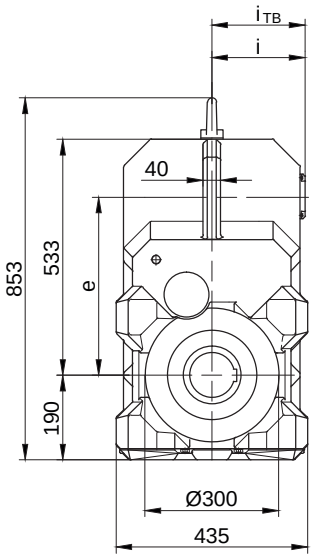
The actual gearbox design can vary from the geometry shown.

BF80G40

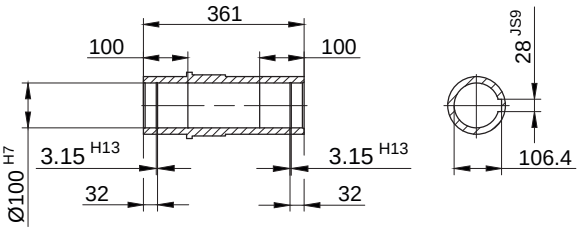
With torque arm

Code -0./

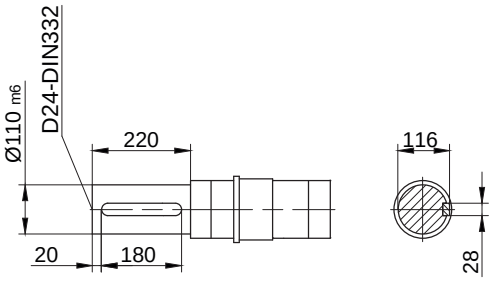




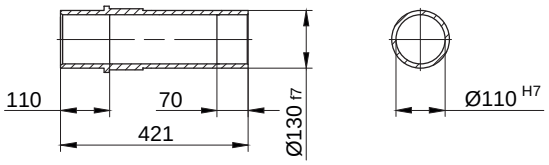
Code -.4/

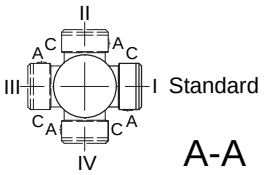


Code -.1/



Code -.5/





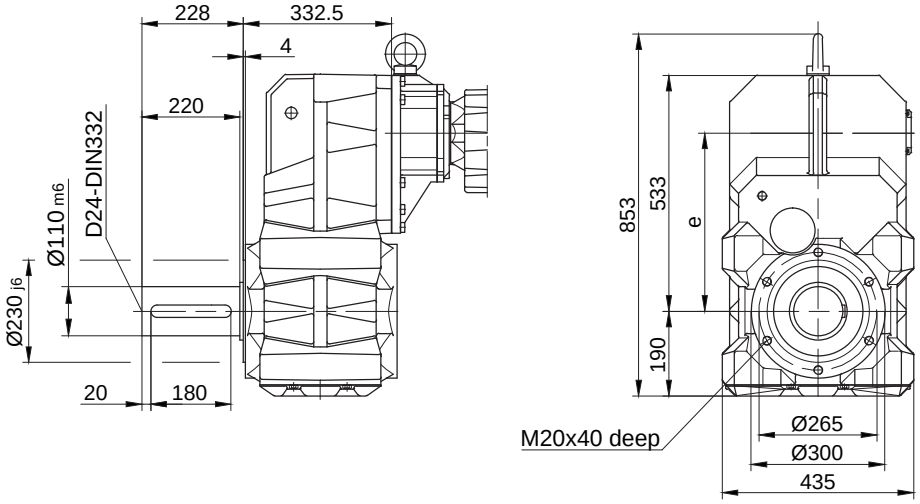
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	ES..	G	ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF80G40-../D..08..	200	376	156	916.5	400	115	136.5	982.5	1023.5	1090	982.5
BF80G40-../D..09..	251	390.5	181	982	400	124	158	1075	1089	1179.5	1075
BF80G40-../D..11..	319	397	228	1056.5	400	181	181	1154.5	1163.5	1259	1154.5

The actual gearbox design can vary from the geometry shown.

BF80G40

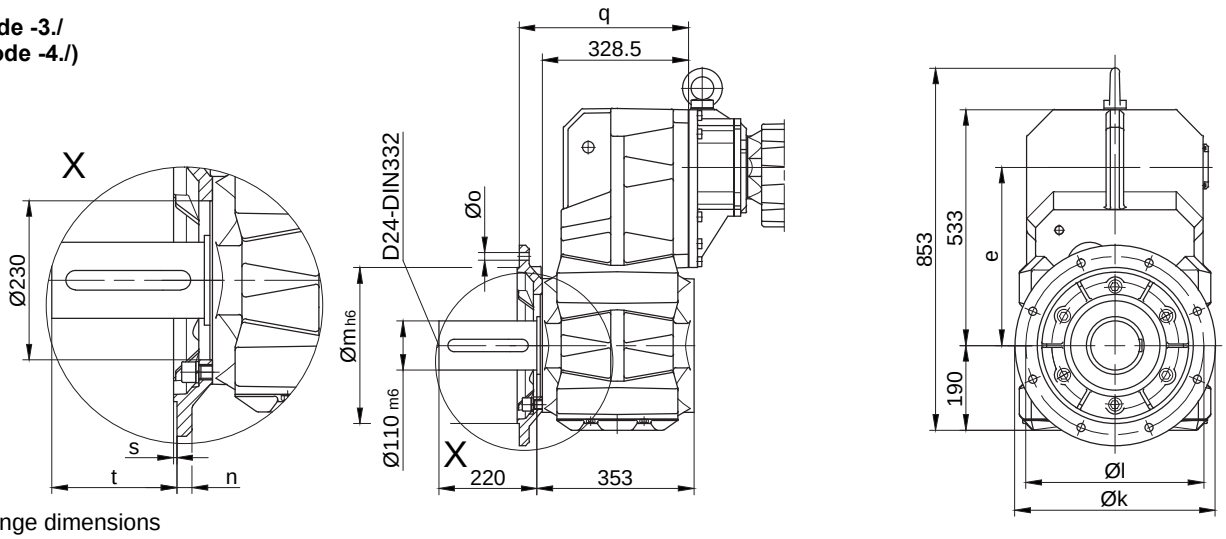
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -4./)

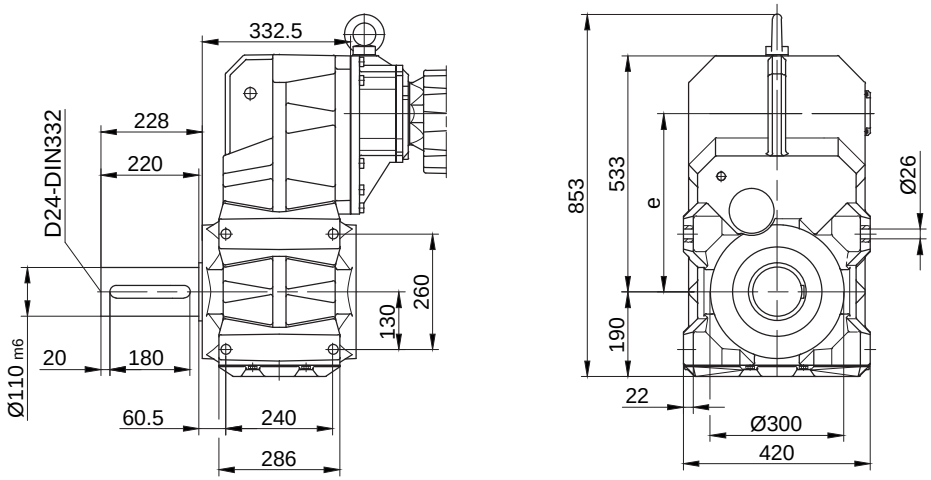


Flange dimensions

BF80G..	k	l	m	n	o	q	s	t
Standard -3./	450	400	350	22	17.5	383.5	5	177
big -4./	550	500	450	22	17.5	388.5	5	172

Foot with clearance holes left and right

Code -1.LR/

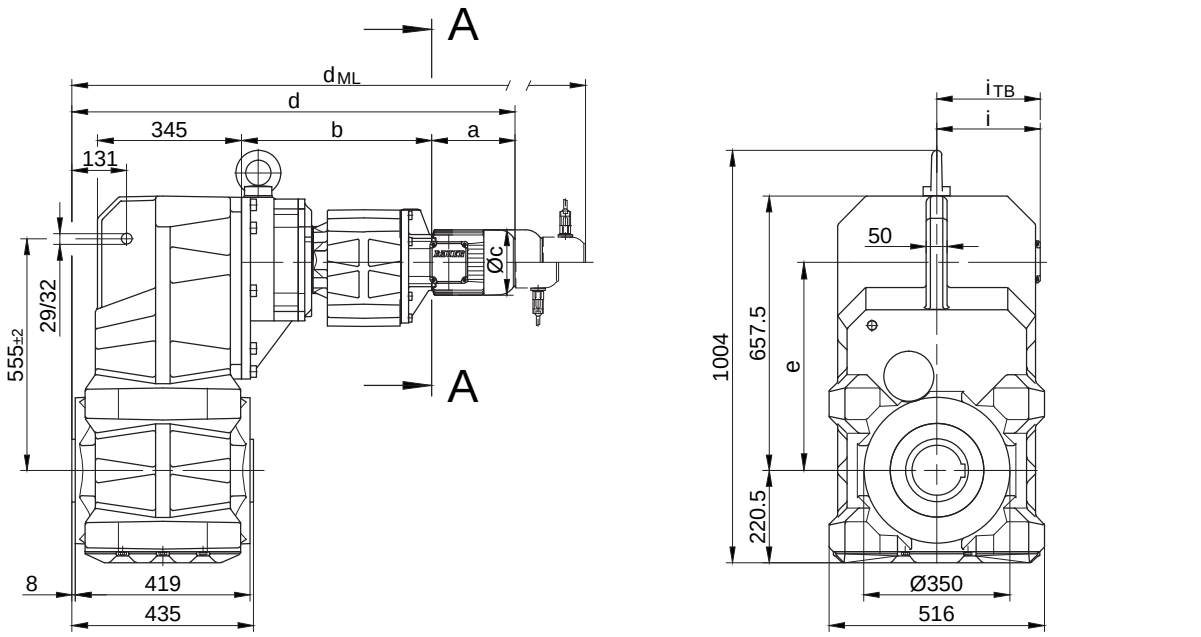


The actual gearbox design can vary from the geometry shown.

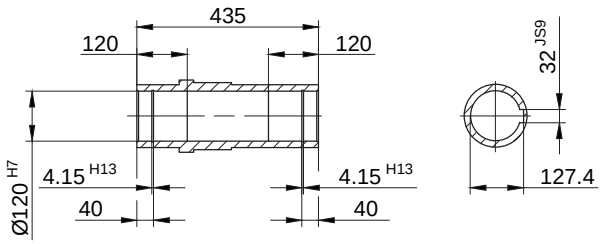
BF90G50

With torque arm

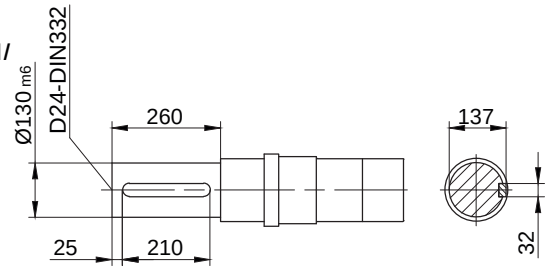
Code -0./



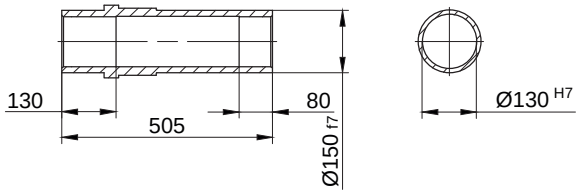
Code -.4/

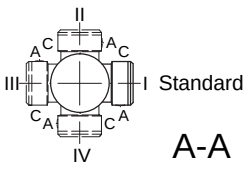


Code -.1/



Code -.5/





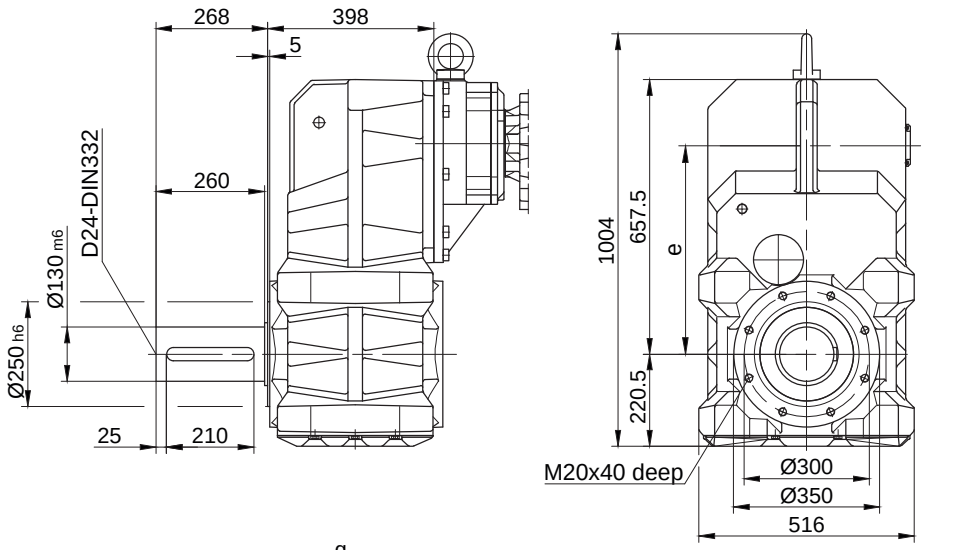
Type	a	b	c	d	e	i	i_{TB}	Design with motor extensions			
								ES../ZS..	G	ES../ZS..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BF90G50-../D..08..	200	456	156	1062	503	115	136.5	1128	1169	1235.5	1128
BF90G50-../D..09..	251	470.5	181	1127.5	499	124	158	1220.5	1234.5	1325	1220.5
BF90G50-../D..11..	319	477	228	1202	499	181	181	1300	1309	1404.5	1300
BF90G50-../D..13..	393	490	258	1289	499	218	218	1400	1396	1504.5	1400
BF90G50-../D..16..	454.5	504	322	1364.5	499	244	244	1508	1471.5	1612	1508
BF90G50-../D..18..	542	535	368	1483	499	288	288	1632.5	1590	1736.5	1632.5

The actual gearbox design can vary from the geometry shown.

BF90G50

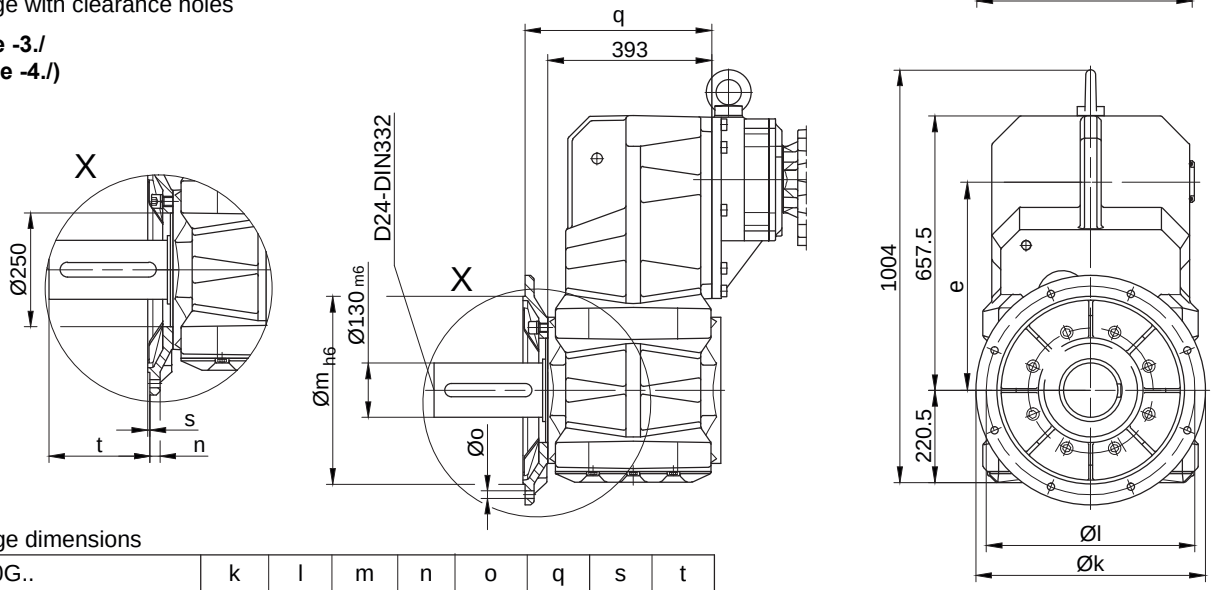
Flange with tapped holes

Code -7./



Flange with clearance holes

Code -3./
(Code -4./)

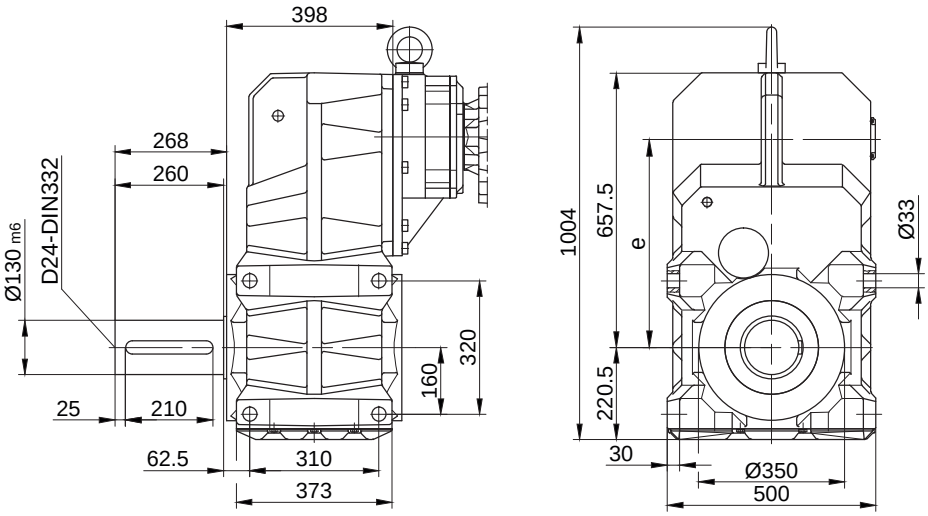


Flange dimensions

BF90G..	k	l	m	n	o	q	s	t
Standard -3./	550	500	450	22	17.5	448	5	218
big -4./	660	600	550	25	22	442	6	224

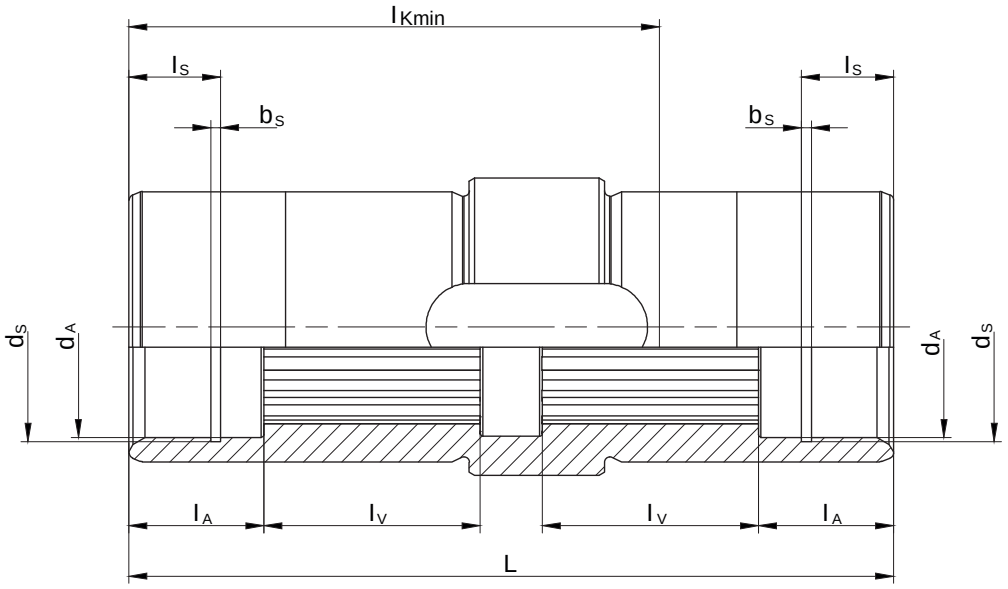
Foot with clearance holes left and right

Code -1.LR/



The actual gearbox design can vary from the geometry shown.

Splined shaft BF

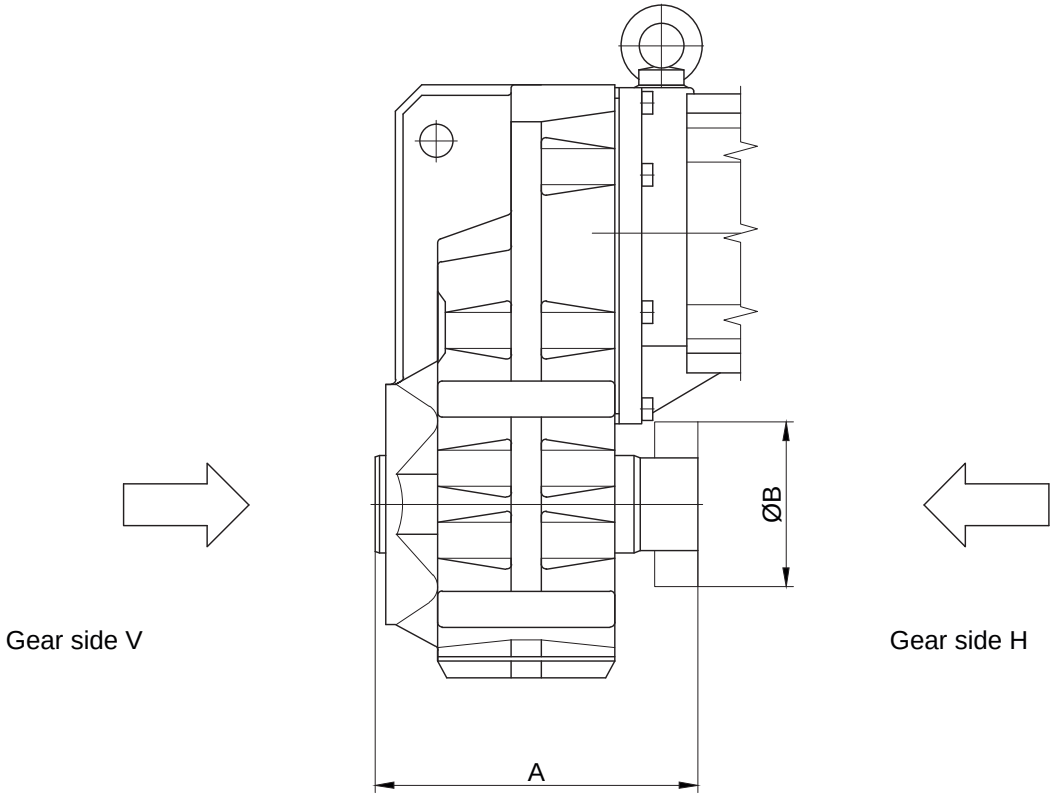


Type	Spline acc. DIN 5480	d_A (mm)	l_A (mm)	l_V (mm)	l_{Kmin} (mm)	L (mm)	d_S (mm)	l_S (mm)	b_S (mm)
BF06	N25x1.25x18x9H	30^{G7}	22	20	68	92	31.4^{H12}	15	1.3^{H13}
BF10	N30x1.25x22x9H	30.5^{G7}	22	33.5	87	124.5	31.4^{H12}	15	1.3^{H13}
BF20	N35x2x16x9H	36^{G7}	22	35	92	130	37^{H12}	9.5	1.6^{H13}
BF30	N40x2x18x9H	41^{G7}	25	40	103	141.5	42.5^{H12}	15	1.85^{H13}
BF40	N50x2x24x9H	51^{G7}	25	48	120	166	53^{H12}	9.5	2.15^{H13}
BF50	N60x2x28x9H	61^{G7}	25	55	123	176	63^{H12}	17	2.15^{H13}
BF60	N70x2x34x9H	72^{G7}	25	70	147	202	75^{H12}	17	2.65^{H13}
BF70	N85x3x27x9H	86^{G7}	26	85	185	241	88.5^{H12}	17	3.15^{H13}
BF80	N110x3x35x9H	112^{G7}	50	90	292	361	116^{H12}	30	4.15^{H13}
BF90	N130x5x24x9H	131.5^{G7}	60	110	365	435	134^{H12}	30	4.15^{H13}

The actual gearbox design can vary from the geometry shown.

Shrink disc coupling (SSV)

(Code BF10-.5/...)
(Code BF10Z-.5/...)

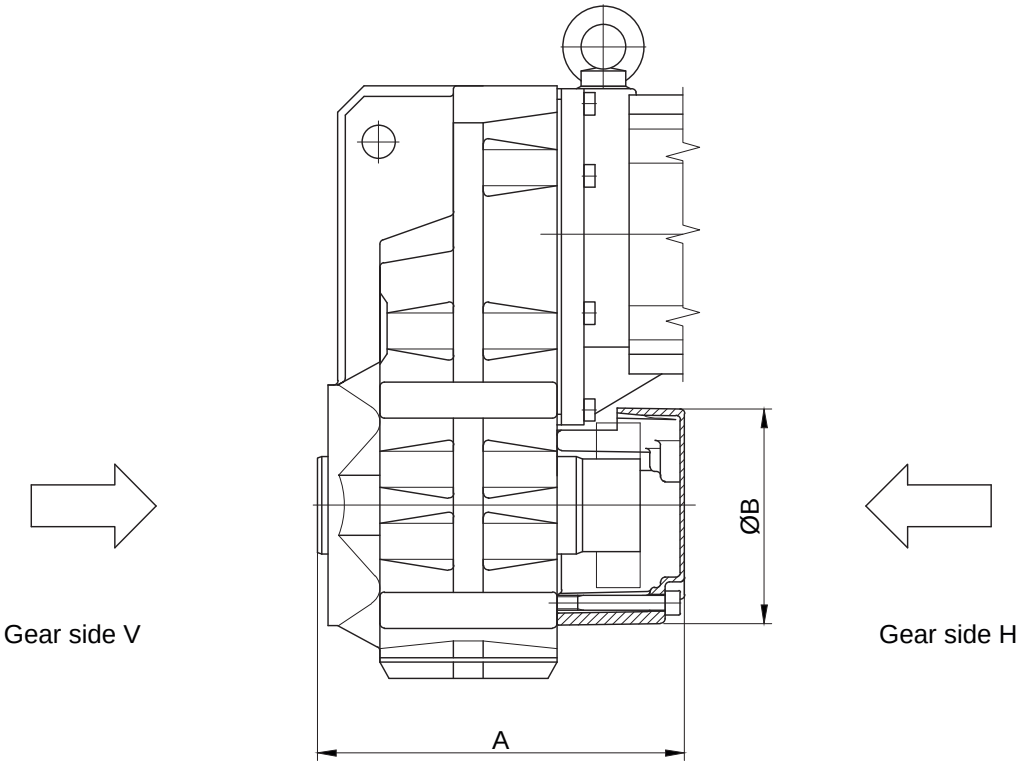


Type	SSV Ringfeder	SSV STÜWE	A	B
BF10	RfN 4161 036x072	HSD 36-22x36	153	72
BF20	RfN 4161 044x080	HSD 44-22x44	173	80
BF30	RfN 4161 050x090	HSD 50-22x50	192	90
BF40	RfN 4161 062x110	HSD 62-22x62	215	110
BF50	RfN 4161 068x115	HSD 68-22x68	211	115
BF60	RfN 4161 080x141	HSD 80-22x80	257	140
BF70	RfN 4161 105x185	HSD 110-22x105	320	185
BF80	RfN 4161 130x215	HSD 125-22x130	421	215
BF90	RfN 4161 150x263	HSD 155-22x150	505	263

The actual gearbox design can vary from the geometry shown.

Shrink disc coupling with (SSV) cover

(Code BF10-.5A/...)
(Code BF10Z-.5A/...)



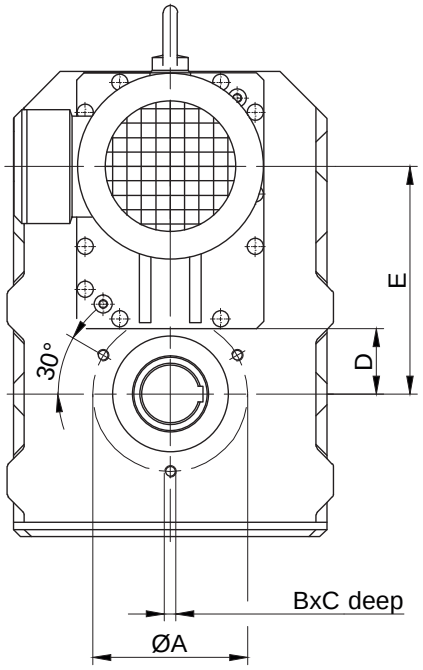
Type	SSV Ringfeder	SSV STÜWE	A	B
BF10	RfN 4161 036x072	HSD 36-22x36	174	120
BF20	RfN 4161 044x080	HSD 44-22x44	211	140
BF30	RfN 4161 050x090	HSD 50-22x50	223	140
BF40	RfN 4161 062x110	HSD 62-22x62	245	160
BF50	RfN 4161 068x115	HSD 68-22x68	227	200
BF60	RfN 4161 080x141	HSD 80-22x80	290	210
BF70	RfN 4161 105x185	HSD 110-22x105	359	250
BF80	RfN 4161 130x215	HSD 125-22x130	463	300
BF90	RfN 4161 150x263	HSD 155-22x150	557	350

The actual gearbox design can vary from the geometry shown.

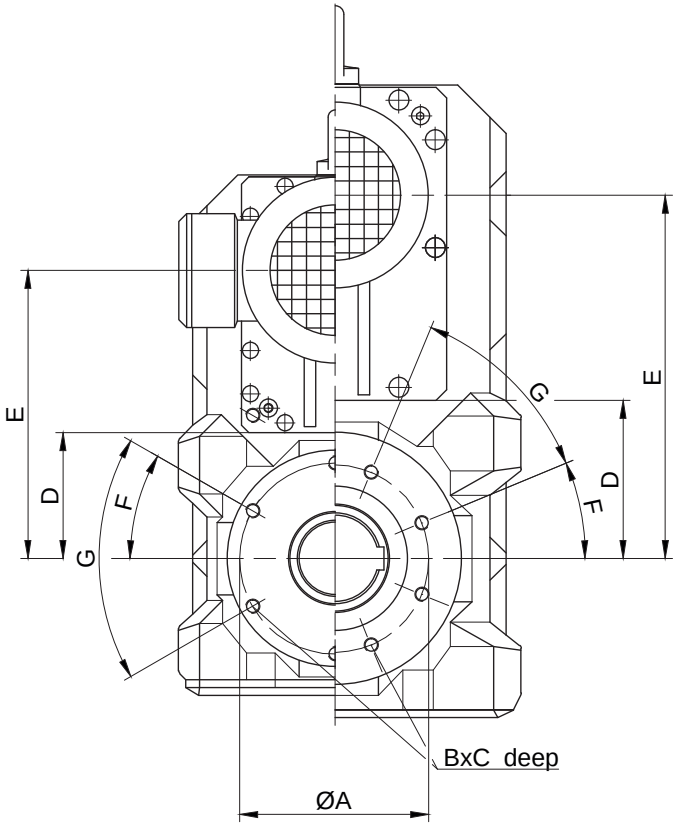
Screw Holes Side (H)

→ Shaft Cover

BF10 to BF70



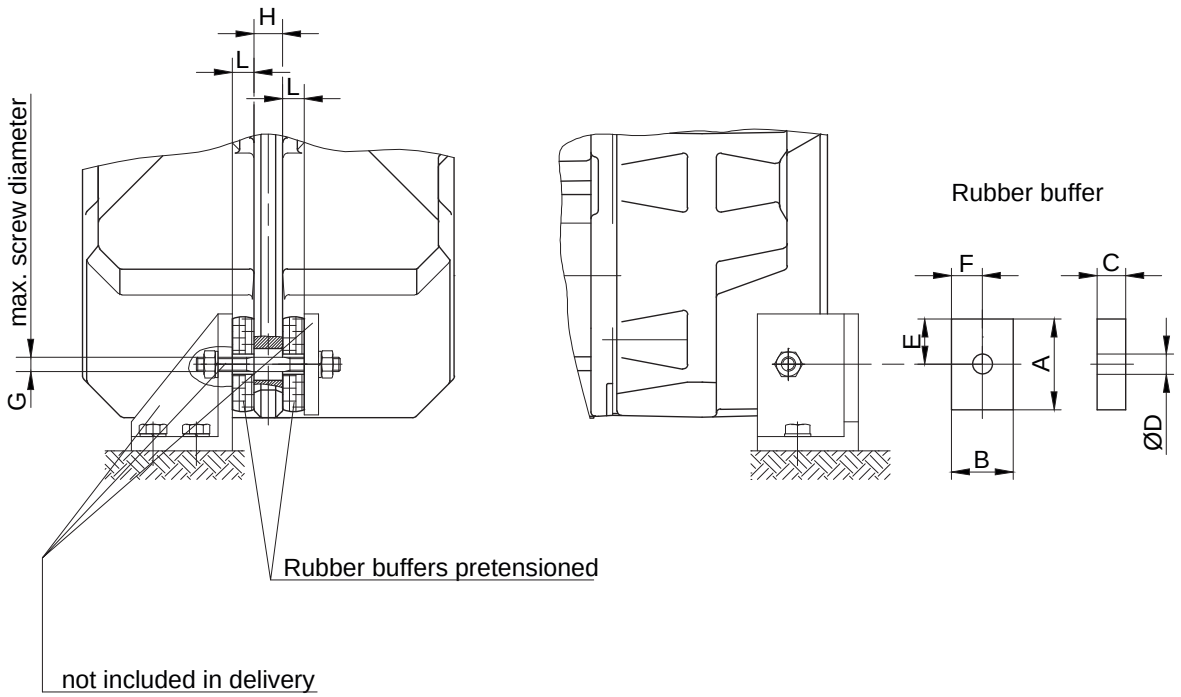
BF80 BF90



Gear	Dimensions (mm)						
	A	B	C	D	E	F	G
BF10	100	M8	16	35	118	-	-
BF20	115	M10	20	39	136	-	-
BF30	115	M10	20	44	157	-	-
BF40	130	M10	20	52	180.5	-	-
BF50	165	M12	24	60	207	-	-
BF60	180	M12	24	69	255.5	-	-
BF70	215	M16	32	89	316	-	-
BF80	265	M20	40	173	400	30°	6x60°
BF90	300	M20	40	219	504.5	22.5°	8x45°

The actual gearbox design can vary from the geometry shown.

Rubber buffer for torque restraint



Material: Natural rubber
Hardness 50 ±5 Shore A

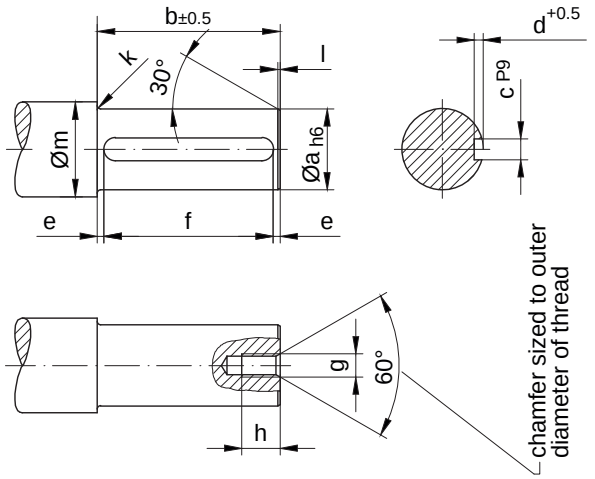
Dimensions of the transverse hole:
see dimensioned sketch of the respective shaft mounted gearbox

Gear	Pos.	Dimensions (mm)								
		A	B	C	D	E	F	G	H	L
BF06	Pos.0	30	30	12	12	15	15	M10	10	10
BF10	Pos.1	48	32	15	14	24	16	M10	16	13.5
BF20	Pos.1	48	32	15	14	24	16	M10	18	13
BF30	Pos.2	63	43	20	14	31.5	21.5	M10	18	17
BF40	Pos.2	63	43	20	14	31.5	21.5	M10	20	16.5
BF50	Pos.3	88	60	25	22	44	30	M18	24	21.5
BF60	Pos.3	88	60	25	22	44	30	M18	28	21
BF70	Pos.4	123	88	30	26	61.5	44	M20	30	25.5
BF80	Pos.5	133	103	35	26	66.5	51.5	M20	40	30
BF90	Pos.5	133	103	35	26	66.5	51.5	M20	50	29.5

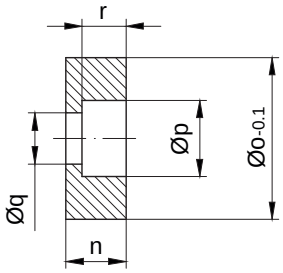
The actual gearbox design can vary from the geometry shown.

Assembly tools for hollow shaft and keyway

Pos.1 Shaft

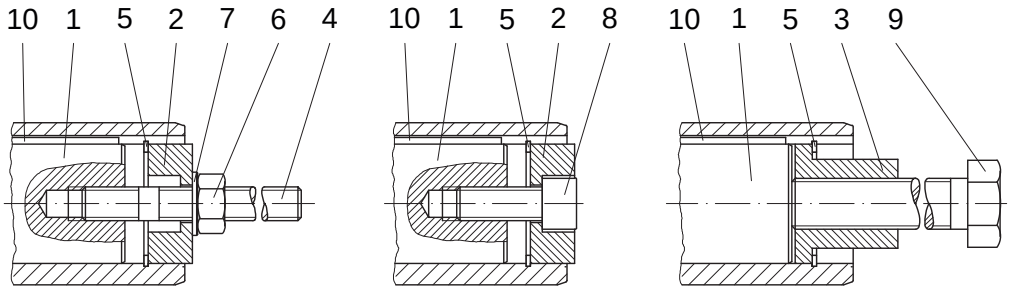


✳Pos.2 Disc



x, edges cut
Material:
C45 DIN 17200

Type	Dimensions (mm)															
	Pos.1 Shaft											Pos.2 Disc				
	a	b	c	d	e	f	g	h	k	l	m	n	o	p	q	r
BF06	25	70	8	4	3.5	$63^{+0.5}$	M8	18	2	1.5	33	13.5	24.8	15	9	8.5
BF10	25	102	8	4	6	$90^{+0.5}$	M8	18	2.5	1.5	33	13.5	24.8	15	9	8.5
BF20	30	108	8	4	9	$90^{+0.5}$	M10	20	3	1.5	38	15	29.8	18	11	10
BF30	35	118	10	5	9	$100^{+0.5}$	M10	20	3	1.5	43	16	34.8	18	11	10
BF40	40	141	12	5	8	$125^{+0.5}$	M12	22	3	2	48	18	39.8	20	13.5	12
BF50	50	148	14	5.5	11.5	$125^{+0.5}$	M16	30	3.5	2	58	21	49.8	26	17.5	15
BF60	60	173	18	7	6.5	$160^{+0.5}$	M20	38	3.5	2	68	24	59.8	33	22	18
BF70	80	205	22	9	12.5	$180^{+0.5}$	M20	38	4	2	90	27	79.8	33	22	20
BF70-K70	70	205	20	7.5	12.5	$180^{+0.5}$	M20	38	4	2	90	27	69.8	33	22	20
BF80	100	317	28	10	18.5	$280^{+0.5}$	M24	45	4	3	110	32	99.8	40	26	25
BF90	120	383	32	11	11.5	$360^{+0.5}$	M24	45	4.5	3	130	35	119.8	40	26	28



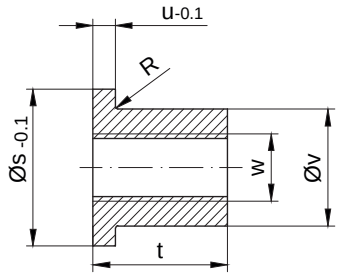
Installation Holding Dismantlement

The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

The actual gearbox design can vary from the geometry shown.

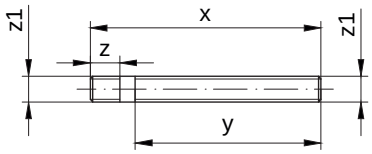
Assembly tools for hollow shaft and keyway

Pos.3 Sleeve



$\sqrt{}^{x}$, edges cut
Material: C45 DIN 17200

Pos.4 Stud Bolt



Material: Steel, tensile strength
≥ 1000N/mm²
threads rolled

Type	Dimensions (mm)										✳Retainer ring DIN 472	Hexagon nut DIN 934-8	Disc DIN 125-St	✳Filister head screw DIN 912-8.8	Starting torque (Nm)	Hexagon bolt DIN EN 24017-8.8	Key DIN 6885 Width x Height x Length
	Pos.3 Sleeve						Pos.4 Stud Bolt										
	s	t	u	v	w	R	x	y	z	z1	Pos.5	Pos.6	Pos.7	Pos.8		Pos.9	Pos.10
BF06	24.8	24	5	15.4	M12	0.8	160	130	20	M8	25x1.2	M8	8.4	M8x30	5	M12x110	A 8x7x63
BF10	24.8	24	5	15.4	M12	0.8	160	130	20	M8	25x1.2	M8	8.4	M8x30		M12x140	A 8x7x90
BF20	29.8	28	5	19.8	M14	0.8	170	135	23	M10	30x1.2	M10	10.5	M10x30	8	M14x150	A 8x7x90
BF30	34.8	28	5	23	M14	-	180	145	23	M10	35x1.5	M10	10.5	M10x35		M14x160	A 10x8x100
BF40	39.8	40	6	27.7	M20	0.8	210	170	28	M12	40x1.75	M12	13	M12x35	16	M20x200	A 12x8x125
BF50	49.8	48	6	36	M24	-	230	175	37	M16	50x2.0	M16	17	M16x40	30	M24x210	A 14x9x125
BF60	59.8	60	6	44	M30	-	270	205	45	M20	60x2.0	M20	21	M20x50	42	M30x250	A 18x11x160
BF70	79.8	60	8	55	M30	-	310	240	45	M20	80x2.5	M20	21	M20x50		M30x280	A 22x14x180
BF70-K70	69.8	60	8	53	M30	-	310	240	45	M20	70x2.5	M20	21	M20x50		M30x280	A 20x12x180
BF80	99.8	72	10	75	M36	-	440	360	55	M24	100x3.0	M24	25	M24x60	100	M36x410	A 28x16x280
BF90	119.8	72	10	80	M36	-	510	430	55	M24	120x4.0	M24	25	M24x60		M36x480	A 32x18x360

The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

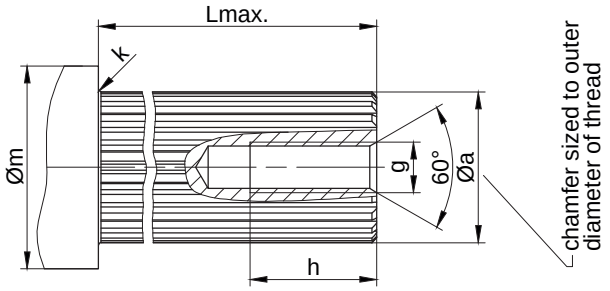
Optional:

Type	Ø s	Order Text
BF06	25	Id.Nr.4103921 Assembly tool "holding"
BF10	25	Id.Nr.4103921 Assembly tool "holding"
BF20	30	Id.Nr.4103939 Assembly tool "holding"
BF30	35	Id.Nr.4103947 Assembly tool "holding"
BF40	40	Id.Nr.4103955 Assembly tool "holding"
BF50	50	Id.Nr.4103963 Assembly tool "holding"
BF60	60	Id.Nr.4103971 Assembly tool "holding"
BF70	80	Id.Nr.4103980 Assembly tool "holding"
BF70-K70	70	Id.Nr.4104765 Assembly tool "holding"
BF80	100	Id.Nr.4103998 Assembly tool "holding"
BF90	120	Id.Nr.4104005 Assembly tool "holding"

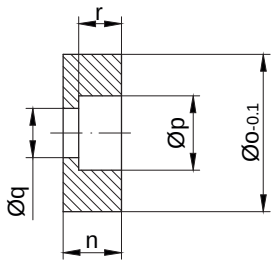
The actual gearbox design can vary from the geometry shown.

Assembly tools for shaft mounted gears with splined shaft

Pos.1 Shaft

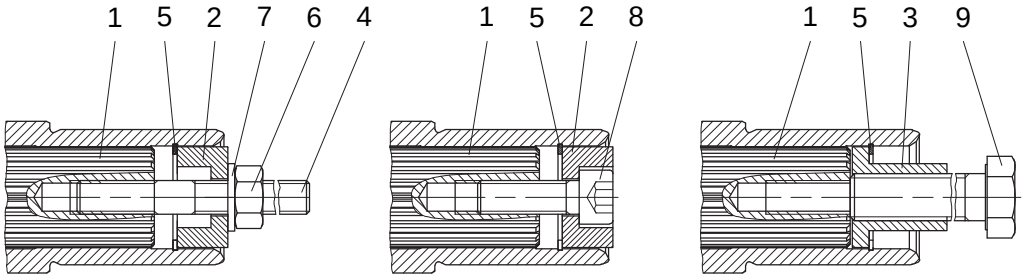


✳Pos.2 Disc



x, edges cut
Material:
C45 DIN 17200

Type	Dimensions (mm)										
	Pos.1 Shaft						Pos.2 Disc				
	a	g	h	k	Lmax.	m	n	o	p	q	r
BF06	DIN 5480-W25x1.25x18x8f	M8	20	2	70	37	13	29.9	15	9	8
BF10	DIN 5480-W30x1.25x22x8f	M10	25	2.5	100	38	15	30.4	18	11	10
BF20	DIN 5480-W35x2x16x8f	M10	25	3	110	43	14	35.9	18	11	10
BF30	DIN 5480-W40x2x18x8f	M12	30	3	117	48	18	40.9	20	13.5	12
BF40	DIN 5480-W50x2x24x8f	M16	35	3	145	60	17.5	50.9	26	17.5	12.5
BF50	DIN 5480-W60x2x28x8f	M20	40	3.5	150	69	24	60.9	33	22	18
BF60	DIN 5480-W70x2x34x8f	M20	40	3.5	175	80	24	71.9	33	22	18
BF70	DIN 5480-W85x3x27x8f	M20	40	4	215	96	22	85.9	33	22	16
BF80	DIN 5480-W110x3x35x8f	M24	50	4	315	122	32	111.9	40	26	25
BF90	DIN 5480-W130x5x24x8f	M24	50	4.5	390	141	25	131.4	40	26	18



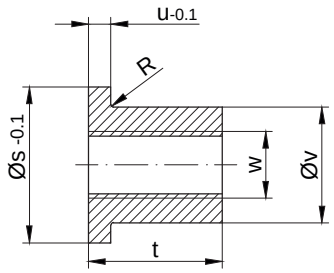
Installation Holding Dismantlement

The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

The actual gearbox design can vary from the geometry shown.

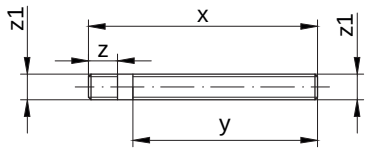
Assembly tools for shaft mounted gears with splined shaft

Pos.3 Sleeve



x, edges cut
Material:
C45 DIN 17200

Pos.4 Stud Bolt



Material: Steel, tensile strength
≥ 1000N/mm²
threads rolled

Type	Dimensions (mm)										✳Retainer ring DIN 472	Hexagon nut DIN 934-8	Disc DIN 125-St	✳Fillister head screw DIN 7984-8.8	Starting torque (Nm)	Hexagon bolt DIN EN 24017-8.8
	Pos.3 Sleeve						Pos.4 Stud Bolt									
	s	t	u	v	w	R	x	y	z	z1	Pos.5	Pos.6	Pos.7	Pos.8		Pos.9
BF06	29.9	24	5	15.4	M12	0.8	160	130	20	M8	25x1.2	M8	8.4	M8x30	5	M12x110
BF10	30.4	28	5	19.8	M14	-	170	135	23	M10	30x1.2	M10	10.5	M10x30	8	M14x150
BF20	35.9	28	5	23	M14	-	180	145	23	M10	35x1.5	M10	10.5	M10x35		M14x160
BF30	40.9	40	6	27.7	M20	-	210	170	28	M12	40x1.75	M12	13	M12x35	16	M20x200
BF40	50.9	48	6	36	M24	0.8	230	175	37	M16	50x2.0	M16	17	M16x40	30	M24x210
BF50	60.9	60	6	44	M30	-	270	205	45	M20	60x2.0	M20	21	M20x50	42	M30x250
BF60	71.9	60	6	53	M30	0.8	310	240	45	M20	70x2.5	M20	21	M20x50		M30x280
BF70	85.9	60	8	65	M30	0.8	310	240	45	M20	85x3	M20	21	M20x50		M30x280
BF80	111.9	72	10	85	M36	0.8	440	360	55	M24	112x4	M24	25	M24x60	100	M36x410
BF90	131.4	72	10	95	M36	0.8	510	430	55	M24	130x4	M24	25	M24x60		M36x480

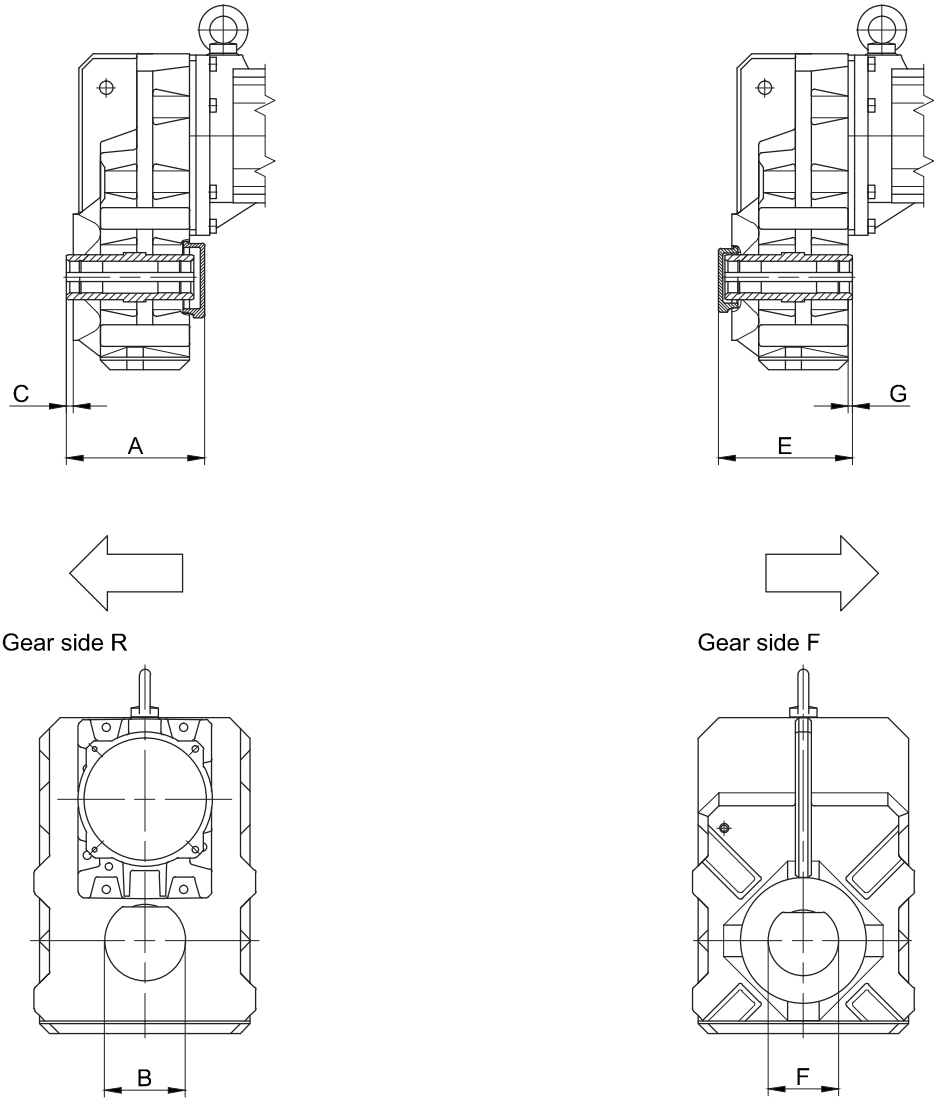
The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

Optional:

Type	Ø s	Order Text
BF06	30	Id.Nr.4105125 Assembly tool "holding"
BF10	30.5	Id.Nr.4105133 Assembly tool "holding"
BF20	36	Id.Nr.4105141 Assembly tool "holding"
BF30	41	Id.Nr.4105150 Assembly tool "holding"
BF40	51	Id.Nr.4105168 Assembly tool "holding"
BF50	61	Id.Nr.4105176 Assembly tool "holding"
BF60	72	Id.Nr.4105184 Assembly tool "holding"
BF70	86	Id.Nr.4105192 Assembly tool "holding"
BF80	112	Id.Nr.4105206 Assembly tool "holding"
BF90	131.5	Id.Nr.4105214 Assembly tool "holding"

The actual gearbox design can vary from the geometry shown.

Shaft Cap (VK)

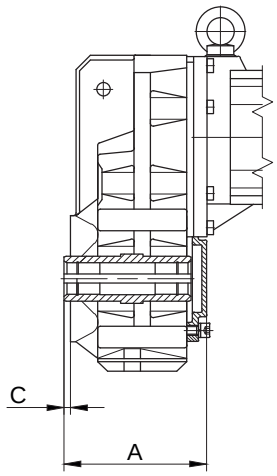


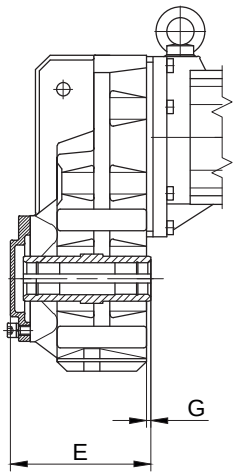
Sealing cap REAR			
Type	A	B	C
BF10	134	78	5
BF20	142	85	5
BF30	153.5	90	7.5
BF40	179.5	110	7
BF50	192	125	6
BF60	222	140	7
BF70	258	170	6

Sealing cap FRONT			
Type	E	F	G
BF30	149	78	7.5
BF50	189.5	110	6
BF70	262	130	6

The actual gearbox design can vary from the geometry shown.

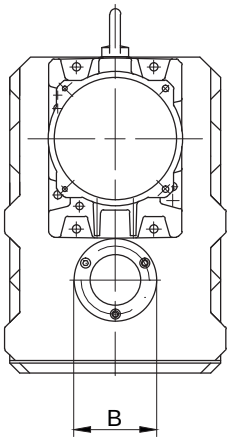
Shaft Cover (VD)

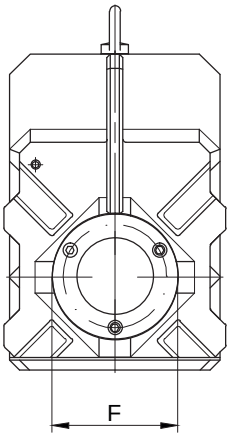




Gear side REAR (H)

Gear side FRONT (V)



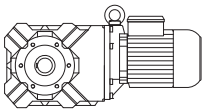


Sealing cover REAR			
Type	A	B	C
BF80	376	300	8
BF90	442	350	8

Sealing cover FRONT			
Type	E	F	G
BF10	135.5	120	5
BF20	144	139.5	5
BF30	153	139.5	7.5
BF40	179.5	160	7
BF50	191.5	199	6
BF60	221.5	210	7
BF70	258	250	6
BF80	376	300	8
BF90	442	350	8

The actual gearbox design can vary from the geometry shown.

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Page

Dimensional drawings bevel-geared motors 303-356
- **Standard**
- **Tandem Gearbox**

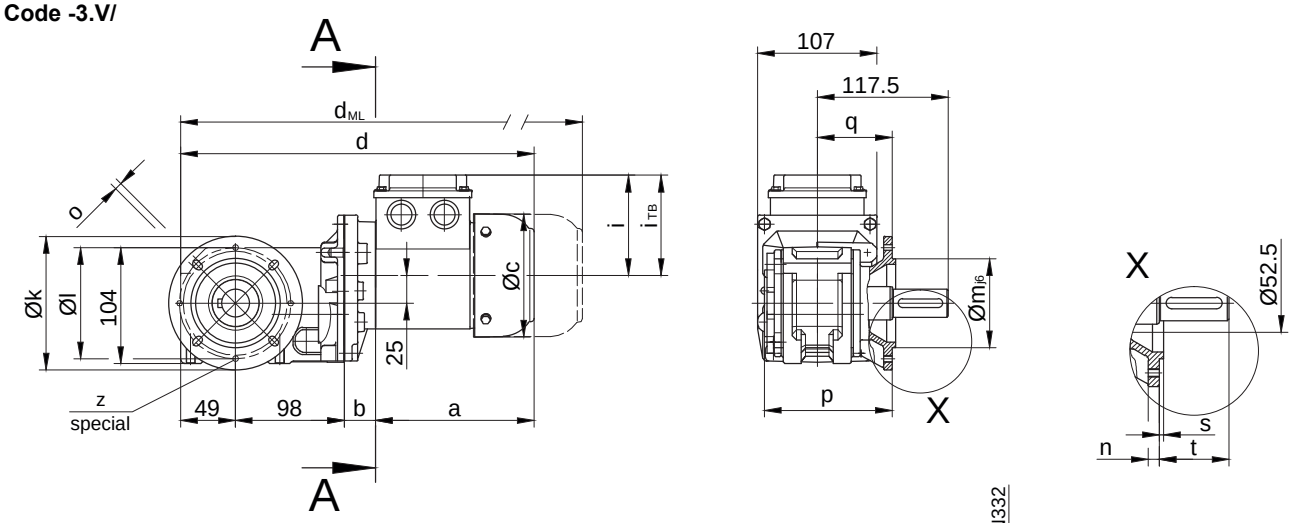
Additional Dimension Sheet

- Splined shaft acc. DIN 5480
- Additional dimension sheet
- Shrink disc connection with cover (SSV)
- Rubber buffer for torque restraint
- Posittion of the torque arm
- Foot with tapped bores
- Foot plate with through holes
- Assembly tools for hollow shaft
- Assembly tools for splined shaft
- Shaft cap (VK)
- Shaft cover (VD)

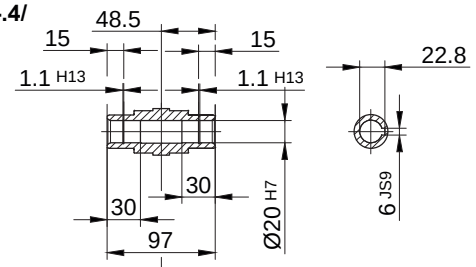
BK06

Flange with clearance holes at front

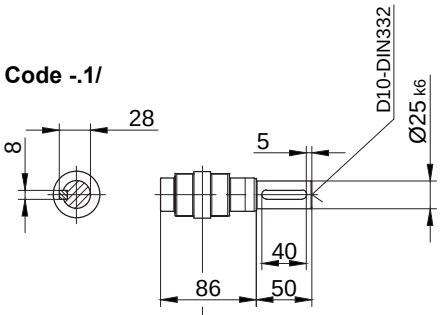
Code -3.V/



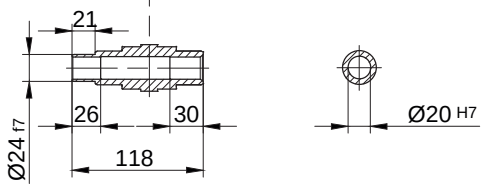
Code -.4/



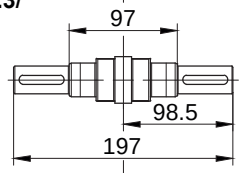
Code -.1/



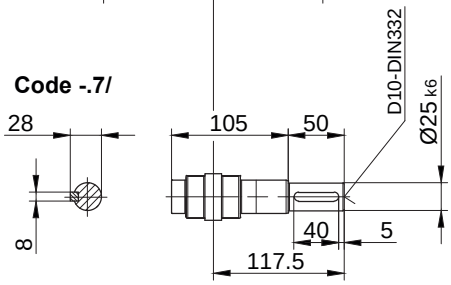
Code -.5/



Code -.3/



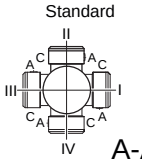
Code -.7/



Flange dimensions

BK06	k	l	m	n	o	p	q	s	t	z
standard -37V/	120	100	80	8	6.6	115	67.5	3	50	-
special -37V	120	100	80	8	6.6	115	67.5	3	50	4xM6

Standard

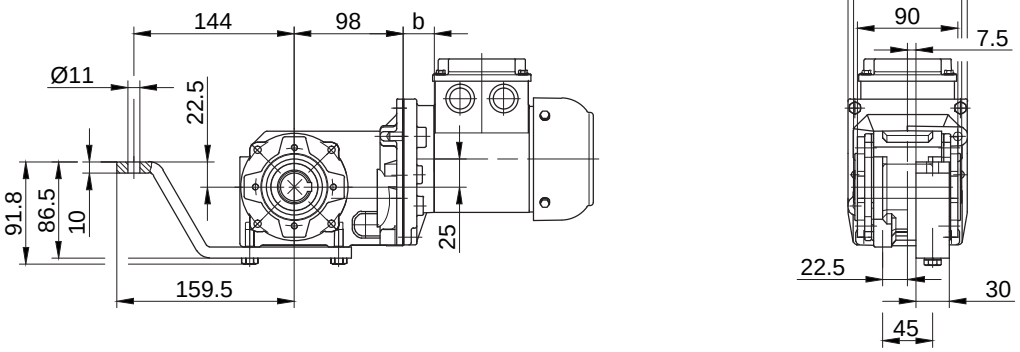


Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK06-../D04..	143	28	111	318	90	112	361.5	380.5	423.5	-
BK06-../D05..	170	30	123	347	100	117	389	450	491.5	-
BK06-../D06..	170	30	123	347	100	119	389	450	491.5	-
BK06-../D07..	190	30	123	367	100	119	409	470	511.5	-
BK06-../D..08..	200	74	156	421	115	136.5	487	528	594.5	487

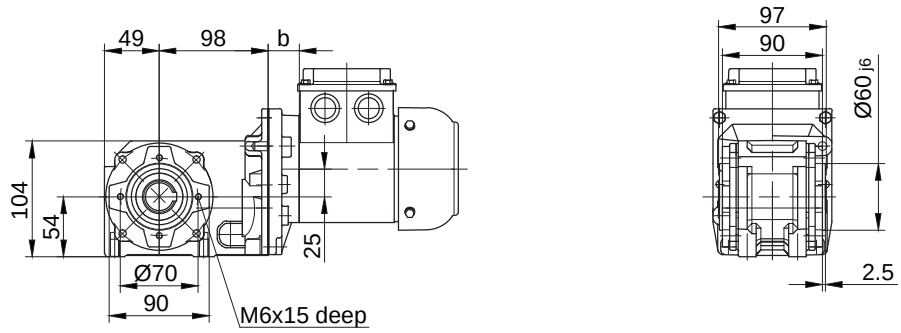
The actual gearbox design can vary from the geometry shown.

BK06

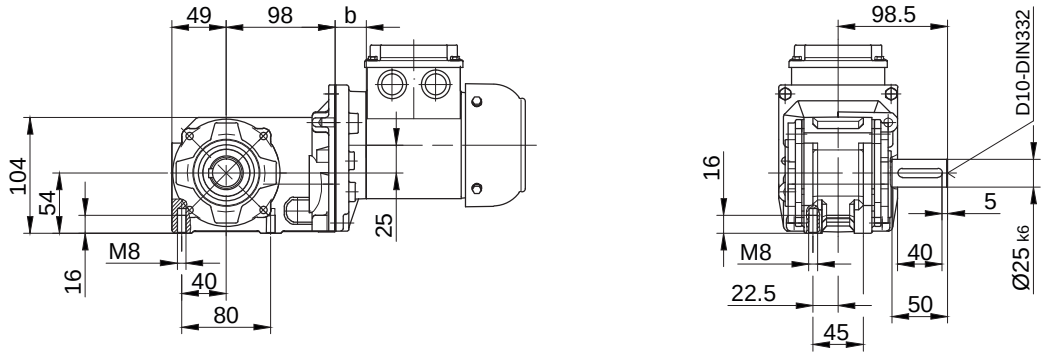
Torque arm at front
Code -5.V/



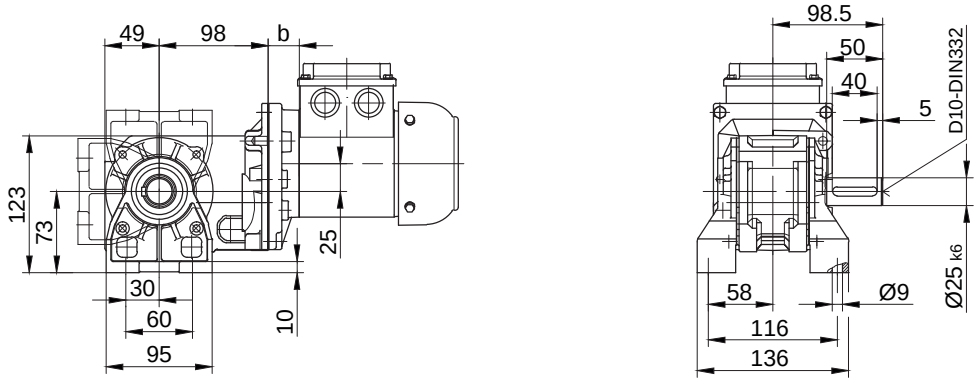
Flange with tapped holes at front
Code -7.V/



Foot with tapped holes at bottom
Code -6.U/



Foot with clearance holes at bottom
Code -1.U/

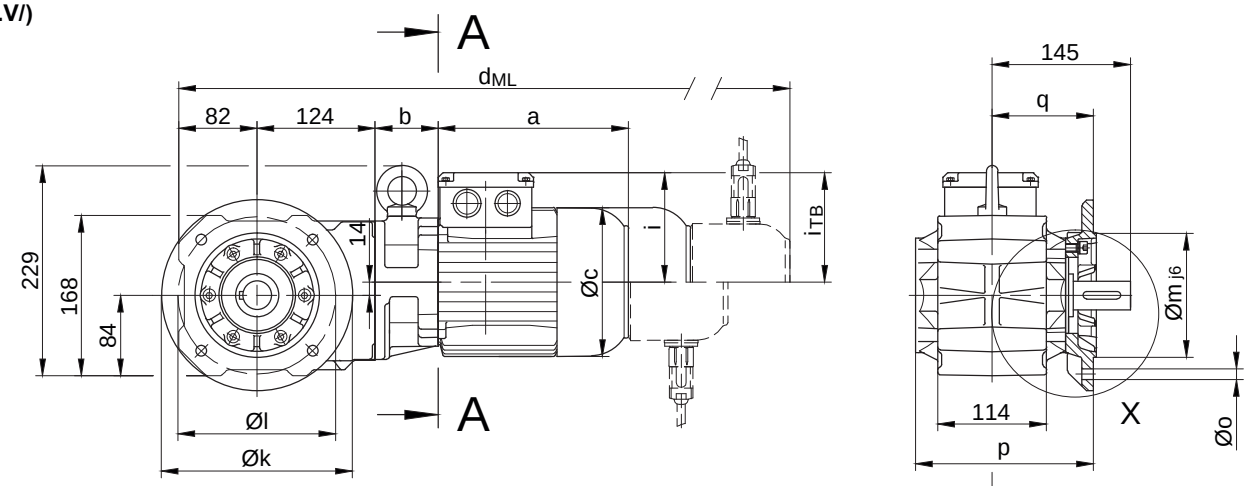


The actual gearbox design can vary from the geometry shown.

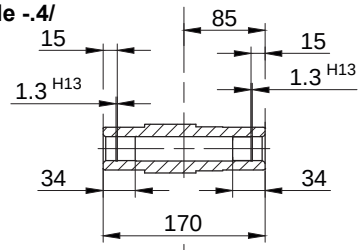
BK10 - BK10Z

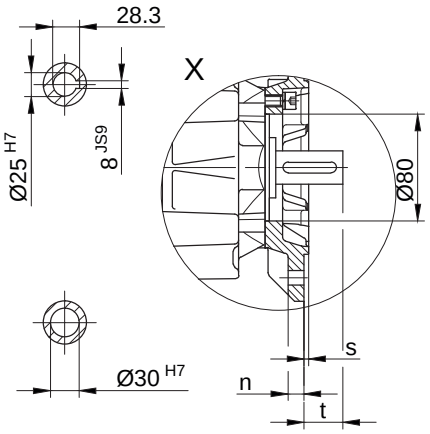
Flange with clearance holes at front

Code -3.V/
(Code -2.V/)

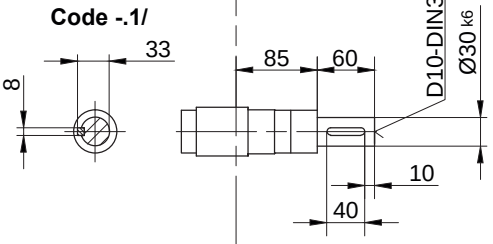


Code -.4/

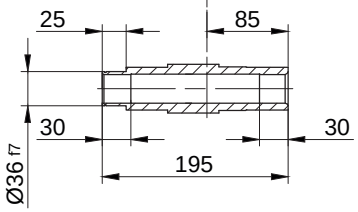




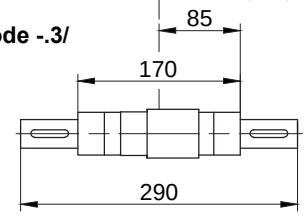
Code -.1/

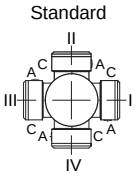


Code -.5/



Code -.3/





A-A

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Flange dimensions

BK10(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	200	165	130	12	11	186.5	106	3.5	39
small -2.V/	160	130	110	10	9	179.5	99	3.5	46

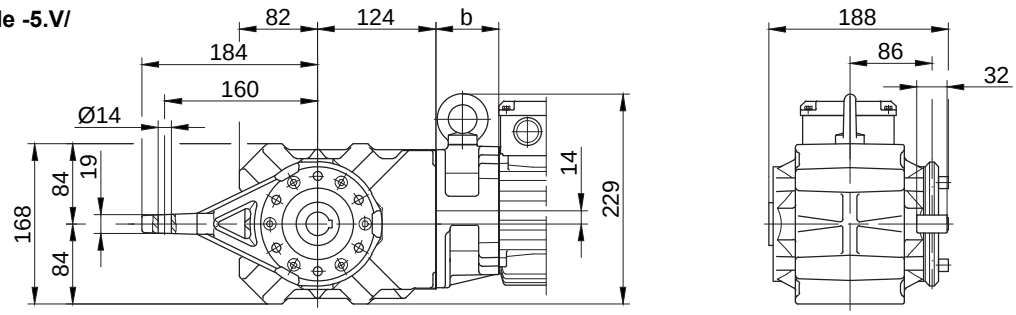
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK10Z-../D04..	143	86	111	435	90	112	478.5	497.5	540.5	-
BK10-../D05..	170	62	123	438	100	117	480	541	582.5	-
BK10Z-../D05..	170	88	123	464	100	117	506	567	608.5	-
BK10-../D06..	170	62	123	438	100	119	480	541	582.5	-
BK10Z-../D06..	170	88	123	464	100	119	506	567	608.5	-
BK10-../D07..	190	62	123	458	100	119	500	561	602.5	-
BK10Z-../D07..	190	88	123	484	100	119	526	587	628.5	-
BK10-../D..08..	200	66	156	472	115	136.5	538	579	645.5	538
BK10Z-../D..08..	200	132	156	538	115	136.5	604	645	711.5	604
BK10-../D..09..	251	80.5	181	537.5	124	158	630.5	644.5	735	630.5

The actual gearbox design can vary from the geometry shown.

BK10 - BK10Z

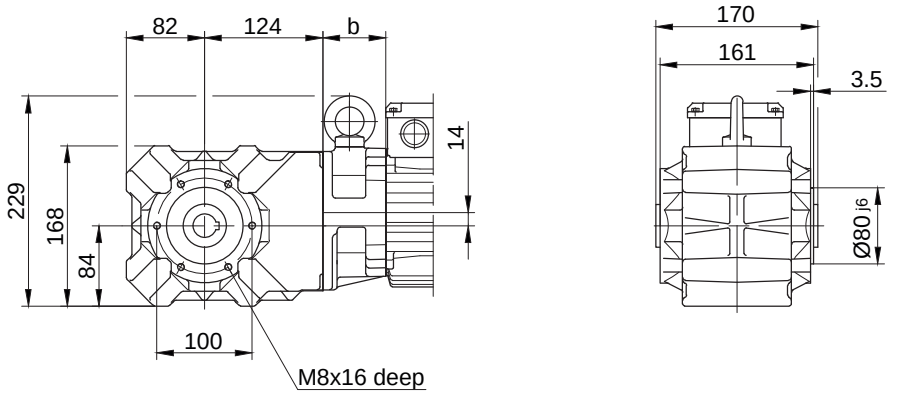
Torque arm at front

Code -5.V/



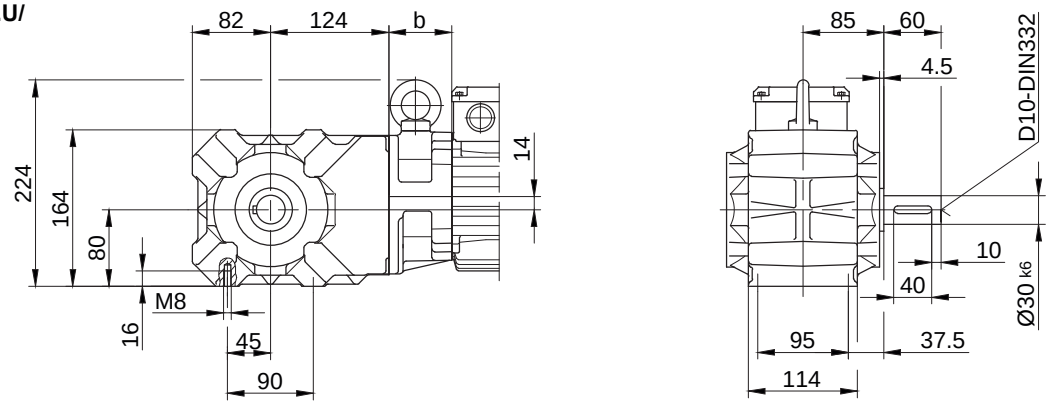
Flange with tapped holes at front

Code -7.V/



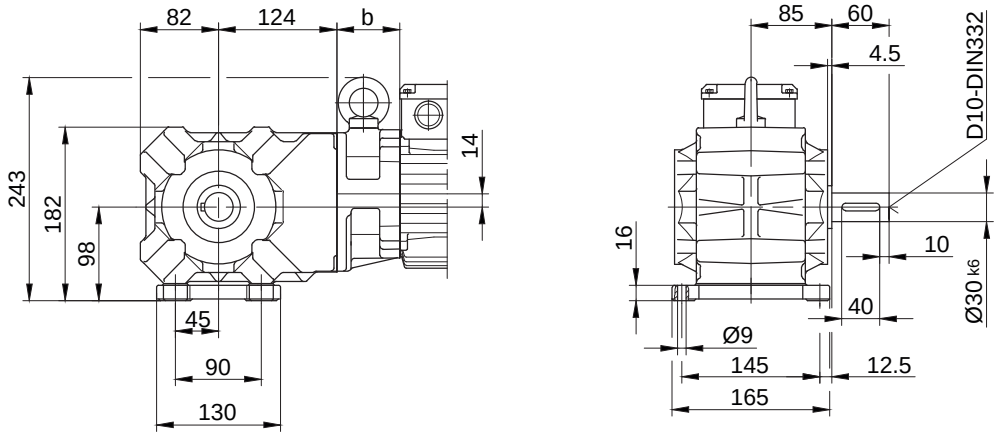
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

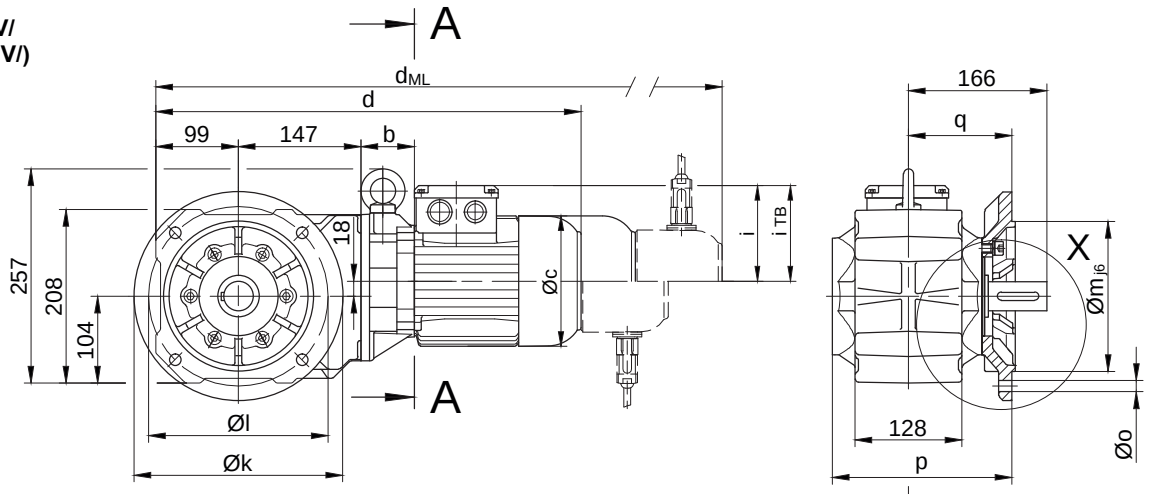


The actual gearbox design can vary from the geometry shown.

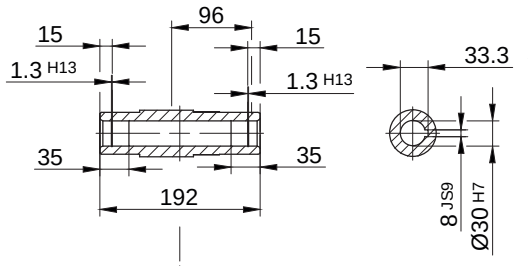
BK20 - BK20Z

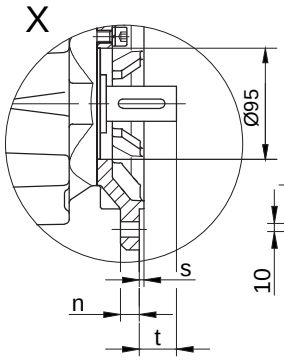
Flange with clearance holes at front

Code -3.V/
(Code -2.V/)

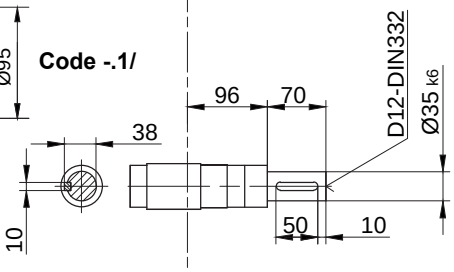


Code -.4/

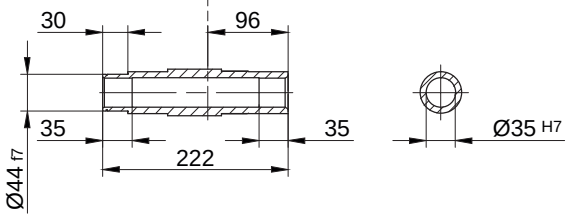




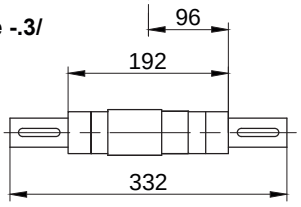
Code -.1/



Code -.5/

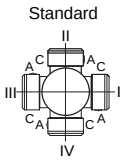


Code -.3/



Flange dimensions

BK20(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	215.5	124	4	42
small -2.V/	200	165	130	12	11	206.5	115	3.5	51



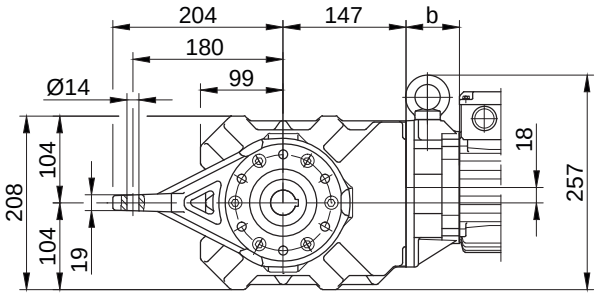
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK20Z-../D04..	143	100	111	489	90	112	532.5	551.5	594.5	-
BK20-../D05..	170	60	123	476	100	117	518	579	620.5	-
BK20Z-../D05..	170	102	123	518	100	117	560	621	662.5	-
BK20-../D06..	170	60	123	476	100	119	518	579	620.5	-
BK20Z-../D06..	170	102	123	518	100	119	560	621	662.5	-
BK20-../D07..	190	60	123	496	100	119	538	599	640.5	-
BK20Z-../D07..	190	102	123	538	100	119	580	641	682.5	-
BK20-../D..08..	200	64	156	510	115	136.5	576	617	683.5	576
BK20Z-../D..08..	200	146	156	592	115	136.5	658	699	765.5	658
BK20-../D..09..	251	78.5	181	575.5	124	158	668.5	682.5	773	668.5

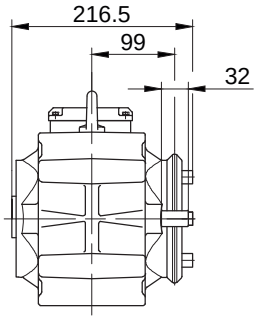
The actual gearbox design can vary from the geometry shown.

BK20 - BK20Z

Torque arm at front

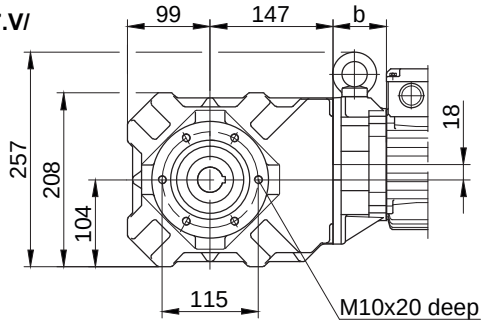
Code -5.V/

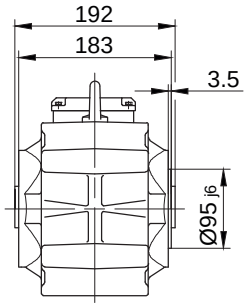




Flange with tapped holes at front

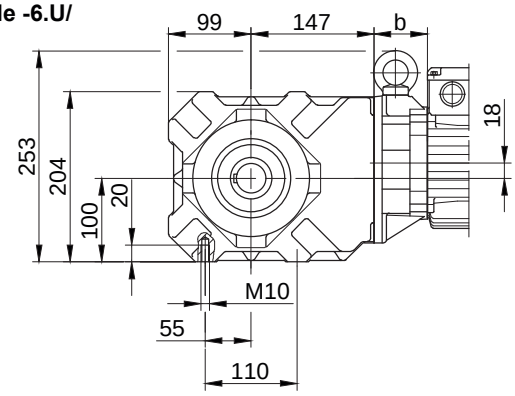
Code -7.V/

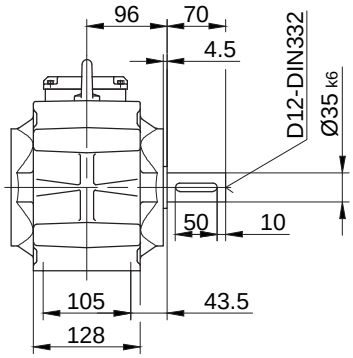




Foot with tapped holes at bottom

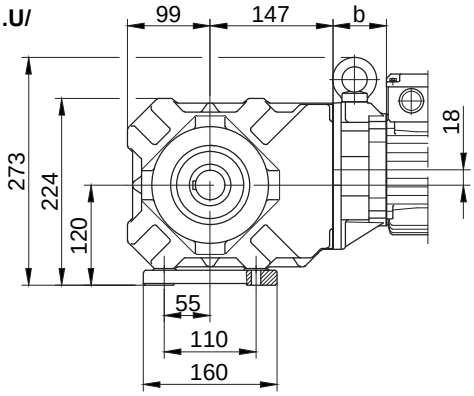
Code -6.U/

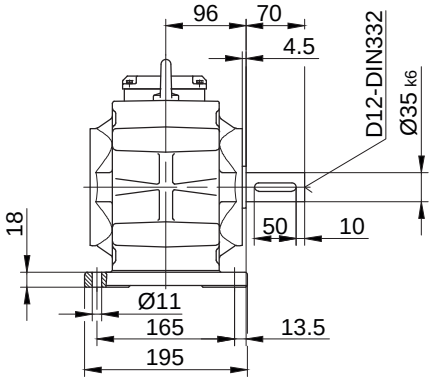




Foot with clearance holes at bottom

Code -1.U/





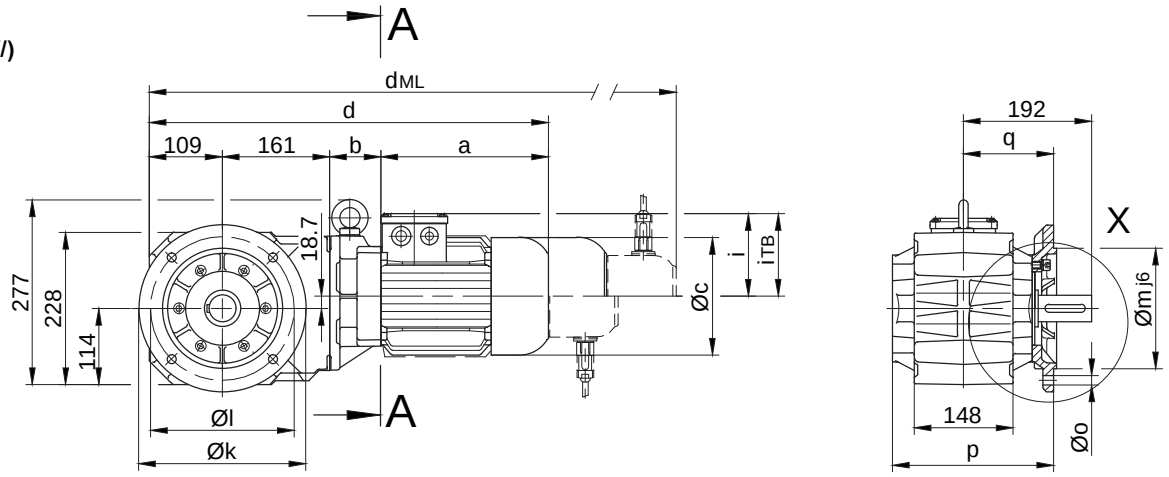
The actual gearbox design can vary from the geometry shown.

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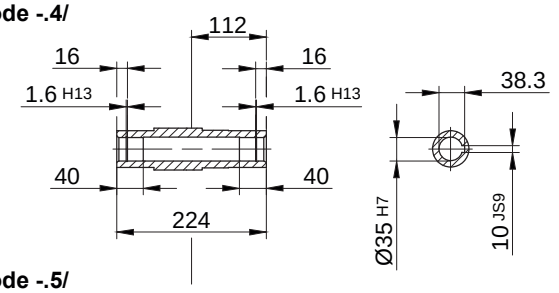
BK30 - BK30Z

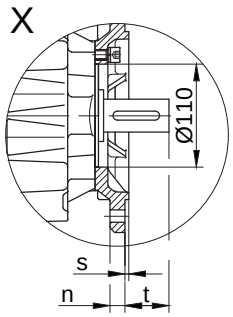
Flange with clearance holes at front

Code -3.V/
(Code -2.V/)

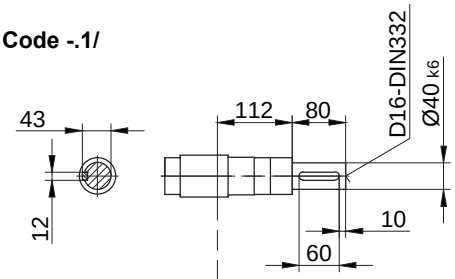


Code -.4/

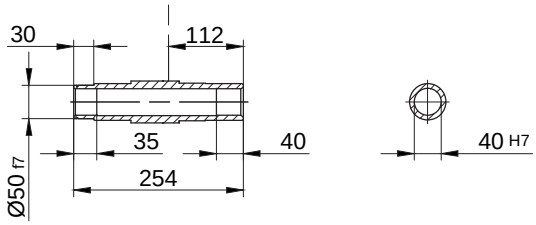




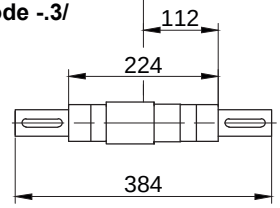
Code -.1/



Code -.5/

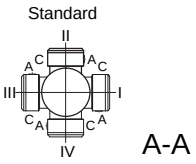


Code -.3/



Flange dimensions

BK30(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	242	135	4	57
small-2.V/	200	165	130	12	11	239	132	3.5	60



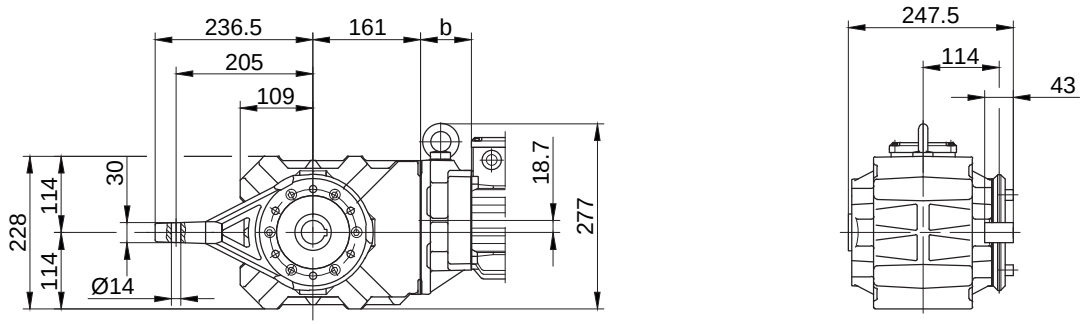
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK30-../D05..	170	58	123	498	100	117	540	601	642.5	-
BK30Z-../D05..	170	133.5	123	573.5	100	117	615.5	676.5	718	-
BK30-../D06..	170	58	123	498	100	119	540	601	642.5	-
BK30Z-../D06..	170	133.5	123	573.5	100	119	615.5	676.5	718	-
BK30-../D07..	190	58	123	518	100	119	560	621	662.5	-
BK30Z-../D07..	190	133.5	123	593.5	100	119	635.5	696.5	738	-
BK30-../D..08..	200	62	156	532	115	136.5	598	639	705.5	598
BK30Z-../D..08..	200	137.5	156	607.5	115	136.5	673.5	714.5	781	673.5
BK30-../D..09..	251	76.5	181	597.5	124	158	690.5	704.5	795	690.5
BK30Z-../D..09..	251	152	181	673	124	158	766	780	870.5	766
BK30-../D..11..	319	83	228	672	181	181	770	779	874.5	770

The actual gearbox design can vary from the geometry shown.

BK30 - BK30Z

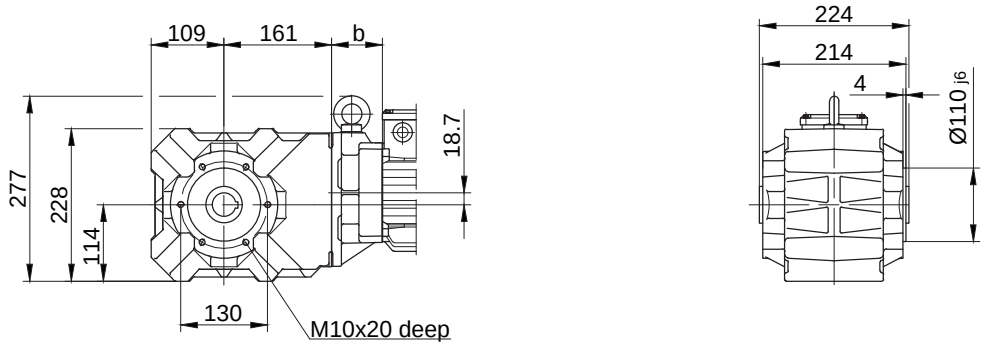
Torque arm at front

Code -5.V/



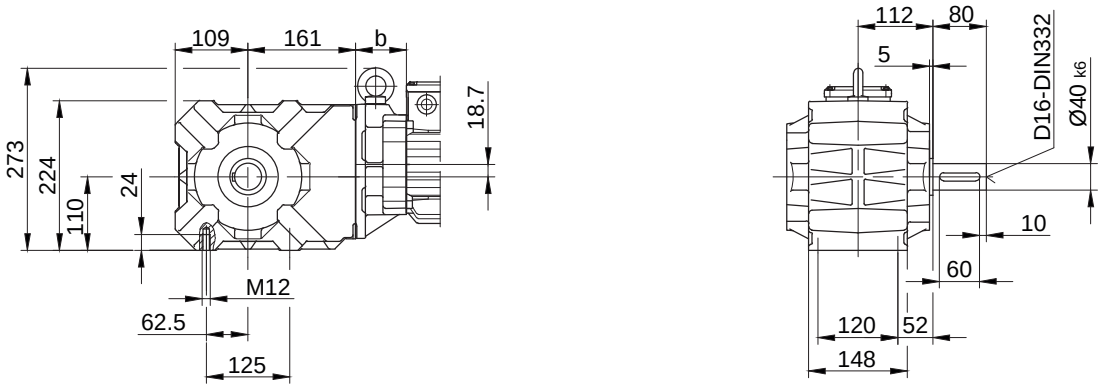
Flange with tapped holes at front

Code -7.V/



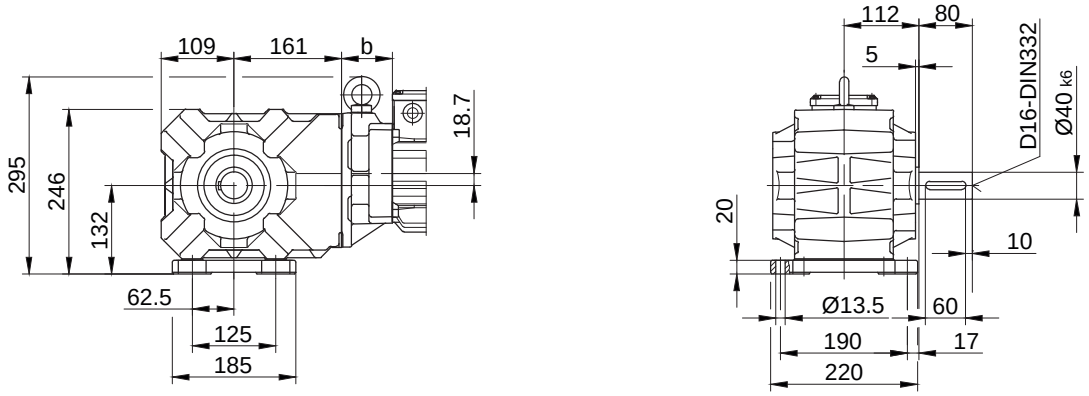
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

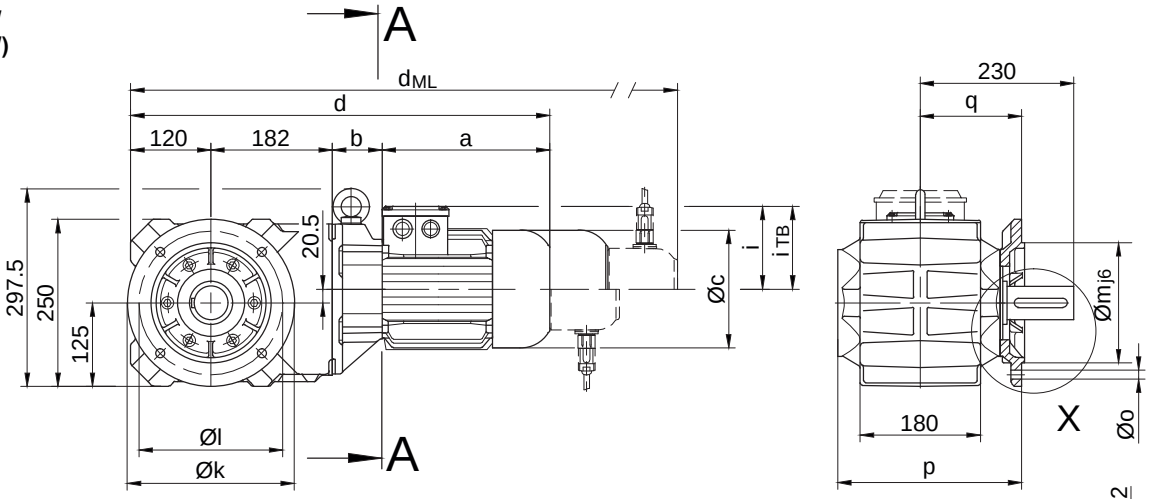


The actual gearbox design can vary from the geometry shown.

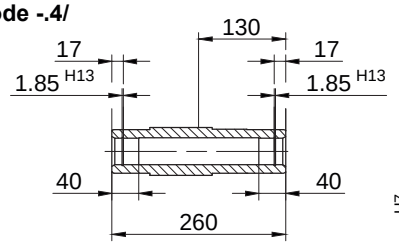
BK40 - BK40Z

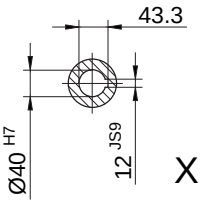
Flange with clearance holes at front

Code -3.V/
(Code 4.V/)

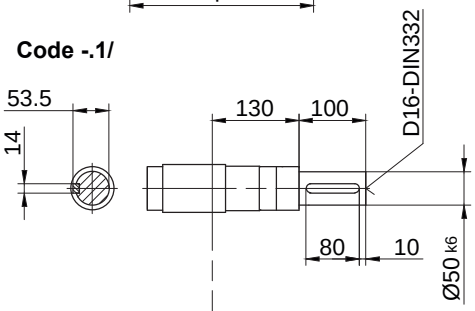


Code -.4/

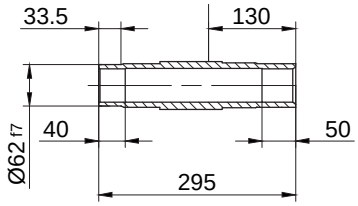


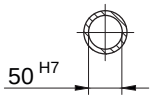


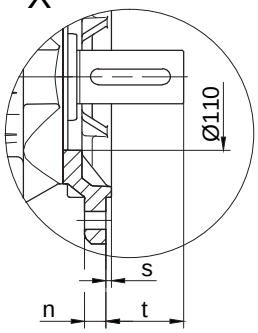
Code -.1/



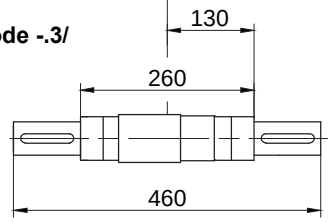
Code -.5/



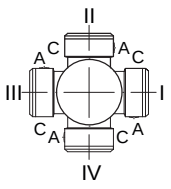




Code -.3/



Standard



A-A

Flange dimensions

BK40(Z)	k	l	m	n	o	p	q	s	t
Standard -.3V/	250	215	180	16	13.5	276	152	4	78
big -.4V/	300	265	230	20	13.5	282	158	4	72

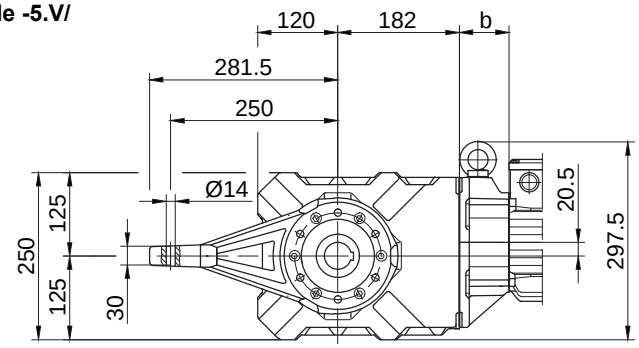
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK40Z-../D05..	170	138.5	123	610.5	100	117	652.5	713.5	755	-
BK40Z-../D06..	170	138.5	123	610.5	100	119	652.5	713.5	755	-
BK40Z-../D07..	190	138.5	123	630.5	100	119	672.5	733.5	775	-
BK40-../D..08..	200	60	156	562	115	136.5	628	669	735.5	628
BK40Z-../D..08..	200	142.5	156	644.5	115	136.5	710.5	751.5	818	710.5
BK40-../D..09..	251	74.5	181	627.5	124	158	720.5	734.5	825	720.5
BK40Z-../D..09..	251	157	181	710	124	158	803	817	907.5	803
BK40-../D..11..	319	81	228	702	181	181	800	809	904.5	800

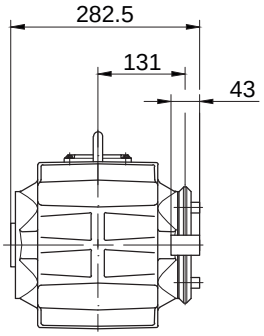
The actual gearbox design can vary from the geometry shown.

BK40 - BK40Z

Torque arm at front

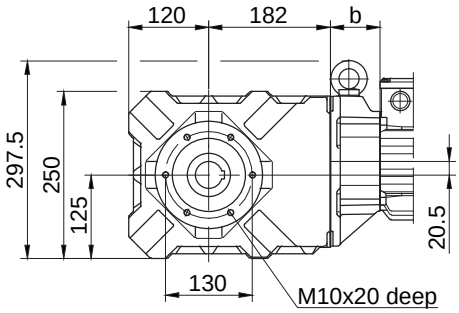
Code -5.V/

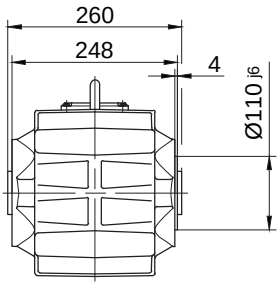




Flange with tapped holes at front

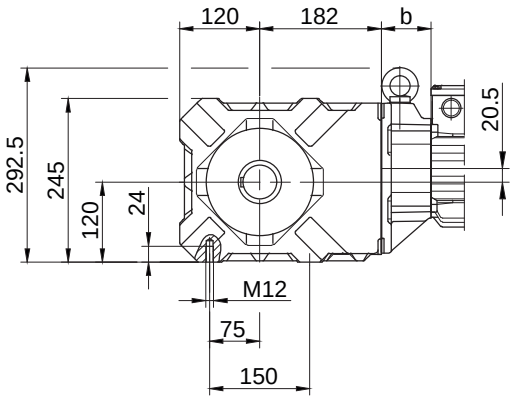
Code -7.V/

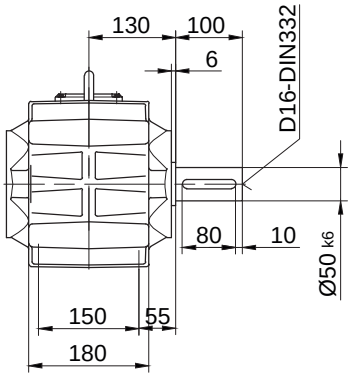




Foot with tapped holes at bottom

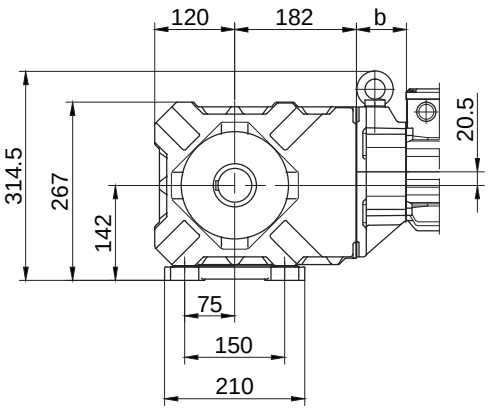
Code -6.U/

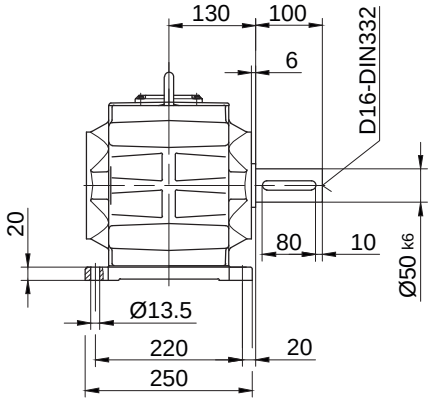




Foot with clearance holes at bottom

Code -1.U/





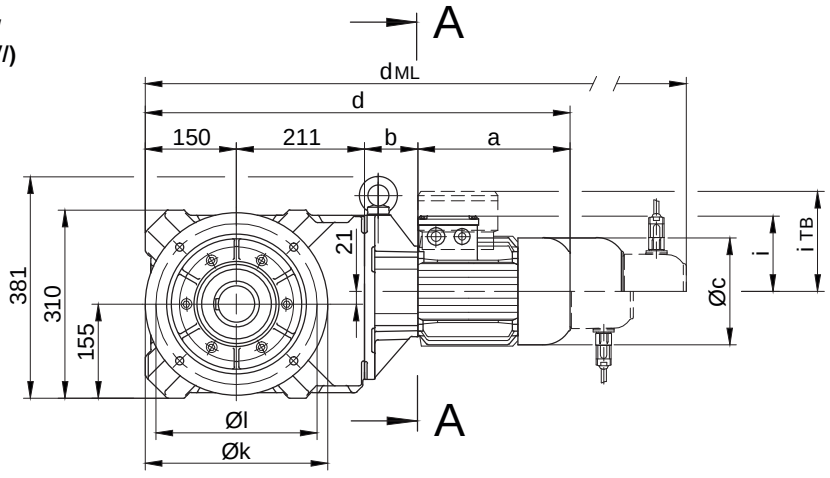
The actual gearbox design can vary from the geometry shown.

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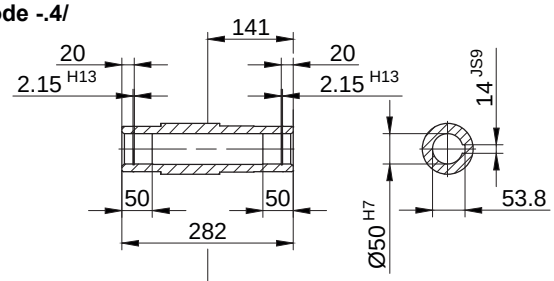
BK50 - BK50Z

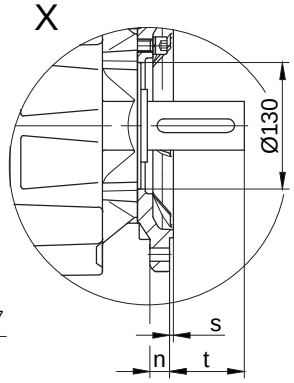
Flange with clearance holes at front

Code -3.V/
(Code -2.V/)

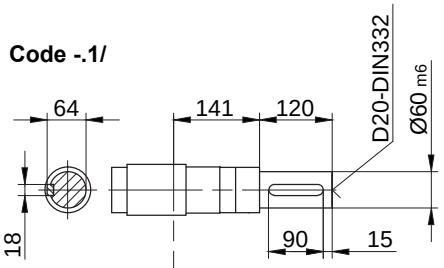


Code -.4/

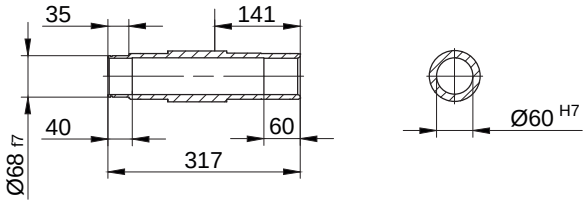




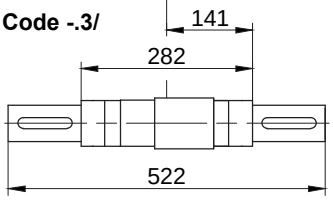
Code -.1/

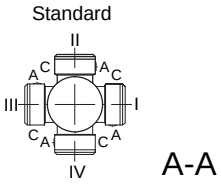


Code -.5/



Code -.3/





Flange dimensions

BK50(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	300	265	230	20	13.5	298.5	164	4	97
small -2.V/	250	215	180	16	13.5	296	161	4	100

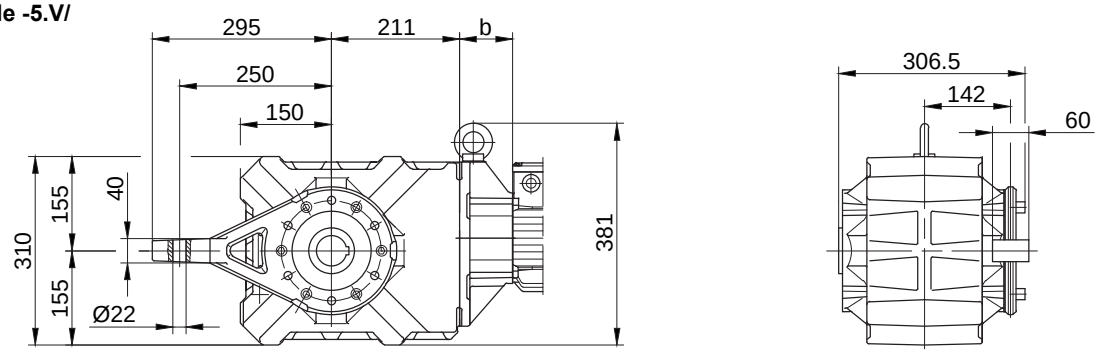
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E..ES../ZS..	G	E..ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK50Z-../D05..	170	155	123	686	100	117	728	789	830.5	-
BK50Z-../D06..	170	155	123	686	100	119	728	789	830.5	-
BK50Z-../D07..	190	155	123	706	100	119	748	809	850.5	-
BK50-../D..08..	200	73	156	634	115	136.5	700	741	807.5	700
BK50Z-../D..08..	200	159	156	720	115	136.5	786	827	893.5	786
BK50-../D..09..	251	87.5	181	699.5	124	158	792.5	806.5	897	792.5
BK50Z-../D..09..	251	173.5	181	785.5	124	158	878.5	892.5	983	878.5
BK50-../D..11..	319	94	228	774	181	181	872	881	976.5	872
BK50-../D..13..	393	107	258	861	218	218	972	968	1076.5	972
BK50-../D..16..	454.5	121	322	936.5	244	244	1080	1043.5	1184	1080
BK50-../D..18..	542	143	368	1046	288	288	1195.5	1153	1299.5	1195.5

The actual gearbox design can vary from the geometry shown.

BK50 - BK50Z

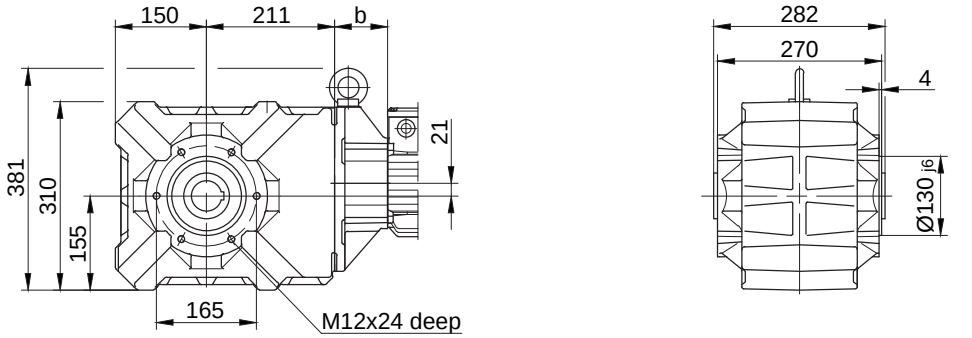
Torque arm at front

Code -5.V/



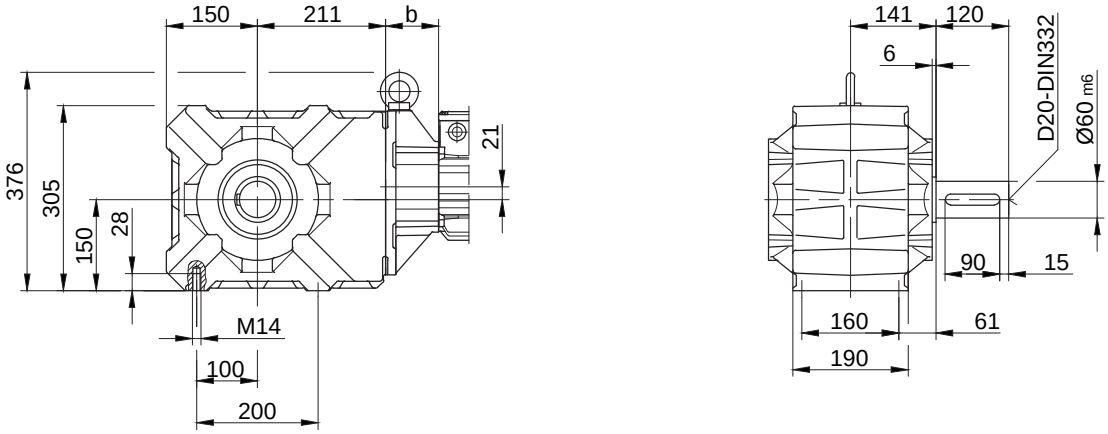
Flange with tapped holes at front

Code -7.V/



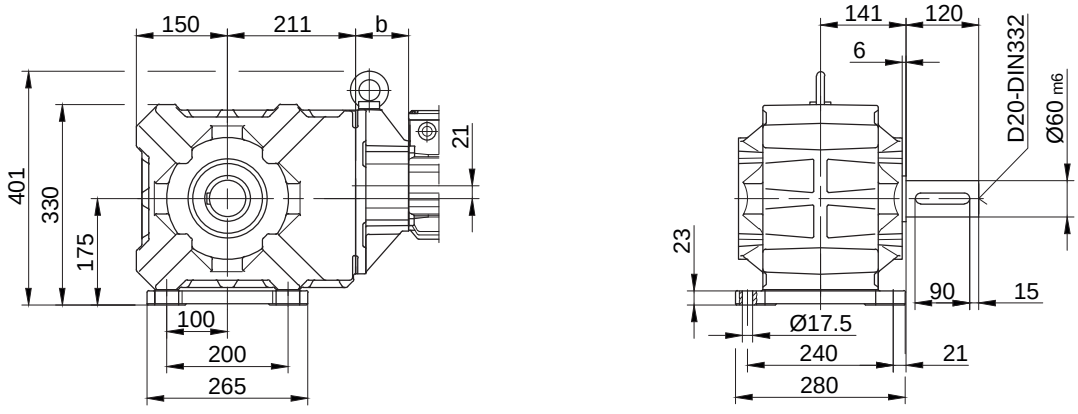
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

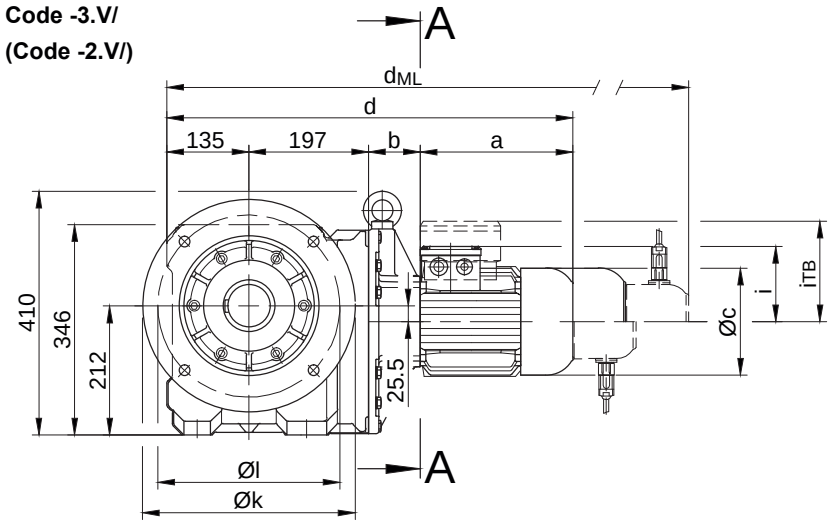


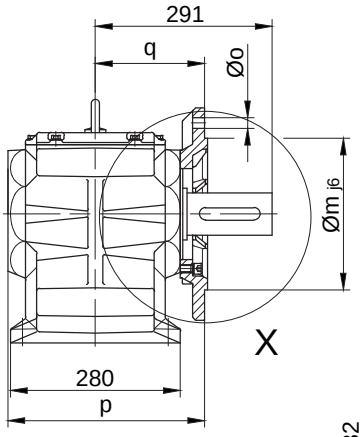
The actual gearbox design can vary from the geometry shown.

BK60 - BK60Z

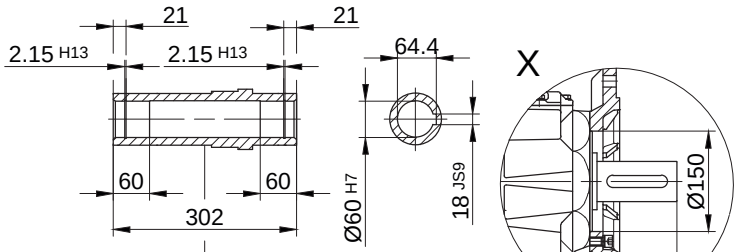
Flange with clearance holes at front

Code -3.V/
(Code -2.V/)

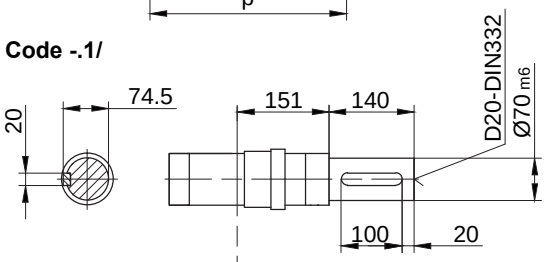




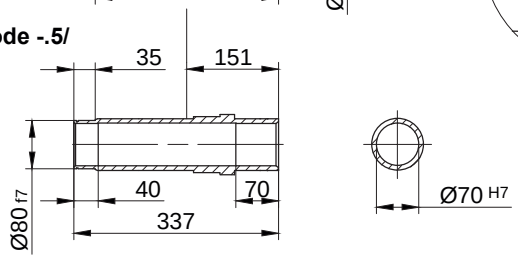
Code -.4/



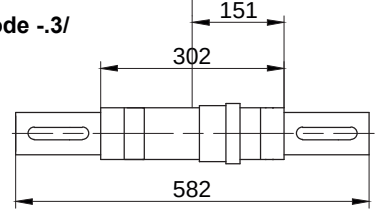
Code -.1/

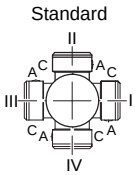


Code -.5/



Code -.3/





A-A

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Flange dimensions

BK60(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	350	300	250_{h6}	20	17.5	324	180	5	111
small -2.V/	300	265	230_{j6}	20	13.5	332	188	4	103

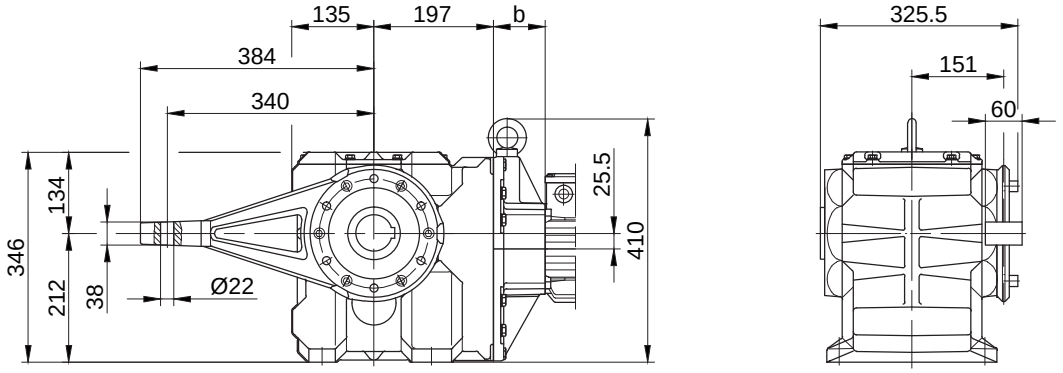
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK60Z-../D..08..	200	181	156	713	115	136.5	779	820	886.5	779
BK60-../D..09..	251	85.5	181	668.5	124	158	761.5	775.5	866	761.5
BK60Z-../D..09..	251	195.5	181	778.5	124	158	871.5	885.5	976	871.5
BK60-../D..11..	319	92	228	743	181	181	841	850	945.5	841
BK60Z-../D..11..	319	202	228	853	181	181	951	960	1055.5	951
BK60-../D..13..	393	105	258	830	218	218	941	937	1045.5	941
BK60-../D..16..	454.5	119	322	905.5	244	244	1049	1012.5	1153	1049
BK60-../D..18..	542	141	368	786.5	288	288	930	893.5	1034	930

The actual gearbox design can vary from the geometry shown.

BK60 - BK60Z

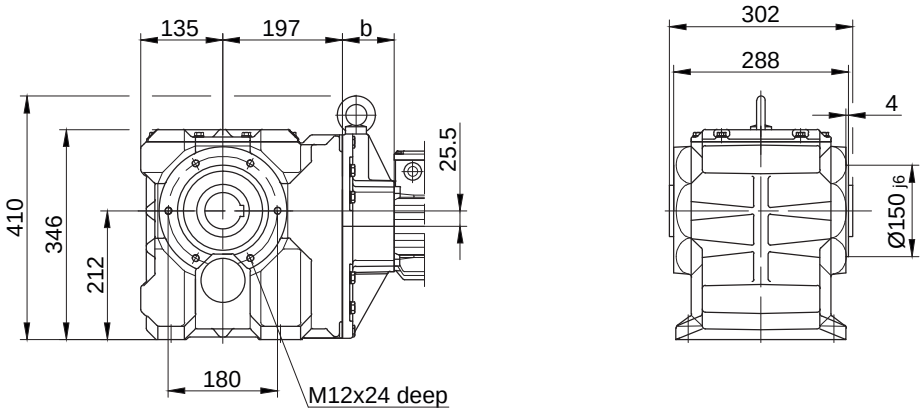
Torque arm at front

Code -5.V/



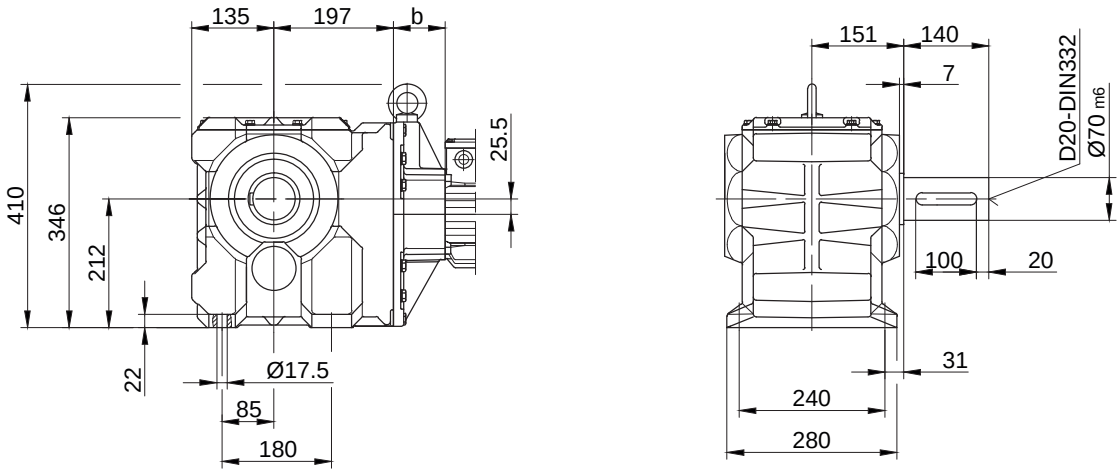
Flange with tapped holes at front

Code -7.V/



Foot with clearance holes at bottom

Code -1.U/

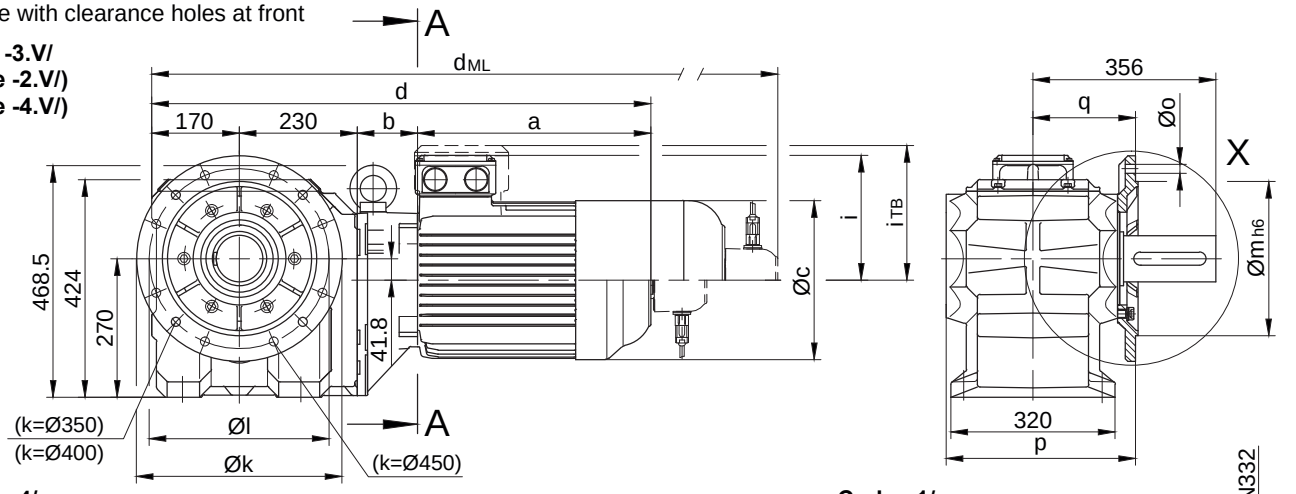


The actual gearbox design can vary from the geometry shown.

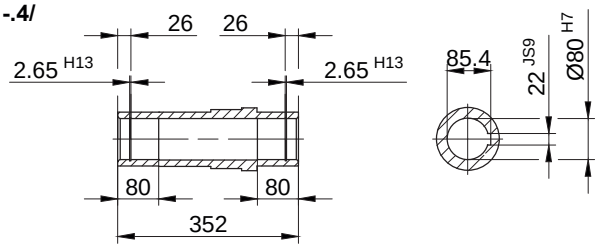
BK70 - BK70Z

Flange with clearance holes at front

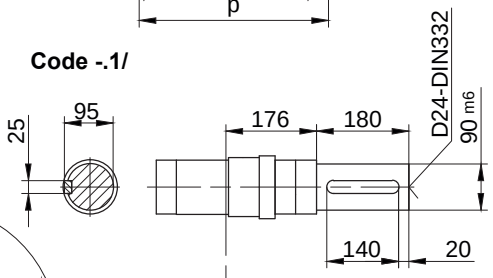
Code -3.V/
(Code -2.V/)
(Code -4.V/)



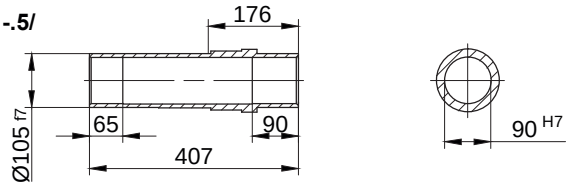
Code -.4/

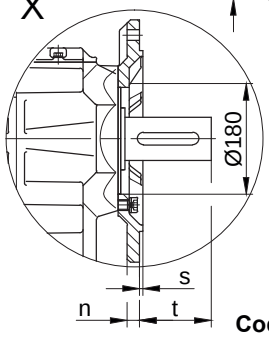


Code -.1/

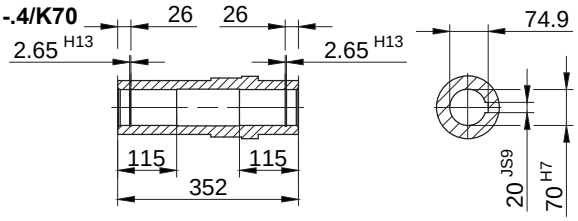


Code -.5/

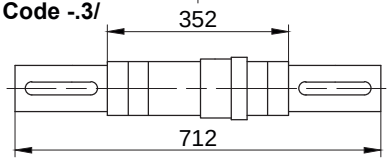


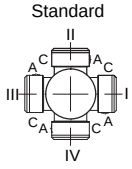


Code -.4/K70



Code -.3/





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Flange dimensions

BK70(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	400	350	300	20	4 x Ø17.5	369	200	5	156
small -2.V/	350	300	250	20	4 x Ø17.5	369	200	5	156
big -4.V/	450	400	350	22	8 x Ø17.5	379	210	5	146

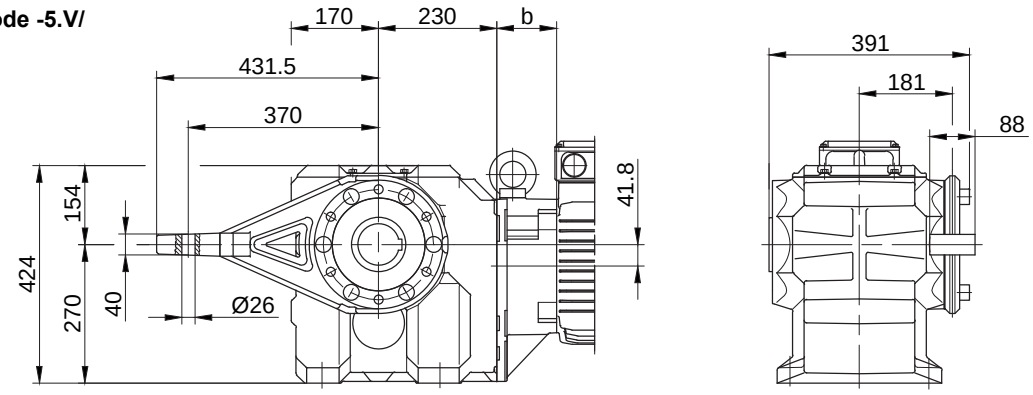
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK70Z-../D..08..	200	202	156	802	115	136.5	868	909	975.5	868
BK70-../D..09..	251	83.5	181	734.5	124	158	827.5	841.5	932	827.5
BK70Z-../D..09..	251	216.5	181	867.5	124	158	960.5	974.5	1065	960.5
BK70-../D..11..	319	90	228	809	181	181	907	916	1011.5	907
BK70Z-../D..11..	319	223	228	942	181	181	1040	1049	1144.5	1040
BK70-../D..13..	393	103	258	896	218	218	1007	1003	1111.5	1007
BK70Z-../D..13..	393	236	258	1029	218	218	1140	1136	1244.5	1140
BK70-../D..16..	454.5	117	322	971.5	244	244	1115	1078.5	1219	1115
BK70Z-../D..16..	454.5	250	322	1104.5	244	244	1248	1211.5	1352	1248
BK70-../D..18..	542	139	368	1081	288	288	1230.5	1188	1334.5	1230.5
BK70Z-../D..18..	542	272	368	1214	288	288	1363.5	1321	1467.5	1363.5

The actual gearbox design can vary from the geometry shown.

BK70 - BK70Z

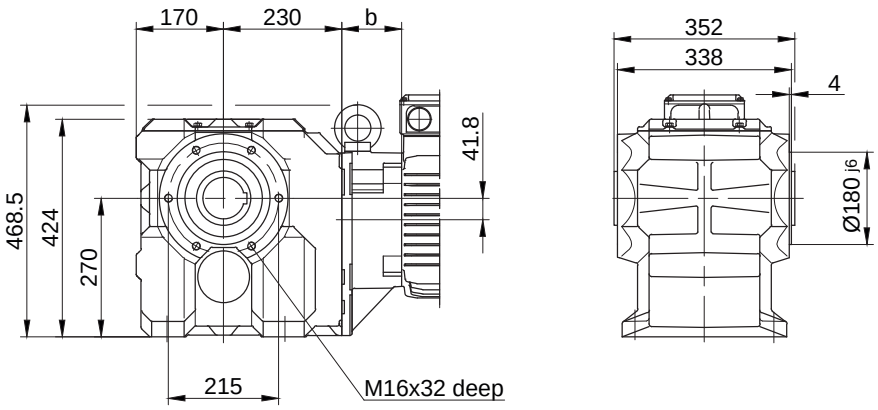
Torque arm at front

Code -5.V/



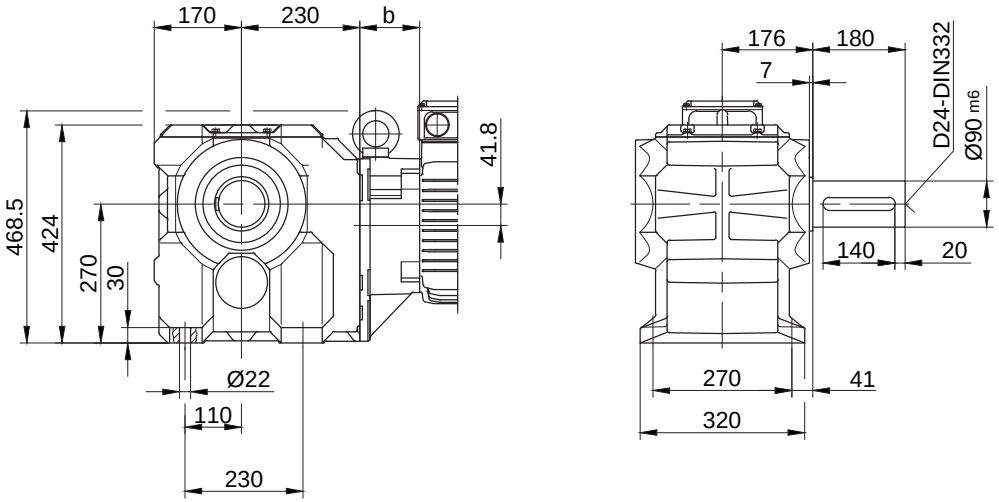
Flange with tapped holes at front

Code -7.V/



Foot with clearance holes at bottom

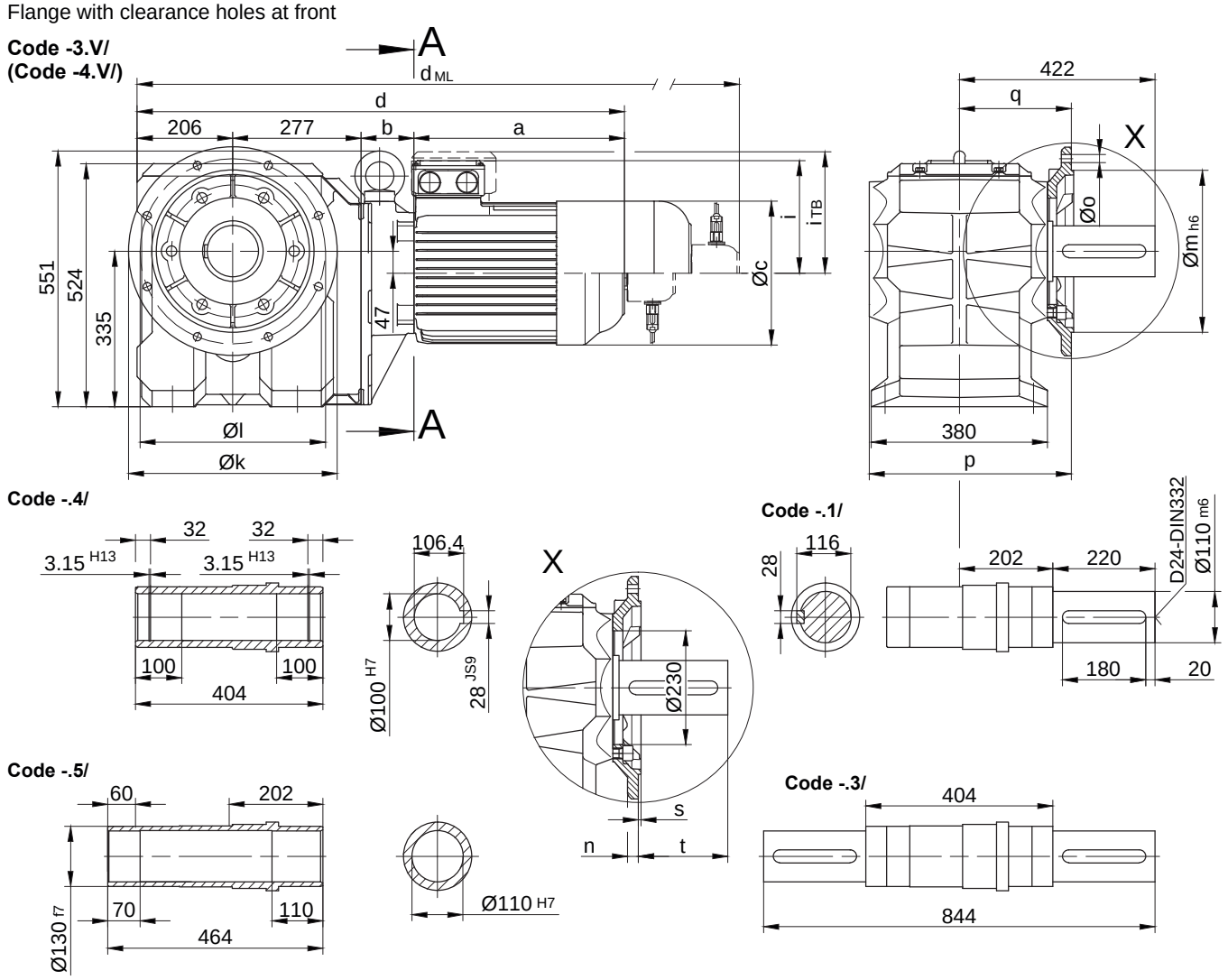
Code -1.U/



The actual gearbox design can vary from the geometry shown.

BK80 - BK80Z

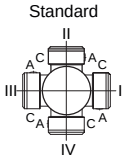
Flange with clearance holes at front



Flange dimensions

BK80(Z)	k	l	m	n	o	p	q	s	t
standard -3.V/	450	400	350	22	17.5	439	245	5	177
big -4.V/	550	500	450	22	17.5	444	250	5	172

Standard



A-A

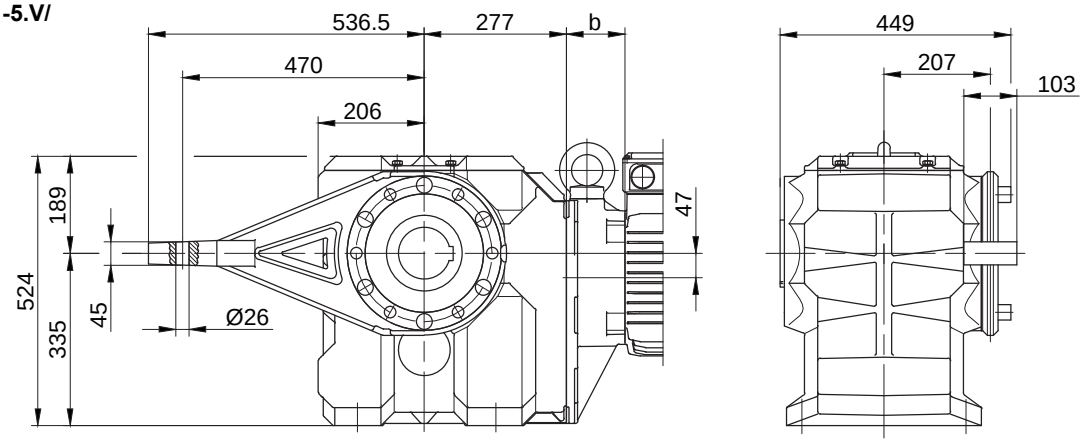
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK80Z-../D..09..	251	252.5	181	986.5	124	158	1079.5	1093.5	1184	1079.5
BK80-../D..11..	319	87	228	889	181	182	987	996	1091.5	987
BK80Z-../D..11..	319	259	228	1061	181	182	1159	1168	1263.5	1159
BK80-../D..13..	393	100	258	976	218	218	1087	1083	1191.5	1087
BK80Z-../D..13..	393	272	258	1148	218	218	1259	1255	1363.5	1259
BK80-../D..16..	454.5	114	322	1051.5	244	244	1195	1158.5	1296	1195
BK80Z-../D..16..	454.5	286	322	1223.5	244	244	1367	1330.5	1471	1637
BK80-../D..18..	542	136	368	1161	288	288	1310.5	1268	1414.5	1310.5
BK80Z-../D..18..	542	308	368	1333	288	288	1482.5	1440	1586.5	1482.5

The actual gearbox design can vary from the geometry shown.

BK80 - BK80Z

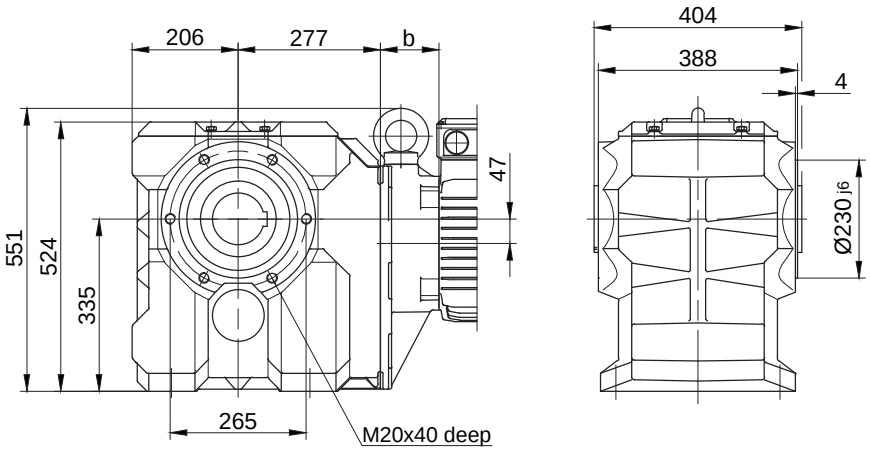
Torque arm at front

Code -5.V/



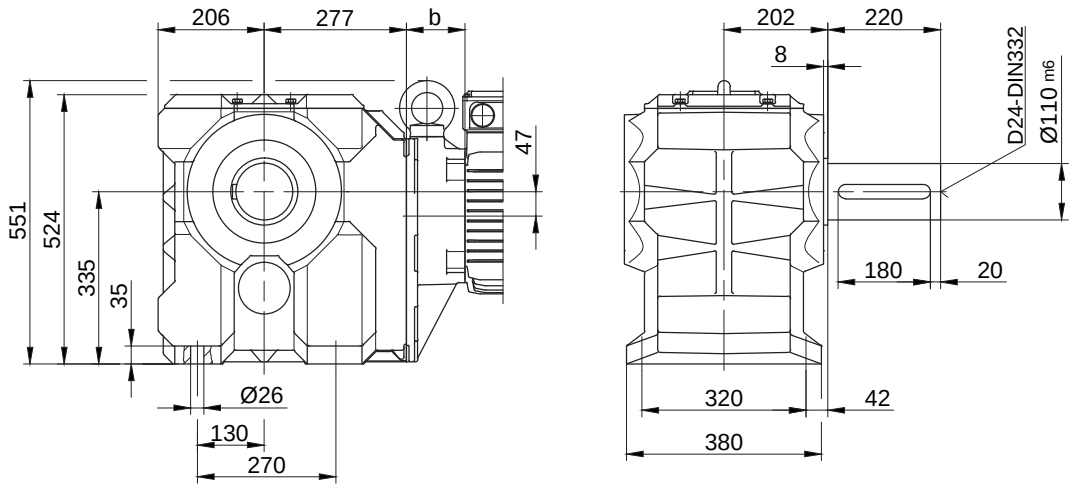
Flange with tapped holes at front

Code -7.V/



Foot with clearance holes at bottom

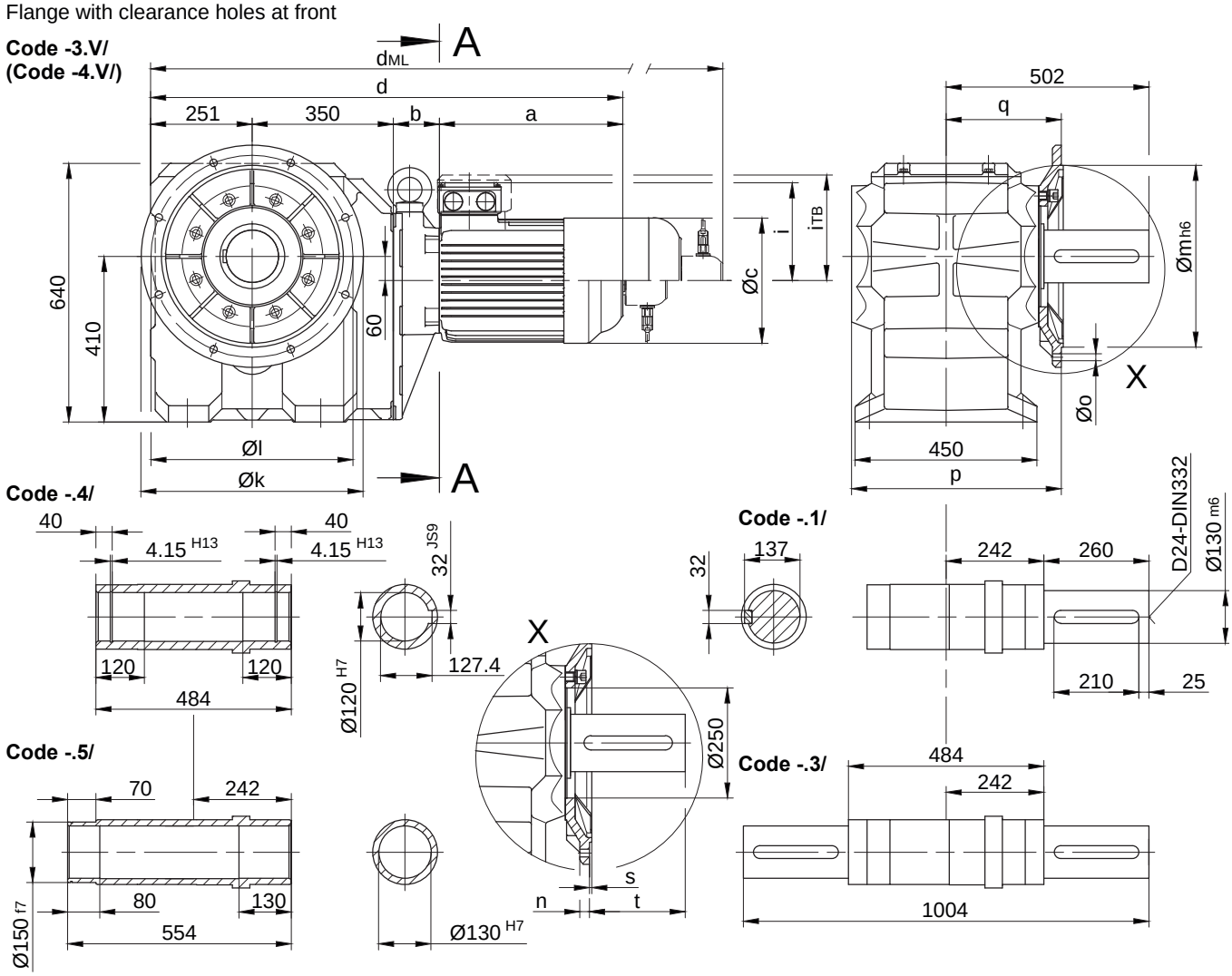
Code -1.U/



The actual gearbox design can vary from the geometry shown.

BK90 - BK90Z

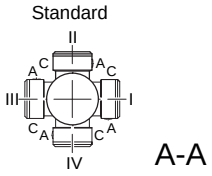
Flange with clearance holes at front



12

Flange dimensions

BK90(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	550	500	450	22	17.5	519	285	5	217
big -4.V/	660	600	550	25	22	513	279	6	223



A-A

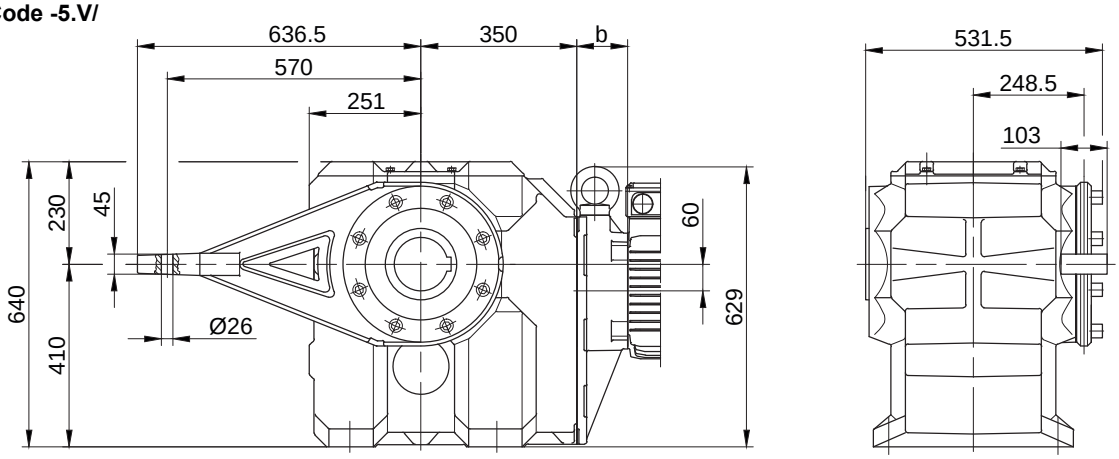
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							ES.../ZS..	G	ES.../ZS..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK90Z-../D..09..	251	267	181	1119	124	158	1212	1226	1316.5	1212
BK90Z-../D..11..	319	273.5	228	1193.5	181	181	1291.5	1300.5	1396	1291.5
BK90-../D..13..	393	100	258	1020	218	218	1118	1127	1222.5	1118
BK90Z-../D..13..	393	286.5	258	1280.5	218	218	1391.5	1387.5	1496	1391.5
BK90-../D..16..	454.5	114	322	1169.5	244	244	1313	1276.5	1417	1313
BK90Z-../D..16..	454.5	300.5	322	1356	244	244	1499.5	1463	1603.5	1499.5
BK90-../D..18..	542	136	368	1279	288	288	1428.5	1386	1532.5	1428.5
BK90Z-../D..18..	542	322.5	368	1465.5	288	288	1615	1572.5	1719	1615

The actual gearbox design can vary from the geometry shown.

BK90 - BK90Z

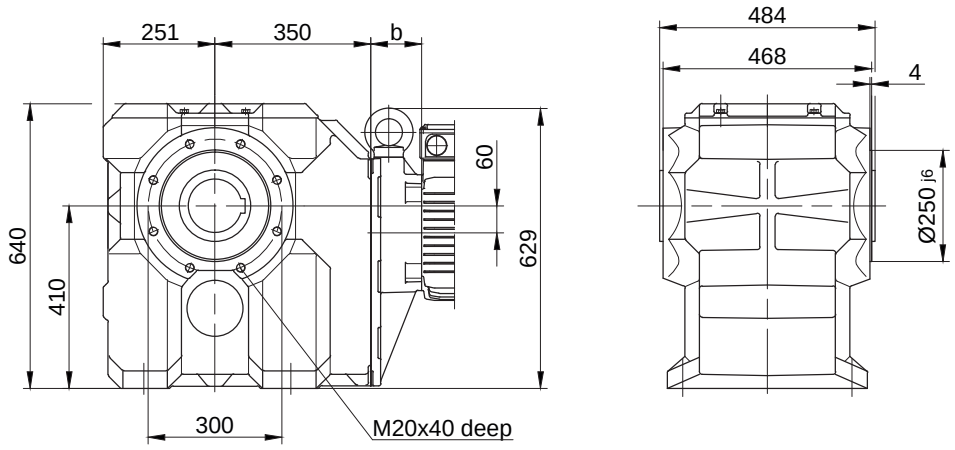
Torque arm at front

Code -5.V/



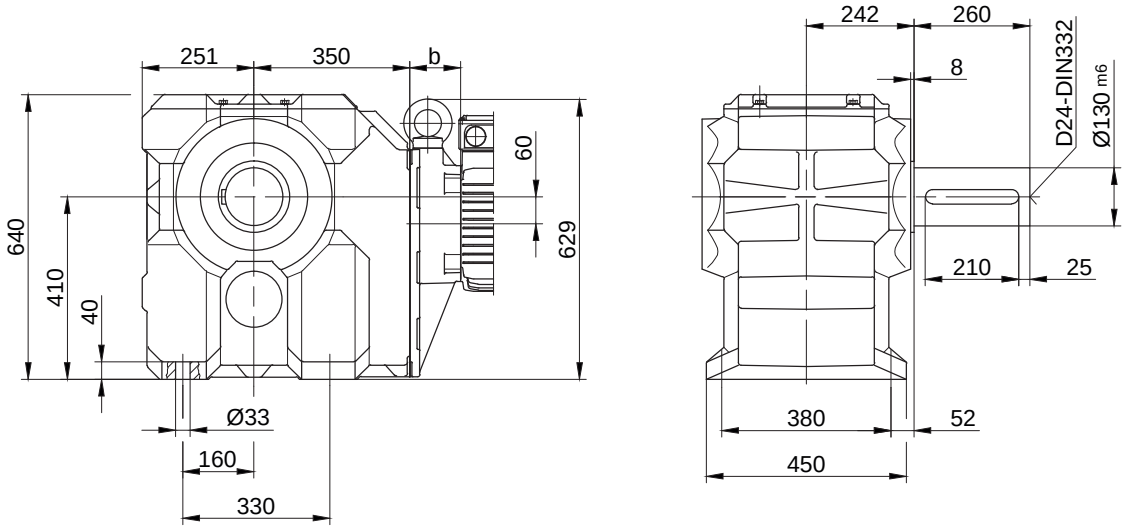
Flange with tapped holes at front

Code -7.V/



Foot with clearance holes at bottom

Code -1.U/

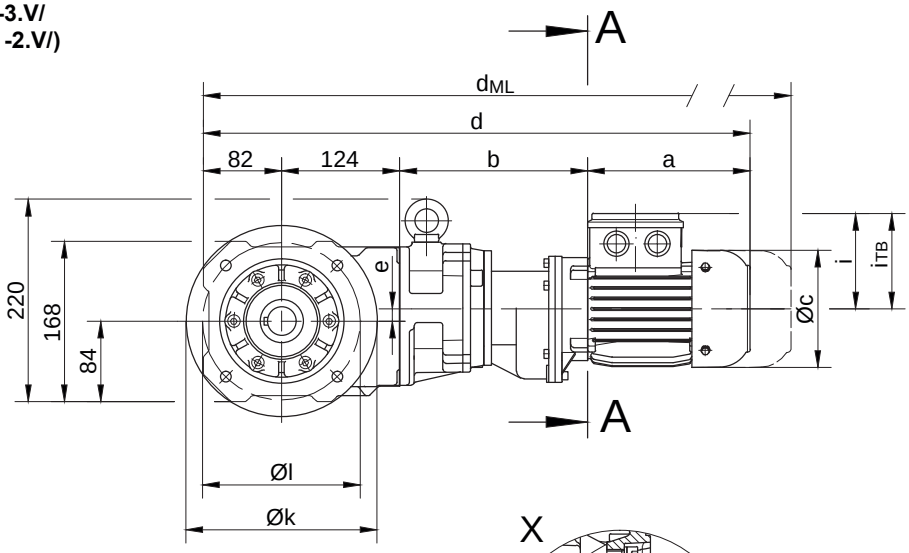


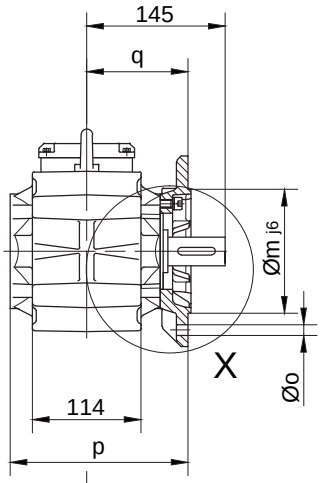
The actual gearbox design can vary from the geometry shown.

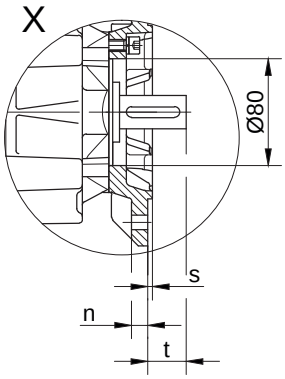
BK10G06

Flange with clearance holes at front

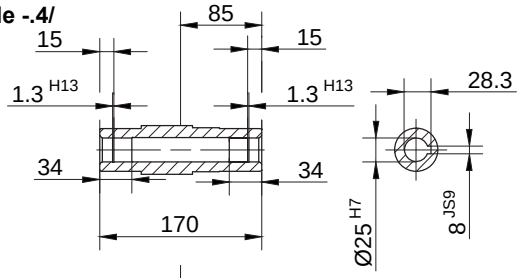
Code -3.V/
(Code -2.V/)



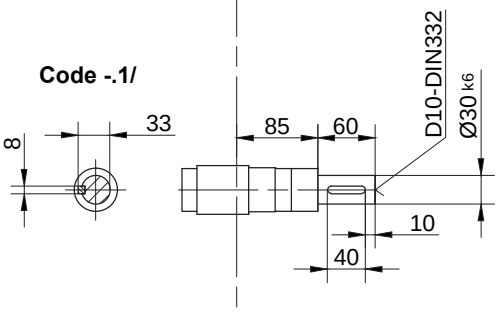




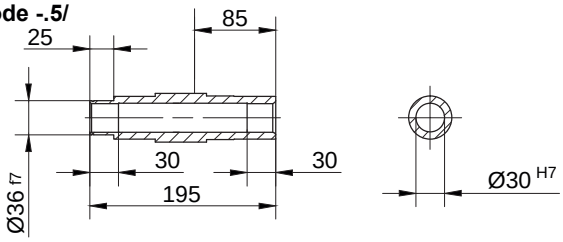
Code -.4/



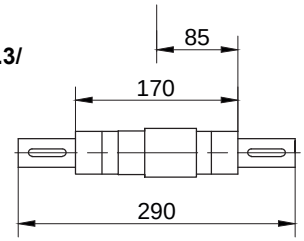
Code -.1/



Code -.5/



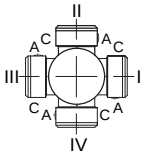
Code -.3/



Flange dimensions

BK10G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	200	165	130	12	11	186.5	106	3.5	39
small -2.V/	160	130	110	10	9	179.5	99	3.5	46

Standard



A-A

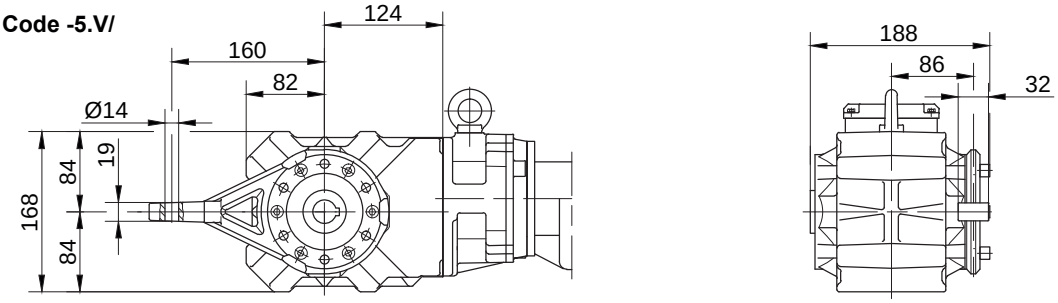
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK10G06-../D04..	143	195	111	544	13	90	112	587.5	606.5	649.5	-
BK10G06-../D05..	170	197	123	573	13	100	117	615	676	715.5	-
BK10G06-../D06..	170	197	123	573	13	100	119	615	676	715.5	-
BK10G06-../D07..	190	197	123	593	13	100	119	635	696	737.5	-
BK10G06-../D..08..	200	241	156	647	13	115	136.5	713	754	820.5	713

The actual gearbox design can vary from the geometry shown.

BK10G06

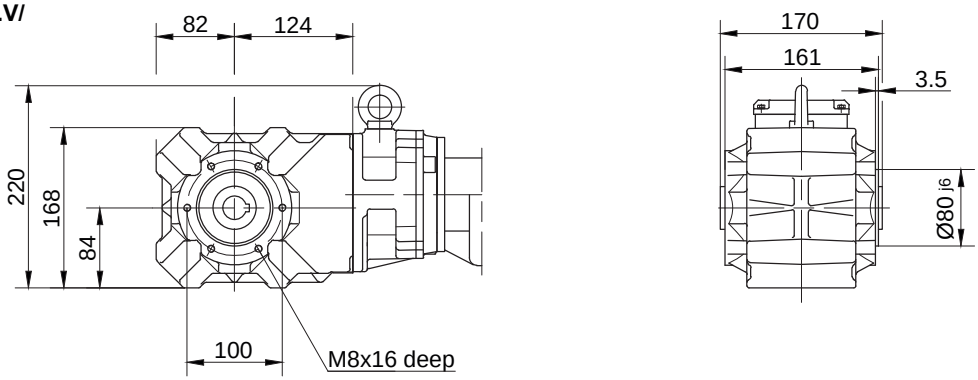
Torque arm at front

Code -5.V/



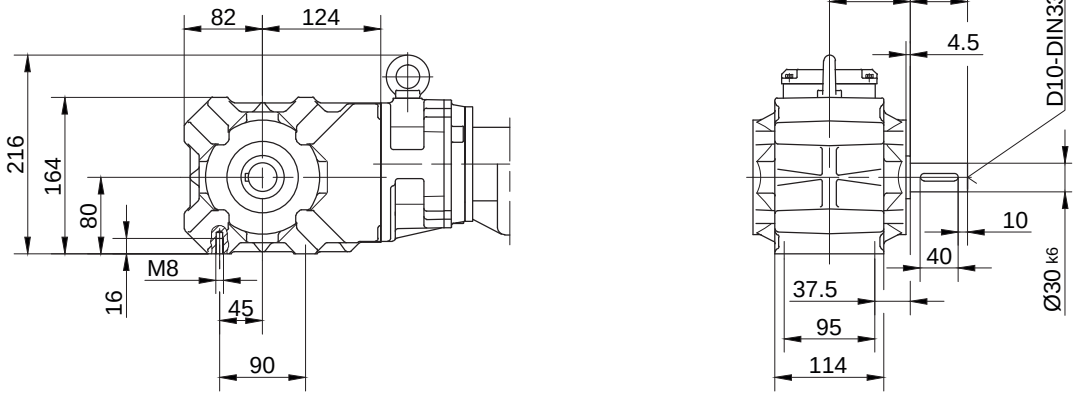
Flange with tapped holes at front

Code -7.V/



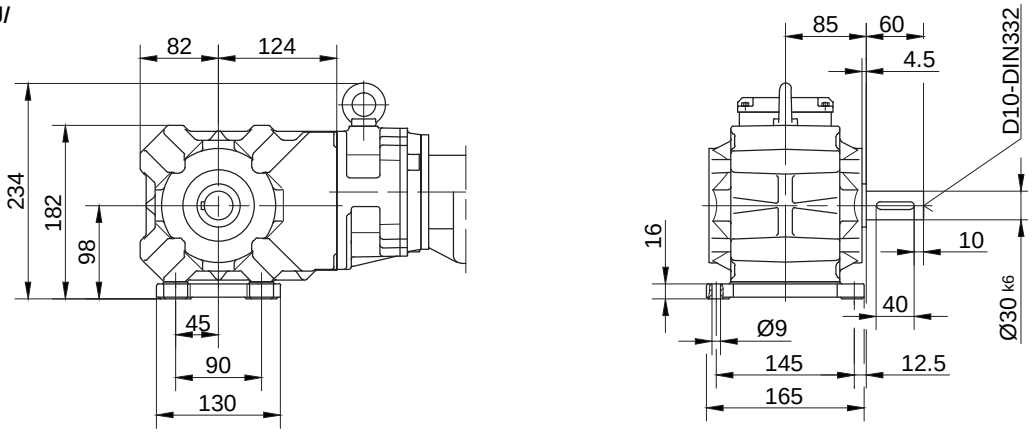
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

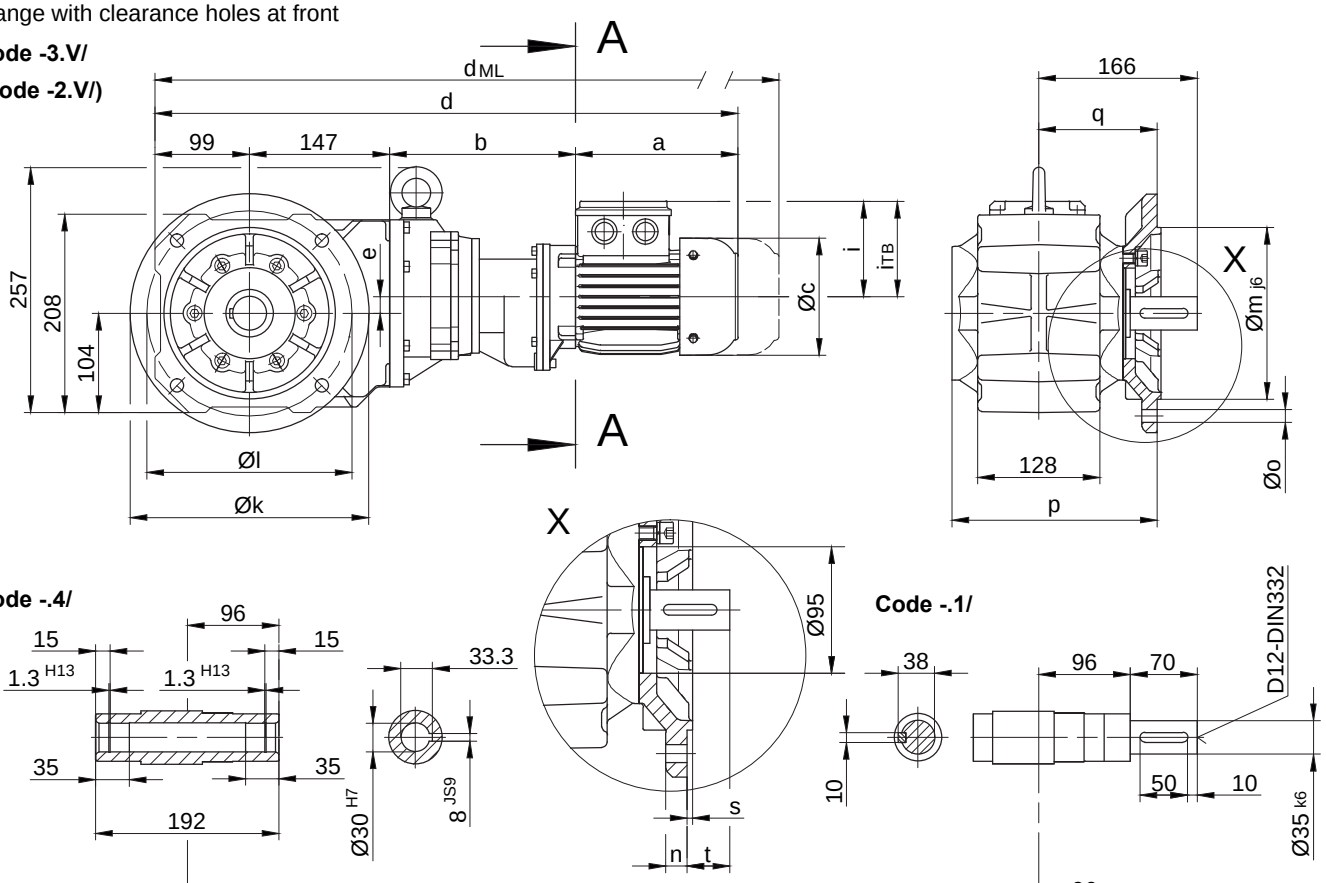


The actual gearbox design can vary from the geometry shown.

BK20G06

Flange with clearance holes at front

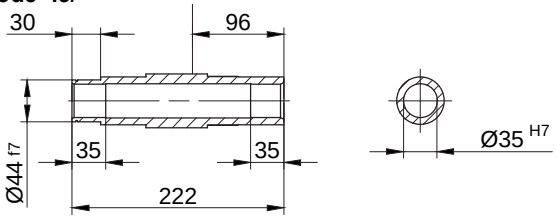
Code -3.V/
(Code -2.V/)



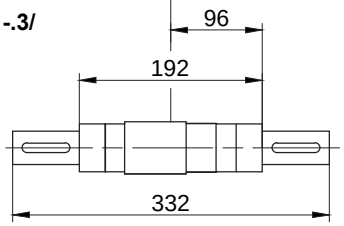
Code -.4/

Code -.1/

Code -.5/



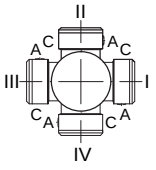
Code -.3/



Flange dimensions

BK20G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	215.5	124	4	42
small -2.V/	200	165	130	12	11	206.5	115	3.5	51

Standard



A-A

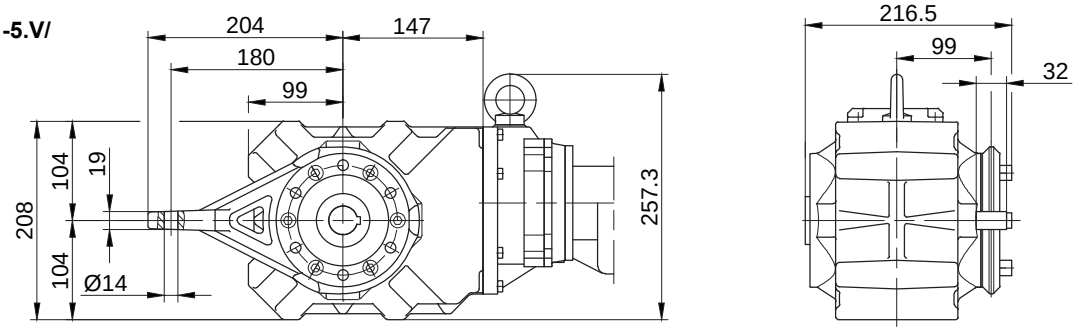
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK20G06-../D04..	143	193	111	582	17	90	112	625.5	644.5	687.5	-
BK20G06-../D05..	170	195	123	611	17	100	117	653	714	755.5	-
BK20G06-../D06..	170	195	123	611	17	100	119	653	714	755.5	-
BK20G06-../D07..	190	195	123	631	17	100	119	673	734	775.5	-
BK20G06-../D..08..	200	239	156	685	17	115	136.5	751	792	858.5	751

The actual gearbox design can vary from the geometry shown.

BK20G06

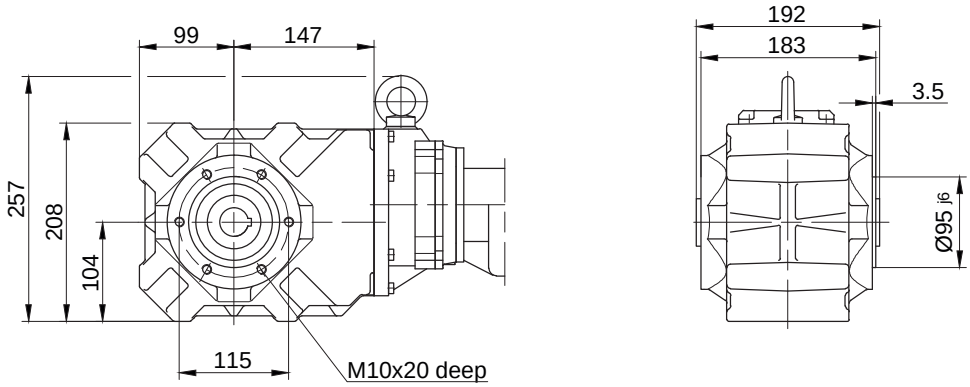
Torque arm at front

Code -5.V/



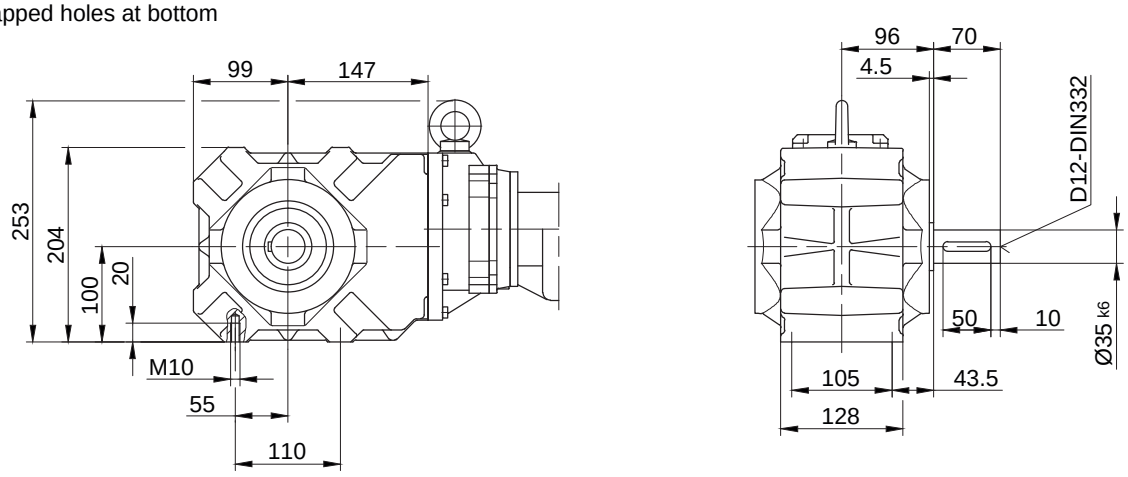
Flange with tapped holes at front

Code -7.V/



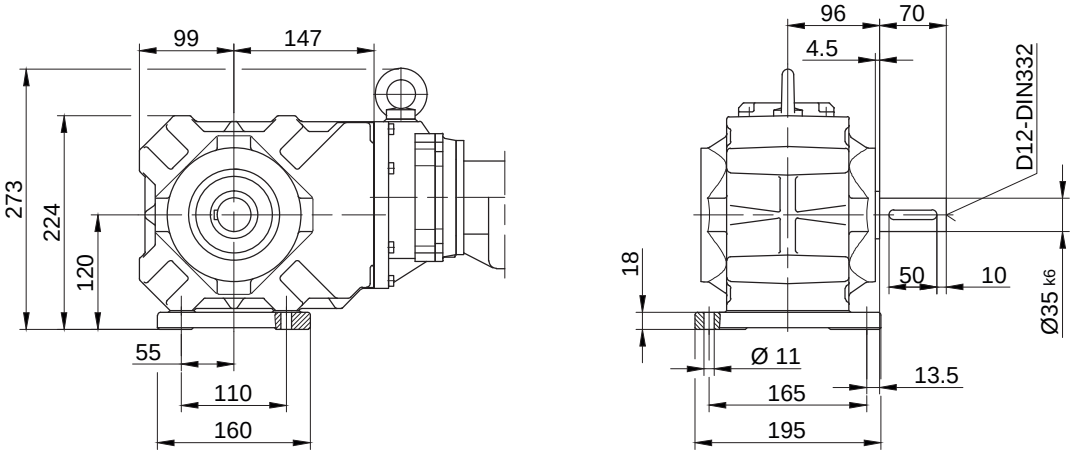
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/



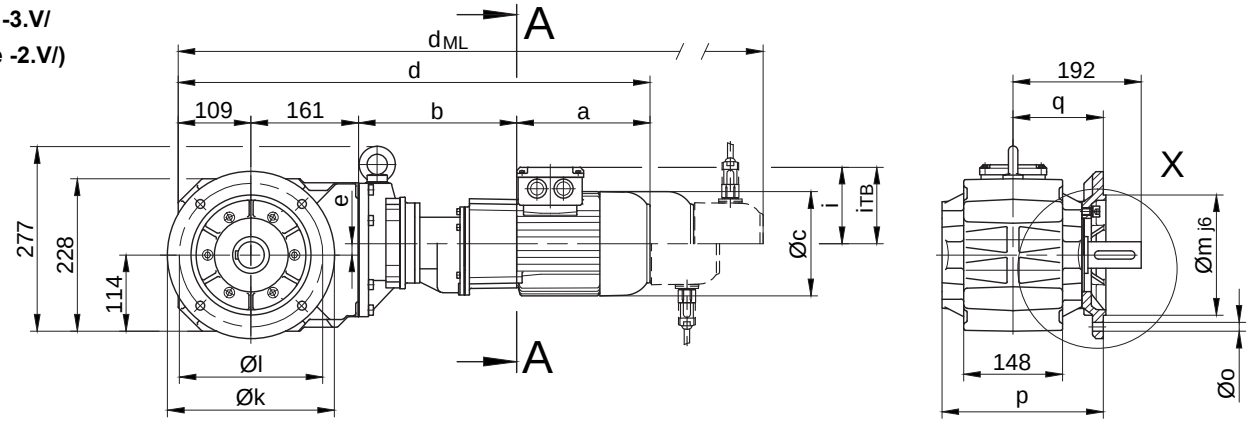
The actual gearbox design can vary from the geometry shown.

BK30G06

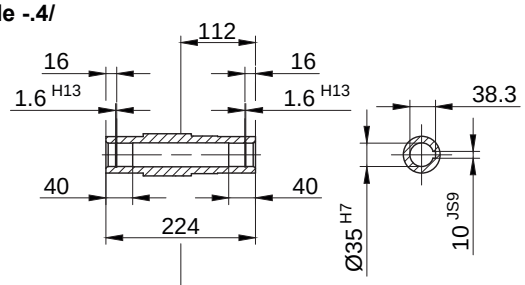
Flange with clearance holes at front

Code -3.V/

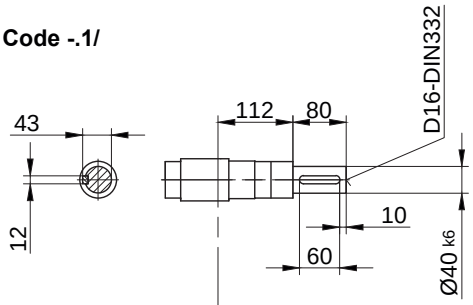
(Code -2.V/)



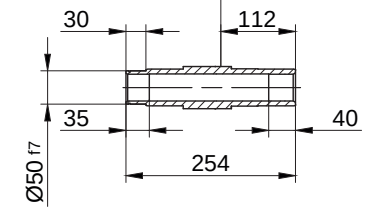
Code -.4/

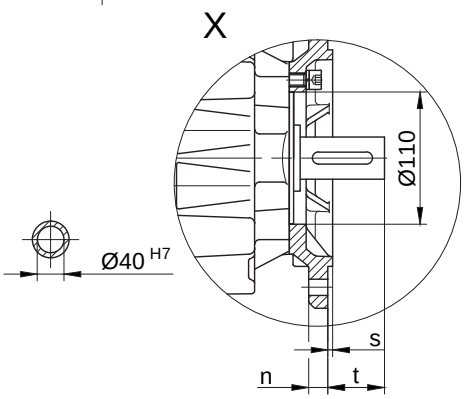


Code -.1/

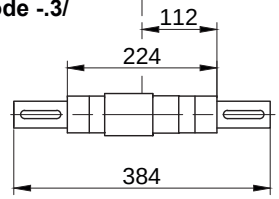


Code -.5/

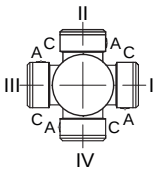




Code -.3/



Standard



A-A

Flange dimensions

BK30G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	242	135	4	57
small -2.V/	200	165	130	12	11	239	132	3.5	60

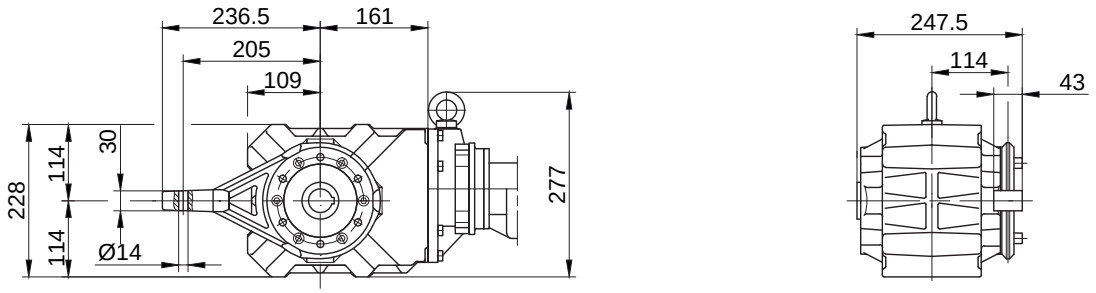
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK30G06-../D04..	143	191	111	604	17	90	112	647.5	666.5	709.5	-
BK30G06-../D05..	170	193	123	633	17	100	117	675	736	777.5	-
BK30G06-../D06..	170	193	123	633	17	100	119	675	736	777.5	-
BK30G06-../D07..	190	193	123	653	17	100	119	695	756	797.5	-
BK30G06-../D..08..	200	237	156	707	17	115	136.5	773	814	880.5	773

The actual gearbox design can vary from the geometry shown.

BK30G06

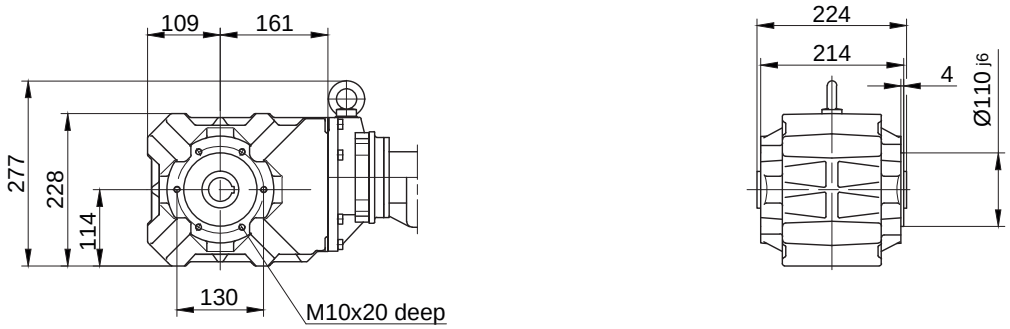
Torque arm at front

Code -5.V/



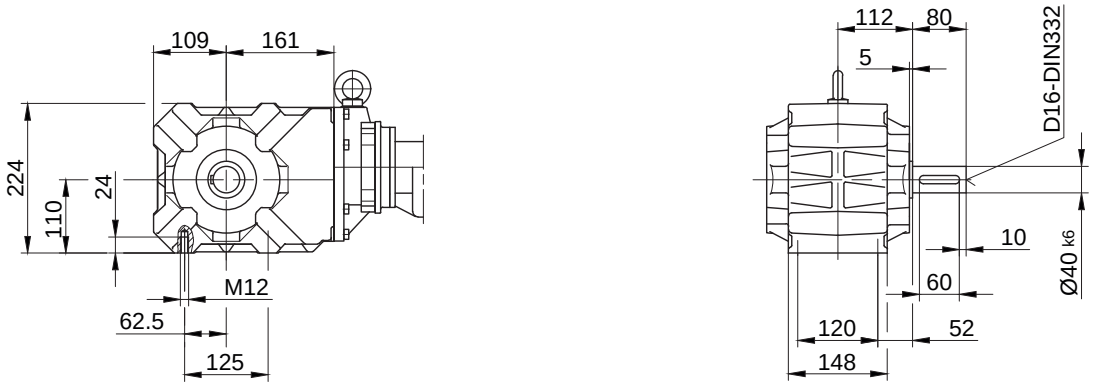
Flange with tapped holes at front

Code -7.V/



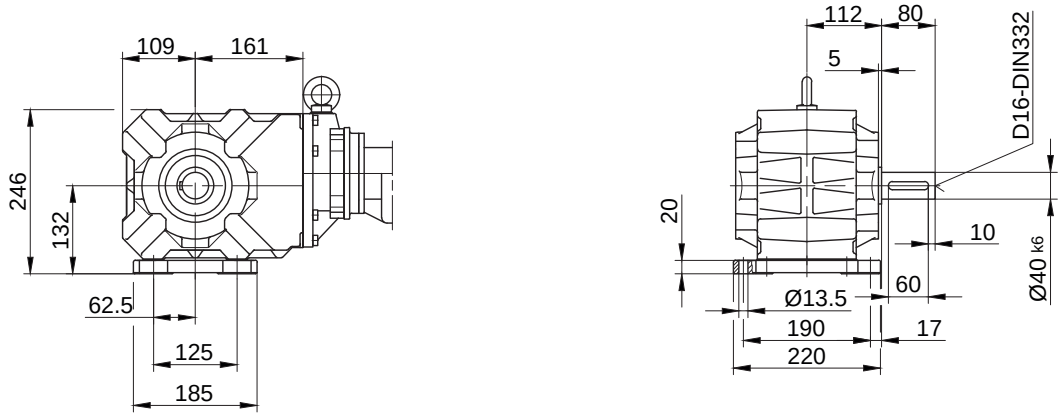
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

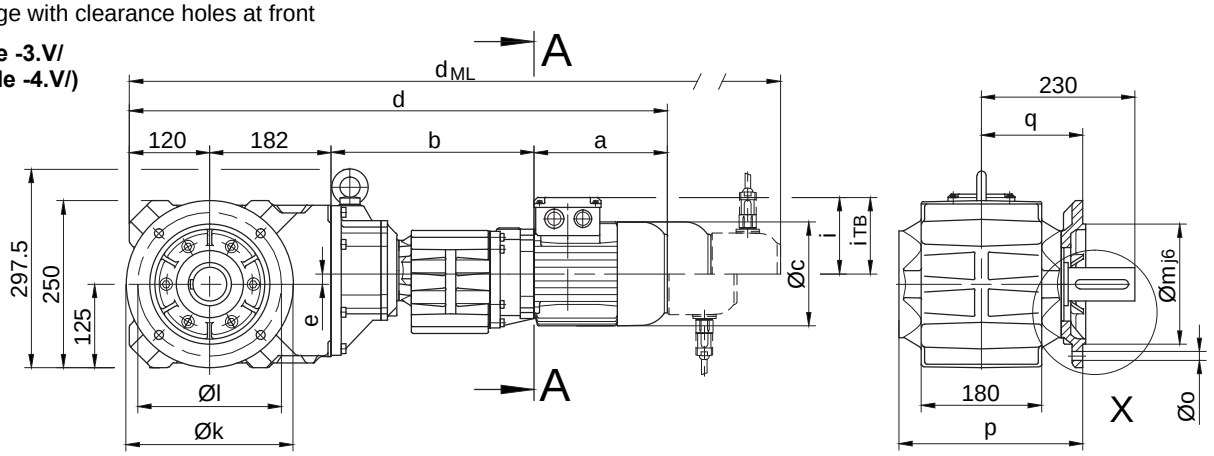


The actual gearbox design can vary from the geometry shown.

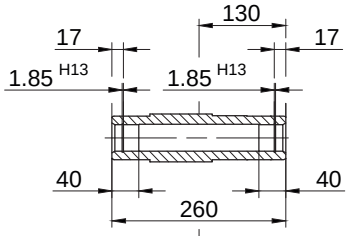
BK40G10

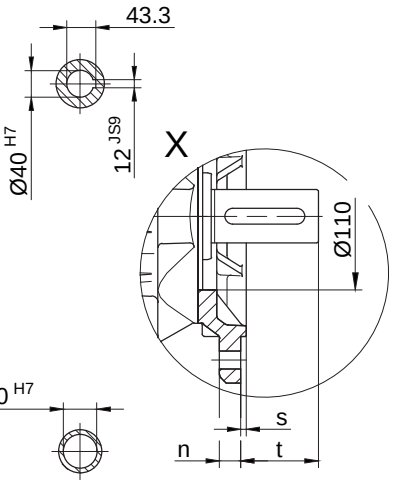
Flange with clearance holes at front

Code -3.V/
(Code -4.V/)

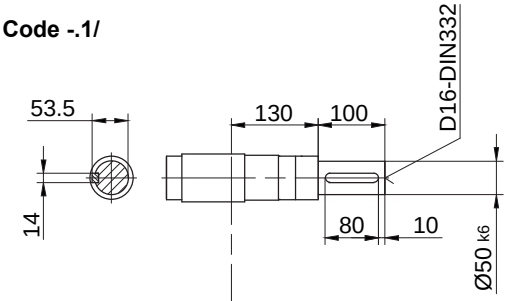


Code -.4/

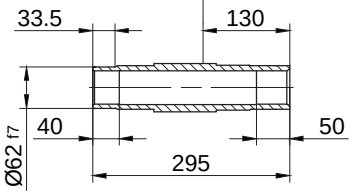




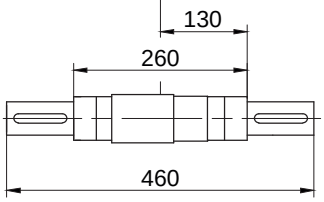
Code -.1/



Code -.5/



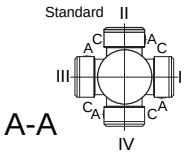
Code -.3/



12

Flange dimensions

BK40G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	276	152	4	78
big -4.V/	300	265	230	20	13.5	282	158	4	72



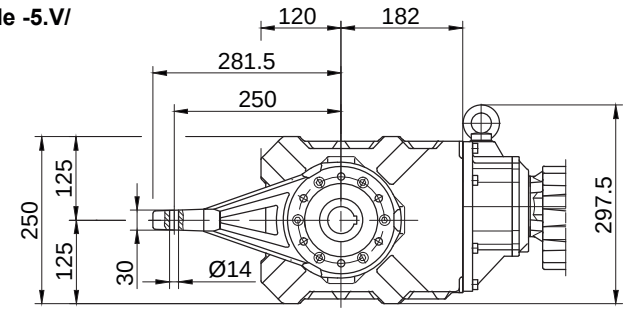
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK40G10-../D05..	170	300	123	772	15.5	100	117	814	875	916.5	-
BK40G10-../D06..	170	300	123	772	15.5	100	119	814	875	916.5	-
BK40G10-../D07..	190	300	123	792	15.5	100	119	834	895	936.5	-
BK40G10-../D..08..	200	304	156	806	15.5	115	136.5	872	913	979.5	872
BK40G10-../D..09..	251	318.5	181	871.5	15.5	124	158	964.5	978.5	1069	964.5

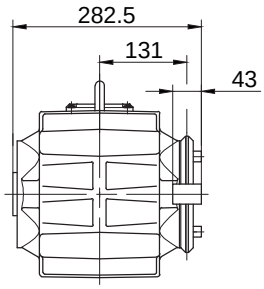
The actual gearbox design can vary from the geometry shown.

BK40G10

Torque arm at front

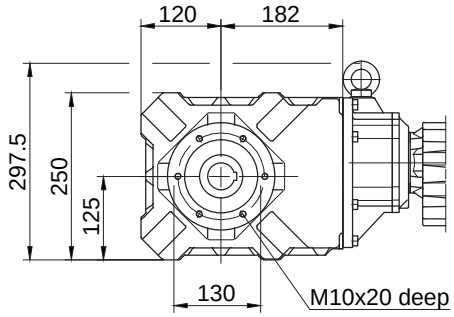
Code -5.V/

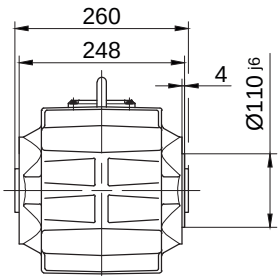




Flange with tapped holes at front

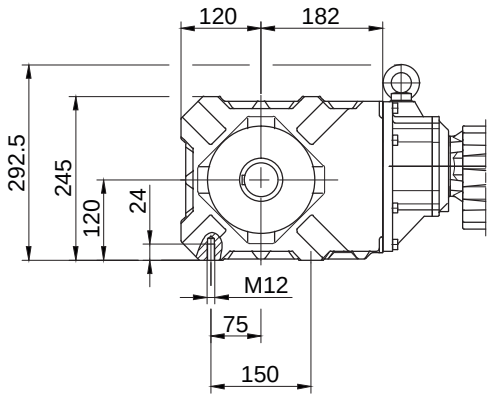
Code -7.V/

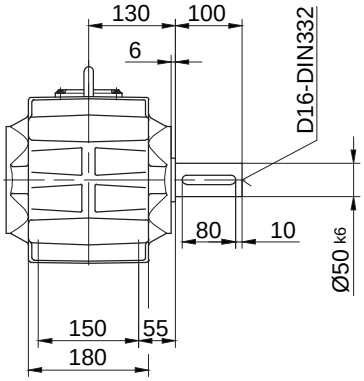




Foot with tapped holes at bottom

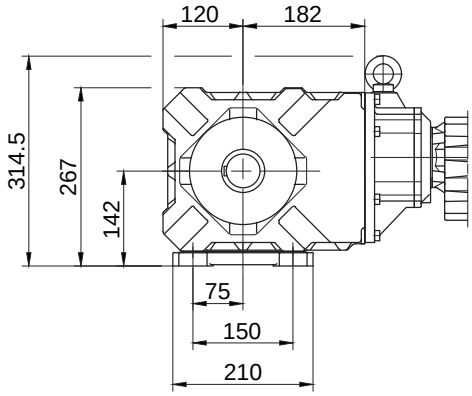
Code -6.U/

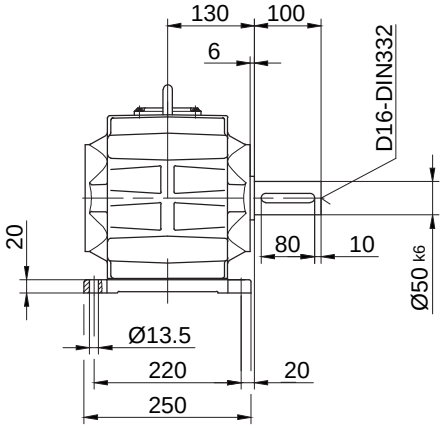




Foot with clearance holes at bottom

Code -1.U/



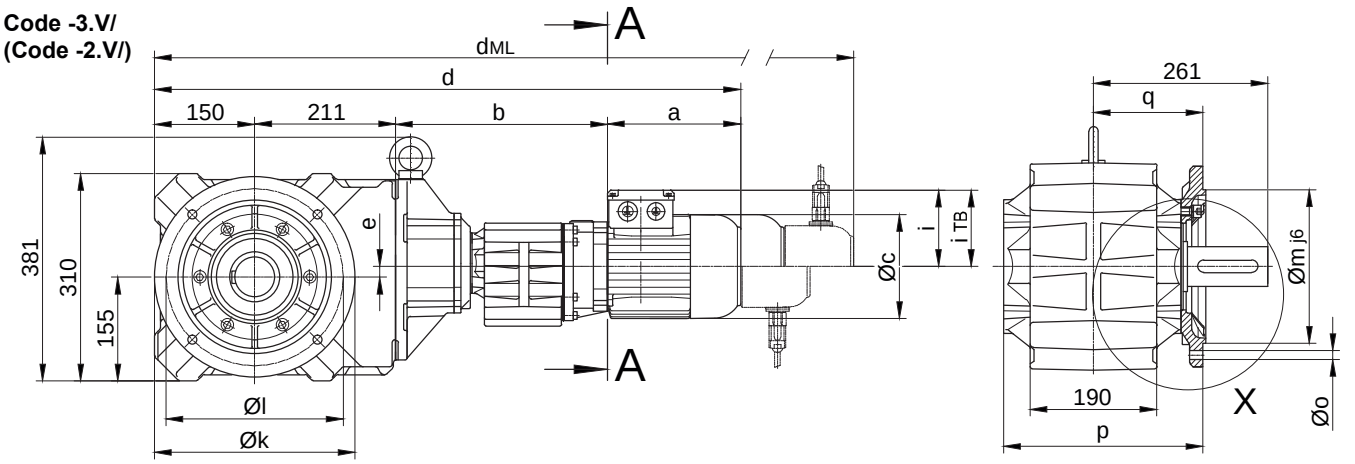


The actual gearbox design can vary from the geometry shown.

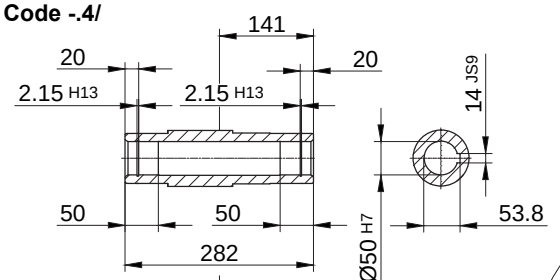
BK50G10

Flange with clearance holes at front

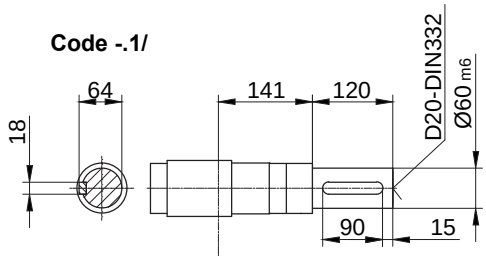
Code -3.V/
(Code -2.V/)



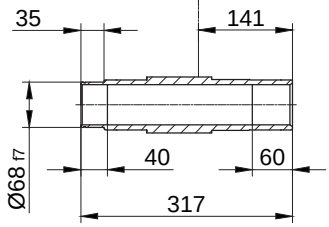
Code -.4/

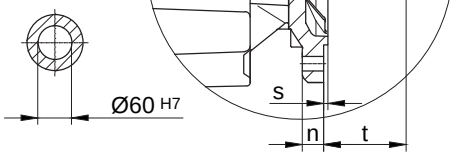


Code -.1/

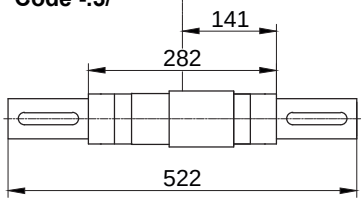


Code -.5/





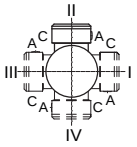
Code -.3/



Flange dimensions

BK50G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	300	265	230	20	13.5	298.5	164	4	97
small-2.V/	250	215	180	16	13.5	296	161	4	100

Standard



A-A

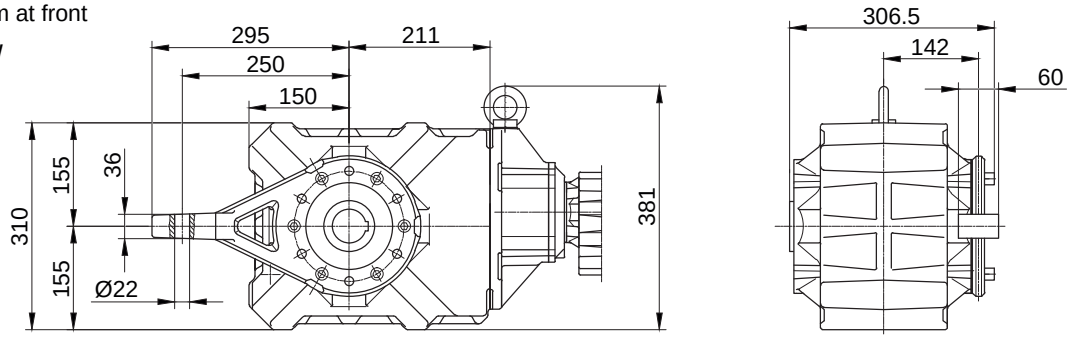
Type	a	b	c	d	e	i	i_{TB}	Design with motor extensions			
								E../ES..	G	E../ES..-G	RL/RR
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK50G10-../D05..	170	313	123	844	16	100	117	886	947	988.5	-
BK50G10-../D06..	170	313	123	844	16	100	119	886	947	988.5	-
BK50G10-../D07..	190	313	123	864	16	100	119	906	967	1008.5	-
BK50G10-../D..08..	200	317	156	878	16	115	136.5	944	985	1051.5	944
BK50G10-../D..09..	251	331.5	181	943.5	16	124	158	1036.5	1050.5	1141	1036.5

The actual gearbox design can vary from the geometry shown.

BK50G10

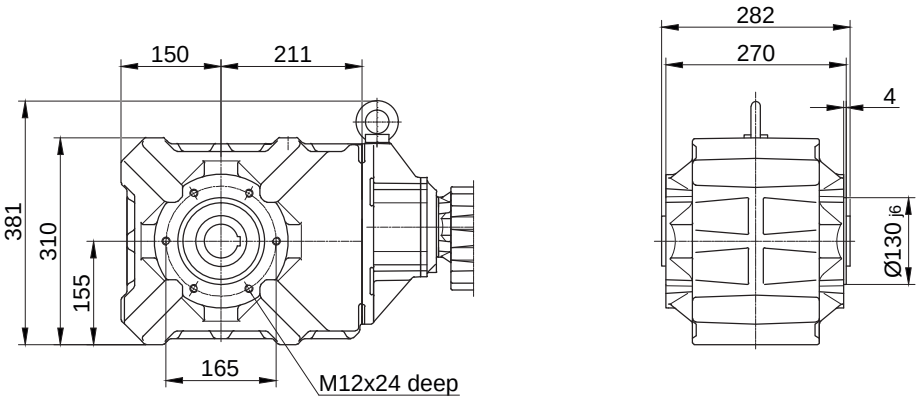
Torque arm at front

Code -5.V/



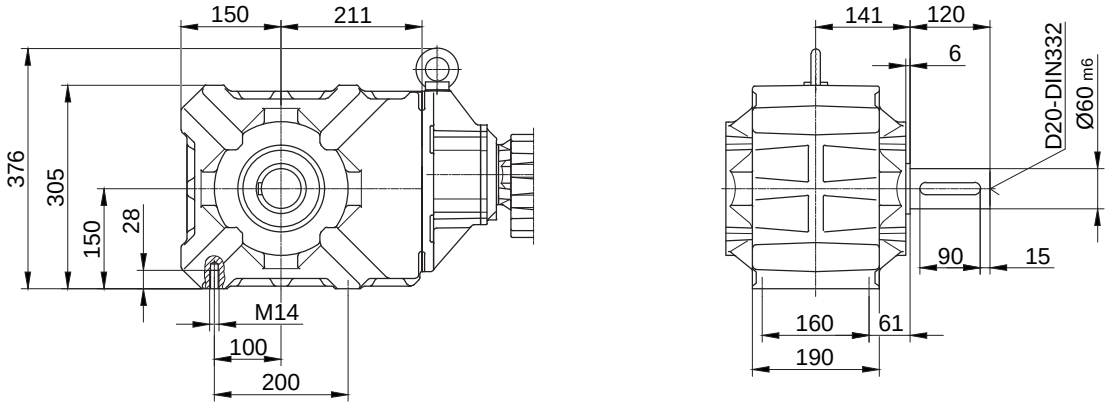
Flange with tapped holes at front

Code -7.V/



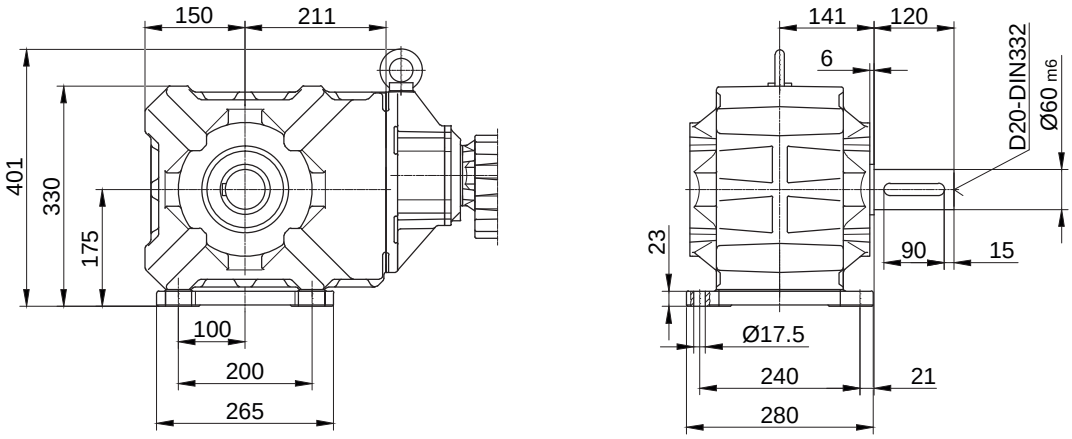
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/



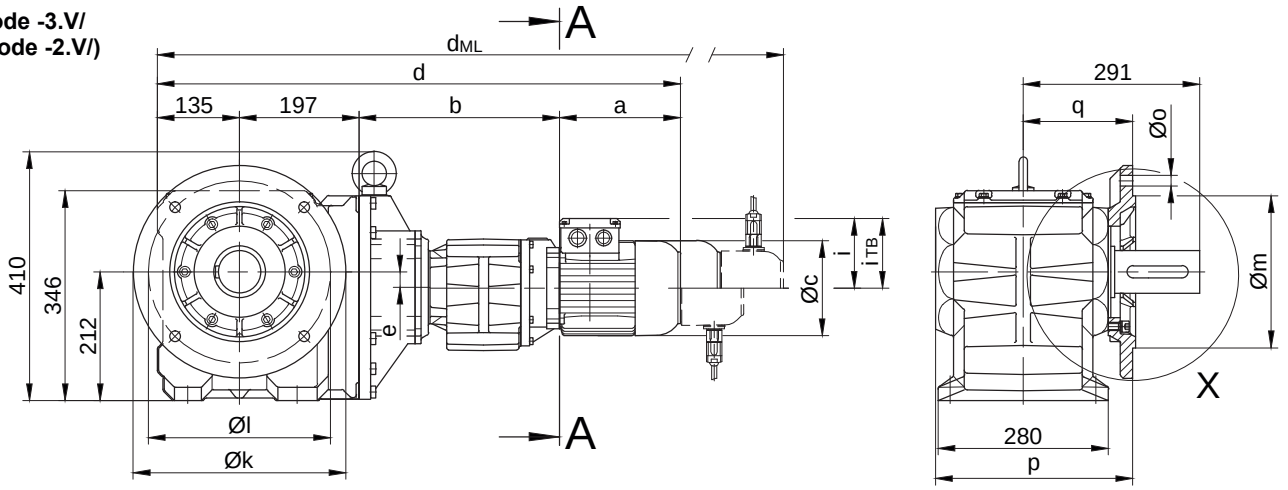
The actual gearbox design can vary from the geometry shown.

Dimension

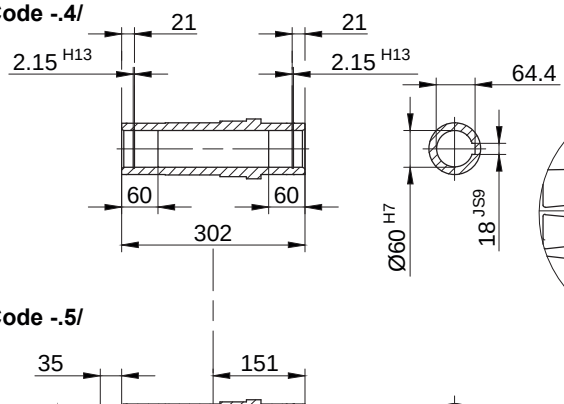
BK60G20

Flange with clearance holes at front

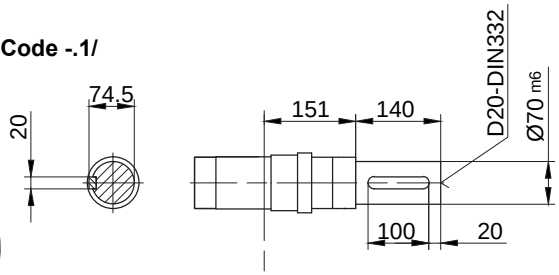
Code -3.V/
(Code -2.V/)



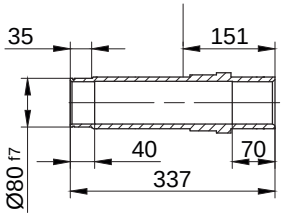
Code -.4/

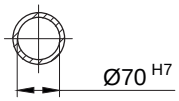


Code -.1/

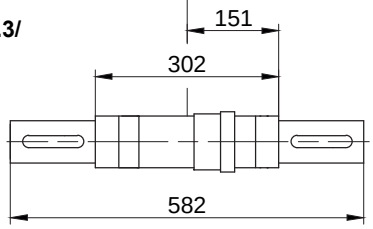


Code -.5/





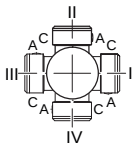
Code -.3/



Flange dimensions

BK60G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	350	300	250h6	20	17.5	324	180	5	111
small -2.V/	300	265	230 j6	20	13.5	332	188	4	103

Standard



A-A

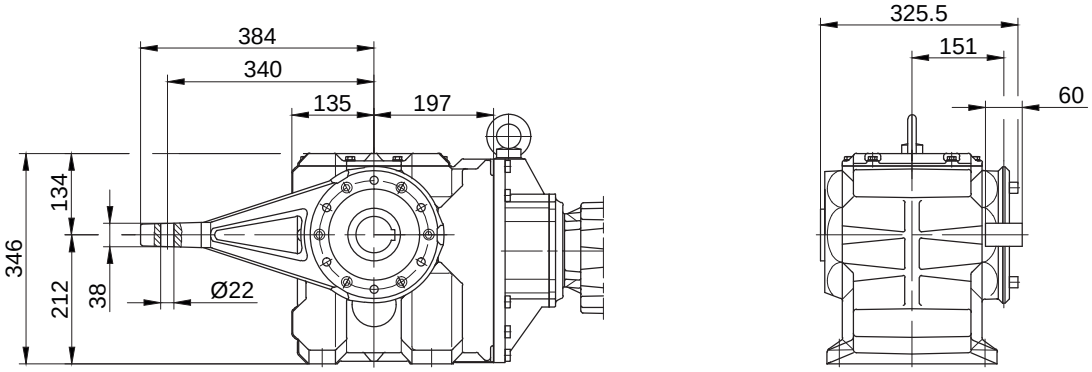
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK60G20-../D05..	170	326	123	828	27	100	117	870	931	972.5	-
BK60G20-../D06..	170	326	123	828	27	100	119	870	931	972.5	-
BK60G20-../D07..	190	326	123	848	27	100	119	890	951	992.5	-
BK60G20-../D..08..	200	330	156	862	27	115	136.5	928	969	1035.5	928
BK60G20-../D..09..	251	344.5	181	927.5	27	124	158	1020.5	1034.5	1125	1020.5

The actual gearbox design can vary from the geometry shown.

BK60G20

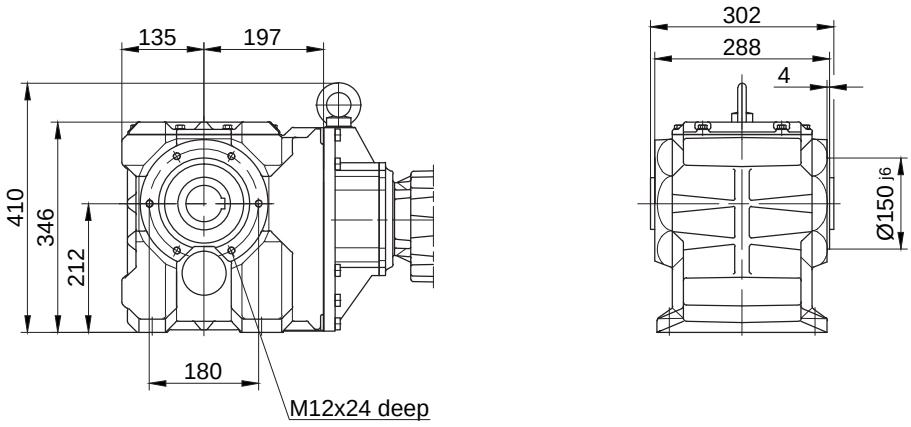
Torque arm at front

Code -5.V/



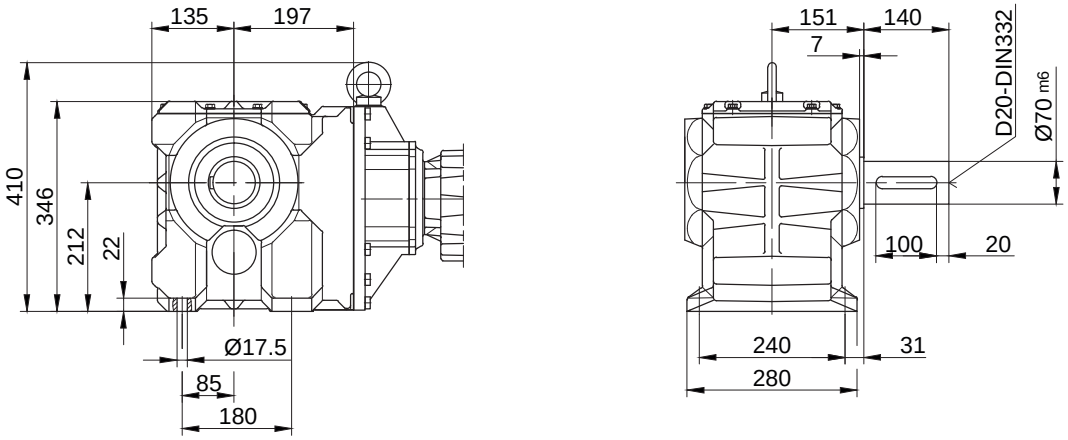
Flange with tapped holes at front

Code -7.V/



Foot with clearance holes at bottom

Code -1.U/

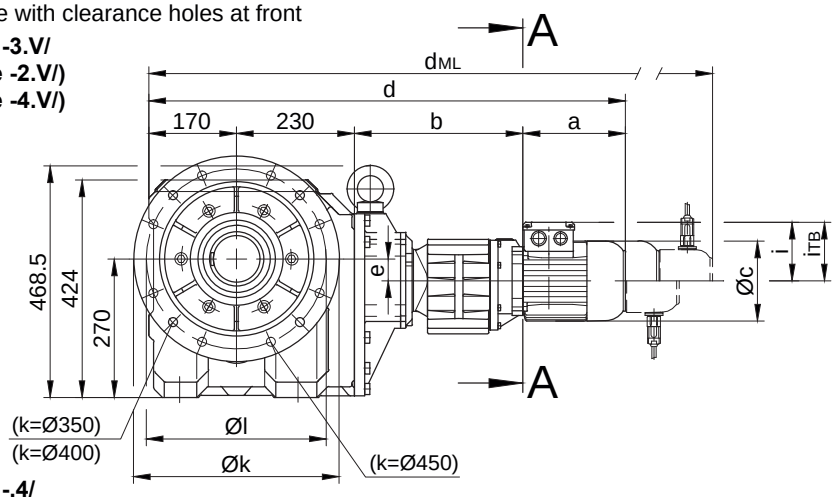


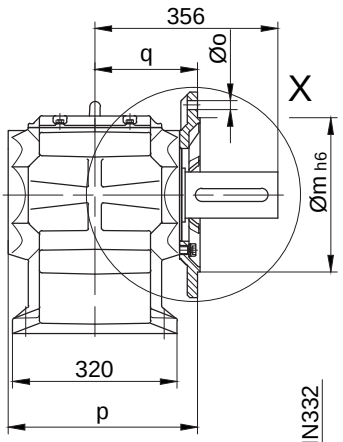
The actual gearbox design can vary from the geometry shown.

BK70G20

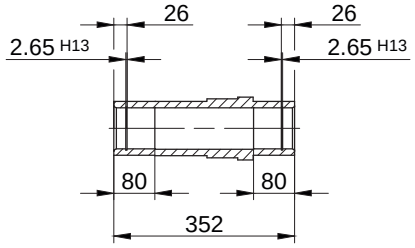
Flange with clearance holes at front

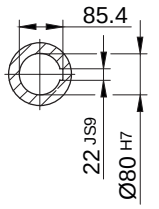
Code -3.V/
(Code -2.V/)
(Code -4.V/)



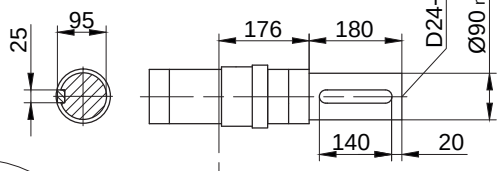


Code -.4/

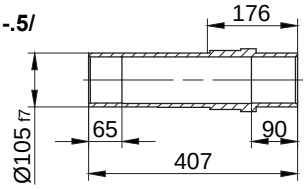


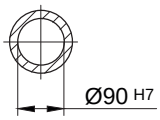


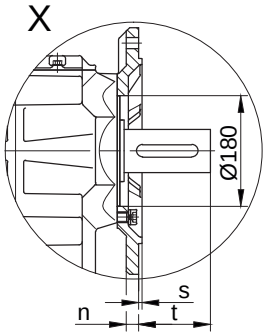
Code -.1/



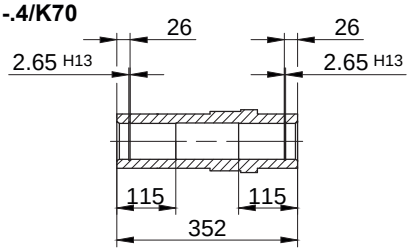
Code -.5/

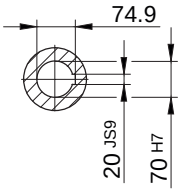




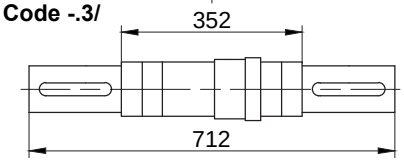


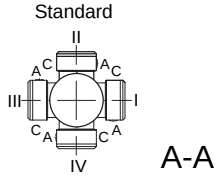
Code -.4/K70





Code -.3/





Flange dimensions

BK70G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	400	350	300	20	4 x 17.5	369	200	5	156
small -2.V/	350	300	250	20	4 x 17.5	369	200	5	156
big -4.V/	450	400	350	22	8 x 17.5	379	210	5	146

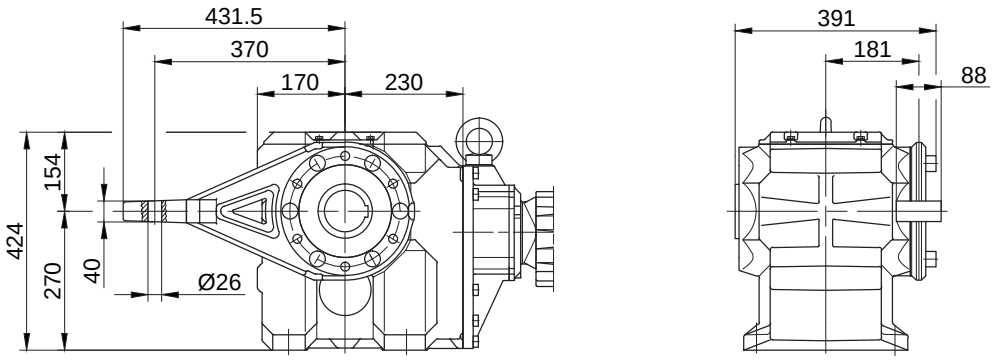
Type	a	b	c	d	e	i	i_{TB}	Design with motor extensions			
								E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK70G20-../D05..	170	324	123	894	43	100	117	936	997	1038.5	-
BK70G20-../D06..	170	324	123	894	43	100	119	936	997	1038.5	-
BK70G20-../D07..	190	324	123	914	43	100	119	956	1017	1058.5	-
BK70G20-../D..08..	200	328	156	928	43	115	136.5	994	1035	1101.5	994
BK70G20-../D..09..	251	342.5	181	993.5	43	124	158	1086.5	1100.5	1191	1086.5

The actual gearbox design can vary from the geometry shown.

BK70G20

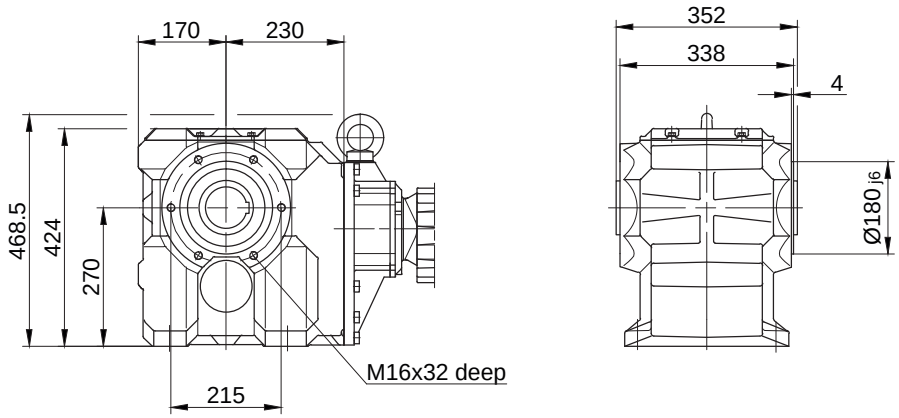
Torque arm at front

Code -5.V/



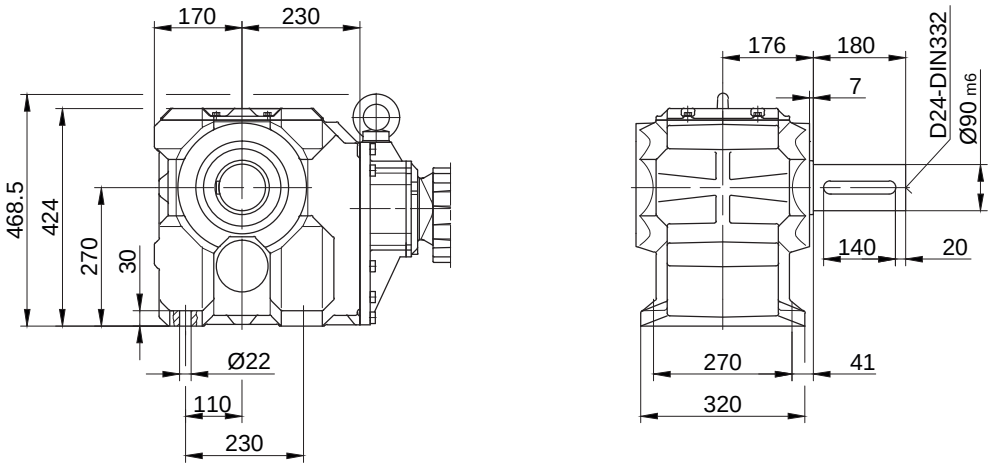
Flange with tapped holes at front

Code -7.V/



Foot with clearance holes at bottom

Code -1.U/

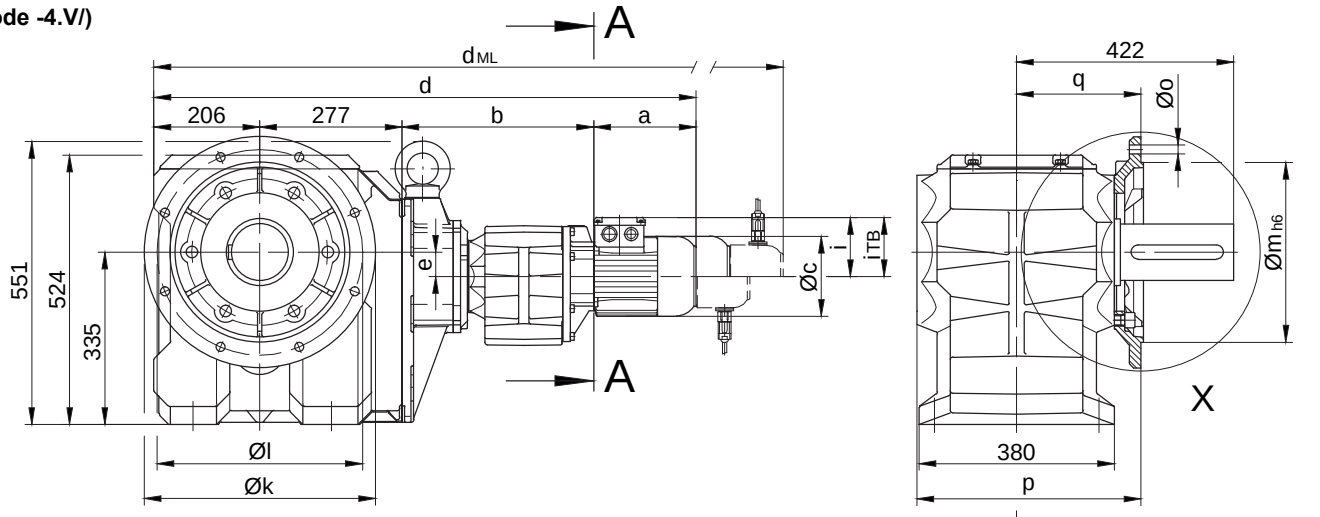


The actual gearbox design can vary from the geometry shown.

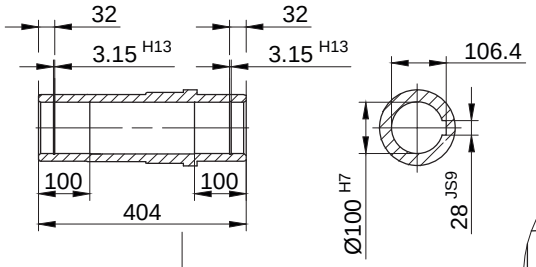
BK80G40

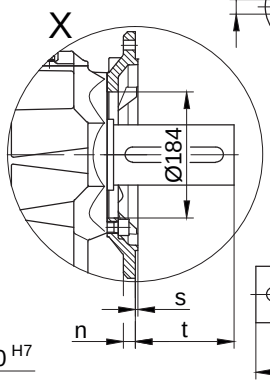
Flange with clearance holes at front

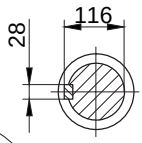
Code -3.V/
(Code -4.V/)



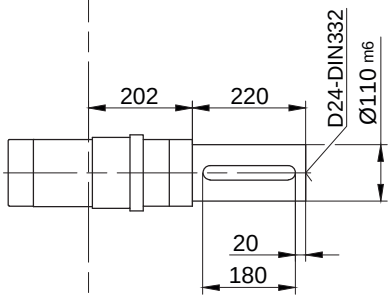
Code -.4/



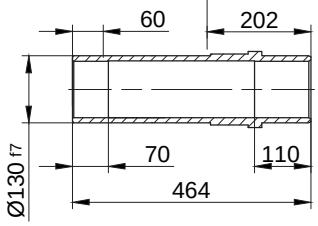


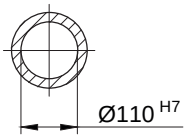


Code -.1/

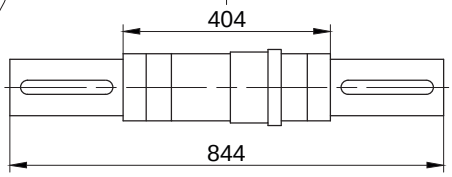


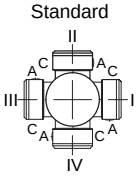
Code -.5/





Code -.3/





A-A

Flange dimensions

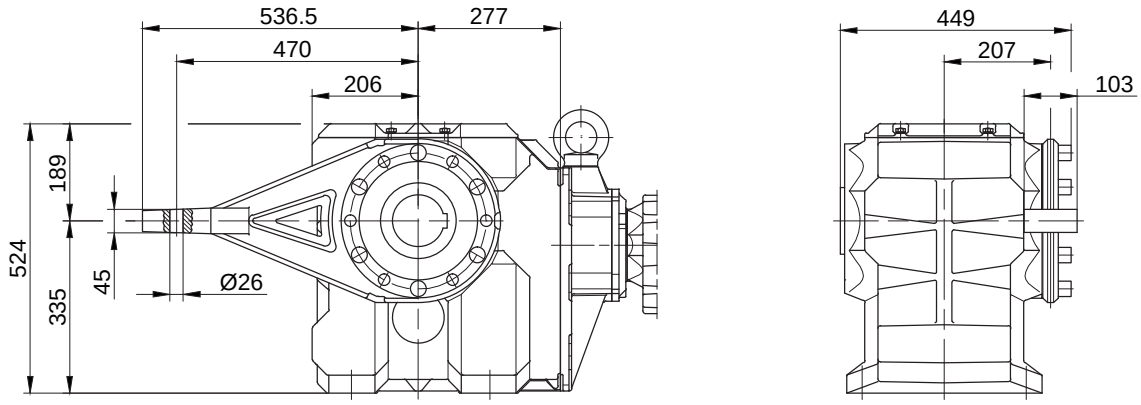
BK80G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	450	400	350	22	17.5	439	245	5	177
big -4.V/	550	500	450	22	17.5	444	250	5	172

Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	ES..	G	ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK80G40-../D..08..	200	373	156	1056	47	115	136.5	1122	1163	1229.5	1122
BK80G40-../D..09..	251	387.5	181	1121.5	47	124	158	1214.5	1228.5	1319	1214.5
BK80G40-../D..11..	319	394	228	1196	47	181	181	1294	1303	1398.5	1294

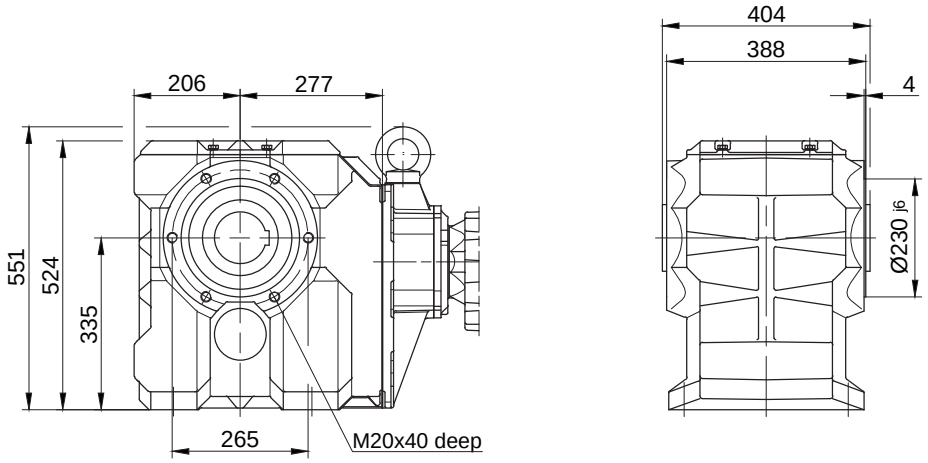
The actual gearbox design can vary from the geometry shown.

BK80G40

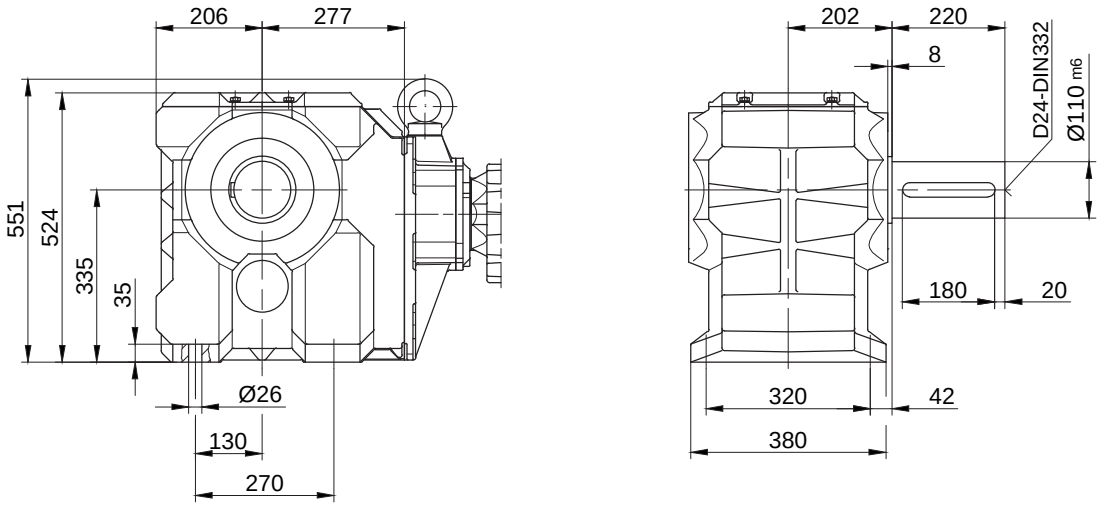
Torque arm at front
Code -5.V/



Flange with tapped holes at front
Code -7.V/



Foot with clearance holes at bottom
Code -1.U/



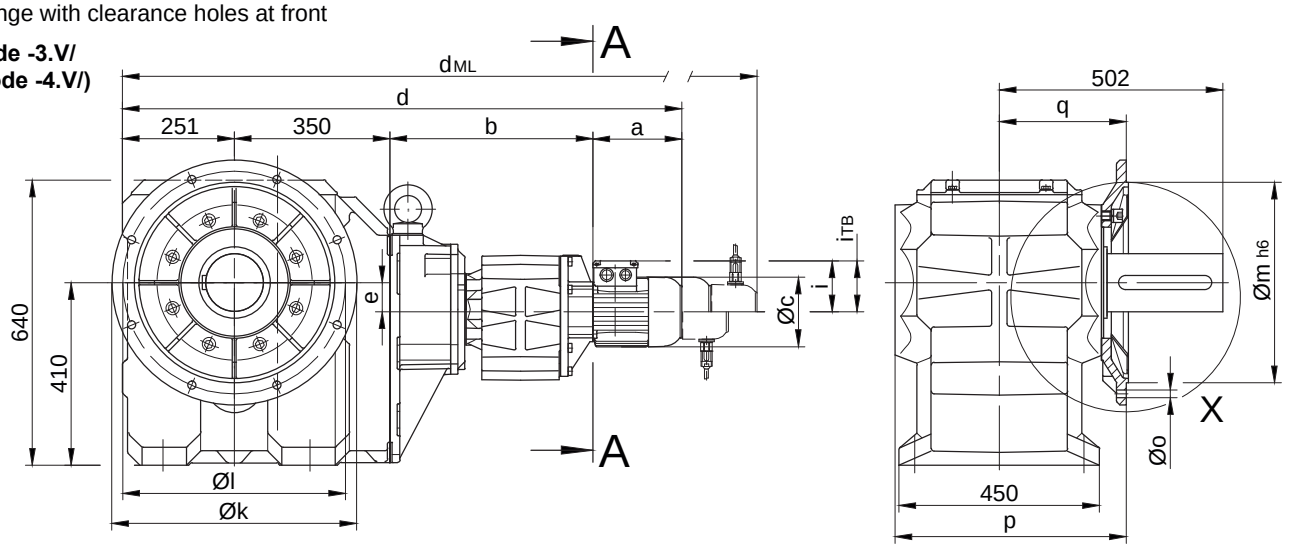
The actual gearbox design can vary from the geometry shown.

Dimension

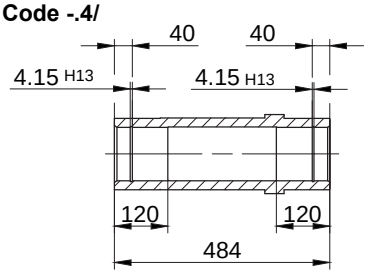
BK90G50

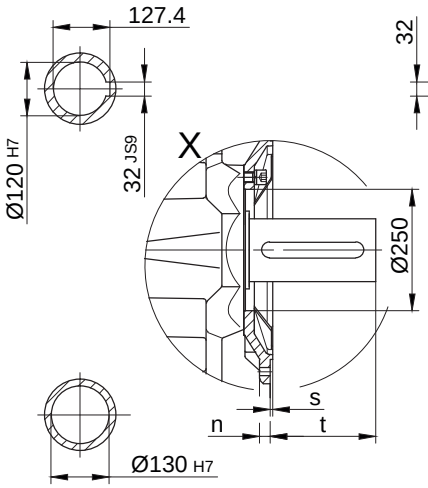
Flange with clearance holes at front

Code -3.V/
(Code -4.V/)

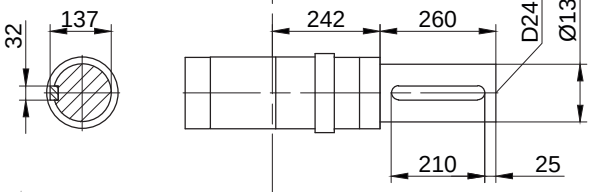


Code -.4/

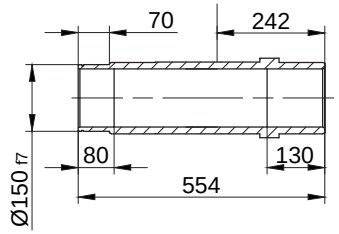




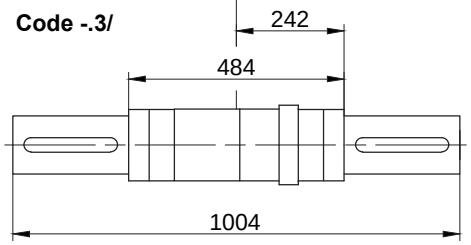
Code -.1/



Code -.5/



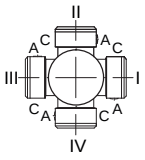
Code -.3/



Flange dimensions

BK90G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	550	500	450	22	17.5	519	285	5	217
big -4.V/	660	600	550	25	22	513	279	6	223

Standard



A-A

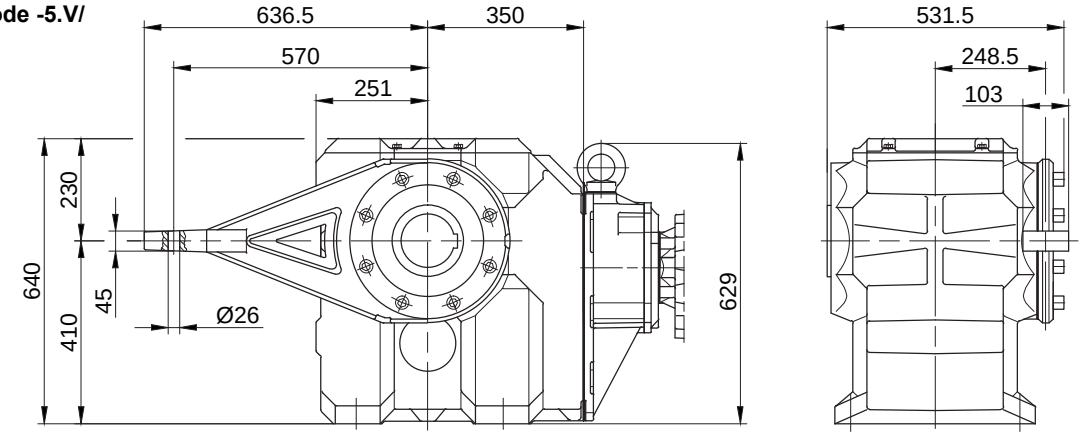
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BK90G50-../D..08..	200	456	156	1257	66	115	136.5	1323	1364	1430.5	1323
BK90G50-../D..09..	251	470.5	181	1322.5	66	124	158	1415.5	1429.5	1520	1415.5
BK90G50-../D..11..	319	477	228	1397	66	181	181	1495	1504	1599.5	1495
BK90G50-../D..13..	393	490	258	1484	66	218	218	1595	1591	1699.5	1595
BK90G50-../D..16..	454.5	504	322	1559.5	66	244	244	1703	1666.5	1806.5	1703
BK90G50-../D..18..	542	535	368	1678	66	288	288	1827.5	1785	1931.5	1827.5

The actual gearbox design can vary from the geometry shown.

BK90G50

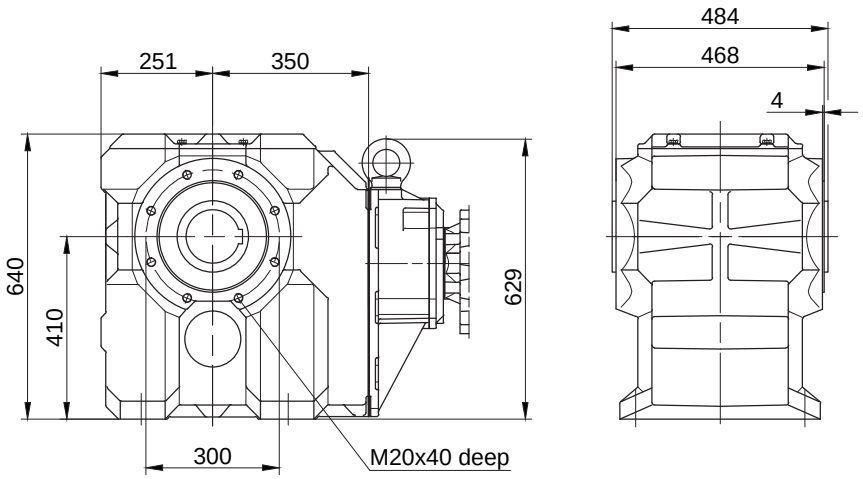
Torque arm at front

Code -5.V/



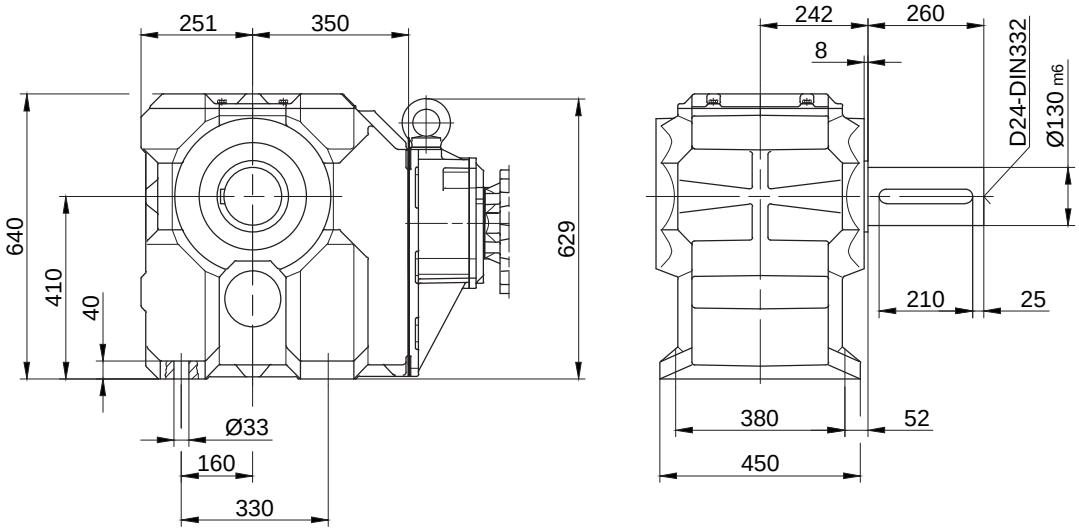
Flange with tapped holes at front

Code -7.V/



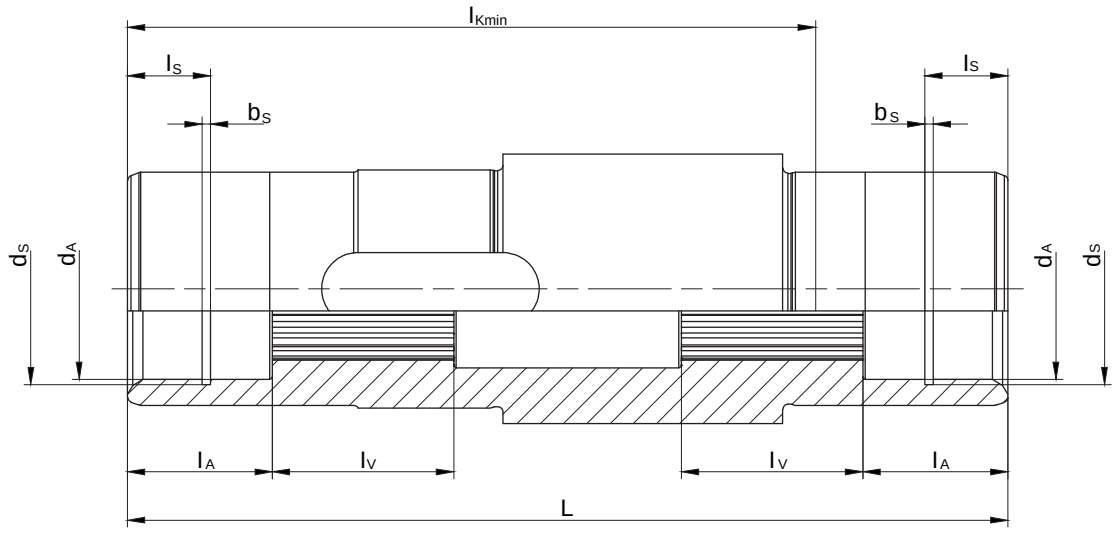
Foot with clearance holes at bottom

Code -1.U/



The actual gearbox design can vary from the geometry shown.

Splined shaft BK

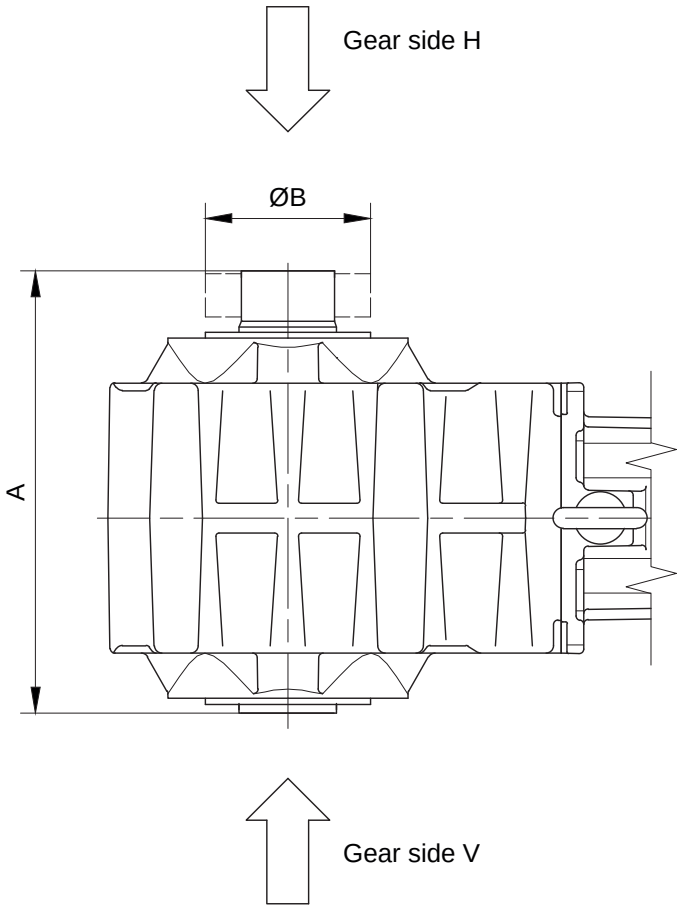


Type	Spline acc. DIN 5480	d_A (mm)	l_A (mm)	l_V (mm)	l_{Kmin} (mm)	L (mm)	d_S (mm)	l_S (mm)	b_S (mm)
BK10	N30x1.25x22x9H	35^{G7}	28	35	132	170	37^{H12}	16	1.6^{H13}
BK20	N35x2x16x9H	36^{G7}	28	35	154	192	37^{H12}	16	1.6^{H13}
BK30	N40x2x18x9H	41^{G7}	25	42	179	224	42.5^{H12}	17	1.85^{H13}
BK40	N50x2x24x9H	51^{G7}	25	49	214	260	53^{H12}	17	2.15^{H13}
BK50	N60x2x28x9H	61^{G7}	25	58	229	282	63^{H12}	17	2.15^{H13}
BK60	N70x2x34x9H	72^{G7}	25	72	248	302	75^{H12}	17	2.65^{H13}
BK70	N85x3x27x9H	86^{G7}	26	100	295	352	88.5^{H12}	17	3.15^{H13}
BK80	N110x3x35x9H	112^{G7}	60	90	335	404	116^{H12}	30	4.15^{H13}
BK90	N130x5x24x9H	131.5^{G7}	60	110	410	484	134^{H12}	30	4.15^{H13}

The actual gearbox design can vary from the geometry shown.

Shrink disc couplings (SSV)

(Code BK10-.5/...)
(Code BK10Z-.5/...)

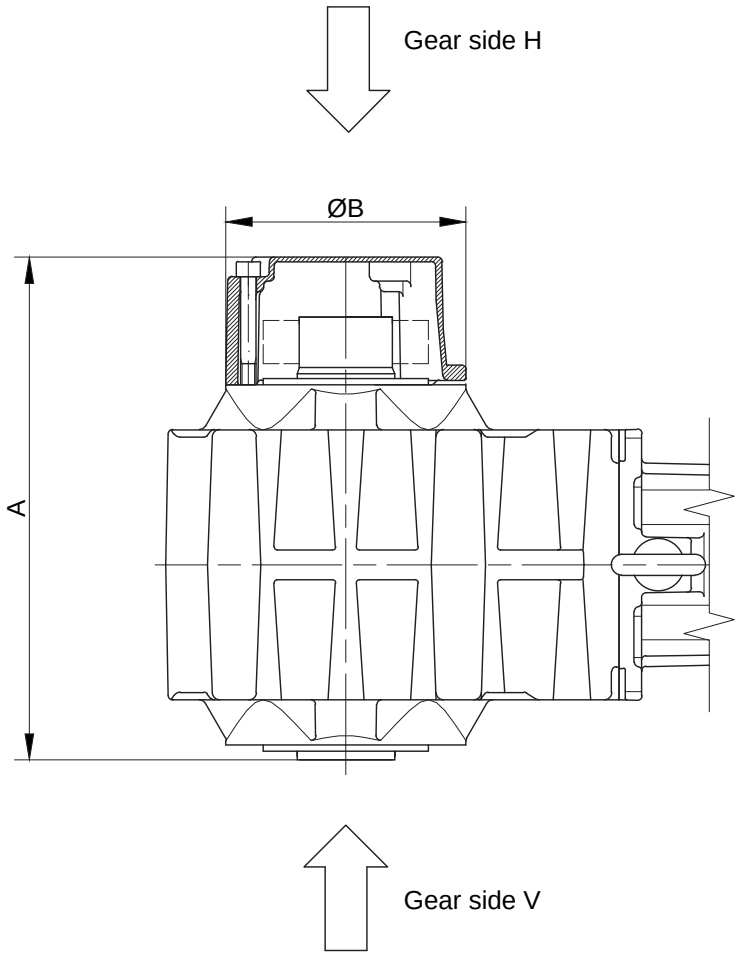


Type	SSV Ringfeder	SSV STÜWE	A	B
BK06	RfN 4161 024x050	HSD 24-22x24	118	50
BK10	RfN 4161 036x072	HSD 36-22x36	195	72
BK20	RfN 4161 044x080	HSD 44-22x44	222	80
BK30	RfN 4161 050x090	HSD 50-22x50	254	90
BK40	RfN 4161 062x110	HSD 62-22x62	295	110
BK50	RfN 4161 068x115	HSD 68-22x68	317	115
BK60	RfN 4161 080x141	HSD 80-22x80	337	140
BK70	RfN 4161 105x185	HSD 110-22x105	407	185
BK80	RfN 4161 130x215	HSD 125-22x130	464	215
BK90	RfN 4161 150x263	HSD 155-22x150	554	263

The actual gearbox design can vary from the geometry shown.

Shrink disc connection with cover (SSV)

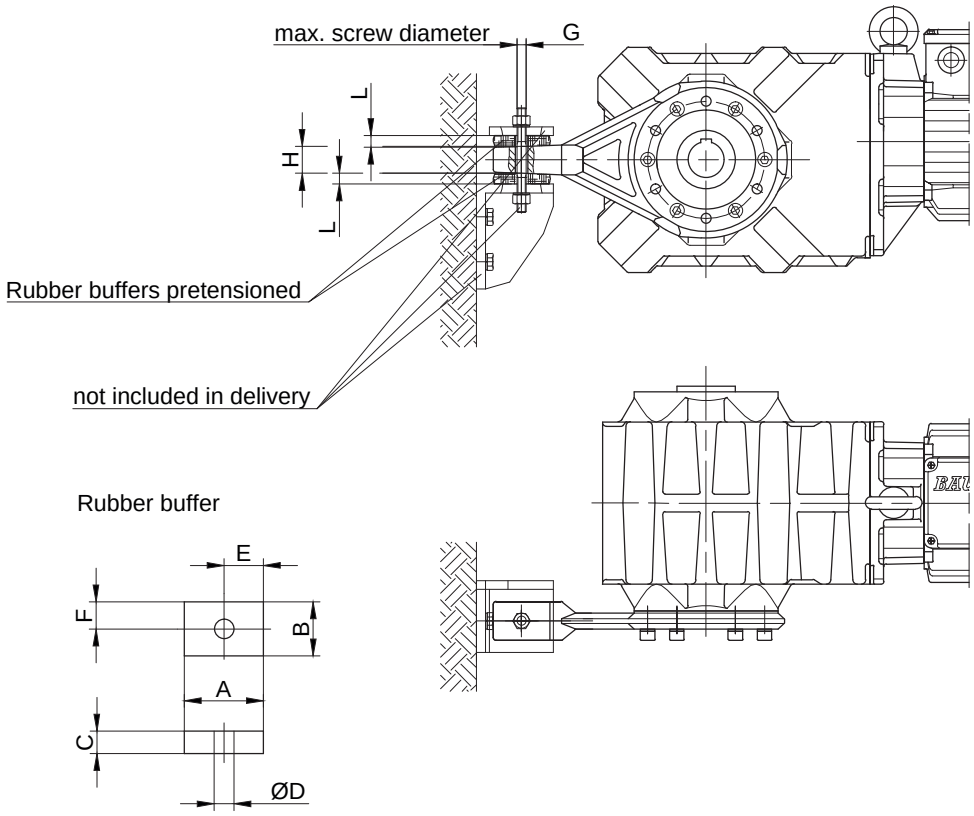
(Code BK10-.5A/...)
(Code BK10Z-.5A/...)



Type	SSV Ringfeder	SSV STÜWE	A	B
BK10	RfN 4161 036x072	HSD 36-22x36	217	120
BK20	RfN 4161 044x080	HSD 44-22x44	270	140
BK30	RfN 4161 050x090	HSD 50-22x50	300	160
BK40	RfN 4161 062x110	HSD 62-22x62	335	160
BK50	RfN 4161 068x115	HSD 68-22x68	329	200
BK60	RfN 4161 080x141	HSD 80-22x80	386	210
BK70	RfN 4161 105x185	HSD 110-22x105	465	250
BK80	RfN 4161 130x215	HSD 125-22x130	502	300
BK90	RfN 4161 150x263	HSD 155-22x150	602	350

The actual gearbox design can vary from the geometry shown.

Rubber buffer for torque arm



Material: Natural rubber
Hardness 50±5 Shore A

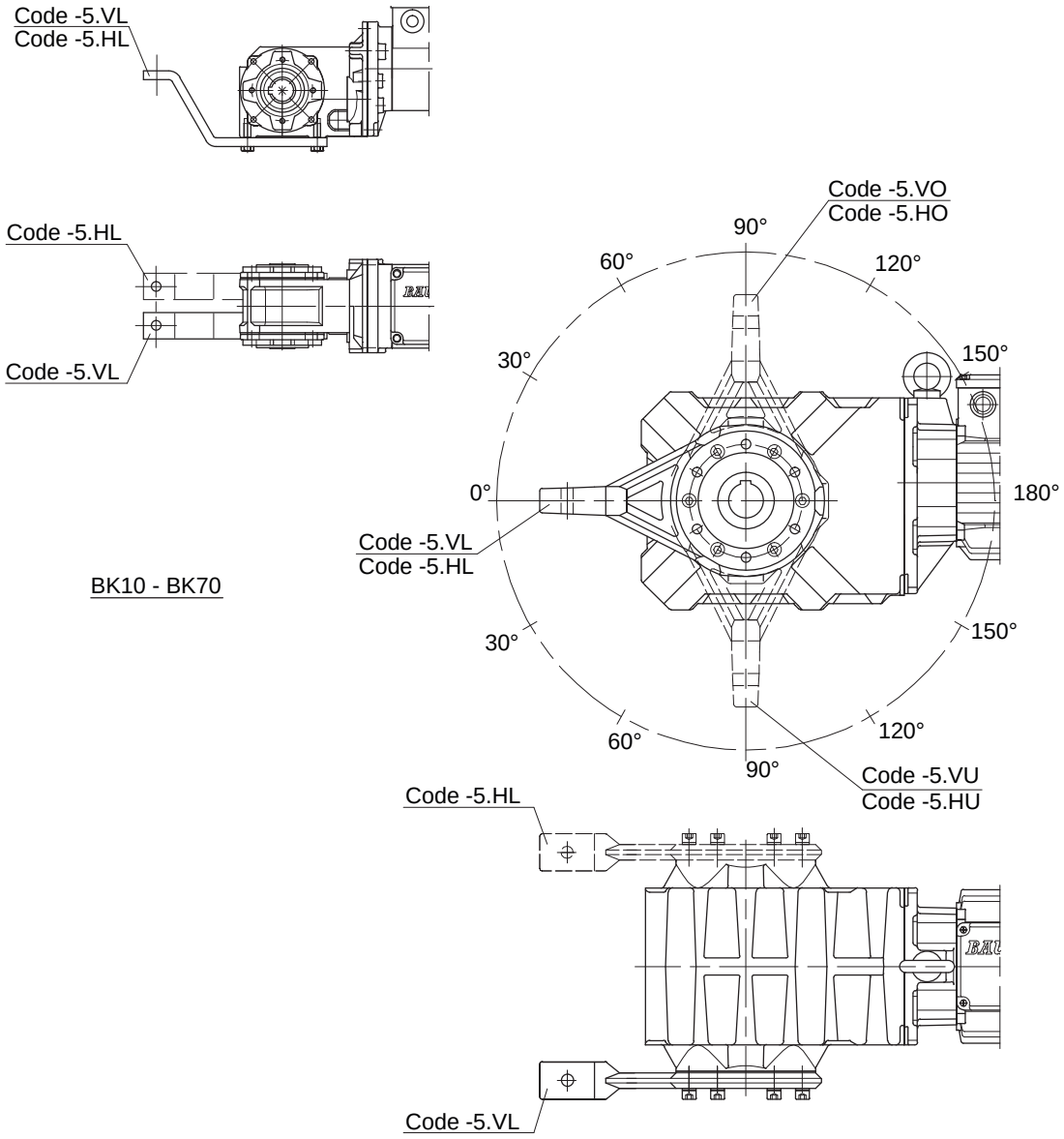
Dimensions of the transverse hole:
see dimensioned sketch of the respective shaft mounted gearbox

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Gear	Pos.	Dimensions (mm)								
		A	B	C	D	E	F	G	H	L
BK06	Pos.0	30	30	12	12	15	15	M10	10	10
BK10	Pos.1	48	32	15	14	24	16	M10	19	13.5
BK20	Pos.1	48	32	15	14	24	16	M10	19	13
BK30	Pos.2	63	43	20	14	31.5	21.5	M10	30	17
BK40	Pos.2	63	43	20	14	31.5	21.5	M10	30	17
BK50	Pos.3	88	60	25	22	44	30	M18	36	21.5
BK60	Pos.3	88	60	25	22	44	30	M18	38	21
BK70	Pos.4	123	88	30	26	61.5	44	M20	40	25.5
BK80	Pos.5	133	103	35	26	66.5	51.5	M20	45	30
BK90	Pos.5	133	103	35	26	66.5	51.5	M20	45	29.5

The actual gearbox design can vary from the geometry shown.

Position of the torque arm



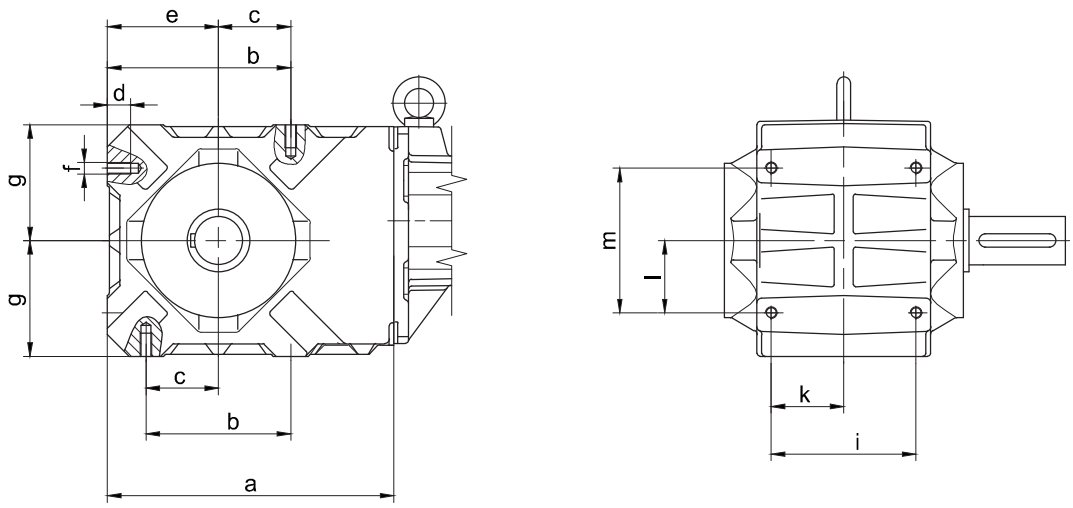
BK10 - BK70

Possible locations.

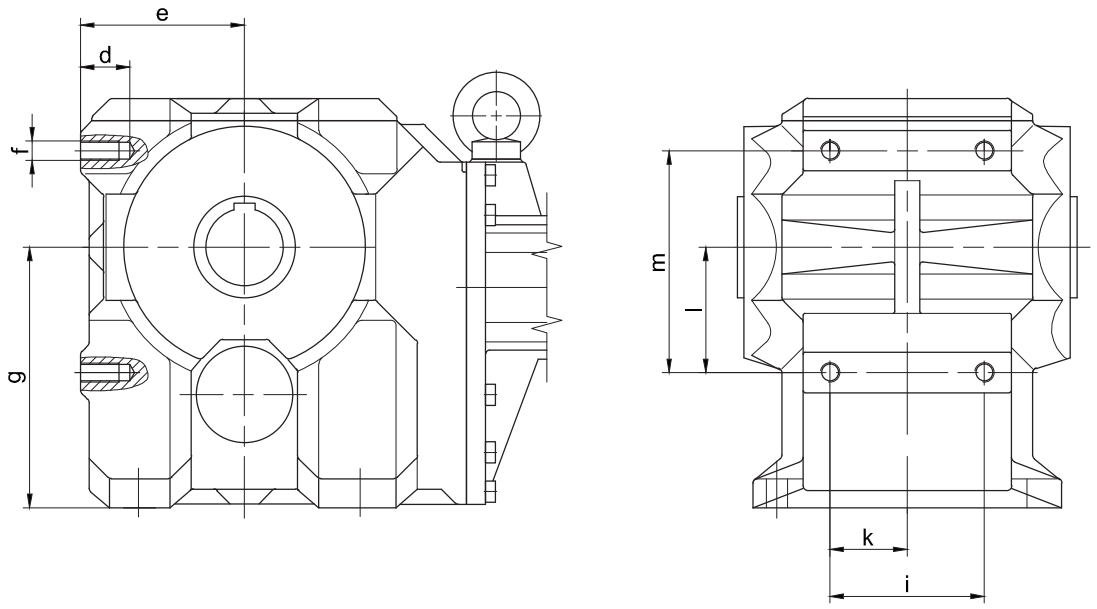
Position	VL / HL	VO / HO VU / HU					VR / HR
BK06	0°	-	-	-	-	-	-
BK10	0°	30°	60°	90°	120°	150°	-
BK20	0°	30°	60°	90°	120°	150°	-
BK30	0°	30°	60°	90°	120°	150°	-
BK40	0°	30°	60°	90°	120°	150°	-
BK50	0°	30°	60°	90°	120°	150°	-
BK60	0°	30°	60°	90°	120°	150°	-
BK70	0°	30°	60°	90°	120°	150°	-
BK80	0°	30°	60°	90°	120°	150°	-
BK90	0°	45°		90°	135°		-

The actual gearbox design can vary from the geometry shown.

Foot with tapped bores



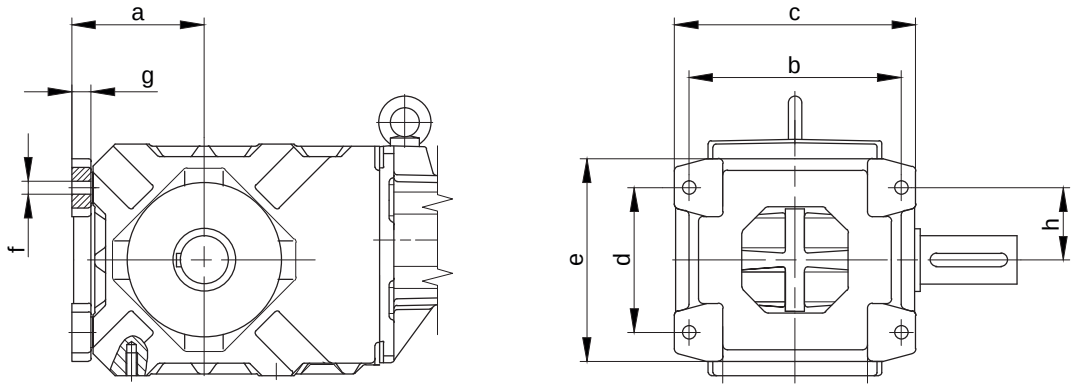
Type	a	b	c	d	e	f	g	i	k	l	m
BK10-BK10Z	202	90	45	16	78	M8	80	95	47.5	45	90
BK20-BK20Z	242	110	55	20	95	M10	100	105	52.5	55	110
BK30-BK30Z	266	125	62.5	24	105	M12	110	120	60	62.5	125
BK40-BK40Z	297	150	75	24	115	M12	120	150	75	75	150
BK50-BK50Z	356	200	100	28	145	M14	150	160	80	100	200



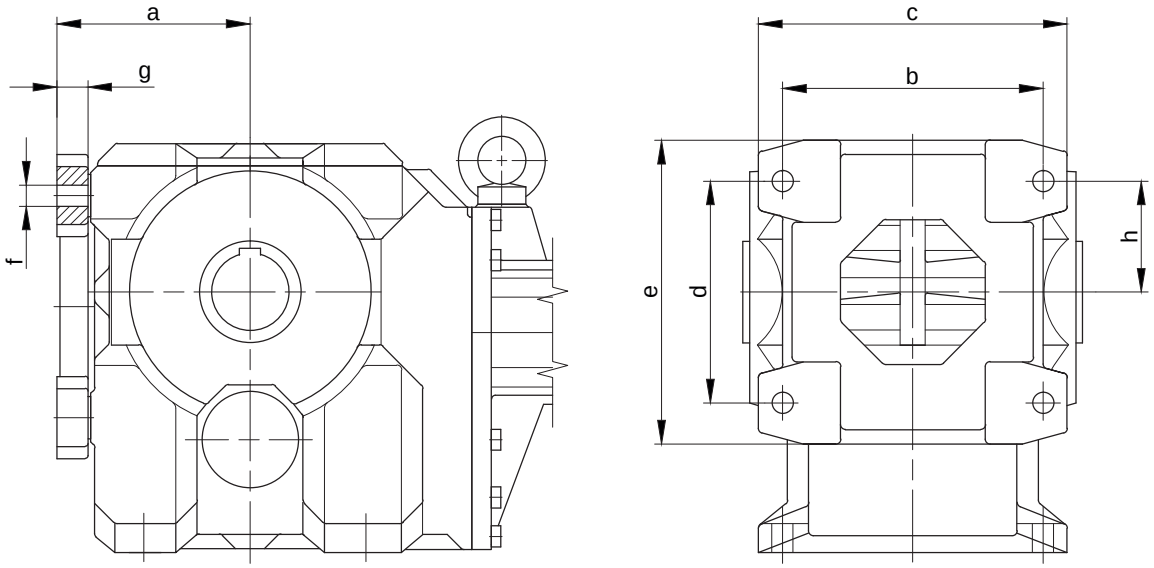
Type	a	b	c	d	e	f	g	i	k	l	m
BK60-BK60Z	-	-	-	40	130	M20	212	160	80	145	230
BK70-BK70Z	-	-	-	40	165	M20	270	160	80	130	230
BK80-BK80Z	-	-	-	60	200	M30	335	210	105	240	360
BK90-BK90Z	-	-	-	60	245	M30	410	210	105	215	360

The actual gearbox design can vary from the geometry shown.

Foot plate with through holes



Type	a	b	c	d	e	f	g	h
BK10-BK10Z	96	145	165	90	130	Ø9	16	45
BK20-BK20Z	115	165	195	110	160	Ø11	18	55
BK30-BK30Z	127	190	220	125	185	Ø13.5	20	62.5
BK40-BK40Z	137	220	250	150	210	Ø13.5	20	75
BK50-BK50Z	170	240	280	200	265	Ø17.5	23	100

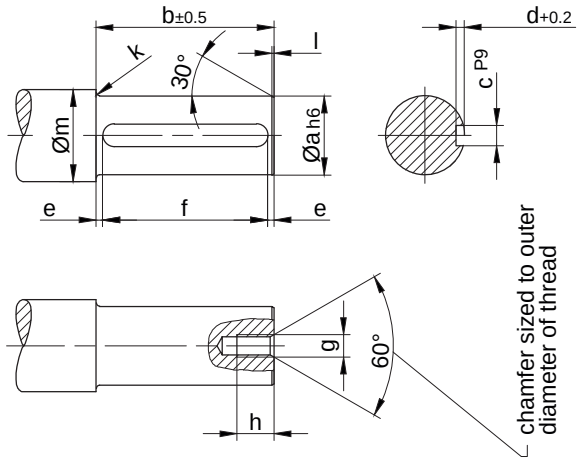


Type	a	b	c	d	e	f	g	h
BK60-BK60Z	165	270	320	230	315	Ø22	32	85
BK70-BK70Z	200	270	320	230	315	Ø22	32	100
BK80-BK80Z	250	400	480	360	480	Ø33	47	120
BK90-BK90Z	295	400	480	360	480	Ø33	47	145

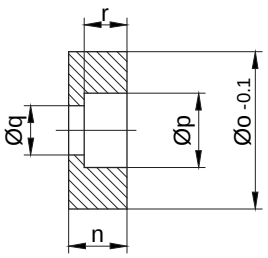
The actual gearbox design can vary from the geometry shown.

Assembly tools for shaft mounted gears with splined shaft

Pos.1 Shaft

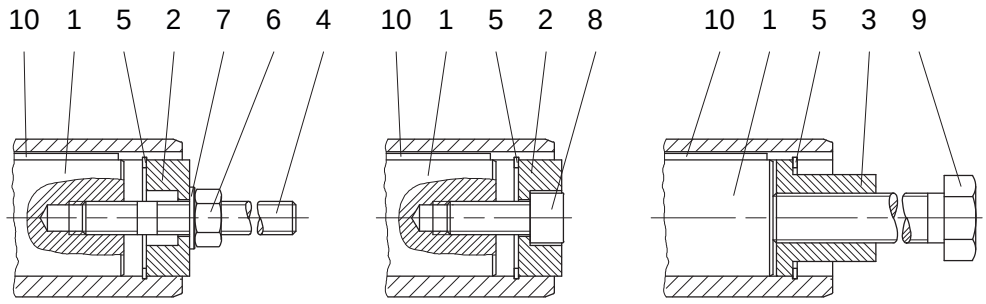


✱Pos.2 Disc



x, edges cut
Material:
C45 DIN 17200

Type	Dimensions (mm)															
	Pos.1 Shaft											Pos.2 Disc				
	a	b	c	d	e	f	g	h	k	l	m	n	o	p	q	r
BK06	20	75	6	3.5	6	$63^{+0.3}$	M6	16	2	1	28	13.5	19.8	11	6.6	6.5
BK10	25	148	8	4	11.5	$125^{+0.5}$	M8	18	2.5	1.5	33	13.5	24.8	15	9	8.5
BK20	30	170	8	4	15	$140^{+0.5}$	M10	20	3	1.5	38	15	29.8	18	11	10
BK30	35	201	10	5	10.5	$180^{+0.5}$	M10	20	3	1.5	43	16	34.8	18	11	10
BK40	40	235	12	5	17.5	$200^{+0.5}$	M12	22	3	2	48	18	39.8	20	13.5	12
BK50	50	254	14	5.5	17	$220^{+0.5}$	M16	30	3.5	2	58	21	49.8	26	17.5	15
BK60	60	273	18	7	11.5	$250^{+0.5}$	M20	38	3.5	2	68	24	59.8	33	22	18
BK70	80	316	22	9	18	$280^{+0.5}$	M20	38	4	2	90	27	79.8	33	22	20
BK70-K70	70	316	20	7.5	18	$280^{+0.5}$	M20	38	4	2	90	27	69.8	33	22	20
BK80	100	360	28	10	20	$320^{+0.5}$	M24	45	4	3	110	32	99.8	40	26	25
BK90	120	432	32	11	16	$400^{+0.5}$	M24	45	4.5	3	130	35	119.8	40	26	28



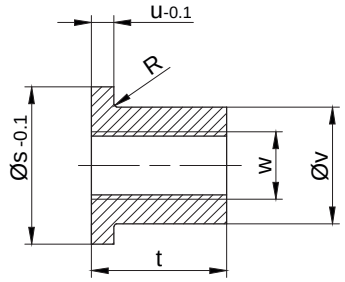
Installation Holding Dismantlement

The parts shown are neccessary fpr assembly. ONLY ✱specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

The actual gearbox design can vary from the geometry shown.

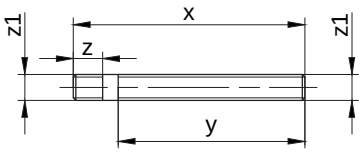
Assembly tools for shaft mounted gears with splined shaft

Pos.3 Sleeve



$\sqrt{^{x}}$, edges cut
Material: C45 DIN 17200

Pos.4 Stud Bolt



Material: Steel, tensile strength
≥ 1000N/mm²
threads rolled

Type	Dimensions (mm)										✳Retainer ring DIN 472	Hexagon nut DIN 934-8	Disc DIN 125-St	✳Filister head screw DIN 912-8.8	Starting torque (Nm)	Hexagon bolt DIN EN 24017-8.8	Key DIN 6885 Width x Height x Length
	Pos.3 Sleeve						Pos.4 Stud Bolt										
	s	t	u	v	w	R	x	y	z	z1	Pos.5	Pos.6	Pos.7	Pos.8		Pos.9	Pos.10
BK06	19.8	20	5	11.1	M8	0.8	130	100	20	M6	20x1	M6	6.4	M6x30	5	M6x120	A 6x6x63
BK10	24.8	24	5	15.4	M12	0.8	200	170	20	M8	25x1.2	M8	8.4	M8x30		M12x190	A 8x7x125
BK20	29.8	28	5	19.8	M14	0.8	230	195	23	M10	30x1.2	M10	10.5	M10x30	8	M14x210	A 8x7x140
BK30	34.8	28	5	23	M14	-	260	220	23	M10	35x1.5	M10	10.5	M10x35		M14x240	A 10x8x180
BK40	39.8	40	6	27.7	M20	0.8	300	260	28	M12	40x1.75	M12	13	M12x35	16	M20x290	A 12x8x200
BK50	49.8	48	6	36	M24	-	340	290	37	M16	50x2.0	M16	17	M16x40	30	M24x320	A 14x9x220
BK60	59.8	60	6	44	M30	-	370	310	45	M20	60x2.0	M20	21	M20x50	42	M30x350	A 18x11x250
BK70	79.8	60	8	55	M30	-	420	360	45	M20	80x2.5	M20	21	M20x50		M30x400	A 22x14x280
BK70-K70	69.8	60	8	53	M30	-	420	360	45	M20	70x2.5	M20	21	M20x50		M30x400	A 20x12x280
BK80	99.8	72	10	75	M36	-	480	410	55	M24	100x3.0	M24	25	M24x60	100	M36x450	A 28x16x320
BK90	119.8	72	10	80	M36	-	560	480	55	M24	120x4.0	M24	25	M24x60		M36x520	A 32x18x400

The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

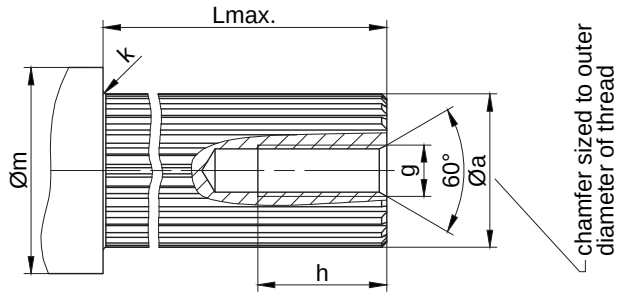
Optional:

Type	Ø s	Order Text
BK06	20	Id.Nr.4104013 Assembly tool "holding"
BK10	25	Id.Nr.4103921 Assembly tool "holding"
BK20	30	Id.Nr.4103939 Assembly tool "holding"
BK30	35	Id.Nr.4103947 Assembly tool "holding"
BK40	40	Id.Nr.4103955 Assembly tool "holding"
BK50	50	Id.Nr.4103963 Assembly tool "holding"
BK60	60	Id.Nr.4103971 Assembly tool "holding"
BK70	80	Id.Nr.4103980 Assembly tool "holding"
BK70-K70	70	Id.Nr.4104765 Assembly tool "holding"
BK80	100	Id.Nr.4103998 Assembly tool "holding"
BK90	120	Id.Nr.4104005 Assembly tool "holding"

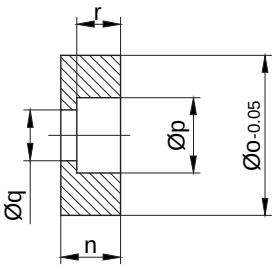
The actual gearbox design can vary from the geometry shown.

Assembly tools for shaft mounted gears with splined shaft

Pos.1 Shaft

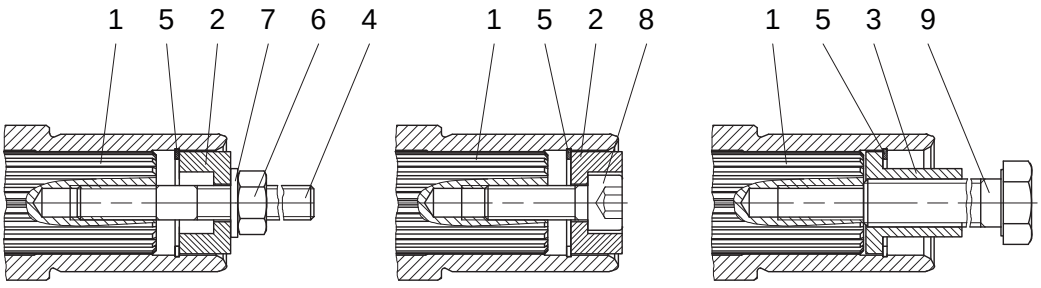


✳Pos.2 Disc



x, edges cut
Material:
C45 DIN 17200

Type	Dimensions (mm)										
	Pos.1 Shaft						Pos.2 Disc				
	a	g	h	k	Lmax.	m	n	o	p	q	r
BK10	DIN 5480-W30x1.25x22	M10	25	2.5	145	42	15	34.9	18	11	10
BK20	DIN 5480-W35x2x16	M10	25	3	167	44	14	35.9	18	11	10
BK30	DIN 5480-W40x2x18	M12	30	3	200	49	18	40.9	20	13.5	12
BK40	DIN 5480-W50x2x24	M16	35	3	235	59	17.5	50.9	26	17.5	12.5
BK50	DIN 5480-W60x2x28	M20	40	3.5	255	69	24	60.9	33	22	18
BK60	DIN 5480-W70x2x34	M20	40	3.5	275	80	24	71.9	33	22	18
BK70	DIN 5480-W85x3x27	M20	40	4	323	96	22	85.9	33	22	16
BK80	DIN 5480-W110x3x35	M24	50	4	360	122	32	111.9	40	26	25
BK90	DIN 5480-W130x5x24	M24	50	4.5	440	143	25	131.4	40	26	18



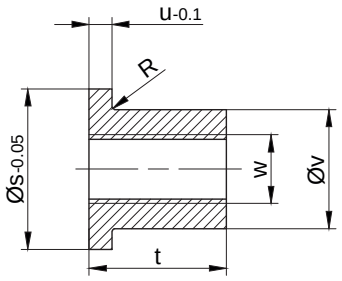
Installation Holding Dismantlement

The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

The actual gearbox design can vary from the geometry shown.

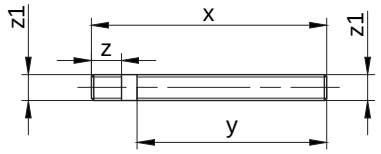
Assembly tools for shaft mounted gears with splined shaft

Pos.3 Sleeve



x, edges cut
Material:
C45 DIN 17200

Pos.4 Stud Bolt



Material: Steel, tensile strength
≥ 1000N/mm²
threads rolled

Type	Dimensions (mm)										✳Retainer ring DIN 472	Hexagon nut DIN 934-8	Disc DIN 125-St	✳Fillister head screw DIN 7984-8.8	Starting torque (Nm)	Hexagon bolt DIN EN 24017-8.8
	Pos.3 Sleeve						Pos.4 Stud Bolt									
	s	t	u	v	w	R	x	y	z	z1	Pos.5	Pos.6	Pos.7	Pos.8		Pos.9
BK10	30.4	28	5	19.8	M14	-	200	170	23	M10	35x1.5	M10	10.5	M10x30	8	M14x190
BK20	35.9	28	5	23	M14	-	230	195	23	M10	35x1.5	M10	10.5	M10x35		M14x210
BK30	40.9	40	6	27.7	M20	-	260	220	28	M12	40x1.75	M12	13	M12x35	16	M20x240
BK40	50.9	48	6	36	M24	0.8	300	260	37	M16	50x2.0	M16	17	M16x40	30	M24x290
BK50	60.9	60	6	44	M30	-	340	290	45	M20	60x2.0	M20	21	M20x50	42	M30x320
BK60	71.9	60	6	53	M30	0.8	370	310	45	M20	70x2.5	M20	21	M20x50		M30x350
BK70	85.9	60	8	65	M30	0.8	420	360	45	M20	85x3	M20	21	M20x50		M30x400
BK80	111.9	72	10	85	M36	0.8	480	410	55	M24	112x4	M24	25	M24x60	100	M36x450
BK90	131.4	72	10	95	M36	0.8	560	480	55	M24	130x4	M24	25	M24x60		M36x520

The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

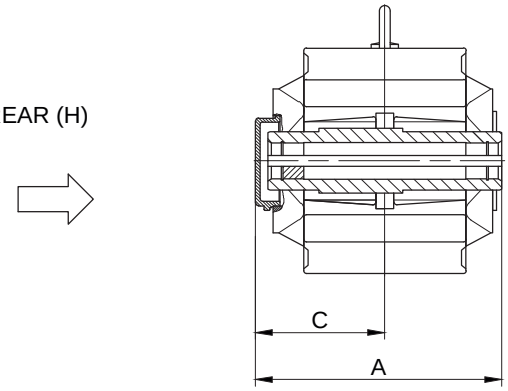
Optional:

Type	Ø s	Order Text
BK10	30.5	Id.Nr.4105133 Assembly tool "holding"
BK20	36	Id.Nr.4105141 Assembly tool "holding"
BK30	41	Id.Nr.4105150 Assembly tool "holding"
BK40	51	Id.Nr.4105168 Assembly tool "holding"
BK50	61	Id.Nr.4105176 Assembly tool "holding"
BK60	72	Id.Nr.4105184 Assembly tool "holding"
BK70	86	Id.Nr.4105192 Assembly tool "holding"
BK80	112	Id.Nr.4105206 Assembly tool "holding"
BK90	131.5	Id.Nr.4105214 Assembly tool "holding"

The actual gearbox design can vary from the geometry shown.

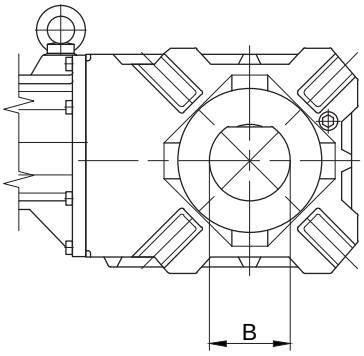
Shaft Cap (VK)

Gear side REAR (H)



Gear side FRONT (V)

Gear side REAR (H)

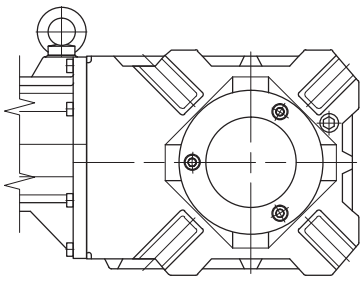


Type	A	B	C
BK10	182.5	85	97.5
BK20	204.5	90	108.5
BK40	273.5	100	143.5
BK50	298	115	157
BK60	322	130	171
BK70	370	160	194

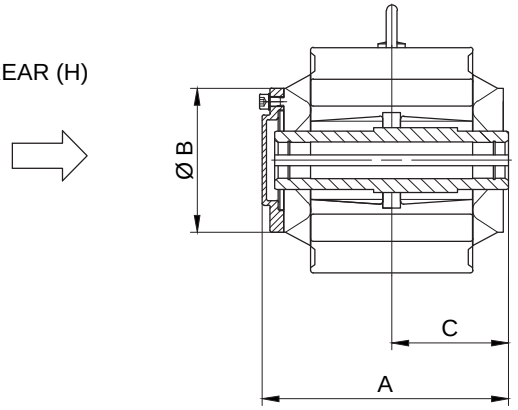
The actual gearbox design can vary from the geometry shown.

Shaft Cover (VD)

Gear side REAR (H)



Gear side REAR (H)

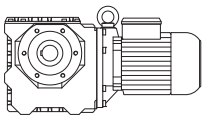


Gear side FRONT (V)

Type	A	B	C
BK10	181	120	85
BK20	206	139.5	96
BK30	239	160	112
BK40	274	160	130
BK50	297	199	141
BK60	321	210	151
BK70	368	250	176
BK80	419	300	202
BK90	492	351	242

The actual gearbox design can vary from the geometry shown.

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Page

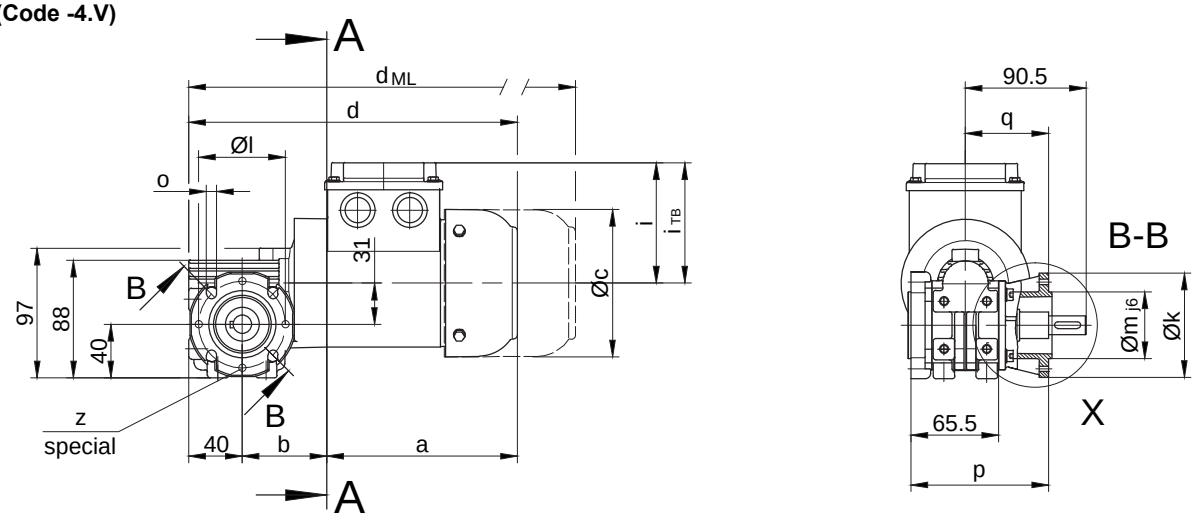
Dimensional drawings worm-geared motors 357-394
- Standard
- Tandem Gearbox

Additional Dimension Sheet
- Shrink disc couplings (SSV)
- Shrink disc couplings with (SSV) cover
- Rubber buffer for torque restraint
- Position of the torque arm
- Threaded foot, left
- Foot plate, left
- Assembly tools for hollow shaft
- Shaft cap (VK)
- Shaft cover (VD)

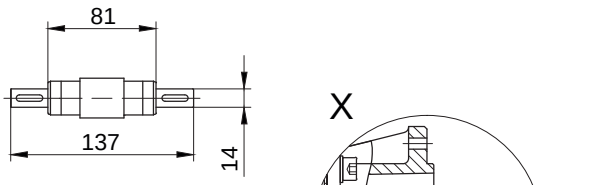
BS02

Flange with clearance holes at front

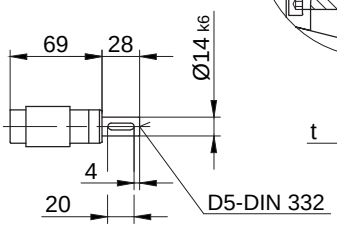
Code -3.V
(Code -4.V)



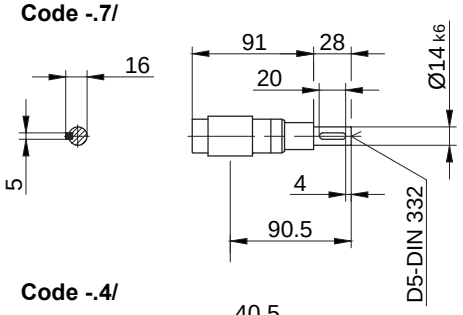
Code -.3/



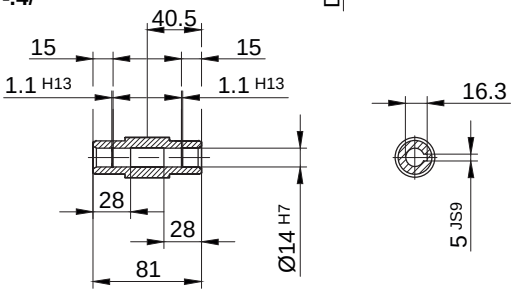
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Code -.7/

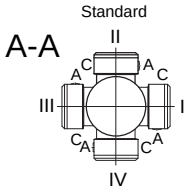


Code -.4/



Flange dimensions

BS02	k	l	m	n	o	p	q	s	t	z
standard -37V/	80	65	50	7	5.5	103	62.5	2.5	28	-
spezial -37V/	80	65	50	7	5.5	103	62.5	2.5	28	4xM5
big -47V/	110	80	60	8	6.6	103	62.5	2.5	28	-
spezial -47V/	110	80	60	8	6.6	103	62.5	2.5	28	4xM6

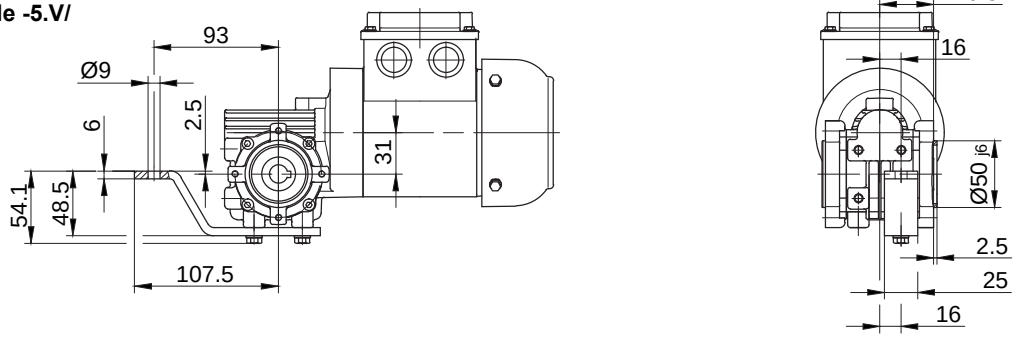


Type	a	b	c	d	u	i	i_{TB}	Design with motor extensions			
								E..	G	E..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS02-../D04..	143	63.5	111	246.5	178	90	112	290	309	352	-
BS02-../D05..	170	65.5	123	275.5	188	100	117	317.5	378.5	420	-
BS02-../D06..	170	65.5	123	275.5	188	100	119	317.5	378.5	420	-
BS02-../D07..	190	65.5	123	295.5	188	100	119	337.5	398.5	440	-

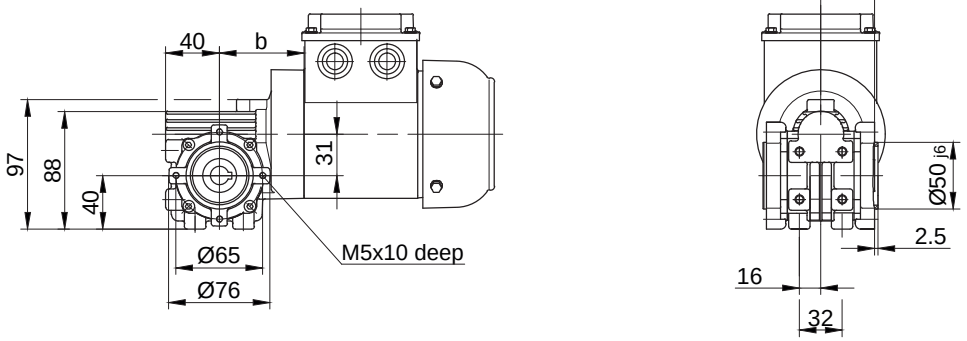
The actual gearbox design can vary from the geometry shown.

BS02

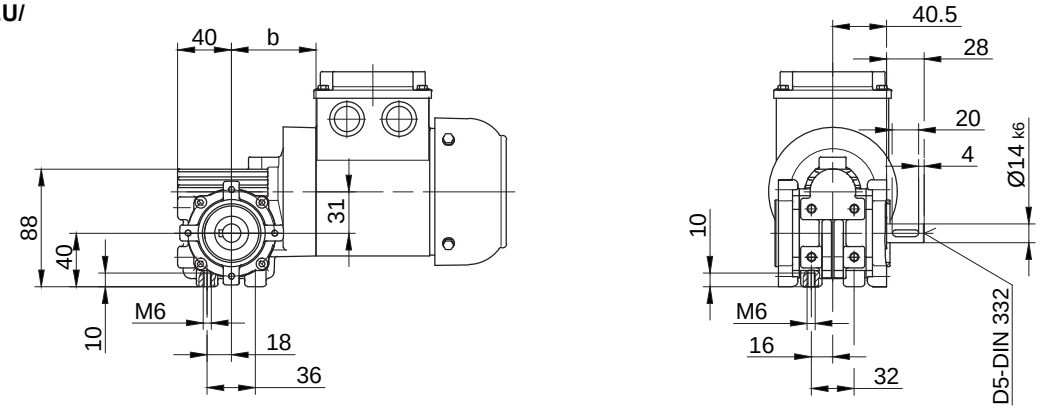
Torque arm at front
Code -5.V/



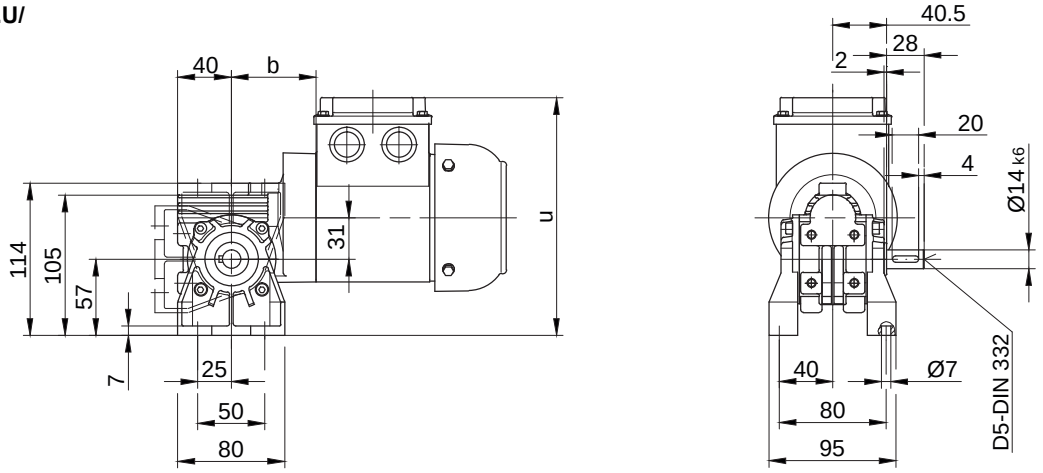
Flange with tapped holes at front
Code -7.V/



Foot with tapped holes at bottom
Code -6.U/



Foot with clearance holes at bottom
Code -1.U/

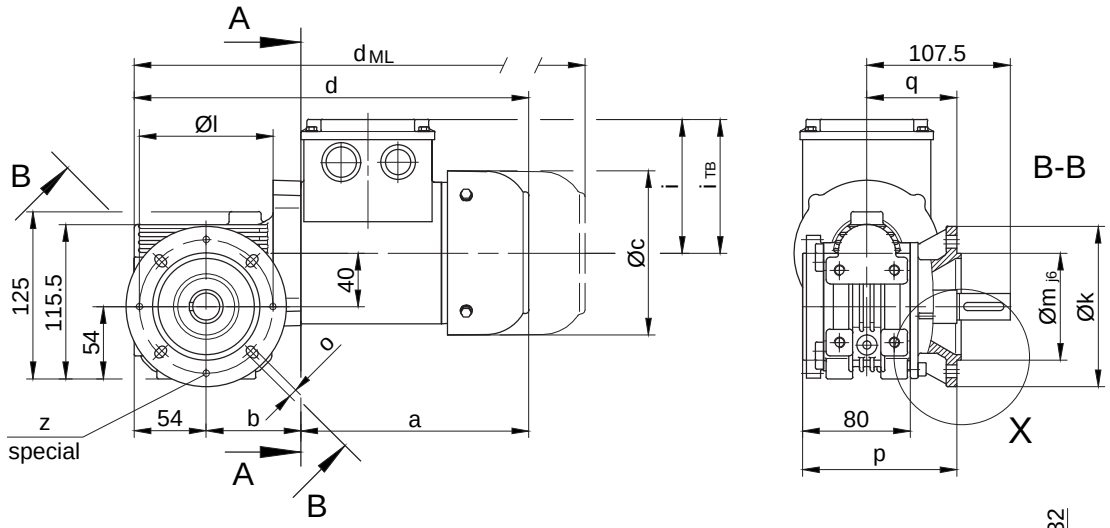


The actual gearbox design can vary from the geometry shown.

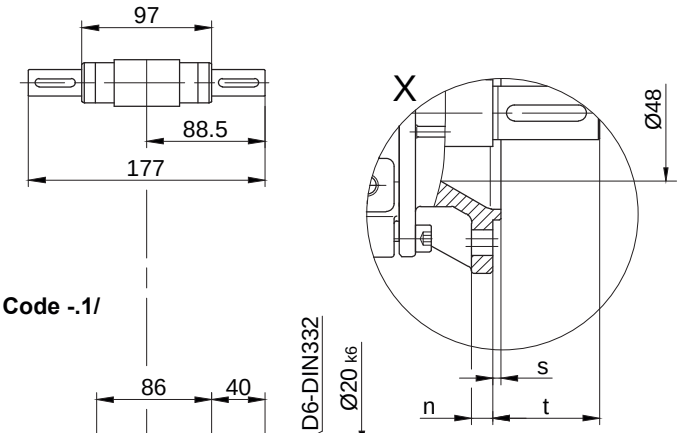
BS03

Flange with clearance holes at front

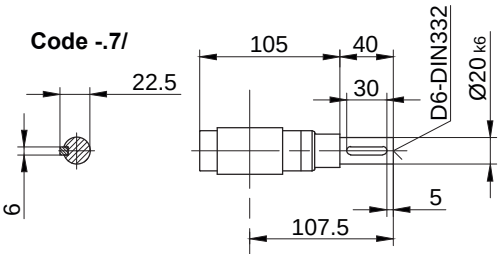
Code -3.V/



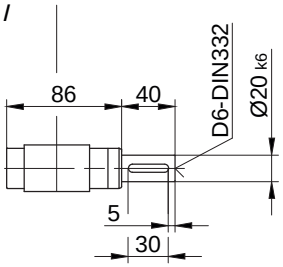
Code -.3/



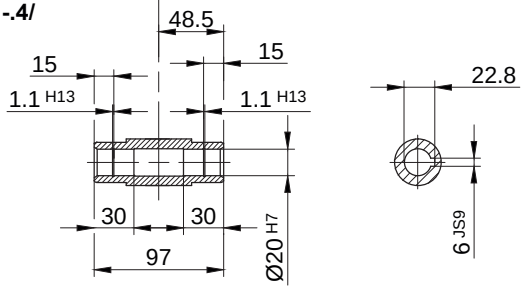
Code -.7/



Code -.1/



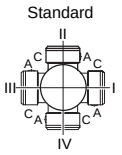
Code -.4/



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Flange dimensions

BS03	k	l	m	n	o	p	q	s	t	z
standard -37V/	120	100	80	8	6.6	115	67.5	3	40	-
special -37V/	120	100	80	8	6.6	115	67.5	3	40	4xM6



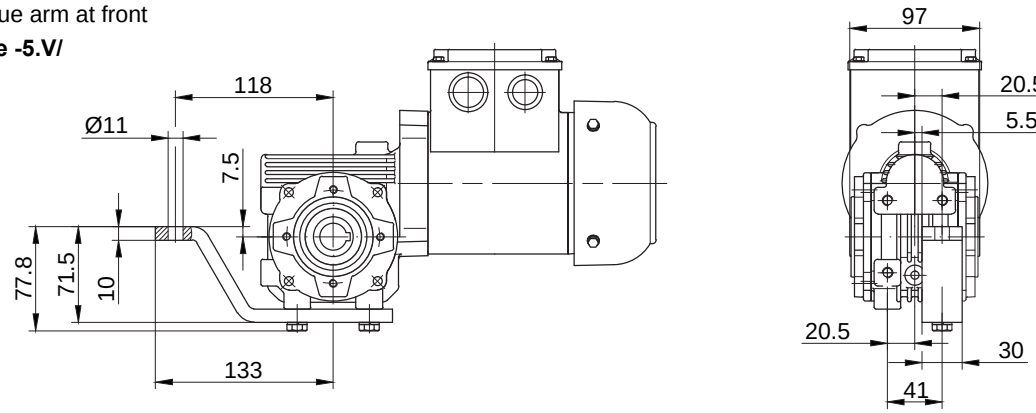
Type	a	b	c	d	u	v	i	i_{TB}	Design with motor extensions			
									E../ES..	G	E../ES..-G	RR/RL
									d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS03-../D05..	170	71	123	295	213	70	100	117	337	398	439.5	-
BS03-../D06..	170	71	123	295	213	70	100	119	337	398	439.5	-
BS03-../D07..	190	71	123	315	213	70	100	119	357	418	459.5	-
BS03-../D..08..	200	115	156	425	228	-	115	136.5	491	532	598.5	491

The actual gearbox design can vary from the geometry shown.

BS03

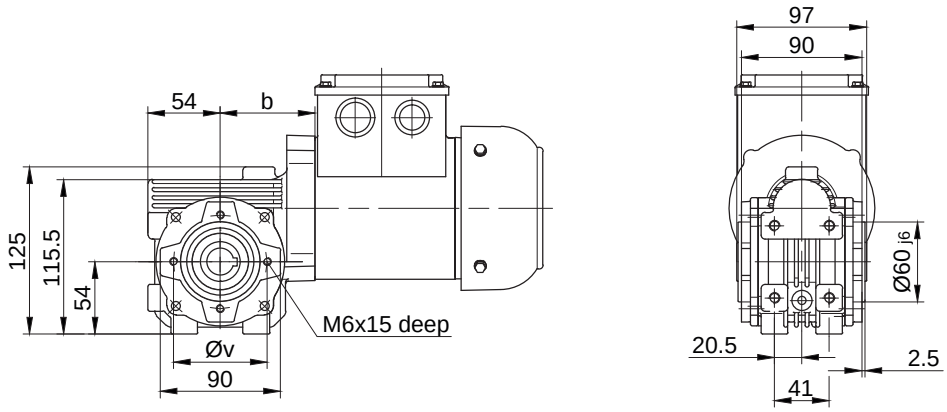
Torque arm at front

Code -5.V/



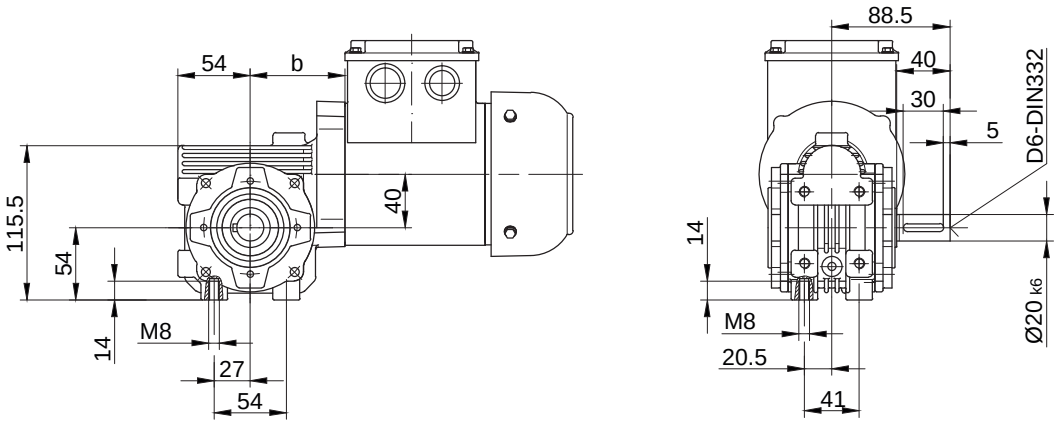
Flange with tapped holes at front

Code -7.V/



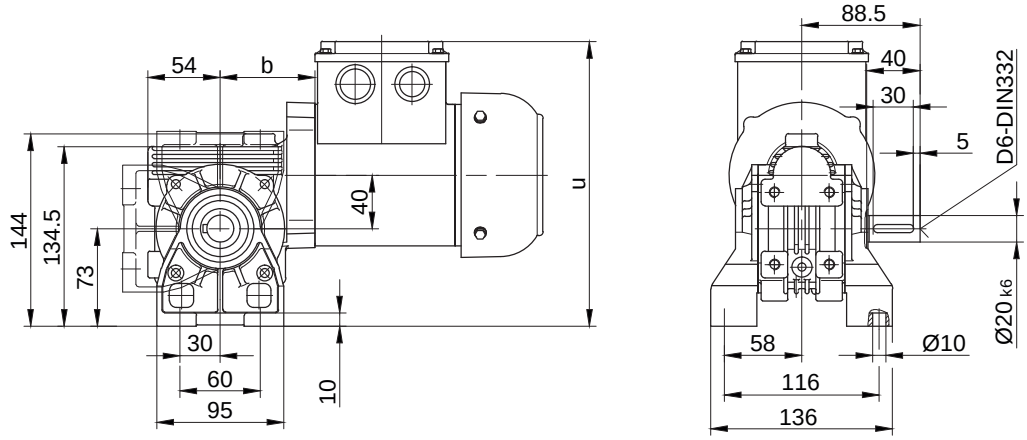
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

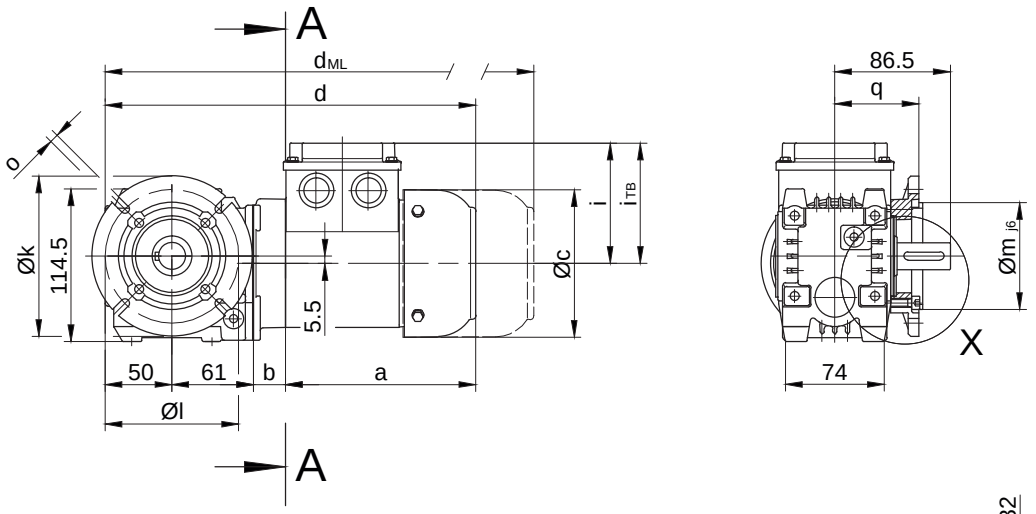
Code -1.U/



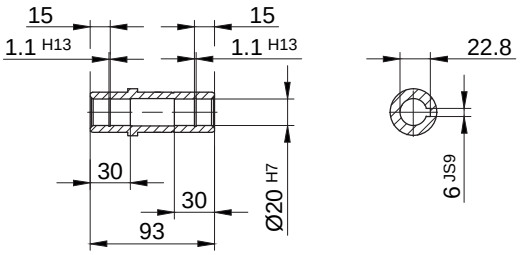
The actual gearbox design can vary from the geometry shown.

BS04

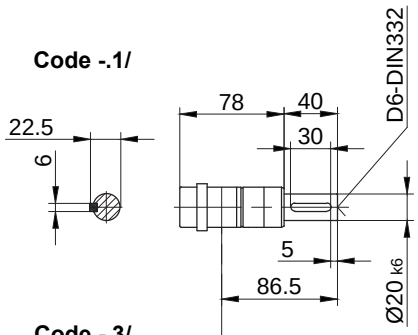
Flange with clearance holes at front
Code -3.V/



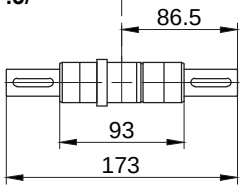
Code -.4/

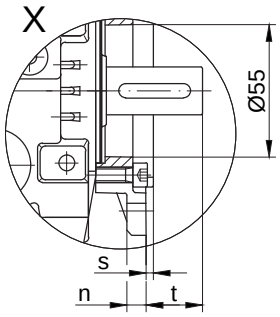


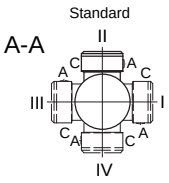
Code -.1/



Code -.3/







Flange dimensions

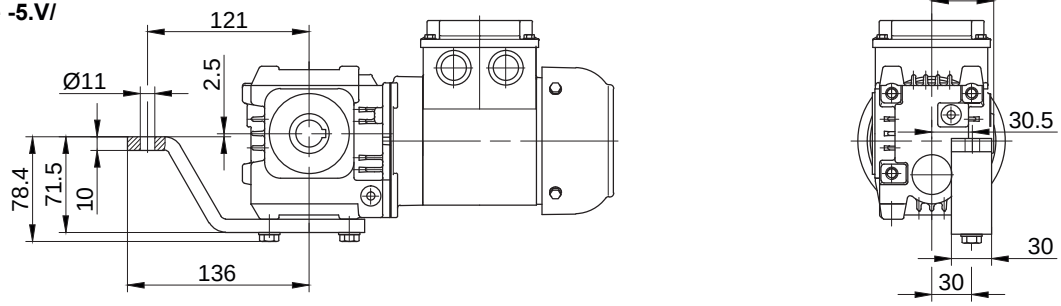
BS04	k	l	m	n	o	p	q	s	t
Standard -3.V/	120	100	80	8	6.6	110.5	63	3	23.5

Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E..	G	E..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS04-../D04..	143	24	111	278	90	112	321.5	340.5	383.5	-
BS04-../D05..	170	26	123	307	100	117	349	410	451.5	-
BS04-../D06..	170	26	123	307	100	119	349	410	451.5	-
BS04-../D07..	190	26	123	327	100	119	369	430	471.5	-

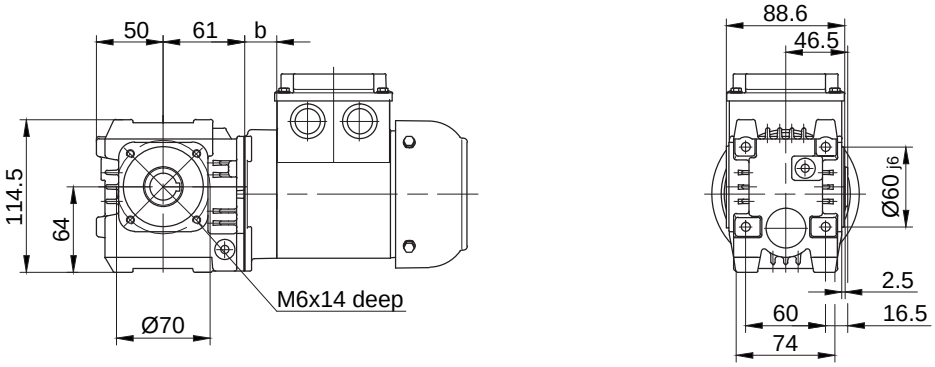
The actual gearbox design can vary from the geometry shown.

BS04

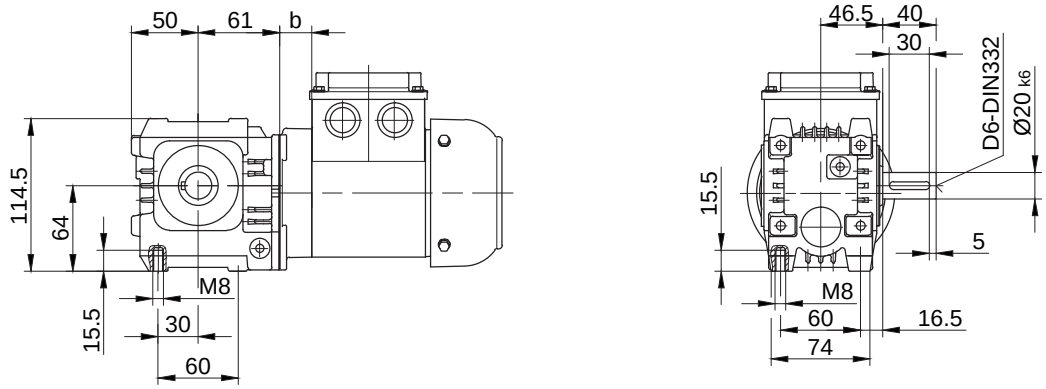
Torque arm at front
Code -5.V/



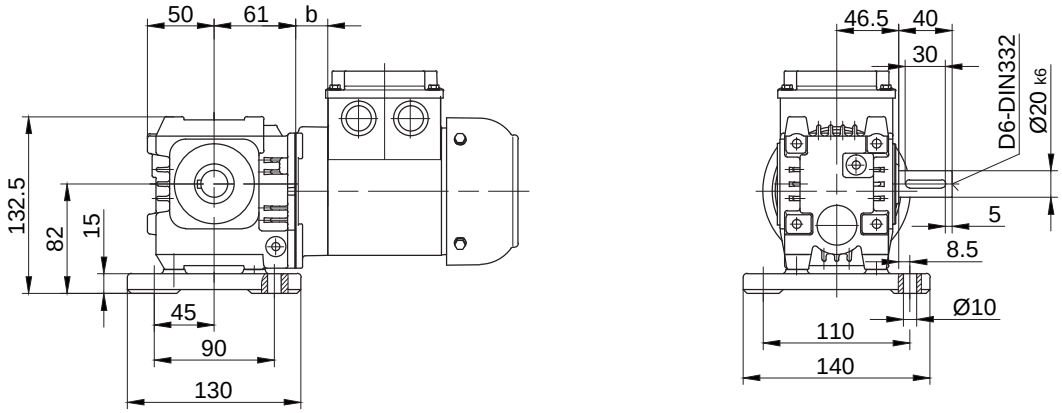
Flange with tapped holes at front
Code -7.V/



Foot with tapped holes at bottom
Code -6.U/



Foot with clearance holes at bottom
Code -1.U/

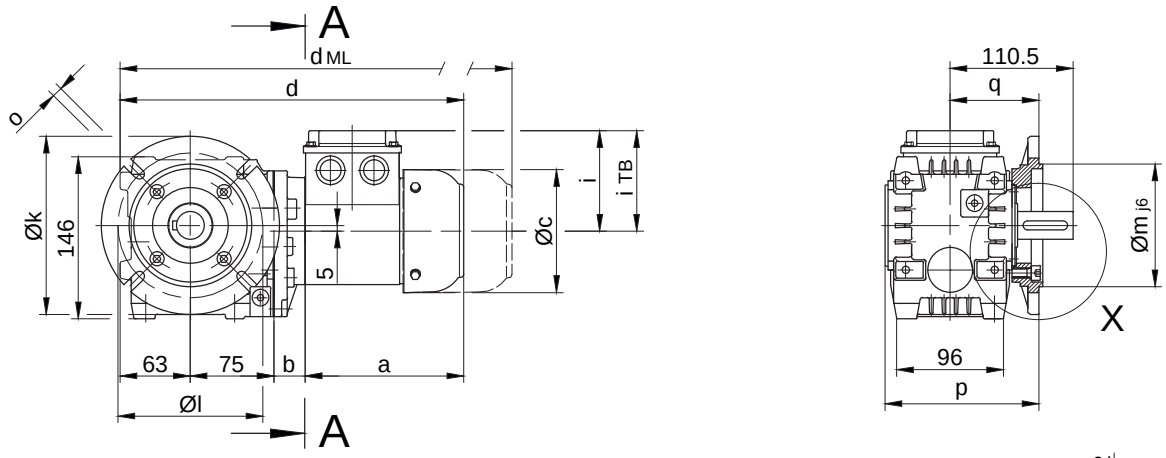


The actual gearbox design can vary from the geometry shown.

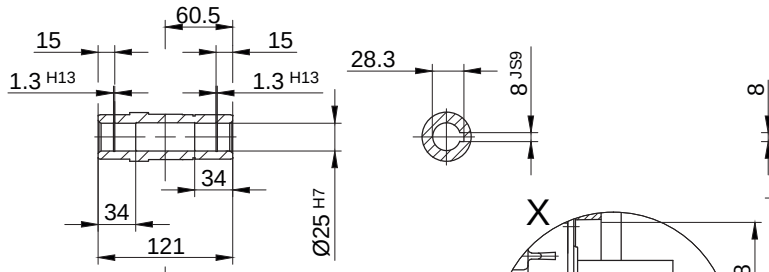
BS06

Flange with clearance holes at front

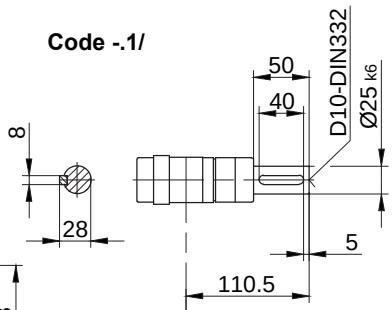
Code -3.V/
(Code -4.V/)



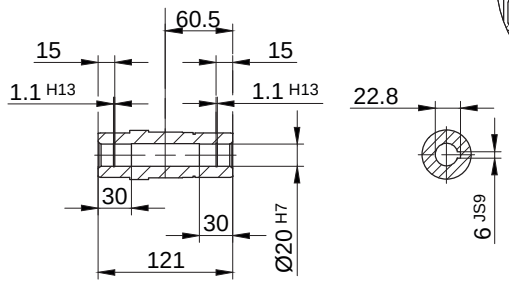
Code -.4/
Standard



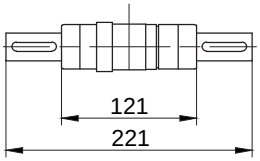
Code -.1/



Code -.4/K20



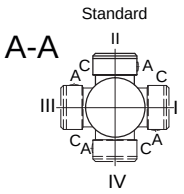
Code -.3/



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Flange dimensions

BS06	k	l	m	n	o	p	q	s	t
Standard -3.V/	140	115	95	10	9	138.5	80	3	30.5
big -4.V/	160	130	110	10	9	138.5	80	3.5	30.5



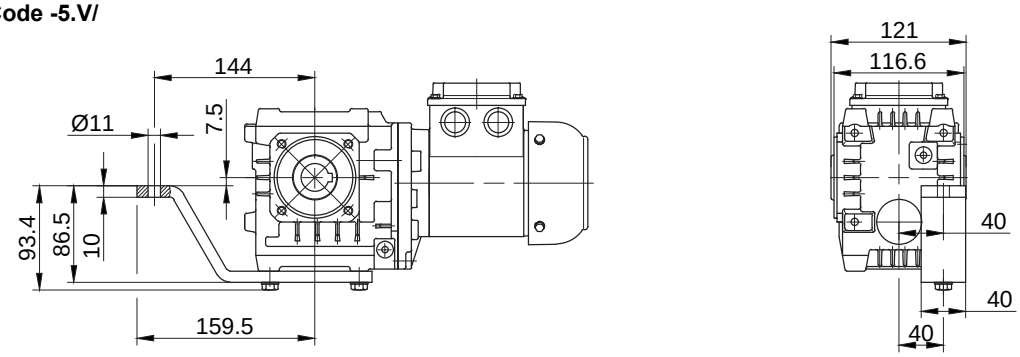
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS06-../D04..	143	28	111	309	90	112	352.5	371.5	414.5	-
BS06-../D05..	170	30	123	338	100	117	380	441	482.5	-
BS06-../D06..	170	30	123	338	100	119	380	441	482.5	-
BS06-../D07..	190	30	123	358	100	119	400	461	502.5	-
BS06-../D..08..	200	74	156	412	115	136.5	478	519	585.5	478

The actual gearbox design can vary from the geometry shown.

BS06

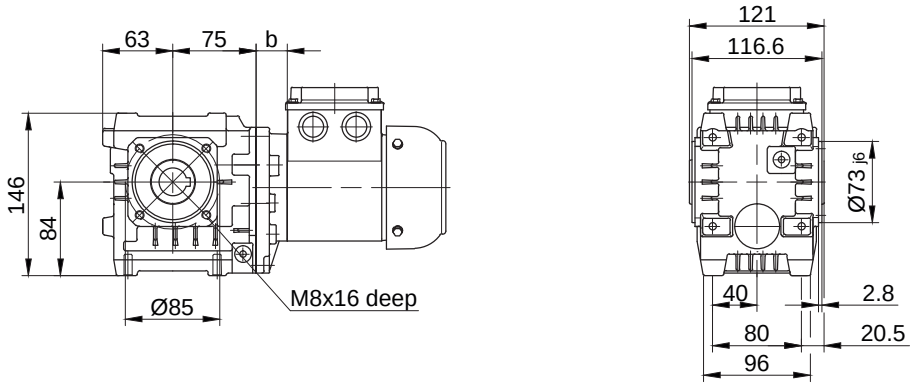
Torque arm at front

Code -5.V/



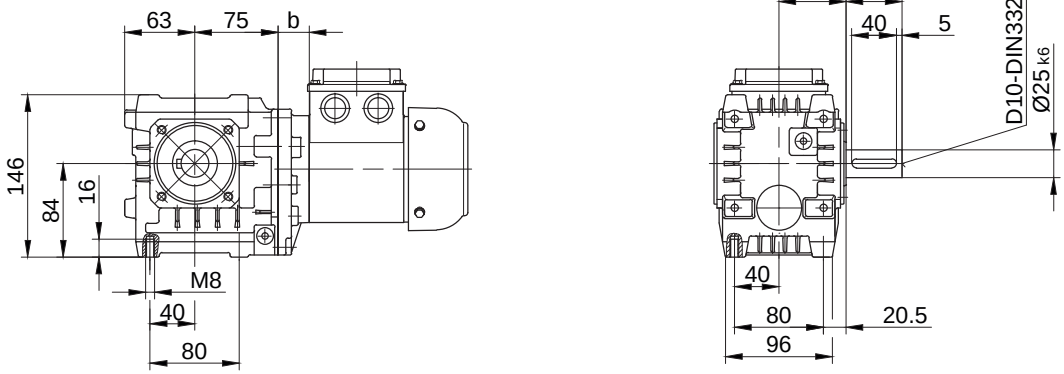
Flange with tapped holes at front

Code -7.V/



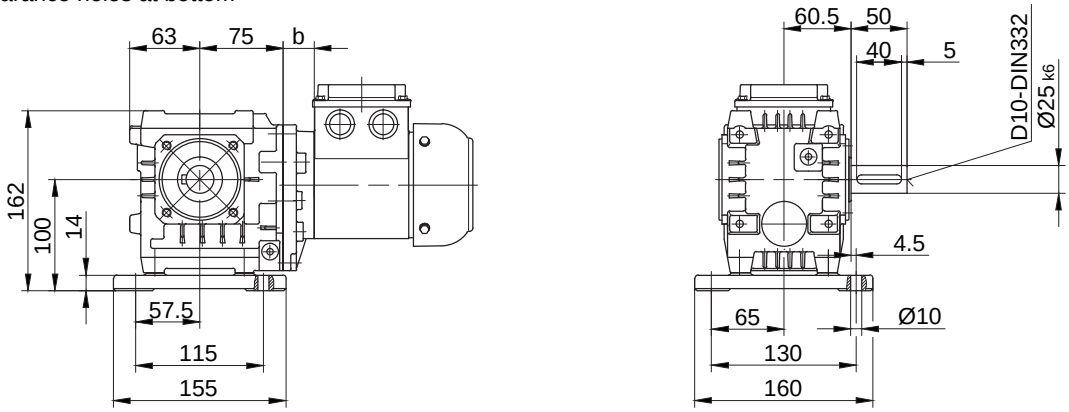
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/



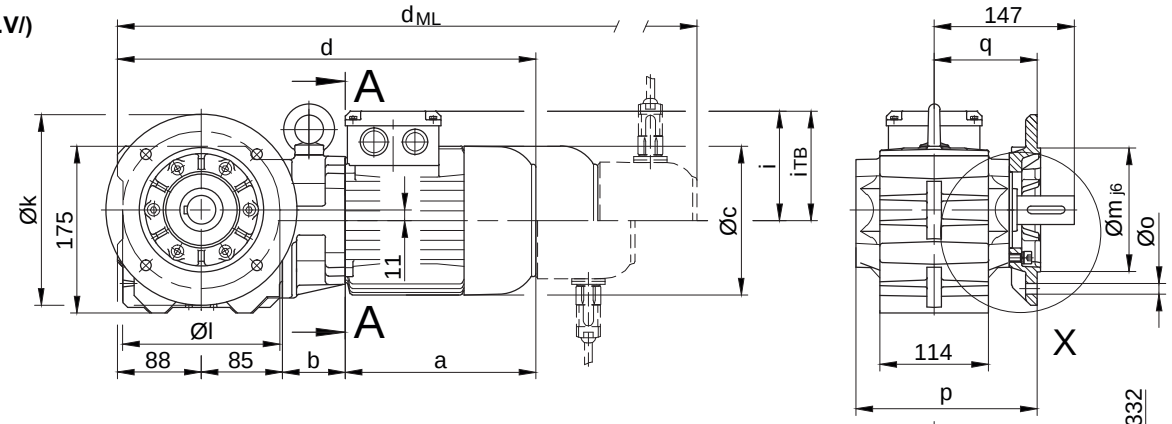
The actual gearbox design can vary from the geometry shown.

BS10 - BS10Z

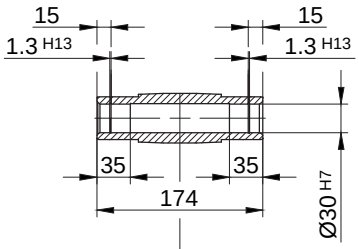
Flange with clearance holes at front

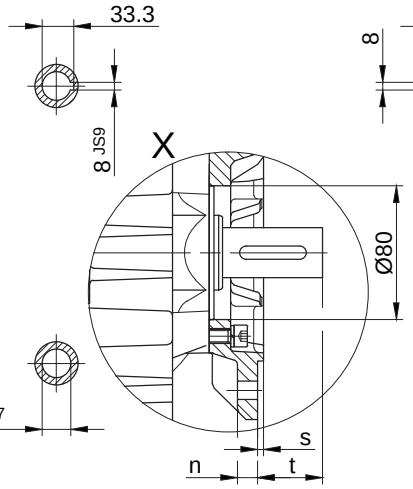
Code -3.V/

(Code -2.V/)

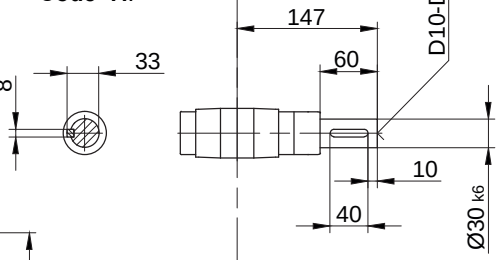


Code -.4/

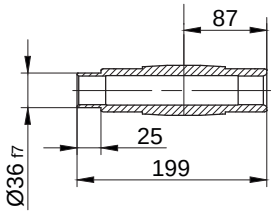




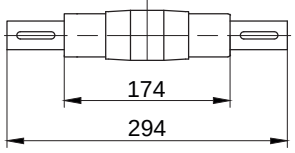
Code -.1/



Code -.5/

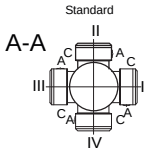


Code -.3/



Flange dimensions

BS10(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	200	165	130	12	11	190	108	3.5	39
small -2.V/	160	130	110	10	9	183	101	3.5	46



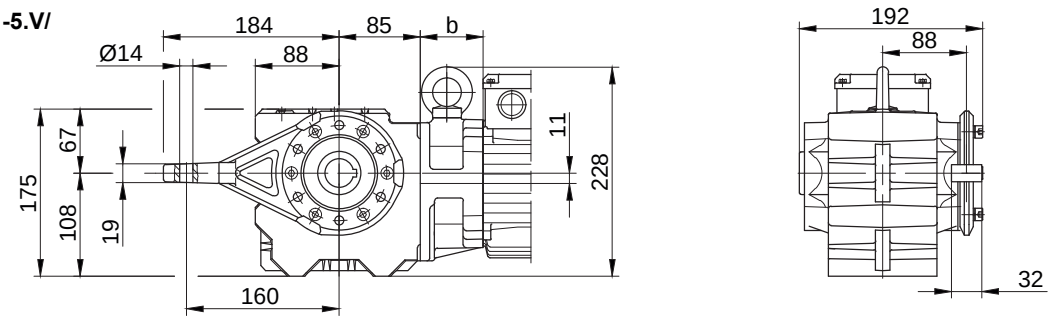
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS10Z-../D04..	143	86	111	402	90	112	445.5	464.5	507.5	-
BS10-../D05..	170	62	123	405	100	117	447	508	549.5	-
BS10Z-../D05..	170	88	123	431	100	117	473	534	575.5	-
BS10-../D06..	170	62	123	405	100	119	447	508	549.5	-
BS10Z-../D06..	170	88	123	431	100	119	473	534	575.5	-
BS10-../D07..	190	62	123	425	100	119	467	528	569.5	-
BS10Z-../D07..	190	88	123	451	100	119	493	554	595.5	-
BS10-../D..08..	200	66	156	439	115	136.5	505	546	612.5	505
BS10Z-../D..08..	200	132	156	505	115	136.5	571	612	678.5	571
BS10-../D..09..	251	80.5	181	504.5	124	158	597.5	611.5	702	597.5

The actual gearbox design can vary from the geometry shown.

BS10 - BS10Z

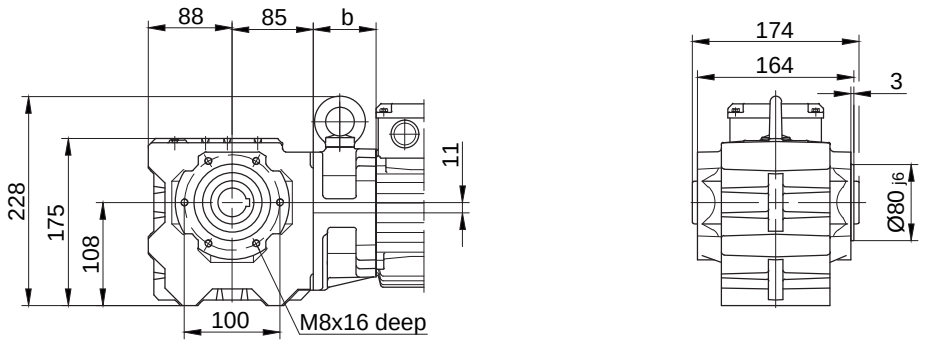
Torque arm at front

Code -5.V/



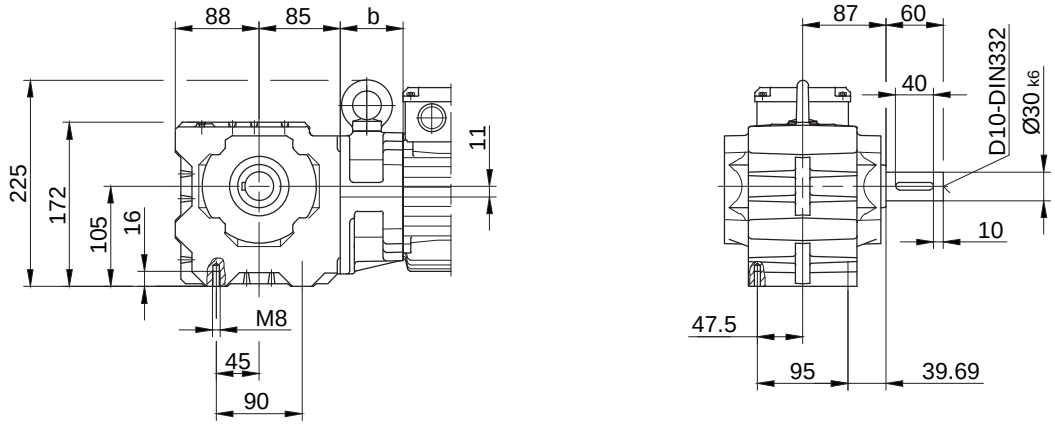
Flange with tapped holes at front

Code -7.V/



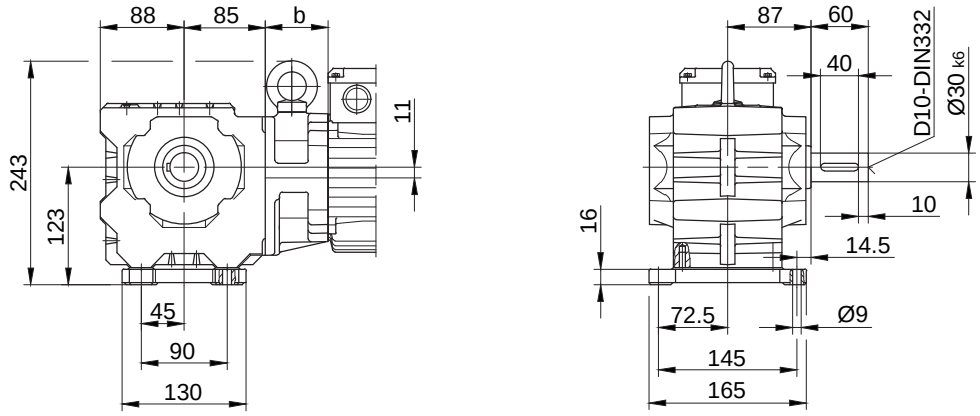
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

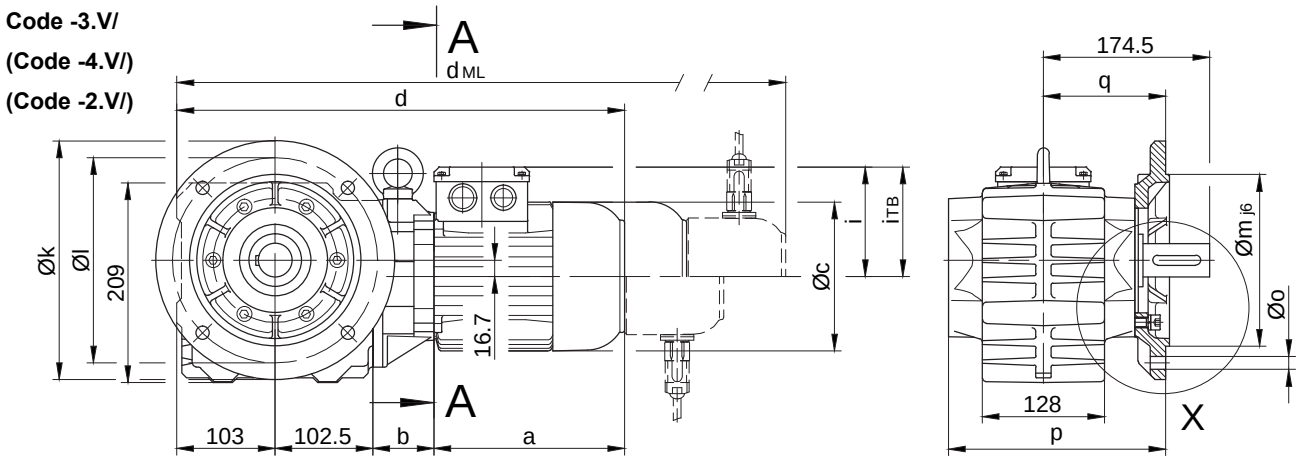


The actual gearbox design can vary from the geometry shown.

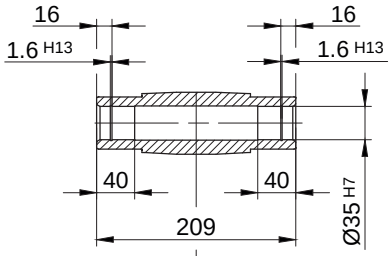
BS20 - BS20Z

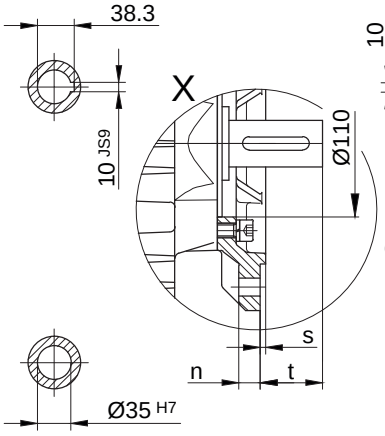
Flange with clearance holes at front

Code -3.V/
(Code -4.V/)
(Code -2.V/)

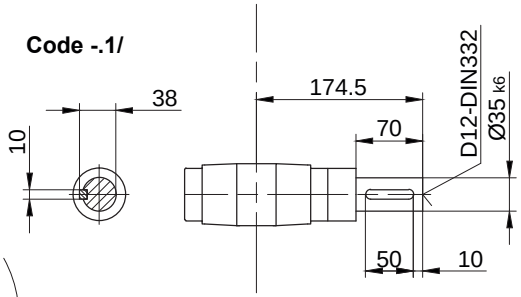


Code -.4/

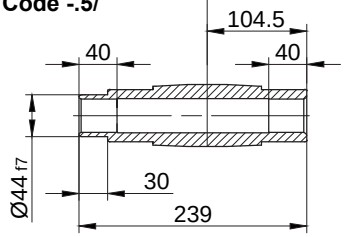




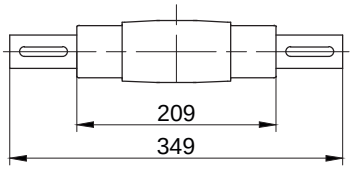
Code -.1/



Code -.5/

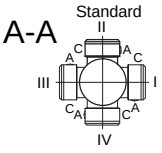


Code -.3/



Flange dimensions

BS20(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	227.5	128	4	46.5
small -2.V/	200	165	130	12	11	224.5	125	3.5	49.5
big -4.V/	300	265	230	20	13.5	233.5	134	4	40.5



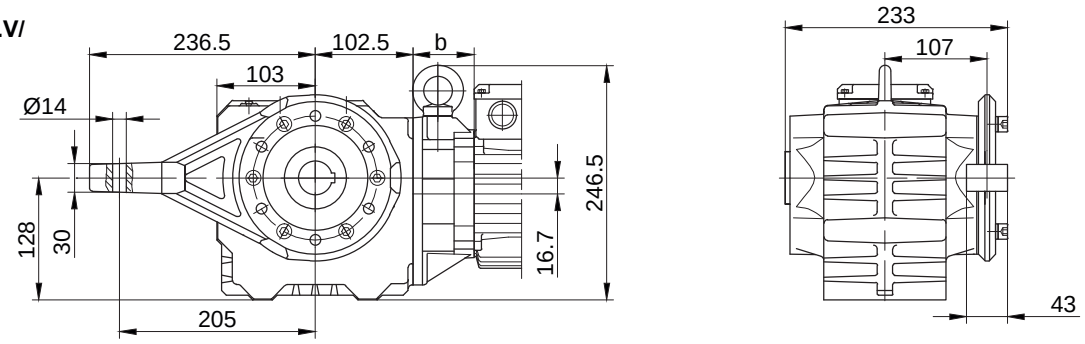
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS20Z-../D04..	143	100	111	448.5	90	112	492	511	554	-
BS20-../D05..	170	60	123	435.5	100	117	477.5	538.5	580	-
BS20Z-../D05..	170	102	123	477.5	100	117	519.5	580.5	622	-
BS20-../D06..	170	60	123	435.5	100	119	477.5	538.5	580	-
BS20Z-../D06..	170	102	123	477.5	100	119	519.5	580.5	622	-
BS20-../D07..	190	60	123	455.5	100	119	497.5	558.5	600	-
BS20Z-../D07..	190	102	123	497.5	100	119	539.5	600.5	642	-
BS20-../D..08..	200	64	156	469.5	115	136.5	535.5	576.5	643	535.5
BS20Z-../D..08..	200	146	156	551.5	115	136.5	617.5	658.5	725	617.5
BS20-../D..09..	251	78.5	181	535	124	158	628	642	732.5	628

The actual gearbox design can vary from the geometry shown.

BS20 - BS20Z

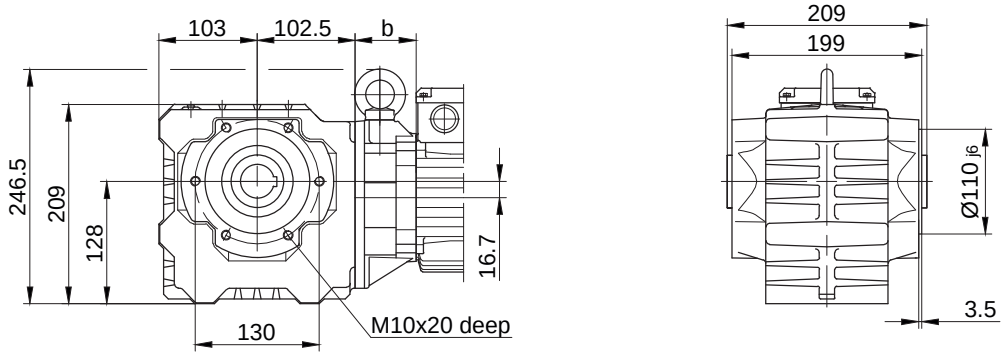
Torque arm at front

Code -5.V/



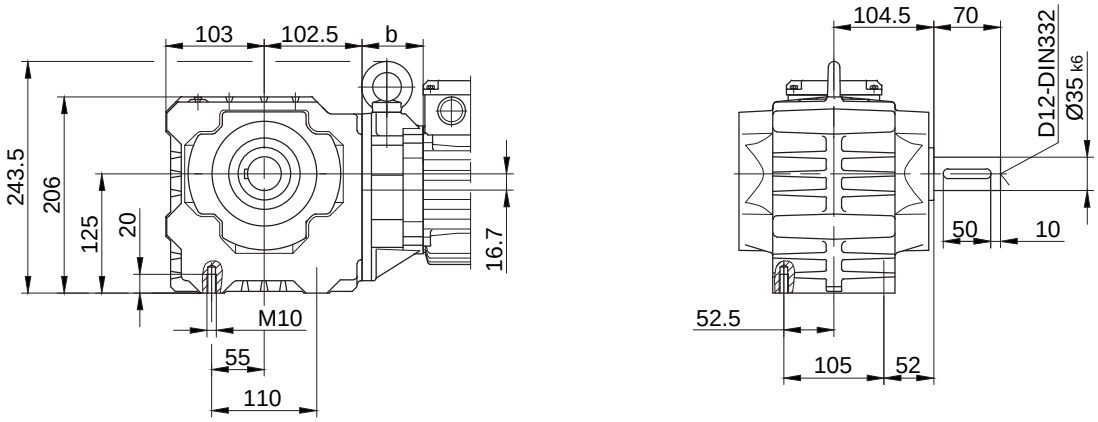
Flange with tapped holes at front

Code -7.V/



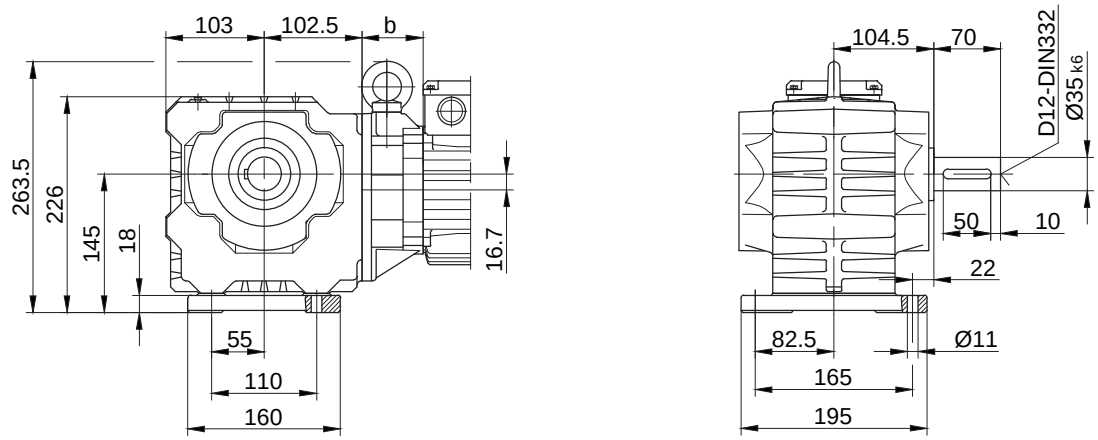
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

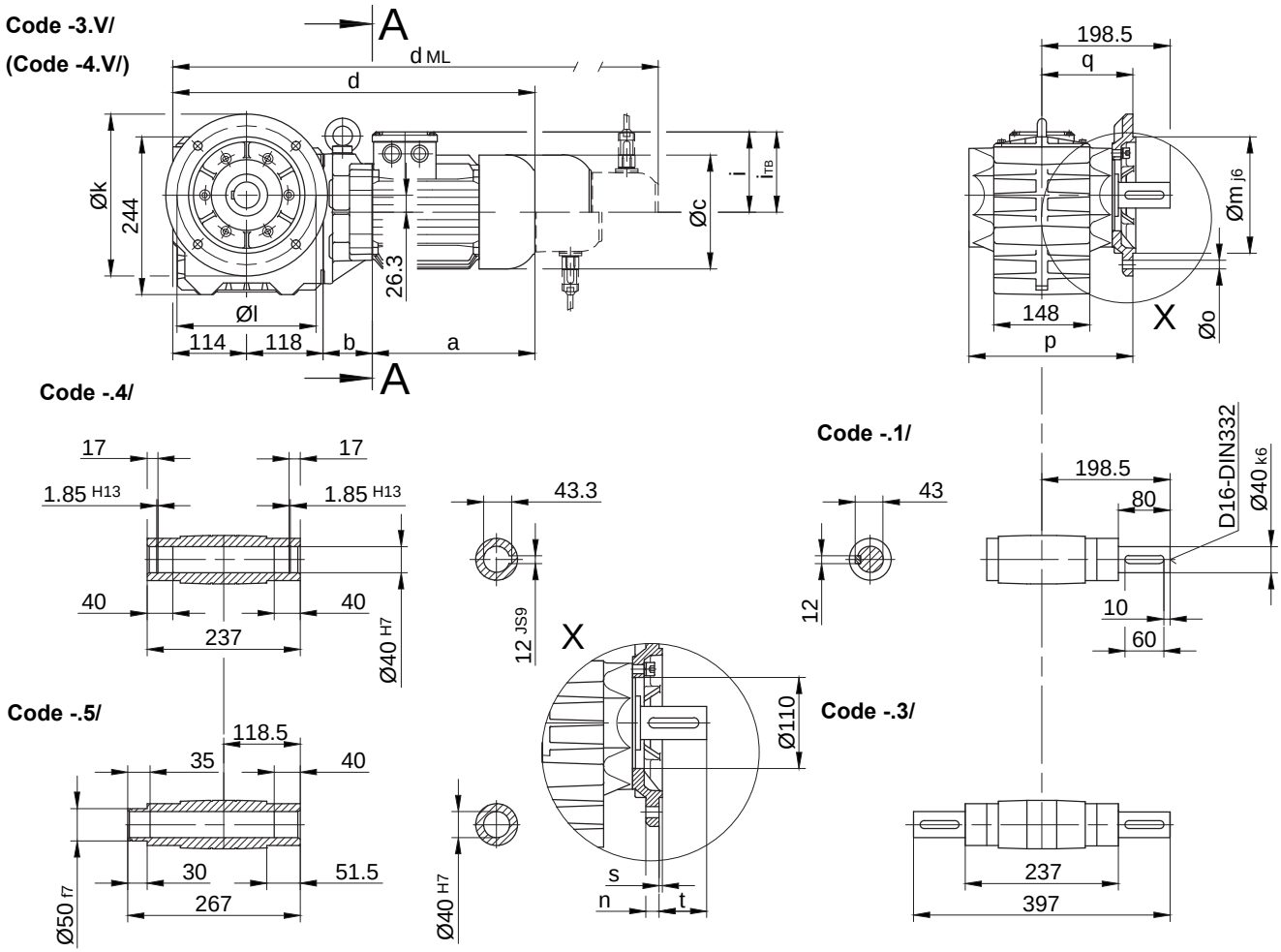
Code -1.U/



The actual gearbox design can vary from the geometry shown.

BS30 - BS30Z

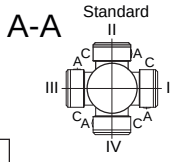
Flange with clearance holes at front



Flange dimensions

BS30(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	253.5	141	4	57.5
big -4.V/	300	265	230	20	13.5	259.5	147	4	51.5

A-A



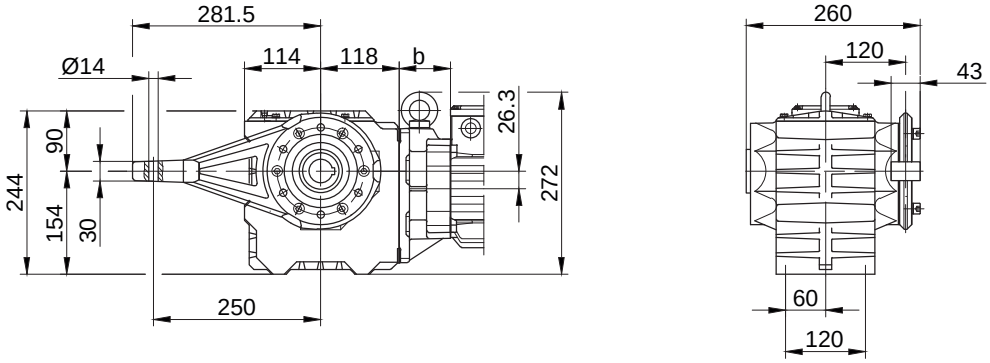
Type	a	b	c	d	i	i_{TB}	Design with motor extensions			
							E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS30-../D05..	170	58	123	460	100	117	502	563	604.5	-
BS30Z-../D05..	170	133.5	123	535.5	100	117	577.5	638.5	680	-
BS30-../D06..	170	58	123	460	100	119	502	563	604.5	-
BS30Z-../D06..	170	133.5	123	535.5	100	119	577.5	638.5	680	-
BS30-../D07..	190	58	123	480	100	119	522	583	624.5	-
BS30Z-../D07..	190	133.5	123	555.5	100	119	597.5	658.5	700	-
BS30-../D..08..	200	62	156	494	115	136.5	560	601	667.5	560
BS30Z-../D..08..	200	137.5	156	569.5	115	136.5	635.5	676.5	743	635.5
BS30-../D..09..	251	76.5	181	559.5	124	158	652.5	666.5	757	652.5
BS30Z-../D..09..	251	152	181	635	124	158	728	742	832.5	728
BS30-../D..11..	319	83	228	634	181	181	732	741	836.5	732

The actual gearbox design can vary from the geometry shown.

BS30 - BS30Z

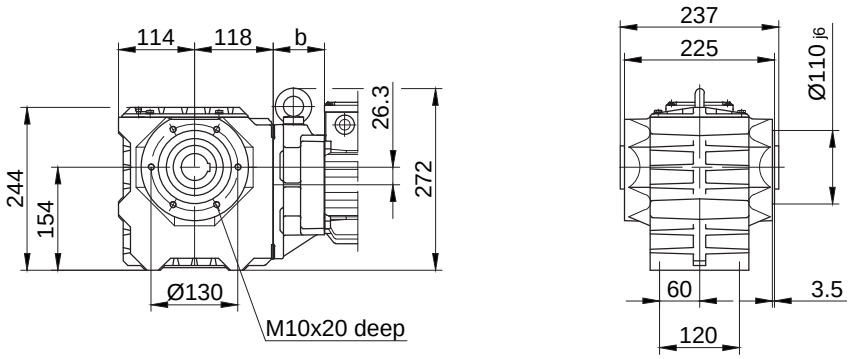
Torque arm at front

Code -5.V/



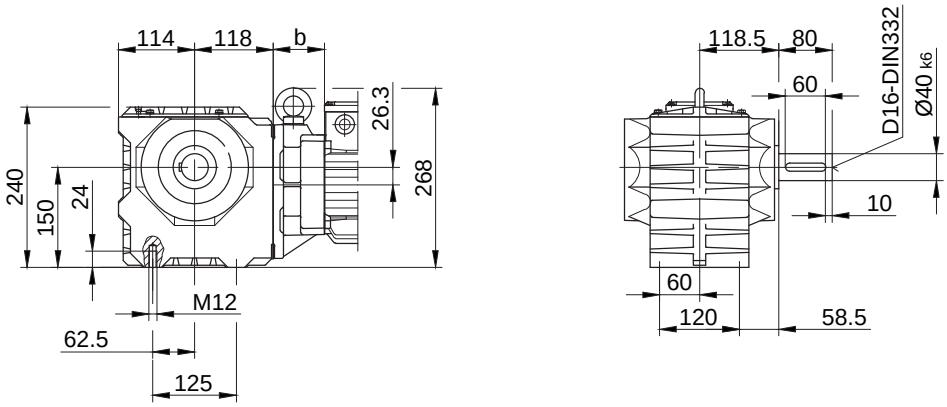
Flange with tapped holes at front

Code -7.V/



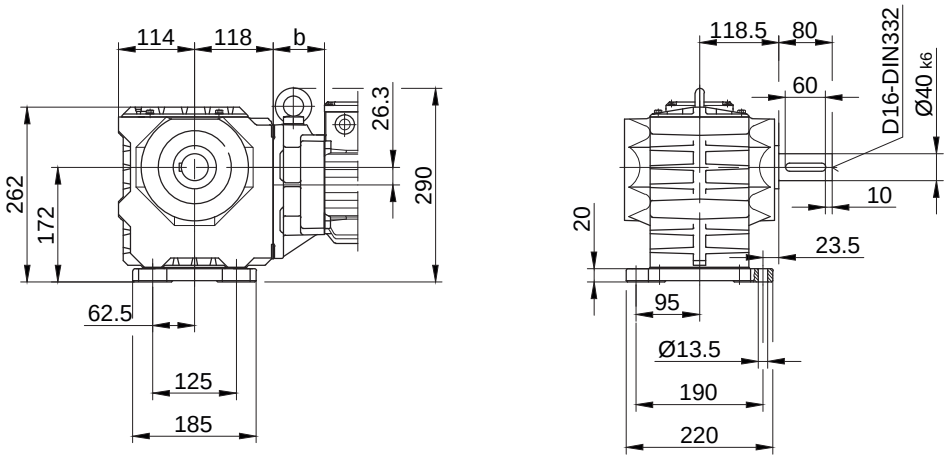
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

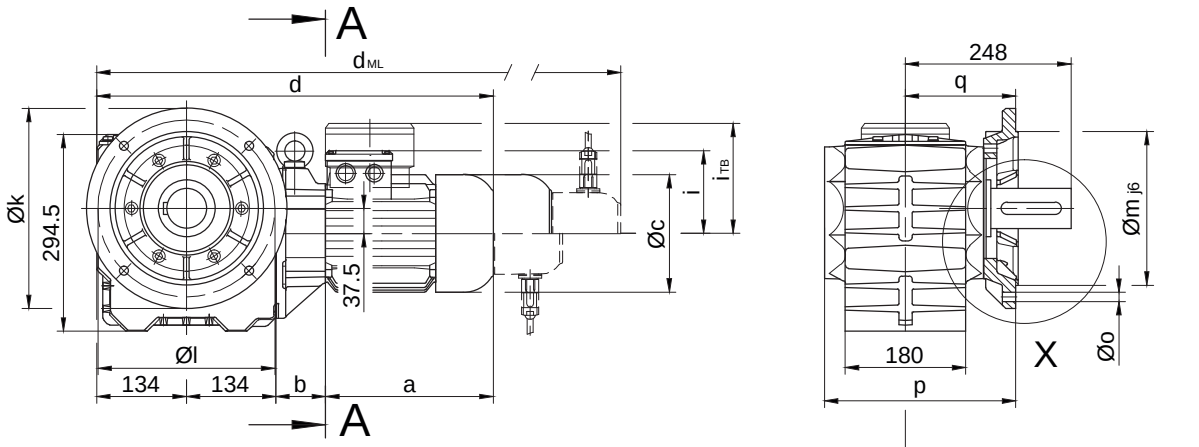


The actual gearbox design can vary from the geometry shown.

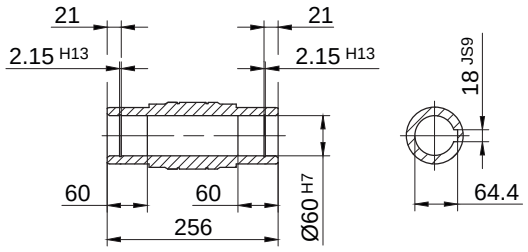
BS40 - BS40Z

Flange with clearance holes at front

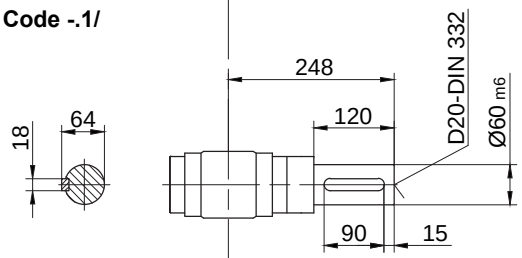
Code -3.V/

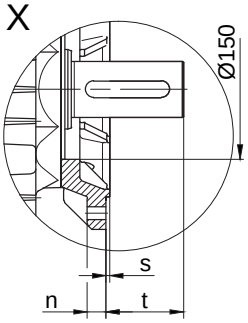


Code -.4/

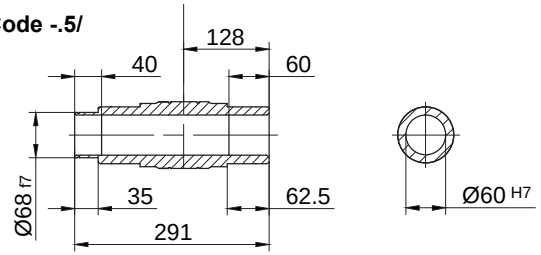


Code -.1/

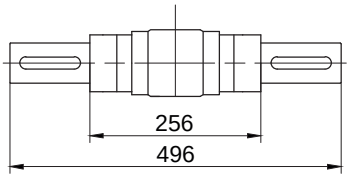


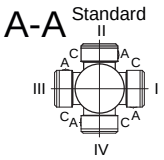


Code -.5/



Code -.3/





Flange dimensions

BS40(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	300	265	230	20	13.5	286	165	4	83

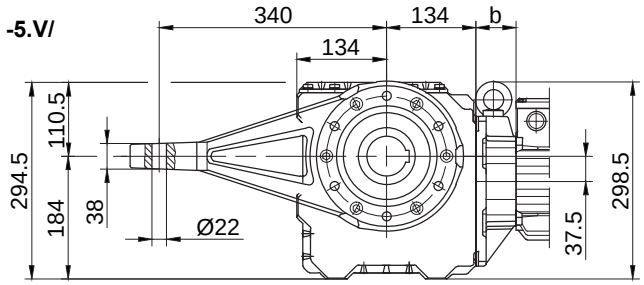
Type	a	b	c	d	i	Design with motor extensions				
						i_{TB}	E../ES..	G	E../ES..-G	RR/RL
							d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS40Z-../D05..	170	138.5	123	576.5	100	117	618.5	679.5	721	-
BS40Z-../D06..	170	138.5	123	576.5	100	119	618.5	679.5	721	-
BS40Z-../D07..	190	138.5	123	596.5	100	119	638.5	699.5	741	-
BS40-../D..08..	200	60	156	528	115	136.5	594	635	701.5	594
BS40Z-../D..08..	200	142.5	156	610.5	115	136.5	676.5	717.5	784	676.5
BS40-../D..09..	251	74.5	181	593.5	124	158	686.5	700.5	791	686.5
BS40Z-../D..09..	251	157	181	676	124	158	769	783	873.5	769
BS40-../D..11..	319	81	228	668	181	181	766	775	870.5	766

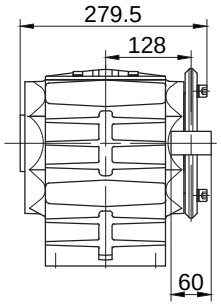
The actual gearbox design can vary from the geometry shown.

BS40 - BS40Z

Torque arm at front

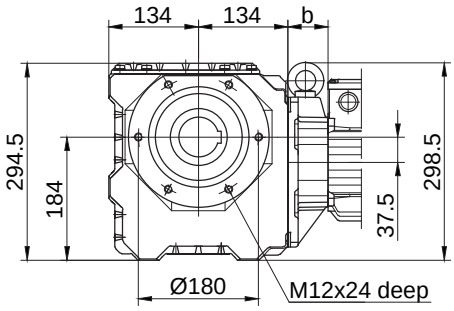
Code -5.V/

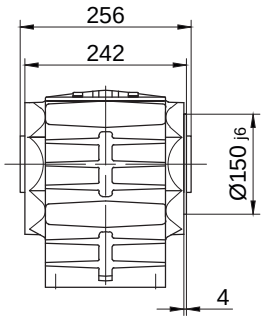




Flange with tapped holes at front

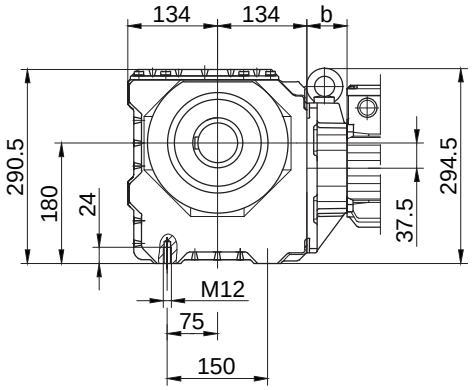
Code -7.V/

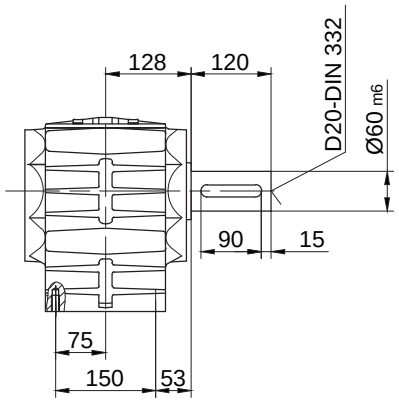




Foot with tapped holes at bottom

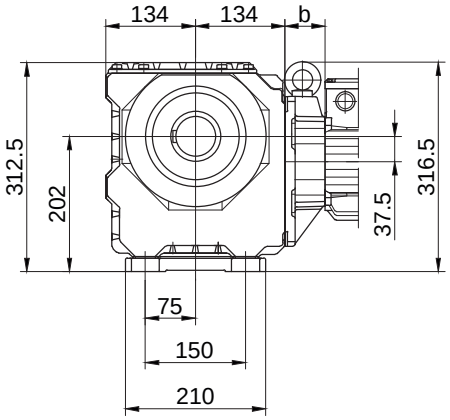
Code -6.U/

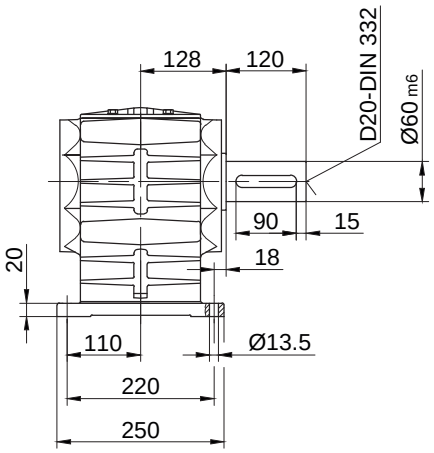




Foot with clearance holes at bottom

Code -1.U/



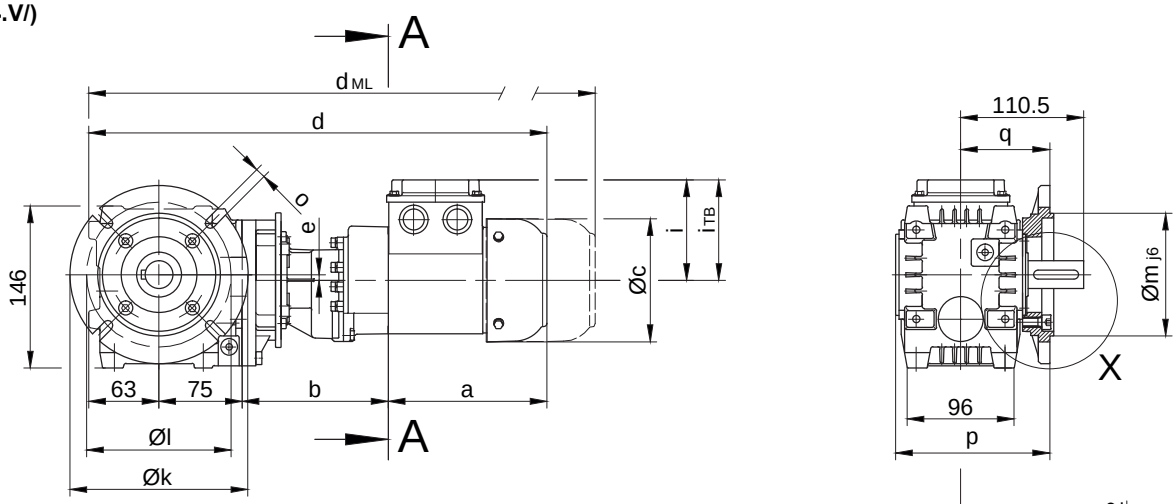


The actual gearbox design can vary from the geometry shown.

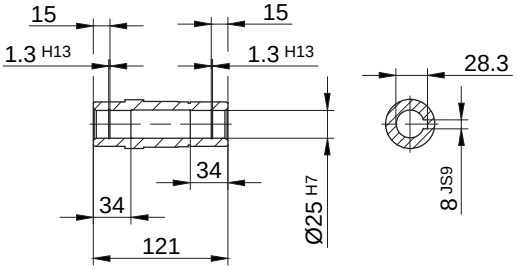
BS06G04

Flange with clearance holes at front

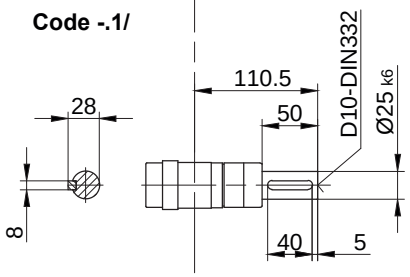
Code -3.V/
(Code -4.V/)

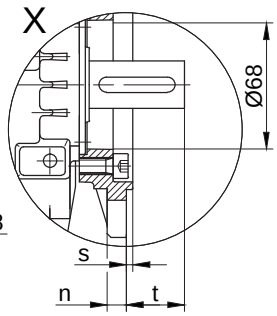


Code -.4/
Standard

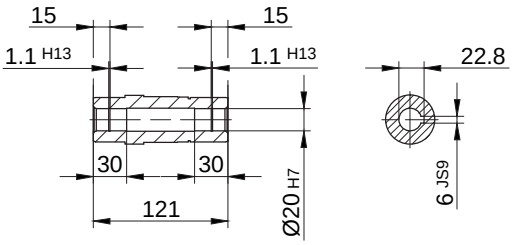


Code -.1/

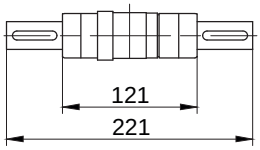


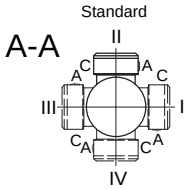


Code -.4/K20



Code -.3/





Flange dimensions

BS06G...	k	l	m	n	o	p	q	s	t
Standard -3.V/	140	115	95	10	9	138.5	80	3	30.5
big -4.V/	160	130	110	10	9	138.5	80	3.5	30.5

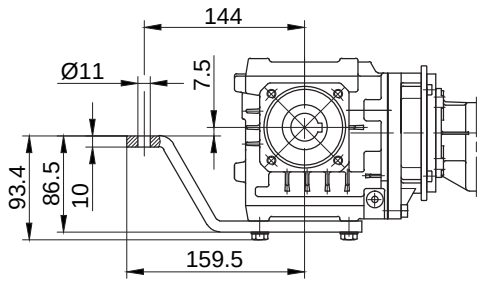
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E..	G	E..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS06G04-../D04..	143	135	111	416	5	90	112	459.5	478.5	521.5	-

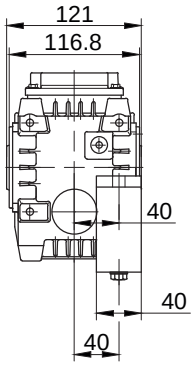
The actual gearbox design can vary from the geometry shown.

BS06G04

Torque arm at front

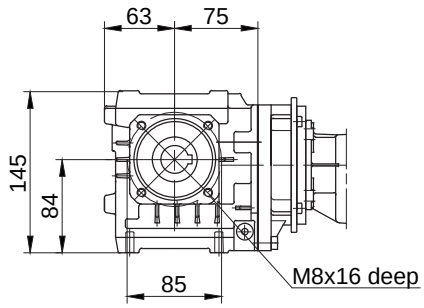
Code -5.V/

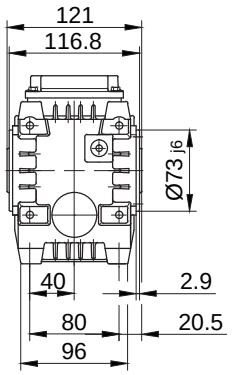




Flange with tapped holes at front

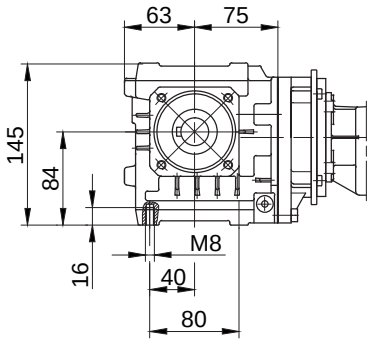
Code -7.V/

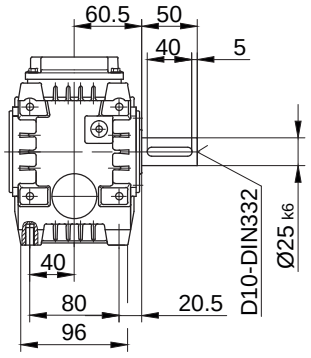




Foot with tapped holes at bottom

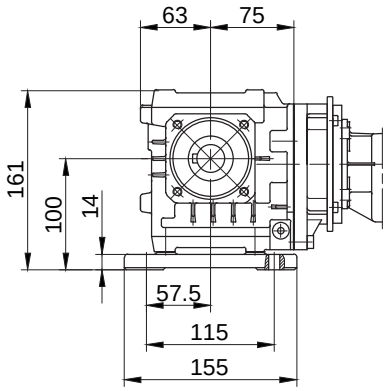
Code -6.U/

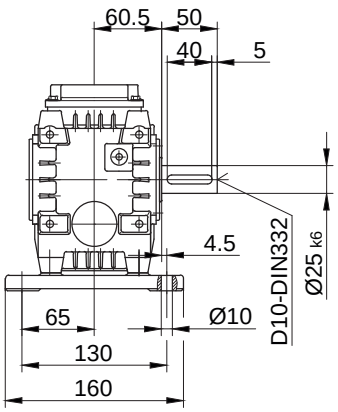




Foot with clearance holes at bottom

Code -1.U/





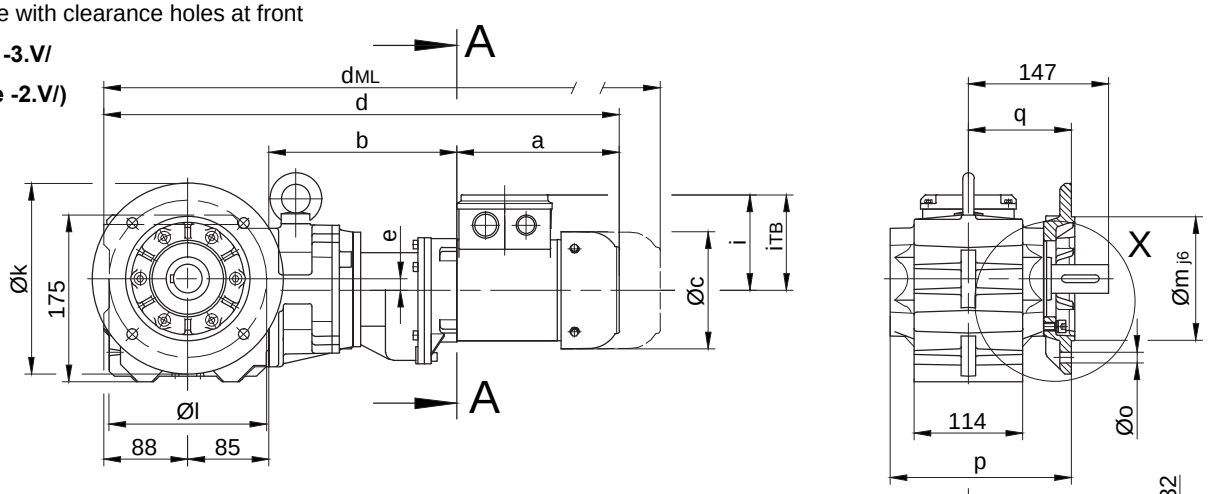
The actual gearbox design can vary from the geometry shown.

BS10G06

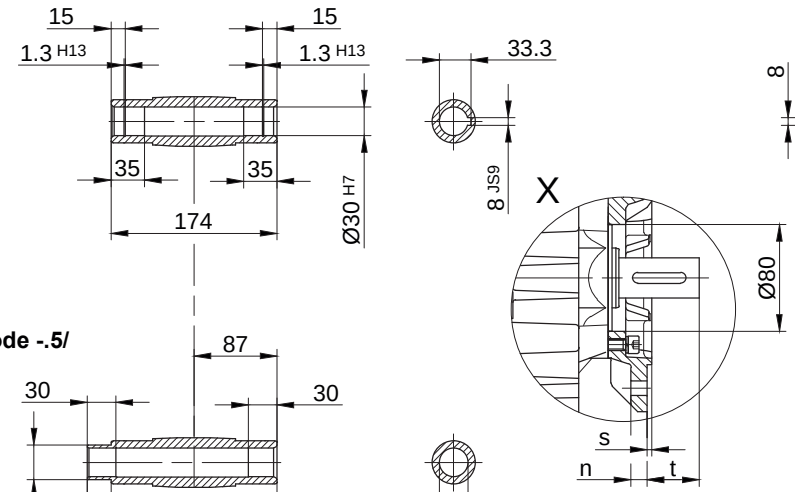
Flange with clearance holes at front

Code -3.V/

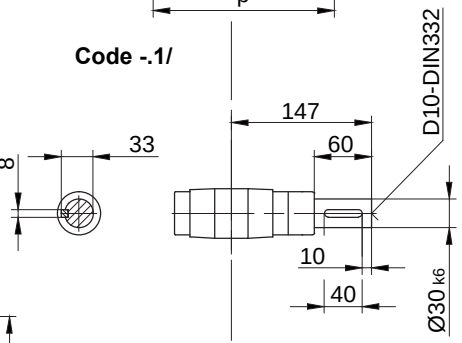
(Code -2.V/)



Code -.4/

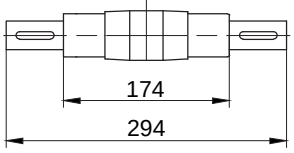


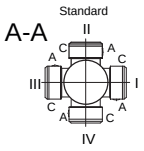
Code -.1/



Code -.5/

Code -.3/





13

Flange dimensions

BS10G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	200	165	130	12	11	190	108	3.5	39
small -2.V/	160	130	110	10	9	183	101	3.5	46

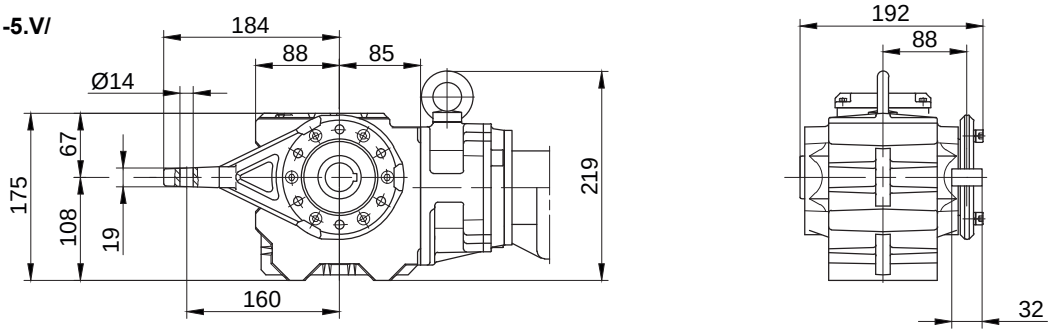
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS10G06-../D04..	143	195	111	511	12	90	112	554.5	573.5	616.5	-
BS10G06-../D05..	170	197	123	540	12	100	117	582	643	684.5	-
BS10G06-../D06..	170	197	123	540	12	100	119	582	643	684.5	-
BS10G06-../D07..	190	197	123	560	12	100	119	602	663	704.5	-
BS10G06-../D..08..	200	241	156	614	12	115	136.5	680	721	787.5	680

The actual gearbox design can vary from the geometry shown.

BS10G06

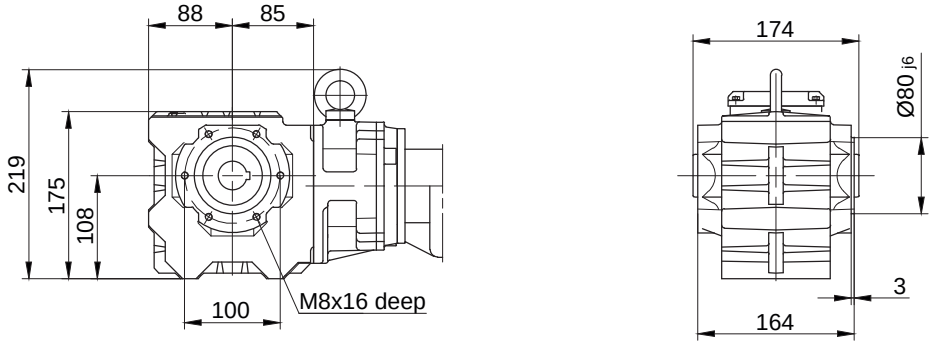
Torque arm at front

Code -5.V/



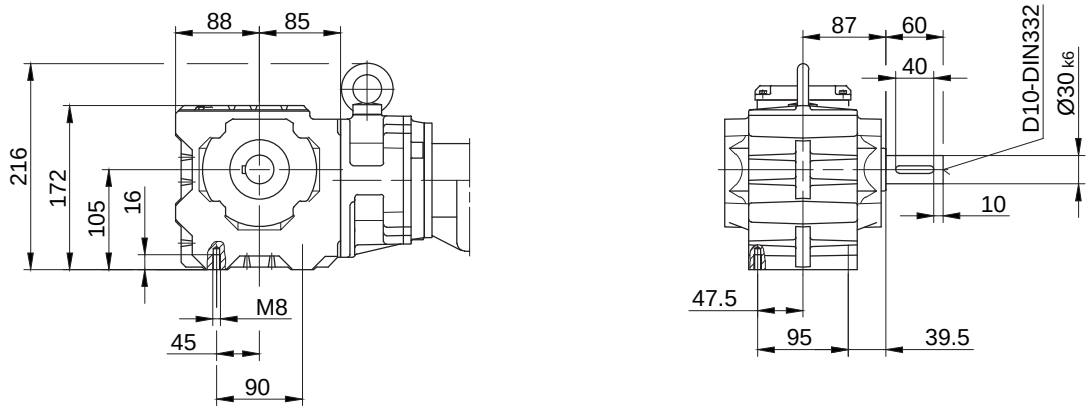
Flange with tapped holes at front

Code -7.V/



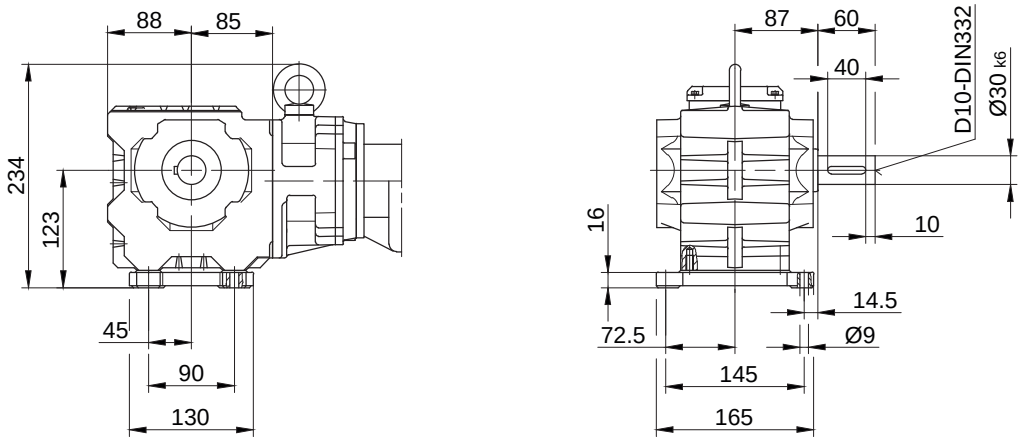
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/



The actual gearbox design can vary from the geometry shown.

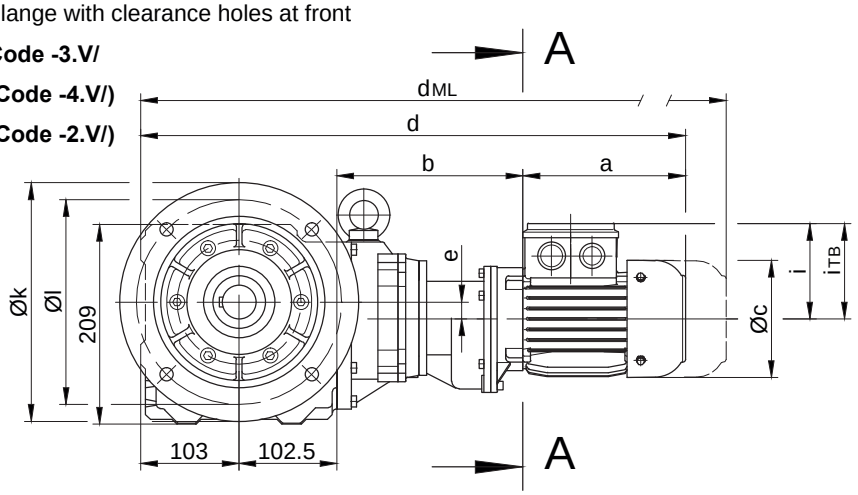
BS20G06

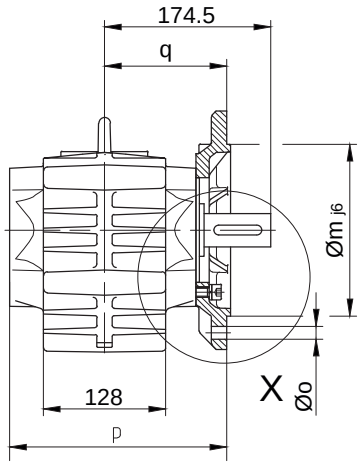
Flange with clearance holes at front

Code -3.V/

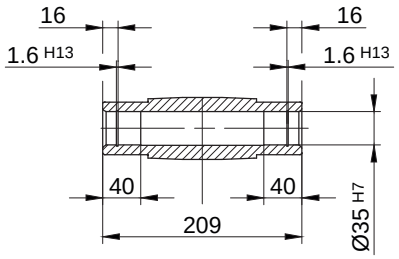
(Code -4.V/)

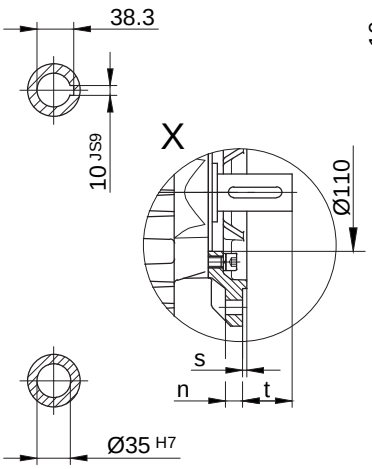
(Code -2.V/)



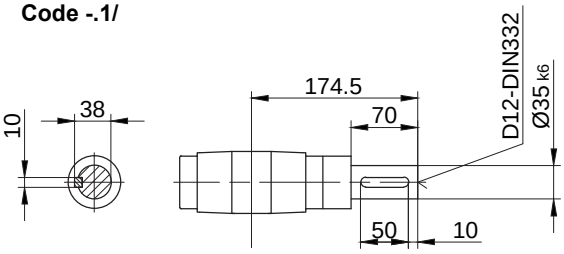


Code -.4/

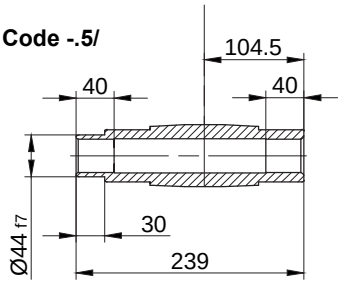




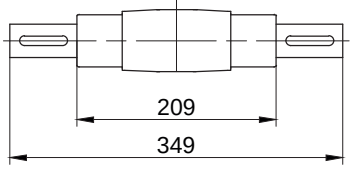
Code -.1/



Code -.5/



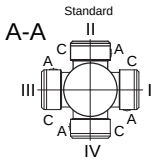
Code -.3/



13

Flange dimensions

BS20G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	227.5	128	4	46.5
small -2.V/	200	165	130	12	11	224.5	125	3.5	49.5
big -4.V/	300	265	230	20	13.5	233.5	134	4	40.5



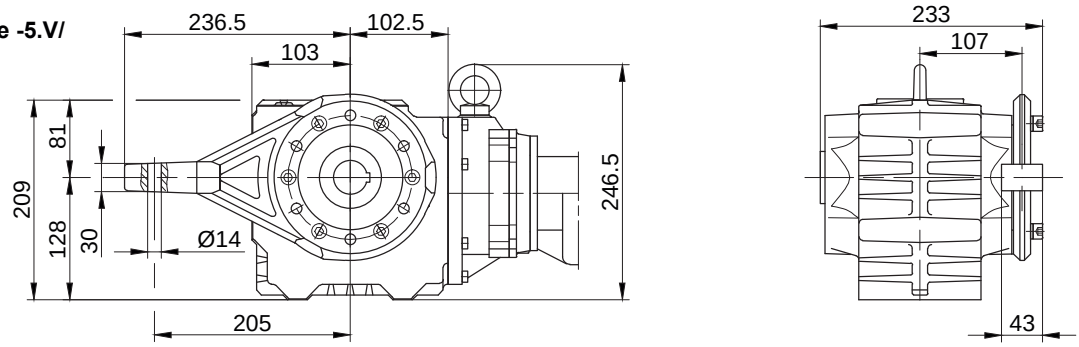
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	ES../ZS..	G	ES../ZS..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS20G06-../D04..	143	193	111	541.5	18	90	112	585	604	647	-
BS20G06-../D05..	170	195	123	570.5	18	100	117	612.5	673.5	715	-
BS20G06-../D06..	170	195	123	570.5	18	100	119	612.5	673.5	715	-
BS20G06-../D07..	190	195	123	590.5	18	100	119	632.5	693.5	735	-
BS20G06-../D..08..	200	239	156	644.5	18	115	136.5	710.5	751.5	818	710.5

The actual gearbox design can vary from the geometry shown.

BS20G06

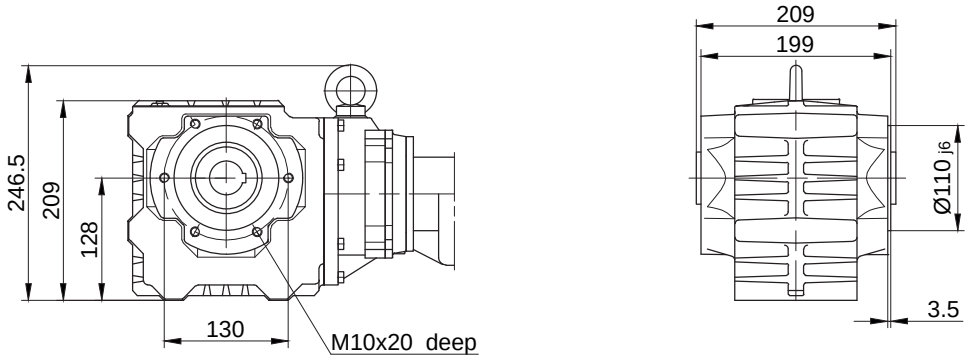
Torque arm at front

Code -5.V/



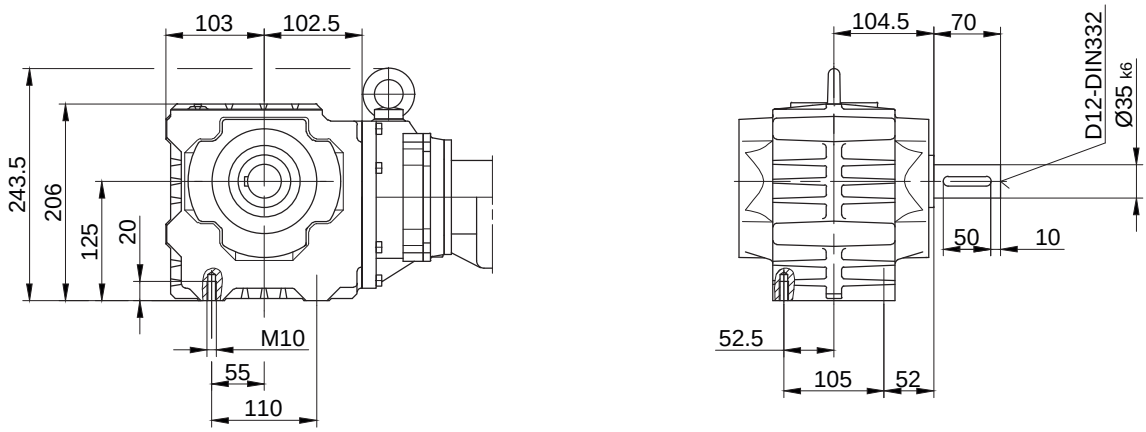
Flange with tapped holes at front

Code -7.V/



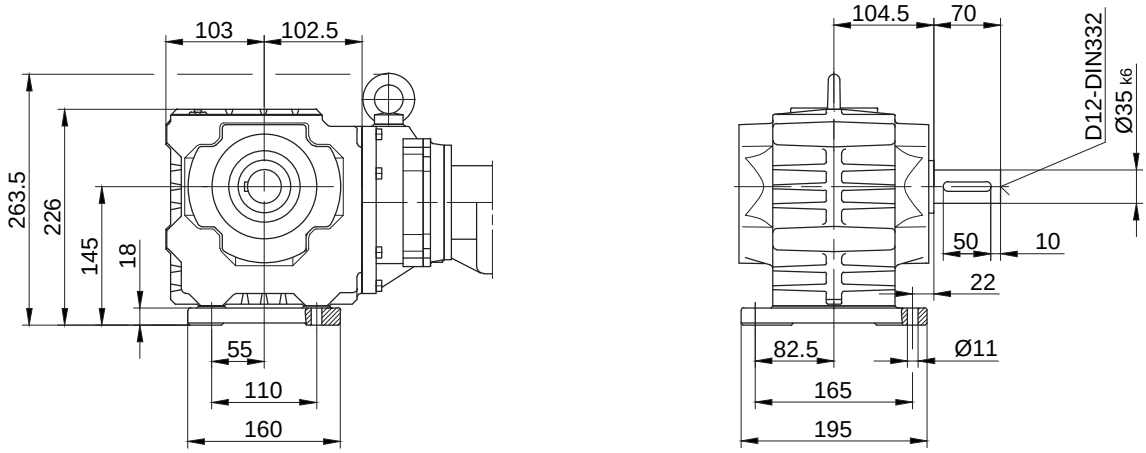
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/



The actual gearbox design can vary from the geometry shown.

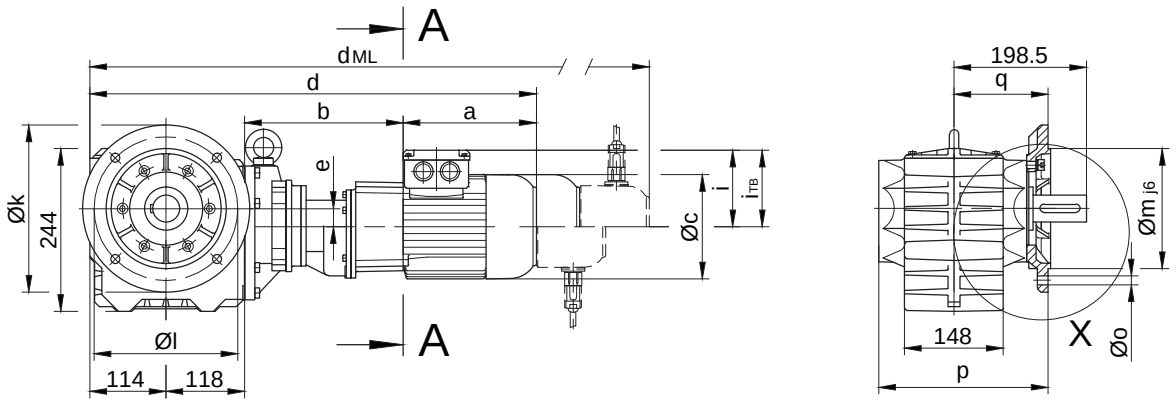
13

BS30G06

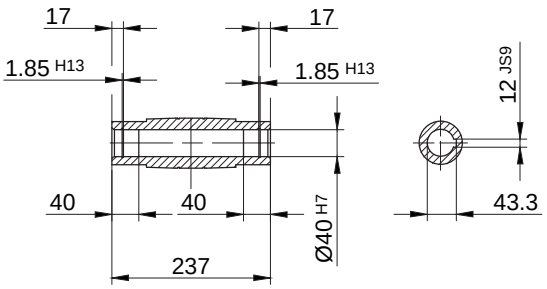
Flange with clearance holes at front

Code -3.V/

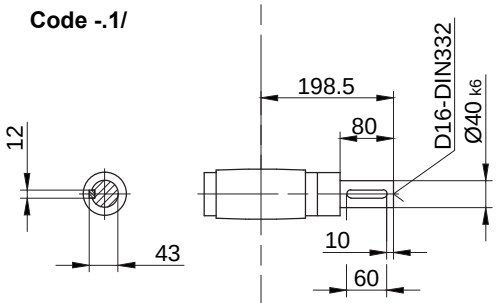
(Code -4.V/)

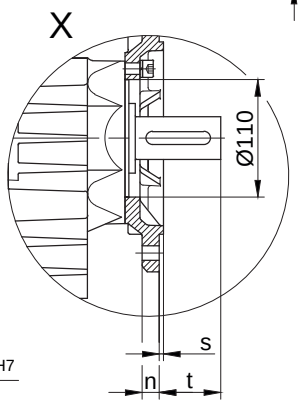


Code -.4/

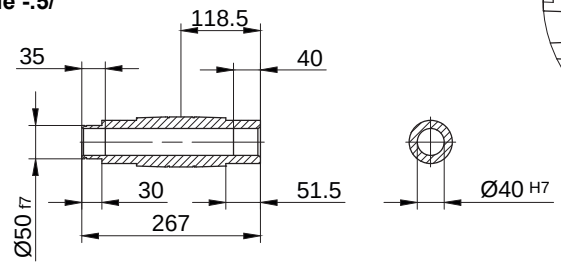


Code -.1/

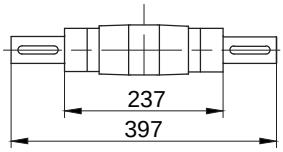




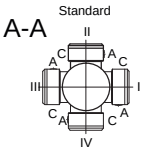
Code -.5/



Code -.3/



Flange dimensions



BS30G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	250	215	180	16	13.5	253.5	141	4	57.5
big -4.V/	300	265	230	20	13.5	259.5	147	4	51.5

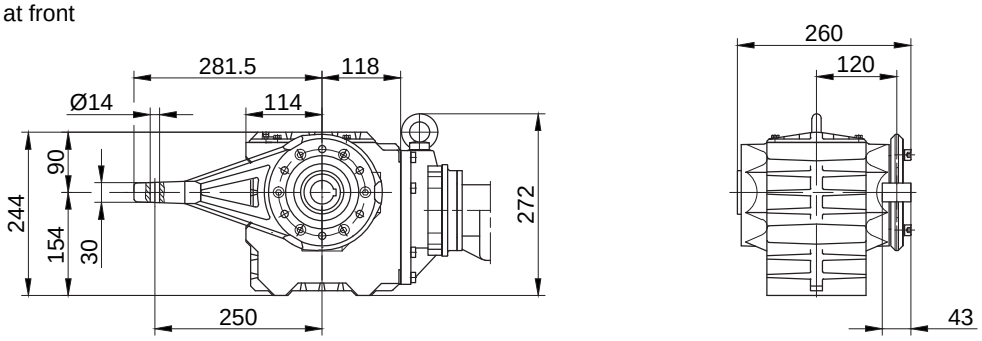
Type	a	b	c	d	e	i	Design with motor extensions				
							i_{TB}	E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS30G06-../D04..	143	191	111	566	27	90	112	609.5	628.5	671.5	-
BS30G06-../D05..	170	193	123	595	27	100	117	637	698	739.5	-
BS30G06-../D06..	170	193	123	595	27	100	119	637	698	739.5	-
BS30G06-../D07..	190	193	123	615	27	100	119	657	718	759.5	-
BS30G06-../D..08..	200	237	156	669	27	115	136.5	735	776	842.5	735

The actual gearbox design can vary from the geometry shown.

BS30G06

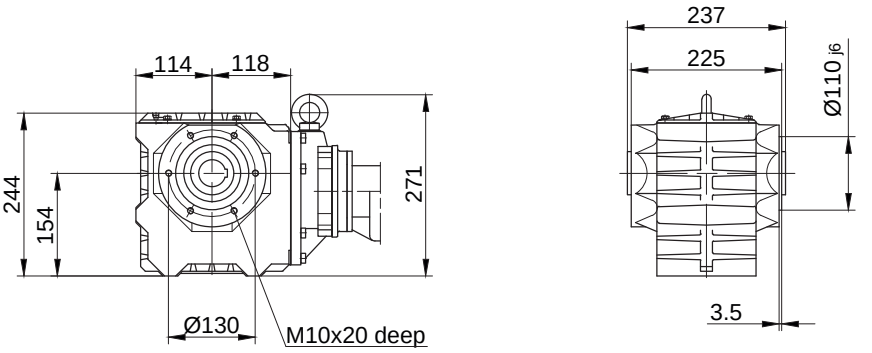
Torque arm at front

Code -5.V/



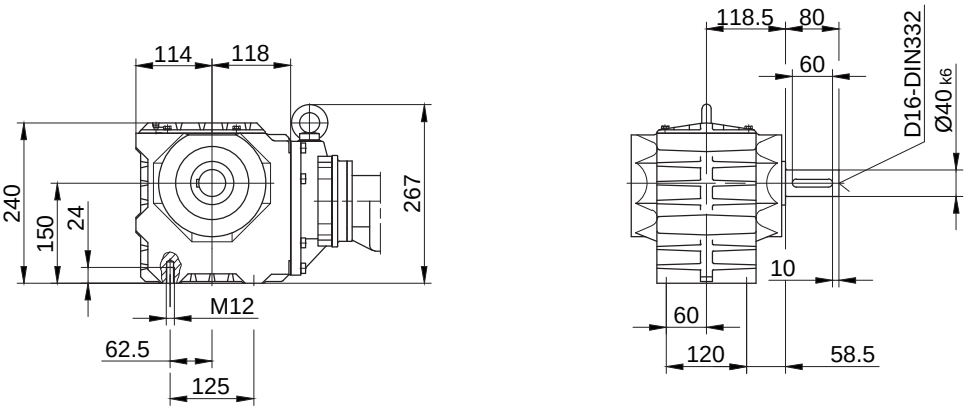
Flange with tapped holes at front

Code -7.V/



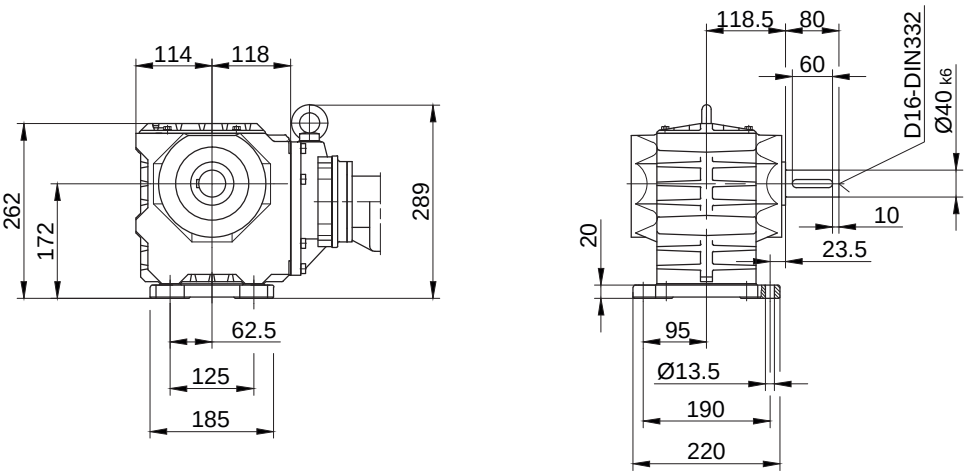
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

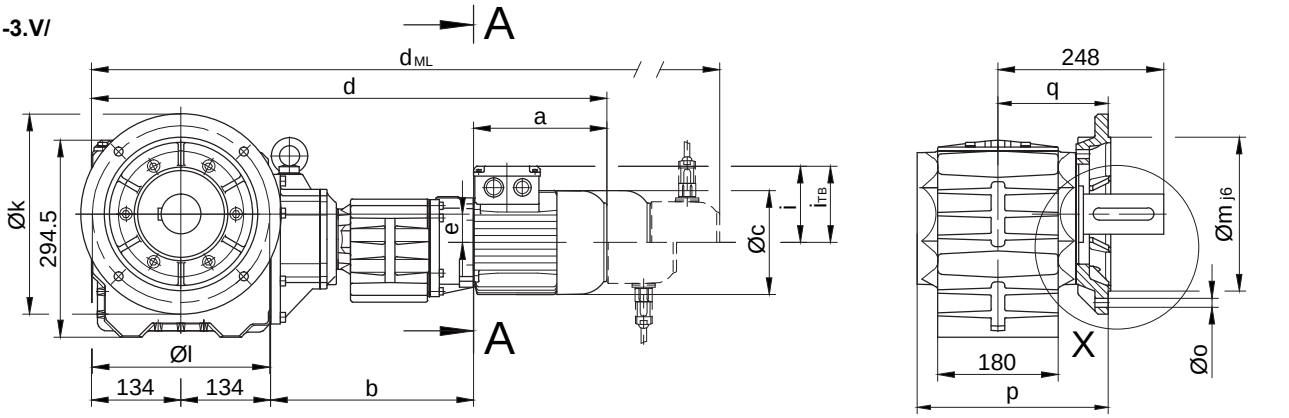


The actual gearbox design can vary from the geometry shown.

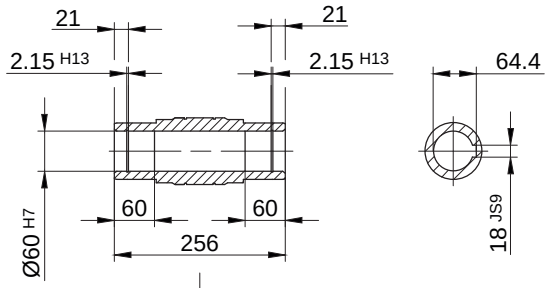
BS40G10

Flange with clearance holes at front

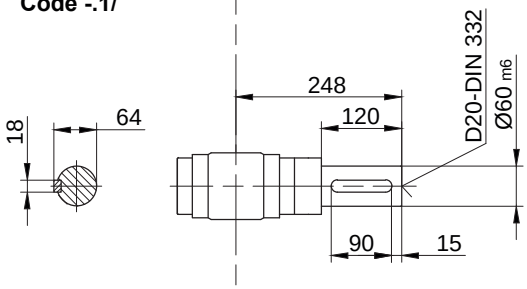
Code -3.V/

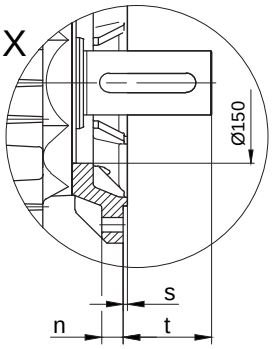


Code -.4/

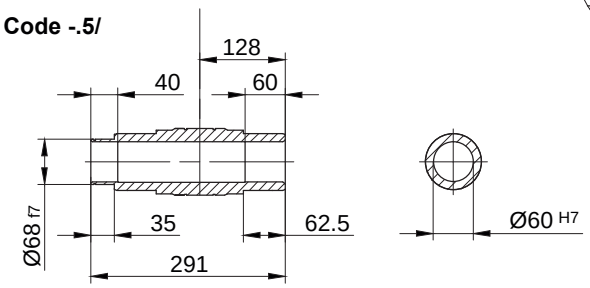


Code -.1/

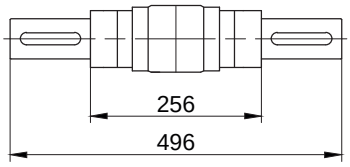


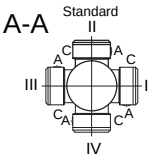


Code -.5/



Code -.3/





Flange dimensions

BS40G..	k	l	m	n	o	p	q	s	t
Standard -3.V/	300	265	230	20	13.5	286	165	4	83

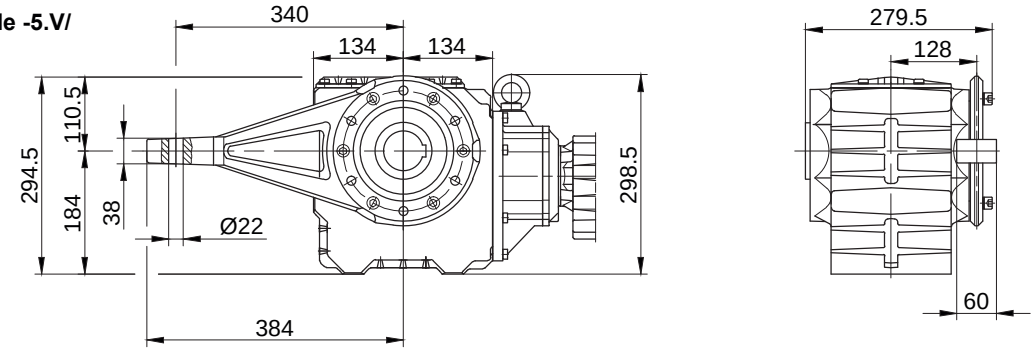
Type	a	b	c	d	e	i	i_{TB}	Design with motor extensions			
								E../ES..	G	E../ES..-G	RR/RL
								d_{ML}	d_{ML}	d_{ML}	d_{ML}
BS40G10-../D05..	170	300	123	738	43	100	117	780	841	882.5	-
BS40G10-../D06..	170	300	123	738	43	100	119	780	841	882.5	-
BS40G10-../D07..	190	300	123	758	43	100	119	800	861	902.5	-
BS40G10-../D..08..	200	304	156	772	43	115	136.5	838	879	945.5	838
BS40G10-../D..09..	251	318.5	181	837.5	43	124	158	930.5	944.5	1035	930.5

The actual gearbox design can vary from the geometry shown.

BS40G10

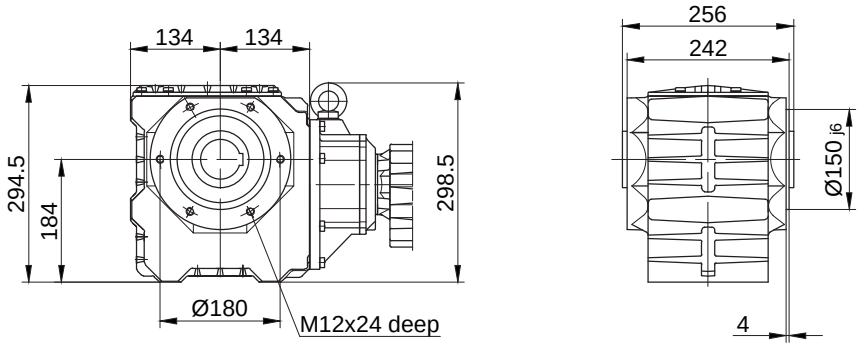
Torque arm at front

Code -5.V/



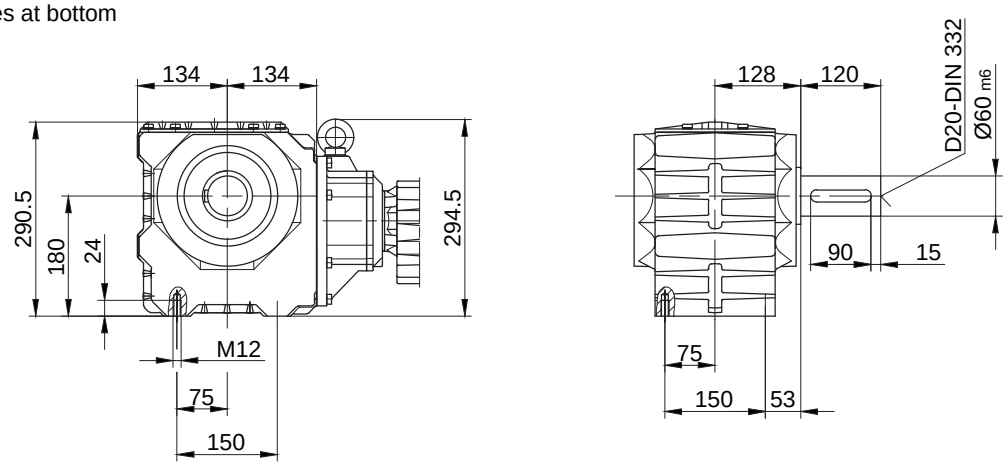
Flange with tapped holes at front

Code -7.V/



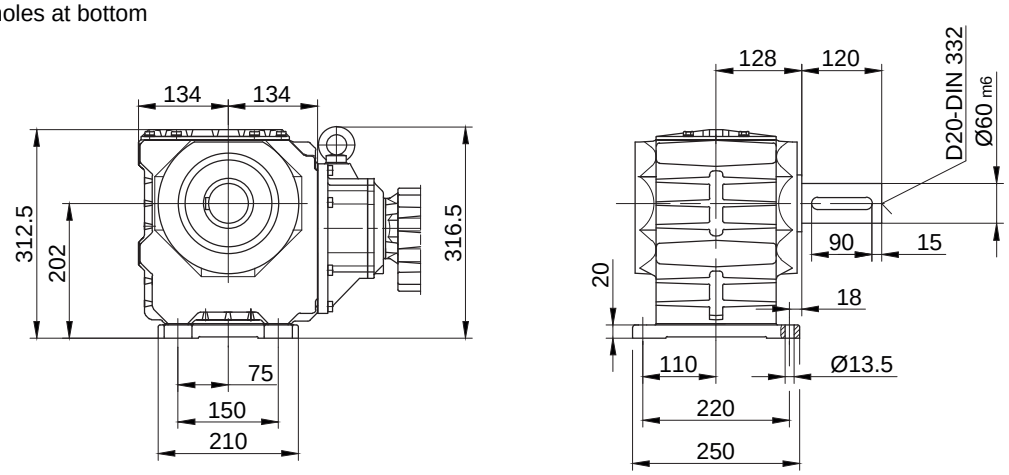
Foot with tapped holes at bottom

Code -6.U/



Foot with clearance holes at bottom

Code -1.U/

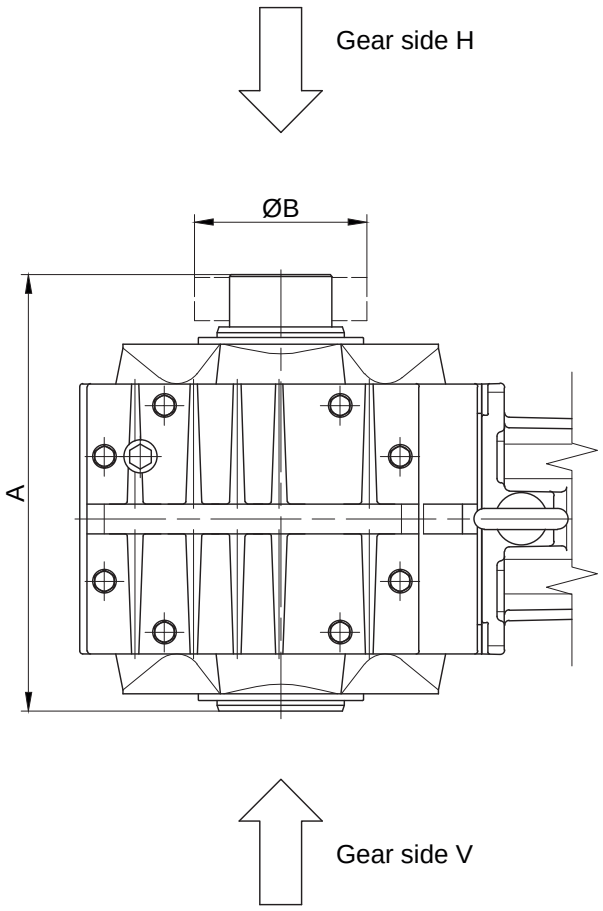


The actual gearbox design can vary from the geometry shown.

Shrink disc couplings (SSV)

(Code BS10Z-.5/...)

(Code BS10Z-.5A/...)



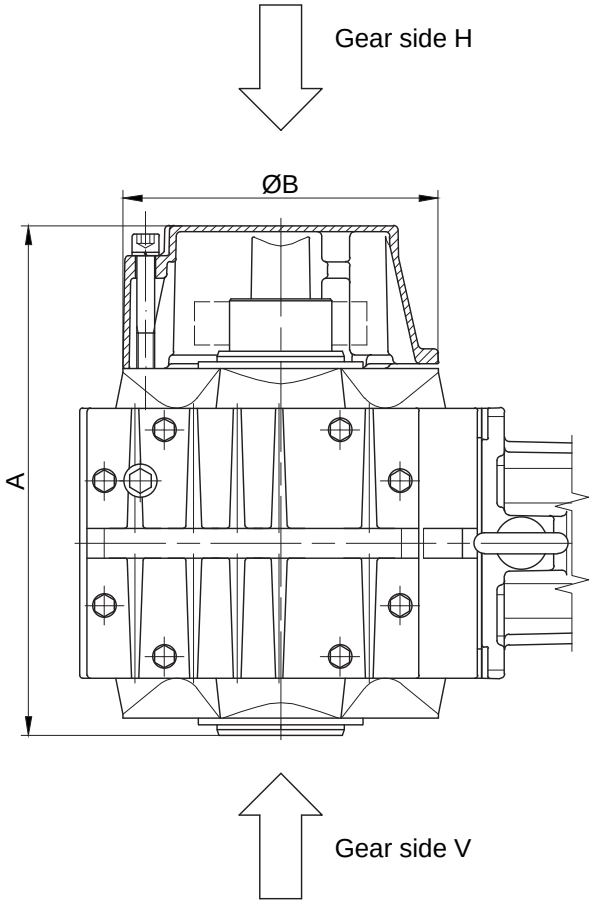
Type	SSV Ringfeder	SSV STÜWE	A	B
BS10	RfN 4161 036x072	HSD 36-22x36	199	72
BS20	RfN 4161 044x080	HSD 44-22x44	239	80
BS30	RfN 4161 050x090	HSD 50-22x50	267	90
BS40	RfN 4161 062x110	HSD 68-22x68	291	115

The actual gearbox design can vary from the geometry shown.

Shrink disc couplings with (SSV) cover

(Code BS10Z-.5A/...)

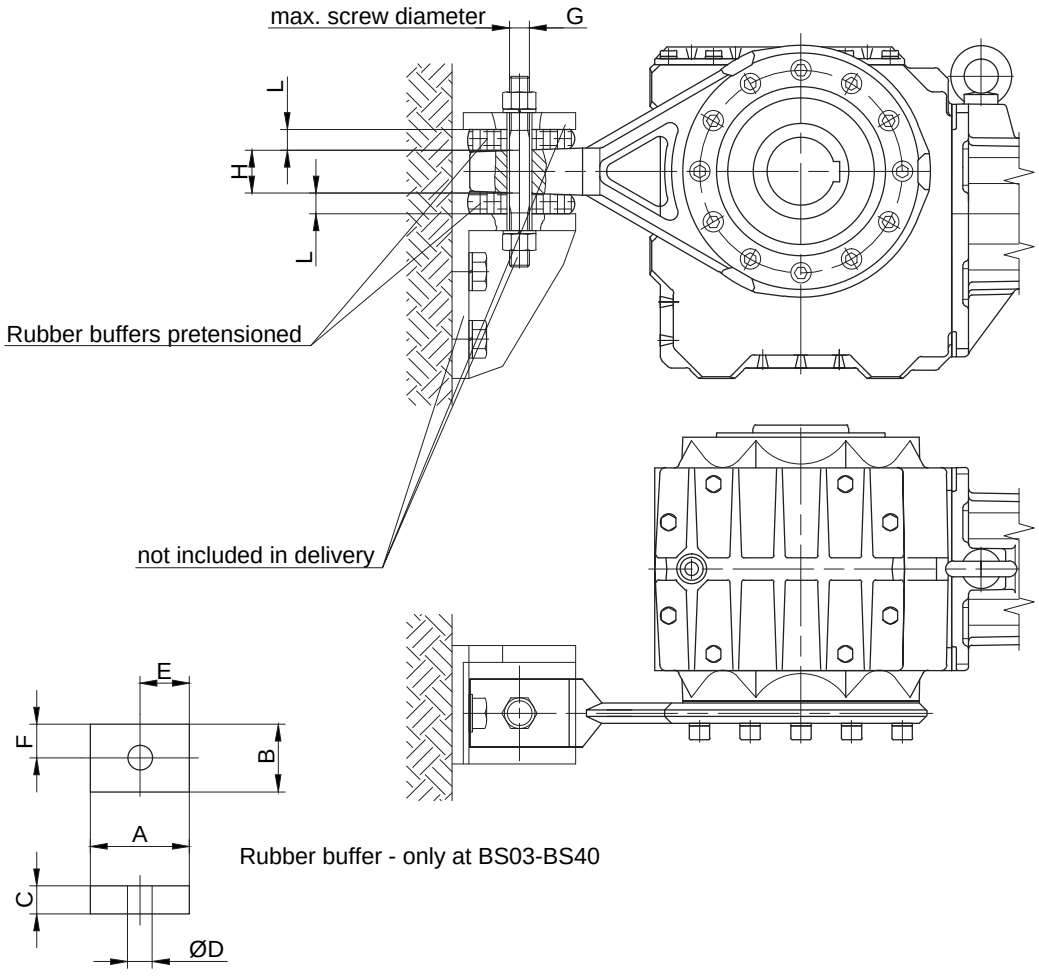
(Code BS10Z-.5A/...)



Type	SSV Ringfeder	SSV STÜWE	A	B
BS10	RfN 4161 036x072	HSD 36-22x36	221	120
BS20	RfN 4161 044x080	HSD 44-22x44	286	160
BS30	RfN 4161 050x090	HSD 50-22x50	313	160
BS40	RfN 4161 062x110	HSD 68-22x68	340	210

The actual gearbox design can vary from the geometry shown.

Rubber buffer for torque arm



Rubber buffer - only at BS03-BS40

13

Material: Natural rubber
Hardness 50±5 Shore A

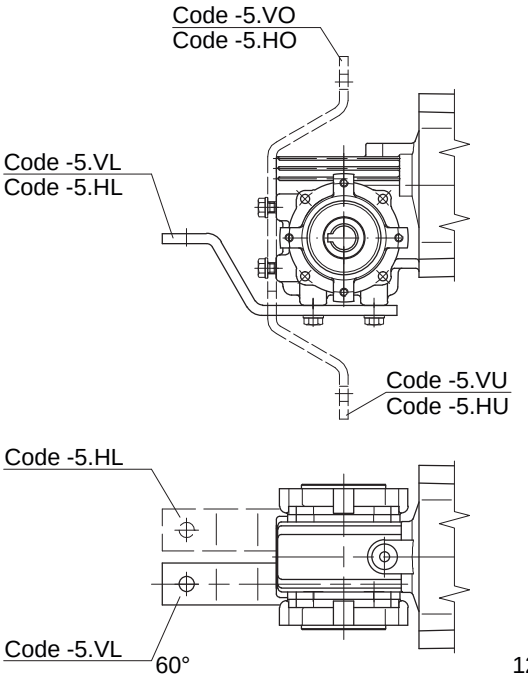
Dimensions of the transverse hole:
see dimensioned sketch of the respective shaft mounted gearbox

Gear	Pos.	Dimensions (mm)								
		A	B	C	D	E	F	G	H	L
BS02	-	-	-	-	-	-	-	M8	6	-
BS03	Pos.0	30	30	12	12	15	15	M8	10	10.5
BS04	Pos.0	30	30	12	12	15	15	M8	10	10.5
BS06	Pos.0	30	30	12	12	15	15	M10	10	10
BS10	Pos.1	48	32	15	14	24	16	M10	19	13
BS20	Pos.2	63	43	20	14	31.5	21.5	M10	30	17.5
BS30	Pos.2	63	43	20	14	31.5	21.5	M10	30	17
BS40	Pos.3	88	60	25	22	44	30	M18	38	22

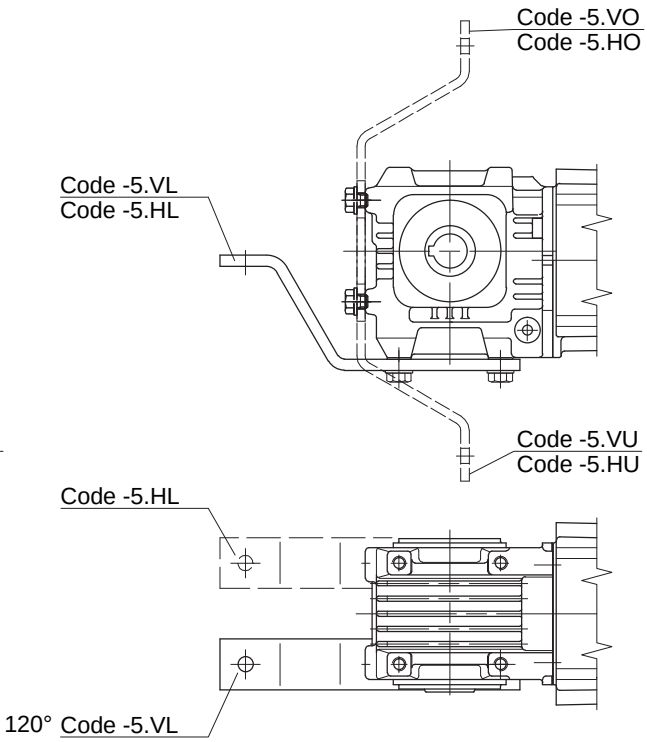
The actual gearbox design can vary from the geometry shown.

Position of the torque arm

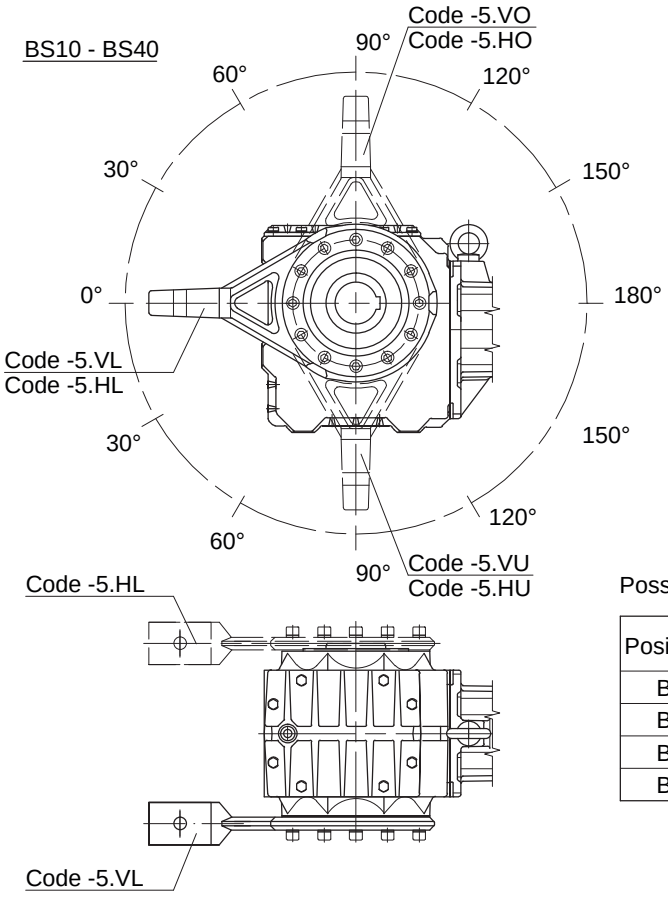
BS02 / BS03



BS04 / BS06



BS10 - BS40

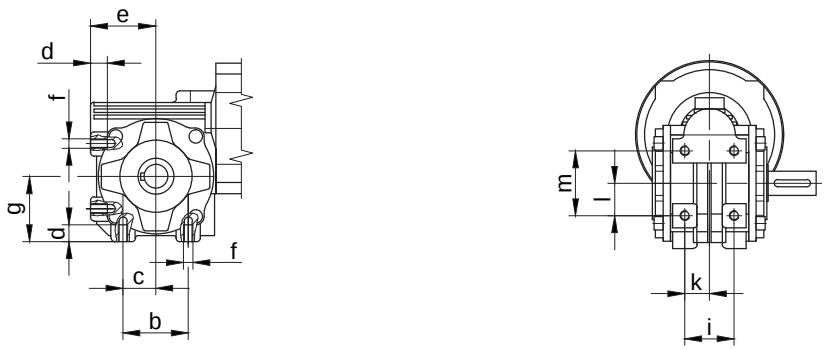


Possible locations.

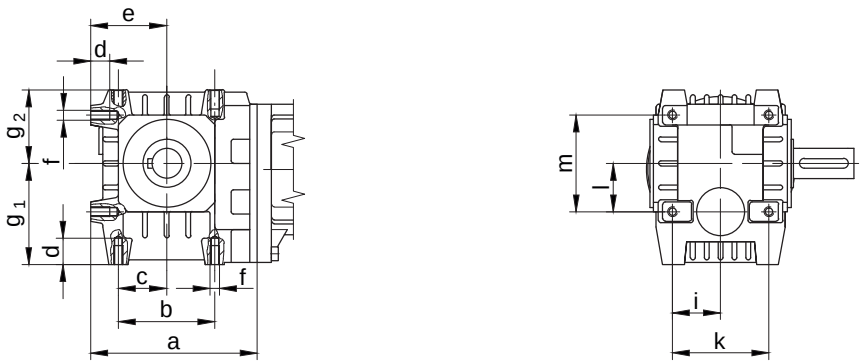
Position	VL/HL	VO / HO VU / HU					VR/HR
BS10	0°	30°	60°	90°	120°	150°	-
BS20	0°	30°	60°	90°	120°	150°	-
BS30	0°	30°	60°	90°	120°	150°	-
BS40	0°	30°	60°	90°	120°	150°	-

The actual gearbox design can vary from the geometry shown.

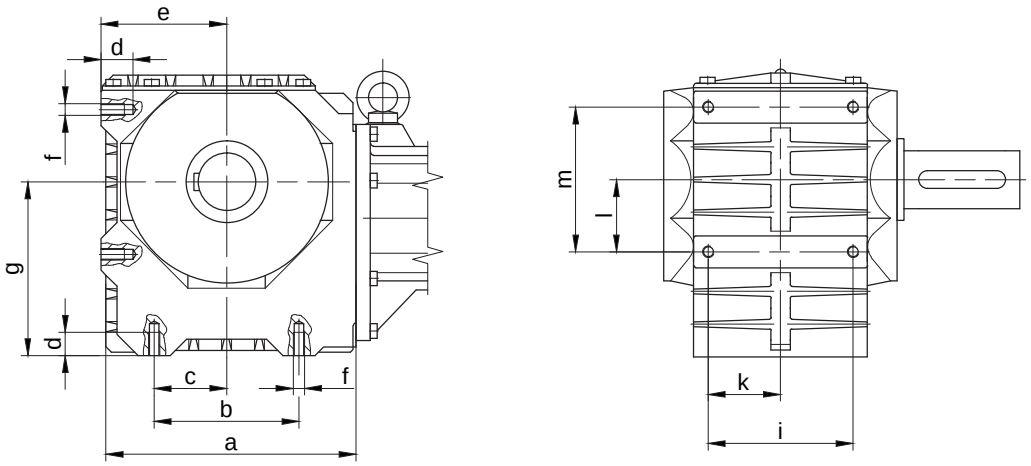
Threaded foot, left



Type	a	b	c	d	e	f	g	-	i	k	l	m
BS02	-	36	18	10	40	M6	40	-	32	16	18	36
BS03	-	54	27	14	54	M8	54	-	41	20.5	27	54



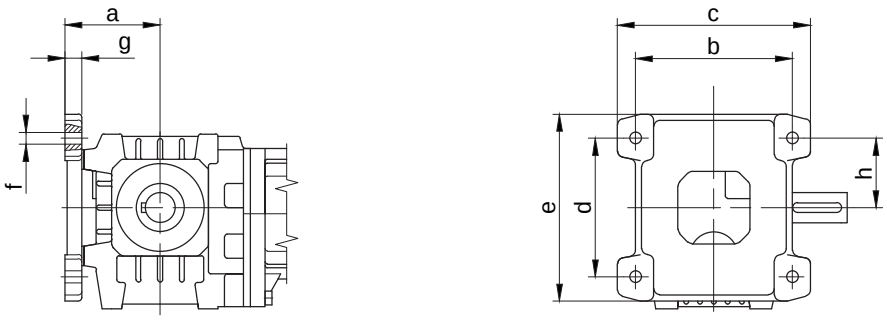
Type	a	b	c	d	e	f	g_1	g_2	i	k	l	m
BS04	111	60	30	15.5	50	M8	64	49.5	30	60	30	60
BS06	138	80	40	16	63	M8	84	61	40	80	40	80



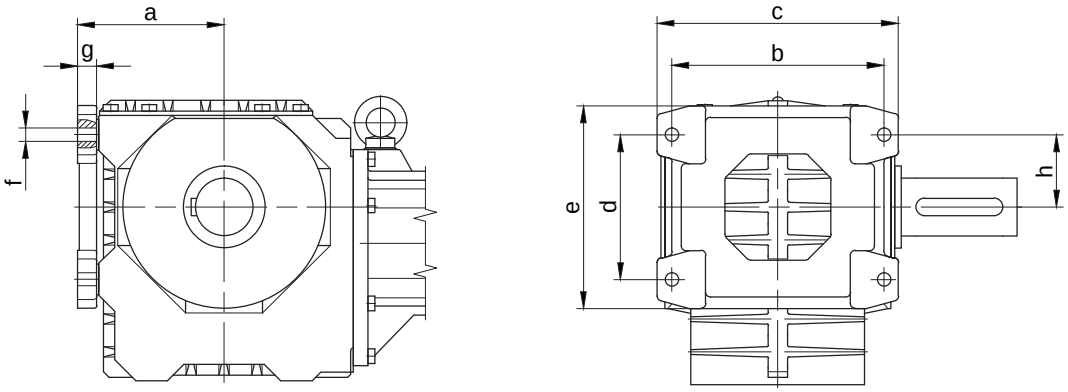
Type	a	b	c	d	e	f	g	-	i	k	l	m
BS10-BS10Z	170	90	45	16	85	M8	105	-	95	47.5	45	90
BS20-BS20Z	202.5	110	55	20	100	M10	125	-	105	52.5	55	110
BS30-BS30Z	228	125	62.5	24	110	M12	150	-	120	60	62.5	125
BS40-BS40Z	264	150	75	24	130	M12	180	-	150	75	75	150

The actual gearbox design can vary from the geometry shown.

Foot plate, left



Type	a	b	c	d	e	f	g	h
BS04	68	110	140	90	130	10	15	45
BS06	79	130	160	115	155	10	14	57.5

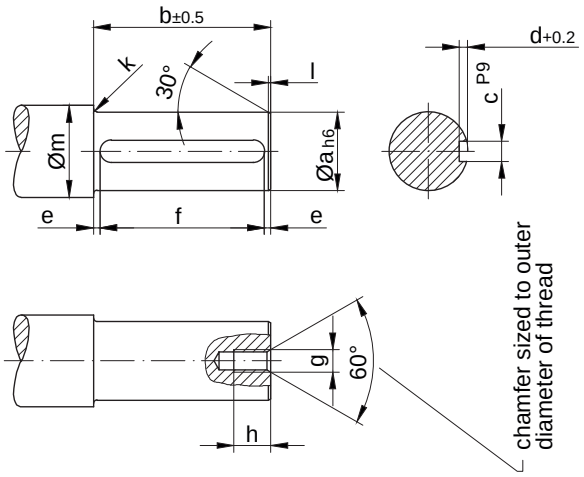


Type	a	b	c	d	e	f	g	h
BS10-BS10Z	103	145	165	90	130	Ø9	16	72.5
BS20-BS20Z	120	165	195	110	160	Ø11	18	55
BS30-BS30Z	132	190	220	125	185	Ø13.5	20	62.5
BS40-BS40Z	152	220	250	150	210	Ø13.5	20	75

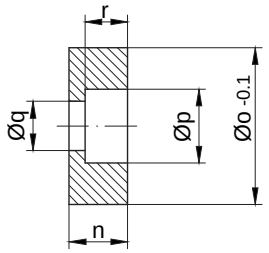
The actual gearbox design can vary from the geometry shown.

Assembly tools for hollow shaft and keyway

Pos.1 Shaft

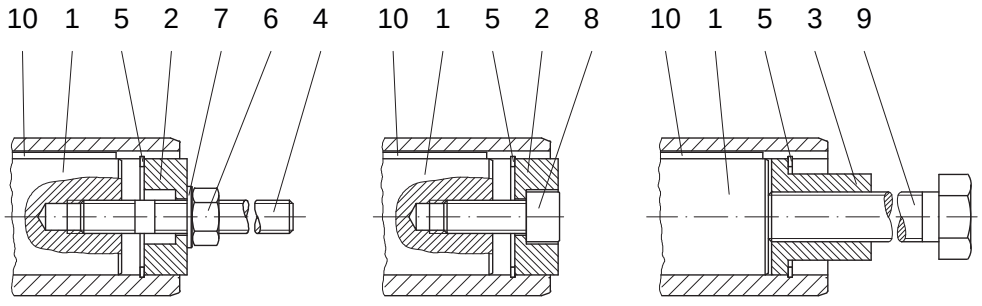


✳Pos.2 Disc



x, edges cut
Material:
C45 DIN 17200

Type	Dimensions (mm)															
	Pos.1 Shaft											Pos.2 Disc				
	a	b	c	d	e	f	g	h	k	l	m	n	o	p	q	r
BS03	20	75	6	3.5	6	$63^{+0.3}$	M6	16	2	1.5	28	13.5	19.8	11	6.6	6.5
BS04	20	71	6	3.5	7.5	$56^{+0.3}$	M6	16	2	1.5	28	13.5	19.8	11	6.6	6.5
BS06	25	99	8	4	9.5	$80^{+0.3}$	M8	18	2.5	1.5	33	13.5	24.8	15	9	8.5
BS10	30	152	8	4	6	$140^{+0.5}$	M10	20	3	1.5	38	15	29.8	18	11	10
BS20	35	186	10	5	13	$160^{+0.5}$	M10	20	3	1.5	43	16	34.8	18	11	10
BS30	40	212	12	5	6	$200^{+0.5}$	M12	22	3	2	48	18	39.8	20	13.5	12
BS40	60	227	18	7	13.5	$200^{+0.5}$	M20	38	3.5	2	68	24	59.8	33	22	18



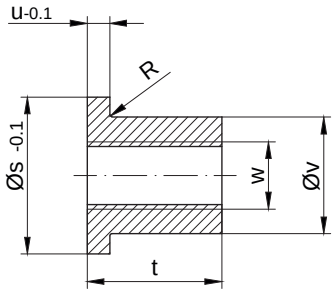
Installation | Holding | Dismantlement

The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

The actual gearbox design can vary from the geometry shown.

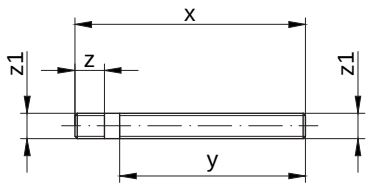
Assembly tools for hollow shaft and keyway

Pos.3 Sleeve



$\sqrt{^{x}}$, edges cut
Material: C45 DIN 17200

Pos.4 Stud bolt



Material: Steel, tensile strength
≥ 1000N/mm²
threads rolled

Type	Dimensions (mm)										✳Retainer ring DIN 472	Hexagon nut DIN 934-8	Disc DIN 125-St	✳Filister head screw DIN 912-8.8	Starting torque (Nm)	Hexagon bolt DIN EN 24017-8.8	Key DIN 6885 Width x Height x Length
	Pos.3 Sleeve						Pos.4 Stud bolt										
	s	t	u	v	w	R	x	y	z	z1	Pos.5	Pos.6	Pos.7	Pos.8		Pos.9	Pos.10
BS03	19.8	24	5	11	M8	-	120	90	18	M6	20x1.0	M6	6.4	M6x25		M8x110	A 8x7x63
BS04	19.8	24	5	11	M8	-	120	90	18	M6	20x1.0	M6	6.4	M6x25	5	M8x110	A 8x7x56
BS06	19.8	24	5	15.4	M12	0.8	150	120	20	M8	25x1.2	M8	8.4	M8x30		M12x140	A 8x7x80
BS10	29.8	28	5	19.8	M14	0.8	210	175	23	M10	30x1.2	M10	10.5	M10x30	8	M14x190	A 8x7x140
BS20	34.9	28	5	23	M14	-	250	215	23	M10	35x1.5	M10	10.5	M10x35		M14x230	A10x8x160
BS30	39.9	40	6	27.7	M20	0.8	280	240	28	M12	40x1.75	M12	13	M12x35	16	M20x270	A 12x8x200
BS40	59.8	60	6	44	M30	-	320	260	45	M20	60x2.0	M20	21	M20x50	42	M30x310	A 18x11x200

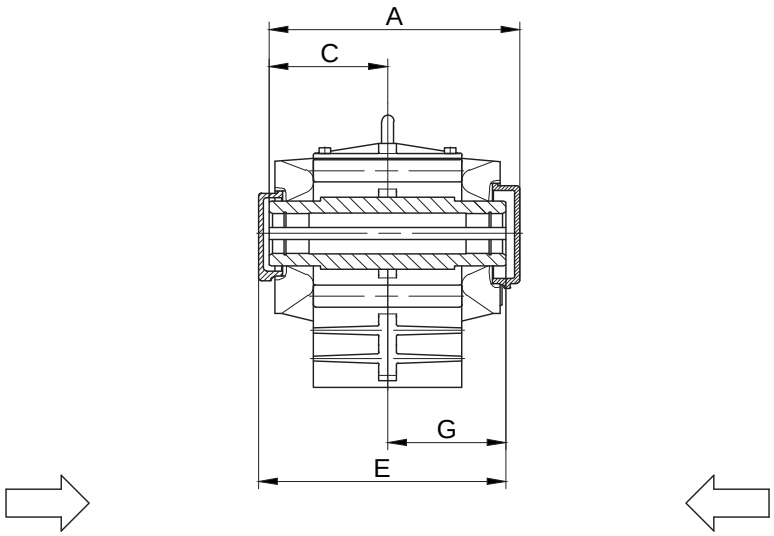
The parts shown are neccessary for assembly. ONLY ✳specified parts are enclosed in the assembly kit.
Suitable measures are to be used to secure Bolt Pos.9 against loosening.

Optional:

Type	Order Text
BS03	Id.Nr.4104013 Assembly tool "holding"
BS04	Id.Nr.4104013 Assembly tool "holding"
BS06	Id.Nr.4103921 Assembly tool "holding"
BS10	Id.Nr.4103939 Assembly tool "holding"
BS20	Id.Nr.4103947 Assembly tool "holding"
BS30	Id.Nr.4103955 Assembly tool "holding"
BS40	Id.Nr.4103971 Assembly tool "holding"

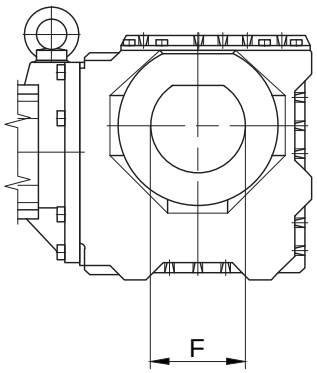
The actual gearbox design can vary from the geometry shown.

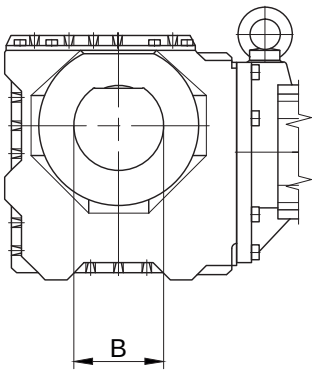
Shaft Cap (VK)



Gear side REAR (H)

Gear side FRONT (V)





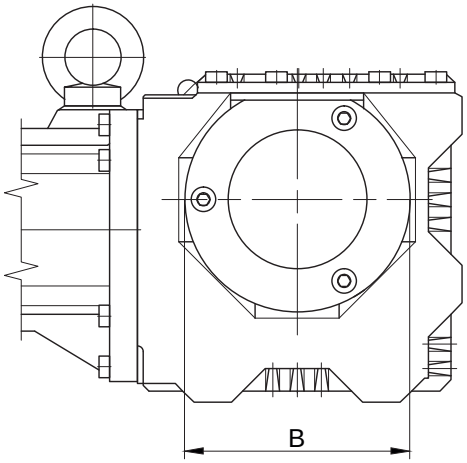
Sealing cap REAR			
Type	E	F	G
BS10	186	68	87
BS30	250.5	100	132
BS40	276	130	128

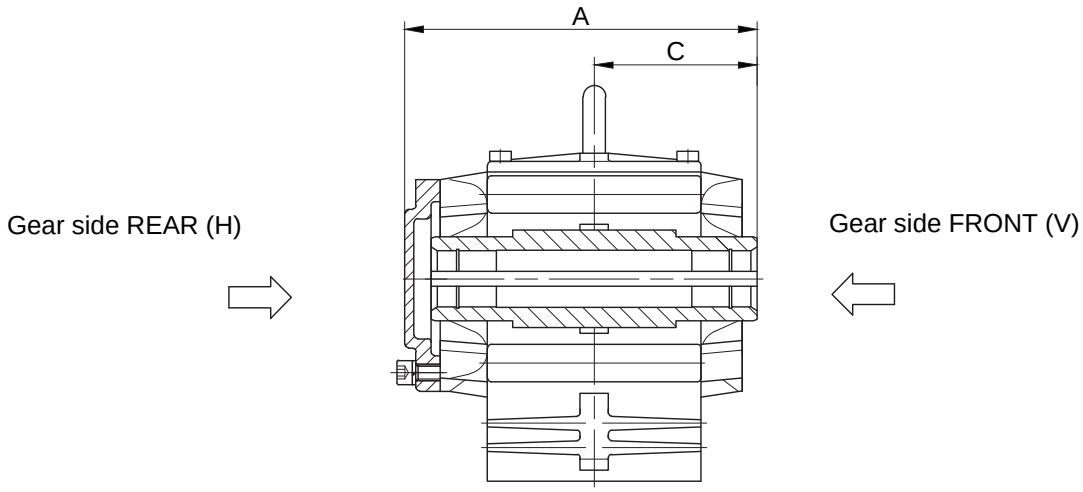
Sealing cap FRONT			
Type	A	B	C
BS20	221	78	104.5

The actual gearbox design can vary from the geometry shown.

Shaft Cover (VD)

Gear side REAR (H)





Type	A	B	C
BS04	99.5	68	46.5
BS06	128.5	81	60.5
BS10	185	Ø120	87
BS20	224.5	Ø160	104.5
BS30	251.5	Ø160	118.5
BS40	275	Ø210	128

The actual gearbox design can vary from the geometry shown.

14



	Page
Motors	**395-426**

General
Duty Cycles acc. to DIN EN 60034
Operation with frequency converter

General

ErP Directive 2009/125/EC

Directive 2009/125/EC of the European Parliament and the Council, issued in 2009, specifies requirements for the environmentally responsible design of energy-related products (ErPs). In November 2009 it superseded Directive 2005/32/EC, which formed the framework for requirements for the environmentally responsible design of energy-using products (EuPs). This change has no effect on already proclaimed implementation measures.
From 16 June 2011 onward, new motors or geared motors marketed in the EU must comply with the requirements of **energy efficiency class IE2**. **From 1 January 2015 onward, motors with rated outputs from 7.5 to 375 kW** destined for the European market must comply with **energy efficiency class IE3**, and **from 1 January 2017 onward this requirement also applies to smaller motors rated at 0.75 kW or more.**

Objectives
The ErP Directive has several objectives:

1. **Mitigating the environmental impact of energy-using products**
   This objective is intended to be achieved by the documentation and labelling of products, by regulations for inspection, and by the formulation of individual requirements in implementation measures. As the entire product life cycle is taken into consideration, action must be taken as early as the design phase.

2. **Climate protection**
   Achievement of the EU climate protection objectives is to be supported. This can be implemented by reducing energy consumption and the emission of global warming gasses in the production, operation and disposal of energy-using products.

3. **Harmonised legislation**
   The directive creates a framework for the European regulation of environmental design requirements. This avoids trade impediments resulting from differences in national regulations. This can be achieved by means of the proclamation of legally binding implementation measures for the entire Community and protection of free trade in goods against further-reaching regulations of the Member States.

IEC 60034-30-1

Rotating electrical machines. Efficiency classes of line operated AC motors (IE-code)

This new edition of IEC 60034-30-1 specifies efficiency classes for single-speed electric motors that are rated according to IEC 60034-1 or IEC 60079-0, are rated for operation on a sinusoidal voltage supply IEC 60034-30-1 widens the product range with no distinction between motor technologies, supply voltage and frequency. All technical constructions of electric motors are covered as long as they are rated for on-line operation including Line-Start-Permanent-Magnet-Motors.

This IEC standard provides for the global harmonization of energy-efficiency classes IE1, IE2, IE3 and IE4 of electric motors.

Efficiency class designation		Comparison with CEMEP classification	
Efficiency	**Code**	**Efficiency**	**Logo**
Super Premium	**IE4**	**-**	**-**
Premium	**IE3**	**-**	**-**
High	**IE2**	**High**	EFF 1
Standard	**IE1**	**Improved**	EFF 2
Lower than Standard	**No designation**	**Standard**	EFF 3

General

Motors subject to the ErP Directive as specified by the Electric Motors Regulation 640/2009/EC

The new Electric Motors Regulation has a broader scope than the standard previously used in Europe.

- → Single-speed, three-phase, 50 Hz and 50/60 Hz
- → 2-, 4- or 6-pole motors
- → Rated output from 0.75 to 375 kW
- → Rated voltage up to 1000 V
- → Duty type S1 (continuous running)
- → For operation directly from the mains (50 Hz or 60 Hz)
- → For Design N motors complying with IEC 60034-12
- → Motors with two switchable rated voltages, under the condition that the magnetic flux is the same with both voltages
- → Geared motors

Motors excluded from regulation

- → Motors exclusively manufactured for converter operation in accordance with IEC 60034-25
- → Pole-changing motors
- → Motors fully integrated into a machine (such as pumps, fans and compressors) that cannot be tested separately from the machine
- → At altitudes exceeding 4000 meters above sea-level
- → Where ambient air temperarures exceed 60°C
- → Where ambient air temperarures are less than -30 °C
- → From 16 June 2011 onward: IE1 motors for none S1 duty destined for the European market
- → Explosion-proof motors (explosion protection has higher priority)
- → Brake motors
- → as from 2015/2017, IE2-Motors for use with variable speed drives (Additional name plate)

Example :



Method for determining motor efficiency according to IEC 60034-2-1

Individual loss method
Additional losses using the residual loss method
Low measurement uncertainty

General

Bauer geared motors for connection to three-phase supply are supplied with specially designed induction motors. This design ensures maximum operating safety with high breakaway torque and minimum starting current.

The torque/speed characteristic is largely free of torque dips. Torque is optimised to suit requirements and application parameters. See "www.bauergears.com" for more information.

Torques

The torques as stated in the selection tables are fully available at the output shaft. These figures apply for continuous operation (S1-100%) at a maximum ambient temperature of 40° C and at site elevations up to 1000 m above sea level. Drives for higher ambient temperatures and site elevations are available on request. Gear efficiencies, which are lower than the usual values for spur gears, are taken into account in the torques listed in the selection tables.

Line voltages

BAUER motors are available as standard for the following three-phase line voltages:

Motor size	Standard voltages:
D04LA4 - D09XA4	220 V Δ/ 380 V Y 50 Hz
0,06 - 2,2 kW	230 V Δ/**400 V Y 50 Hz* (anm-iec38)**
	240 V Δ / 415 V Y 50 Hz**
	440 V Y / 60 Hz 460 V Y / 60 Hz
from D11SA4	220 V Δ/ 380 V Y 50 Hz
from 3,0 kW	230 V Δ/ 400 V Y 50 Hz
	240 V Δ/ 415 V Y 50 Hz**
	440 V Y / 60 Hz460 V Y / 60 Hz
	380 V Δ/ 660 V Y 50 Hz
	400 V Δ/ 690 V Y**50 Hz***
	415 V Δ / 50 Hz**
	440 V Δ/ 60 Hz
	460 V Δ/ 60 Hz

*Voltage recommended world-wide by IEC 38 and in Europe by CENELEC.
**= Insulation Class F is necessary.

Designs for other voltages available on request and at extra cost.

Unless otherwise specified, motors for operation in conjunction with frequency converters with a 50 or 60 Hz frequency have a Y-circuit to optimise operating noise and winding load.

Unless otherwise stated, the tolerance for the rated voltage is +/- 5 %, in accordance with IEC 60034-1.

The D04 to D18 motors in 4 pole design can be operated within a tolerance of +/- 10 % of the rated voltage (400 V 50 Hz).

General

Line frequencies

All motors are available with the same power ratings for either 50 or 60 Hz . Increased power models are available on request.

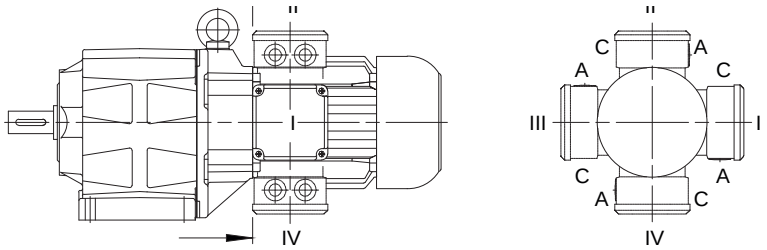
Rating plate

Bauer geared motors are supplied with a corrosion-proof rating plate as standard. The standard rating plate is made of special plastic tried and tested in many years of practical use and approved for hazardous areas by the Physikalisch-Technische-Bundesanstalt (PTB).



Terminal box

The cables of motors with and without brakes can be introduced into the motor terminal box from side A or side C.



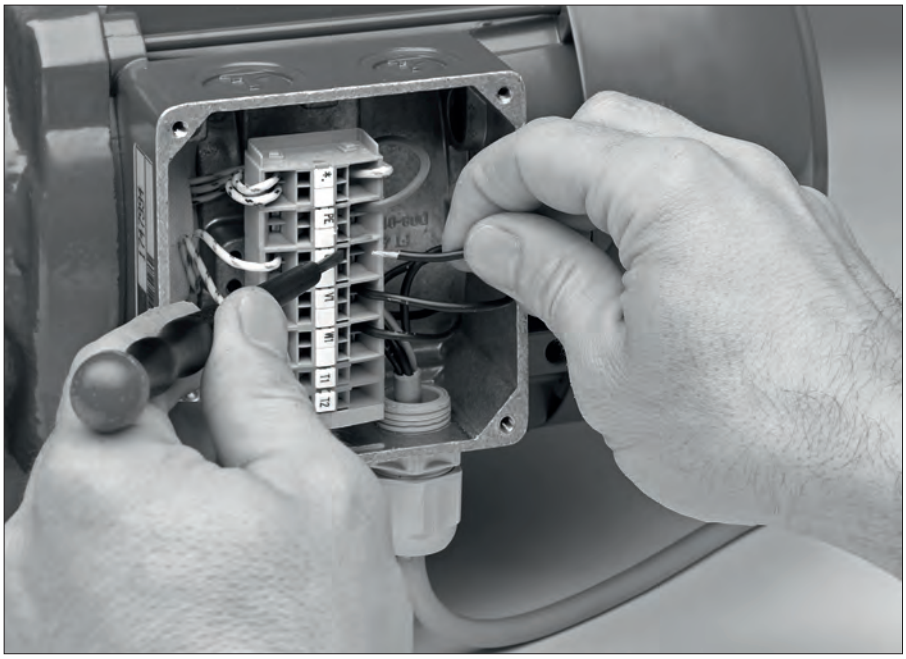
The standard position for the motor terminal box is shown in the dimensional drawings for the geared motors (see chapter 10,11,12 and 13). The terminal box can be installed at any of 3 other positions on request, if on-site space is restricted. The 4 possible positions are 90° offsets around the axis of the motor (dimensional drawing and designation for standard terminal box, see chapter 17 “Dimensional drawing standard terminal box”).

Cast-on terminal boxes (KAG) are supplied with knock out entries with metric nut for cable gland. Screw- on terminal boxes (TBI...4 are supplied with a metric screw thread as standard.

General

Motor connections

The electrical connection of gear motors is time consuming and creates costs, which cannot be neglected both during initial installation and in service cases. These costs are reduced considerably by the use of BAUER Gear Motors, have CAGE CLAMP® connection technology instead of the conventional terminal block – and that without extra charge.



What are the advantages for you ?

Cost reduction during connection
Public timing test have confirmed, that the electrical connection of a cable by means of CAGE CLAMP® technology saves up to 75% working time compared with the classic screw connection.

Simple Handling
Cable connection from the top, very easily accessible: The CAGE CLAMP® spring is pressed, and the cable inserted from the front, i.e. in the field of vision of the installation engineer.

Which cable core diameters ?
Suitable for all copper wires from 0,5 mm^2 to 25 mm^2.

Cost saving in material and tooling
- multicore cable ends, cable eyes or cable ring eyes are no longer needed
- Tools such as crimping pliers are no longer needed
- Inadvertently over tightening or breaking of the terminal bolts and the procurement of a new terminal block belong in the past.
- Searching and procurement of nuts and washers for the terminal blocks, which have fallen down, also belongs in the past.

Vibration and shock resistant
Vibration and shock result neither in conductor damage nor in a measurable contact interruption. The connection is service free.

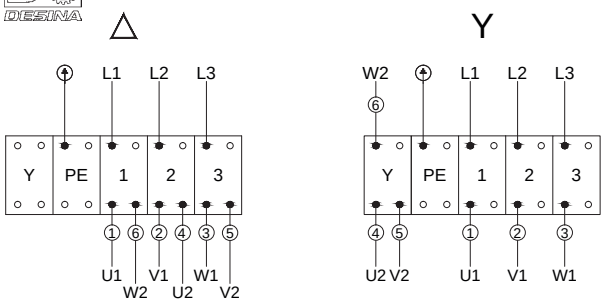
Type of conductors
The CAGE CLAMP®-connector can clamp fine stranded, stranded and solid cores wires.

General

Terminal connections for single speed motors

Standard connection of three phase motors via CAGE CLAMP®.
D..04 - D..09

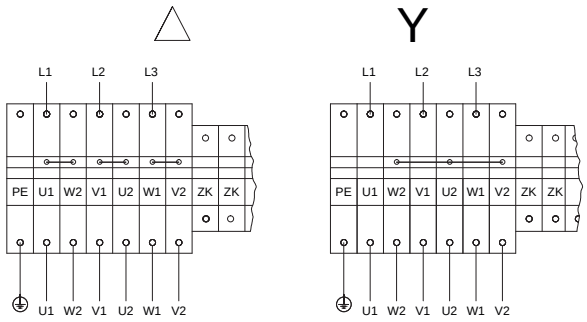
Three Phase motor means of CAGE CLAMP ®



	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	U1 V1 W1 U2 V2 W2	T1 T2 T3 T4 T5 T6	black blue brown yellow red violet
△	Connections for the low rated voltage (e.g.: 230 V)		
Y	Connections for the high rated voltage (e.g.: 400 V)		

D..11 - D..18

Connection of three phase motor via CAGE CLAMP



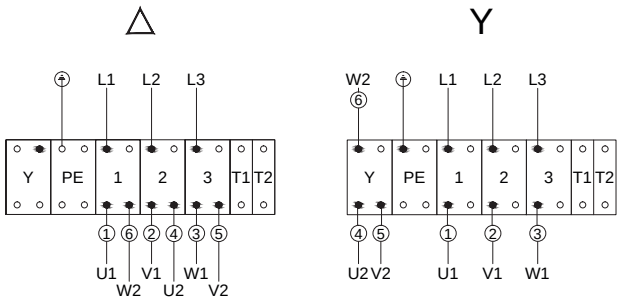
	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	U1 V1 W1 U2 V2 W2	T1 T2 T3 T4 T5 T6	black blue brown yellow red violet
△	Connections for the low rated voltage (e.g.: 230 V)		
Y	Connections for the high rated voltage (e.g.: 400 V)		
ZK	Optional additional connection		

General

Terminal connections for single speed motors with thermal motor protection

Standard connection of three phase motors with thermal motor protection via CAGE CLAMP®.
D..04 - D..09

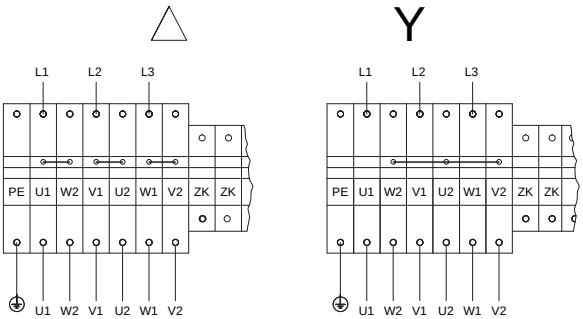
Three Phase motor and thermal protection connection by means of CAGE CLAMP®



	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	U1 V1 W1 U2 V2 W2	T1 T2 T3 T4 T5 T6	black blue brown yellow red violet
△	Connections for the low rated voltage (e.g.: 230 V)		
Y	Connections for the high rated voltage (e.g.: 400 V)		
T1 T2	Thermal motor protection		

D..11 - D..18

Connection of three phase motor via CAGE CLAMP

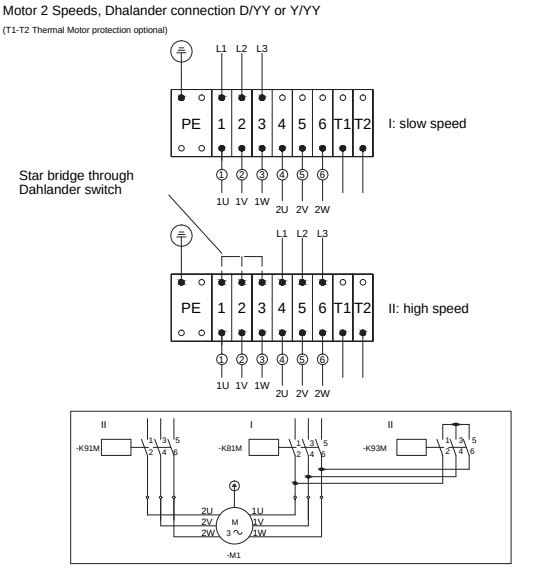


	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	U1 V1 W1 U2 V2 W2	T1 T2 T3 T4 T5 T6	black blue brown yellow red violet
△	Connections for the low rated voltage (e.g.: 230 V)		
Y	Connections for the high rated voltage (e.g.: 400 V)		
ZK	Optional additional connection		

General

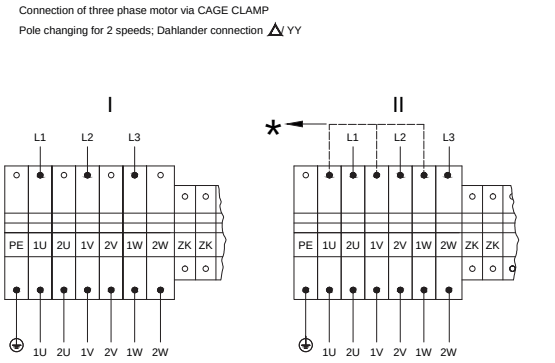
Terminal connections for pole changing motors in Dahlander connection (Δ/YY or Y/YY)

Standard connection of three phase motors without motor protection via CAGE CLAMP®.
D04 ... D..09



	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	1U 1V 1W 2U 2V 2W	T1 T2 T3 T5 T6 T4	black blue brown yellow red violet
I	Low speed		
II	High speed		

D..11 ....D..18.



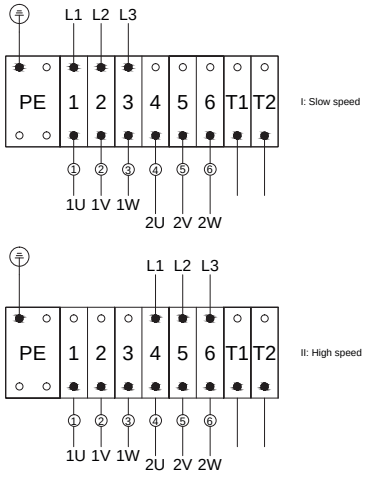
	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	1U 1V 1W 2U 2V 2W	T1 T2 T3 T4 T5 T6	black blue brown yellow red violet
I	Low speed		
II	High speed		
ZK	Optional additional connection		
*	Star point over Dahlander Relay		

General

Terminal connections for pole changing motors with two separate windings (Y/Y or Δ/Δ)

Standard connection of three phase motors with motor protection via CAGE CLAMP®.
D04 ... D..09

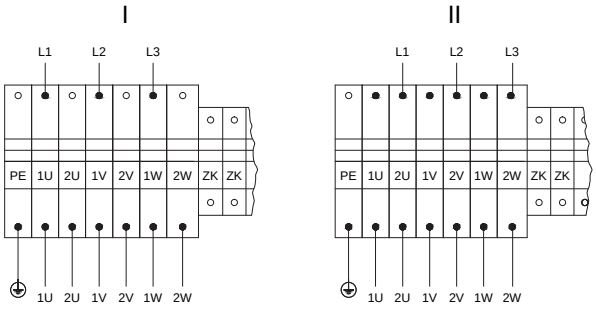
Pole change motor
2 Speeds, 2 windings Y/Y or D/D
(T1-T2 Thermal Motor protection optional)



	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	1U 1V 1W 2U 2V 2W	T1 T2 T3 T11 T12 T13	black blue brown yellow red violet
I	Low speed		
II	High speed		
T1 T2	Thermal motor protection		

D..11 ... D..18

Connection of three phase motor via CAGE CLAMP
Pole changing for 2 speeds; separate windings Y/Y or Δ/Δ



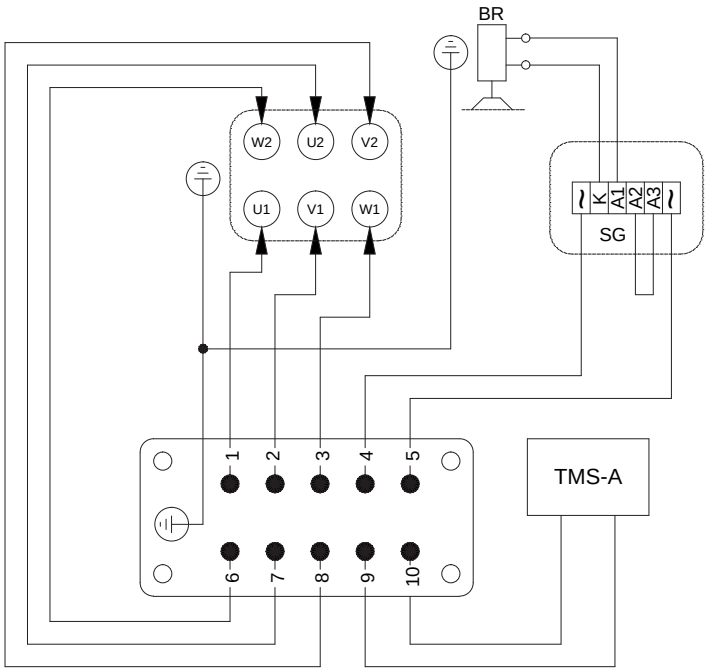
	IEC / EN 60034-8	NEMA MG 1	Colour
Supply lines	L1 L2 L3	L1 L2 L3	
Motor winding	1U 1V 1W 2U 2V 2W	T1 T2 T3 T4 T5 T6	black blue brown yellow red violet
I	Low speed		
II	High speed		
ZK	Optional additional connection		

General

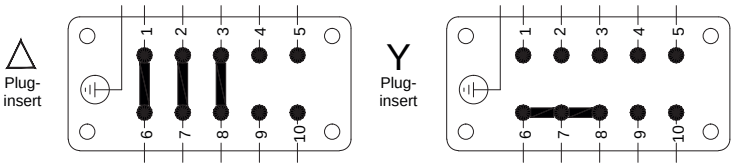
Plug-and-socket connection

D06 to D..16 Bauer motors are available with plug-in motor connection. The socket housing is mounted on the fan-cowl side of the terminal box as standard. This layout minimises the protrusion caused by the plug.
The standard plug-and-socket type connection incorporates the attachment housing, pin insert and cover. Grommet-type housings and jack inserts are available on request at extra cost. Pin assignments on request (dimensional drawing, see chapter 17 "Dimensional drawing, plug-connector terminal box").

A design with single clamp lever according to the DESINA regulation of the „Verbandes Deutscher Werkzeugmaschinenhersteller" (VDW) is also available.



△- or Y-Connection in the plughousing or installation cabinet is performed by the machine manufacturer.



Han 10ESS

Caution !

Motor shaft rotates clockwise for this connection (A-side).
The rotation of the gear shaft is depent on the gear design.

The motors are also available with a low-cost round plug connector as an alternative. This is fitted at the factory in the standard terminal box and is also suitable for brake connection, thermistors and thermostats. Additional information on request.

Bauer motors from D08 with motor-mounted brake are also available with plug-in brake connection. This means that if it requires attention, the brake can be replaced on site with no loss of time.

General

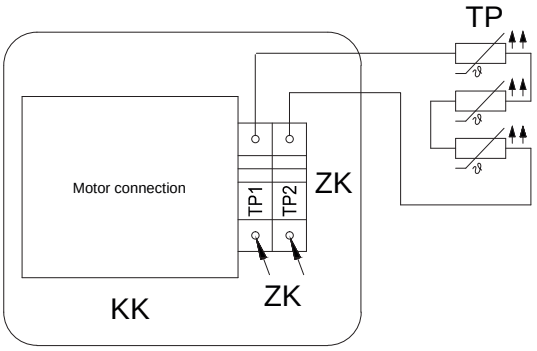
Motor protection

Each geared motor requires a current-dependent motor protection switch or an overcurrent relay with thermal delay in the switchgear to protect the motor windings. The rated motor currents required for settings are stated in the order acknowledgment. Thermal protection for the winding is recommended as an additional safety measure for special operating conditions (short-time or intermittent periodic duty, high switching frequency, severe voltage fluctuations or restricted cooling) and for operation in conjunction with a frequency converter.

Thermistors (PTC)

Thermistors are temperature-dependent resistors which are fitted in each phase winding. In conjunction with a motor protection switch, they ensure optimum protection for the winding in the event of rapid temperature rise. Characteristic to DIN 44081 and "Mark A" to IEC 34-11-2. Thermistors are available for all motors at extra cost. The requisite monitoring device is not included in the scope of supply.

Thermal motor protection with PTC-thermistors



KK	Terminal box
ZK	Additional terminals
TP	PTC-thermistors DIN 44081/IEC 34-11-2 Mark A
TCU	Connection of thermistor control unit EN 60947 Max. permissible testing voltage 2,5 VDC / thermistor in case of with auth. certificate:

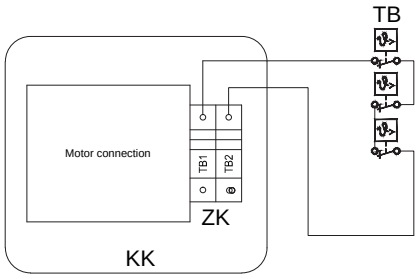
The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

General

Thermostatic protection

Bimetal switches are used for slow-acting, independent temperature monitoring and are embedded in each winding section of the motor.
The bimetal disc is sized such that when the temperature rises above a specific, previously set value, the disc suddenly snaps from a convex state to a concave state and the contact moves vertically away from the contact plate. In this state the switch is either open (normally closed switch) or closed (normally open switch). A significant temperature change is necessary to allow the bimetal disc to independently snap back to its initial position. When it does, the switch is again closed (normally closed switch) or open (normally open switch). Thermal protection switches are available for all motors at additional cost. For technical reasons, this option is not recommended for large motors (D11 to D18).

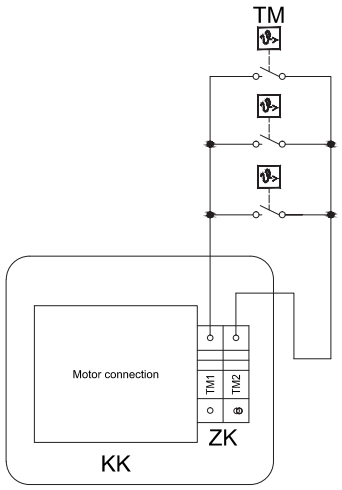
Thermal motor protection with thermostats
(with normally closed contacts)



KK	Terminal box
ZK	Additional terminals
TB	Thermostats with normally closed contacts max. 250VAC 1,6A

The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

Thermal motor protection with thermostats
(with normally opened contacts)



KK	Terminal box
ZK	Additional terminals
TB	Thermostats with normally closed contacts max. 250VAC 1,6A

The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

General

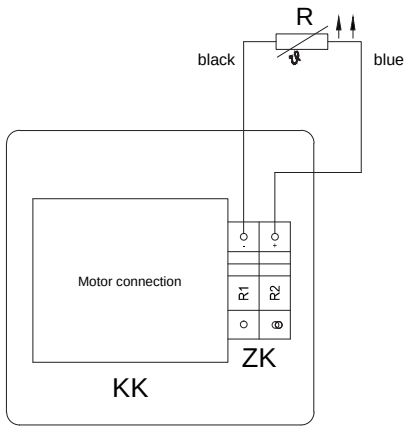
KTY sensors

KTY sensors with heat-shrink insulation can be used to measure and monitor critical surface temperatures and internal temperatures of motors and machines. These sensors are suitable for use in harsh industrial environments in all places where accurate measurements with a single sensor are required. KTY sensors are available for all types of motors at additional cost.

Type 84-130SH: primarily installed in motors that are operated with Siemens frequency converters.

Working principle: KTY sensors are temperature-dependent components. The resistance of the KTY sensor increases when its temperature rises. The characteristic curve is nearly linear in the sensor's measuring range; the reference resistance (at 100 °C) is 970 to 1030 ohms.

Resistance temperature sensor KTY84-130SH



KK	Terminal box
ZK	Additional terminals
R	Resistance temperature sensor

The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

General

PT100 sensors

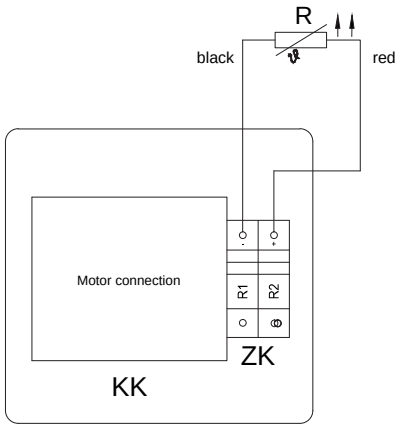
Precise monitoring of motor temperatures is necessary in many fields of industry. Pt100 sensors feature high accuracy, short response time and long-term stability, and they are suitable for use over a wide range of temperatures. Pt100 sensors are available for all motor types at additional cost.

Specifications

Nominal resistance: 100 Ω at 0 °C

The resistance characteristics are specified in EN 60751.

Resistance temperature sensor PT 100



KK	Terminal box
ZK	Additional terminals
R	Resistance temperature sensor

The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

General

Insulation

The gearmotors described in the selection tables of this catalogue with the motor sizes D04, D05, D06, D08, D..09S and D..09L are executed in insulation class B. Temperature class F is available on request at extra cost.
4-pole motors D07 and D..09XA4 (2.2 kW) to D..18XA4 (30 kW) and all multi-speed motors are rated in Temperature Class F as standard.
Insulation Class F bestows the winding a multiple protection against high humidity, acidic gases and heavy tropical influences while making the same shock resistant and more resistant to heat. Protection against insects (termites) is guaranteed through the complete enclosure (IP65) as long as the mains cables are encased in metal.

Degree of protection

Bauer motors from motor size D06 are manufactured to IP65 degree of protection as standard. Motor sizes D04 and D05 have smooth housings, degree of protection IP 54, on request in IP65 at extra cost. The motor terminal box is always IP 65.

Special corrosion protection

If high requirements for corrosion resistance are required, the geared motors are available with three levels of enhanced corrosion protection:

CORO1: Finished with two-component paint to protect against chemically aggressive gases and vapours.

CORO2: External paint as CORO1. In addition, sheet steel fan cowl with coating. The screws for the terminal-box cover are non-rusting steel.

CORO3 with IP 66: Available from motor size D06. Corrosion protection as CORO2. All motors manufactured within Temperature Class F. Terminal box compartment separated from motor interior by cast resin. Threaded cable entries and mating faces have special seals. See Bauer special imprint SD1 for more information.

Speed of output shaft

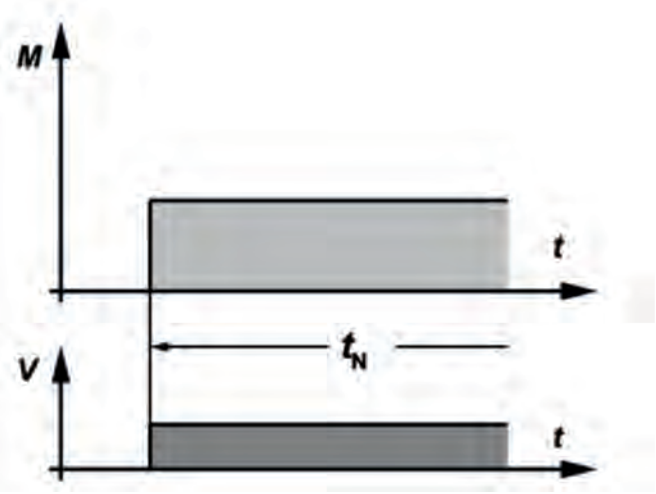
The rated speeds in the selection tables are guidelines for load at rated power. Speed can vary depending on degree of load and temperature (particularly in the case of relatively small motors). Combination gear units for lower speeds are available on request.

Duty types as defined by EN 60034

General

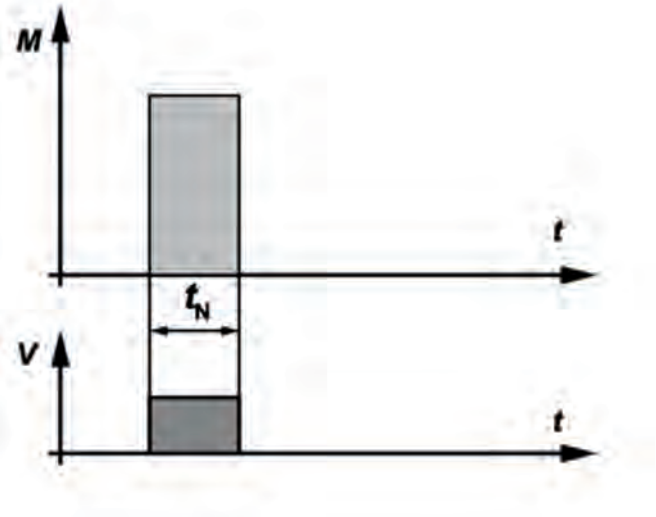
Aside from special drives (such as lifting equipment), standard motors are always designed for continuous running duty. If the drive is operated with frequent on/off cycles, it may be necessary to select a larger motor with a special design. On the other hand, with pronounced short-time duty it is often possible to select a smaller model. **For this reason, it is technically necessary or economically advantageous to inform the motor manufacturer of any duty type that differs from continuous running.**

Continuous running duty (S1)



Operation under rated load for sufficient time to allow temperature equilibrium to be attained, such that the temperature does not increase any more with continued operation. The equipment can operate continuously under the rated load without exceeding the allowable temperature.

Short-time duty (S2)

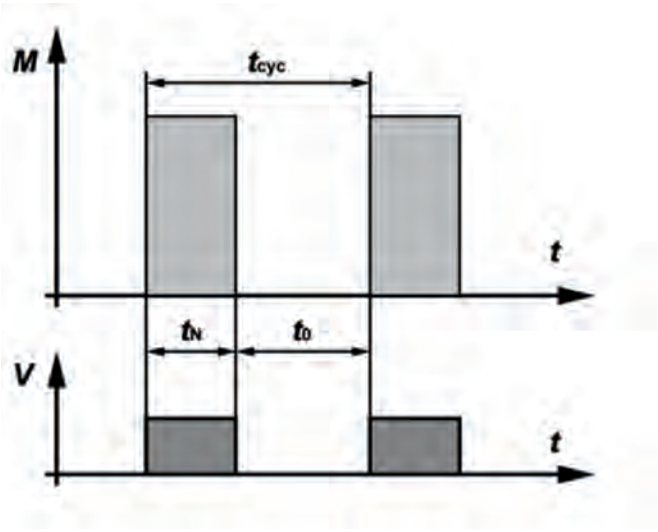


The operating time under rated load is short compared with the subsequent rest period. The standard operating times are 10, 30, 60 and 90 minutes. The equipment can operate for this period under the rated load without exceeding the allowable temperature.

Example: S2 – 60 min

Duty types as defined by EN 60034

Intermittent periodic duty (S3)



S3 duty consists of a sequence of identical cycles, each composed of an operating time with constant load and a rest time with the windings de-energised. The cycle is such that the starting current does not significantly affect the temperature rise. The operating time under rated load and the subsequent pause are both short. The equipment can operate under load only during the period indicated by the duty cycle as a percentage of the total cycle time (cycle duration).
The standardised duty cycles are 15, 25, 40 and 60%. The cycle duration is 10 minutes unless otherwise specified.

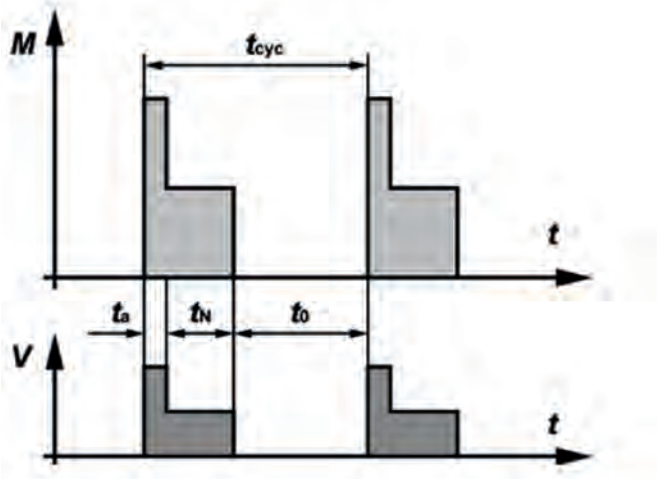
Intermittent periodic duty means that a state of thermal equilibrium is not reached during the load interval.

The duty cycle can be determined as follows:

$$ED = \frac{t_N}{t_{cyc}} \times 100\% = \frac{t_N}{t_N + t_0} \times 100\%$$

Example: S3 – 25%

Intermittent periodic duty with starting (S4)



Duty types as defined by EN 60034

S4 duty consists of a sequence of identical cycles, each of which is composed of a distinct starting time, a time of operation under constant load, and a rest period with the windings de-energised.

The operating time under rated load and the subsequent pause are both short. The equipment can operate under load only during the period indicated by the duty cycle as a percentage of the total cycle time (cycle duration).

The standardised duty cycles are 15, 20, 40 and 60%. The cycle duration is 10 minutes unless otherwise specified.

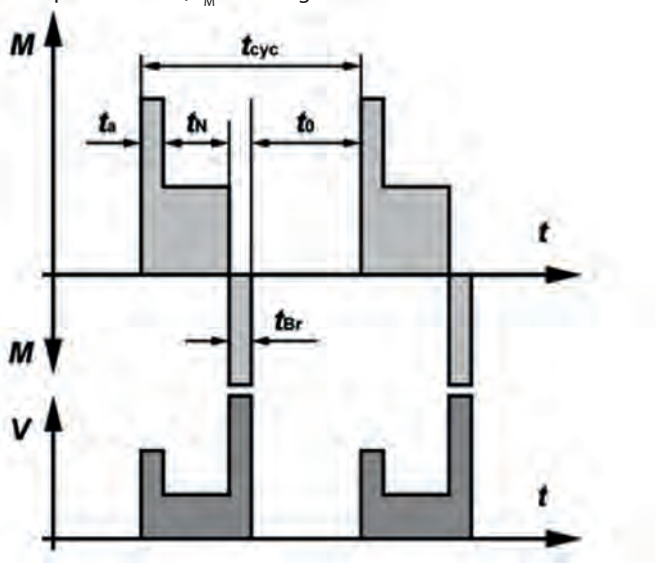
The load cycle corresponds to mode S3, but with additional heating during the starting time that must be taken into account.

The duty cycle can be determined as follows:

$$ED = \frac{(t_a + t_N)}{t_{cyc}} \times 100\% = \frac{t_a + t_N}{t_a + t_N + t_0} \times 100\%$$

Example: S4 – 25%, $J_M = 0.15$ kgm²

Intermittent periodic duty with electric braking (S5)



S5 duty consists of a sequence of identical cycles, each of which is composed of a starting time, a time of operation under constant load, a time of fast electric braking, and a rest period with the windings de-energised.
The operating time under rated load and the subsequent pause are both short. The equipment can operate under load only during the period indicated by the duty cycle as a percentage of the total cycle time (cycle duration).
The standardised duty cycles are 15, 20, 40 and 60%. The cycle duration is 10 minutes unless otherwise specified.

The load cycle corresponds to S3 duty, but with additional warming during the starting time t_a and the braking time t_{Br} taken into account.

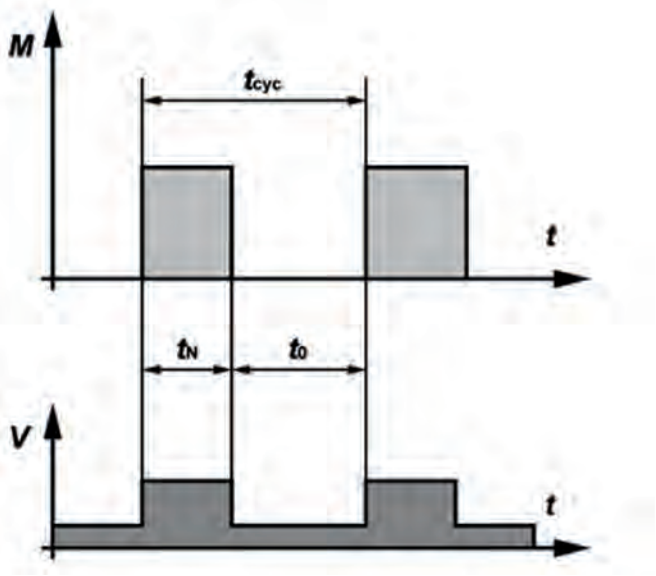
The duty cycle can be determined as follows:

$$ED = \frac{(t_a + t_N + t_{Br})}{t_{cyc}} \times 100\% = \frac{t_a + t_N + t_{Br}}{t_a + t_N + t_{Br} + t_0} \times 100\%$$

Example: S5 – 25%; $J_M = 0.15$ kgm², $J_{ext} = 0.7$ kgm²

Duty types as defined by EN 60034

Continuous-operation periodic duty (S6)



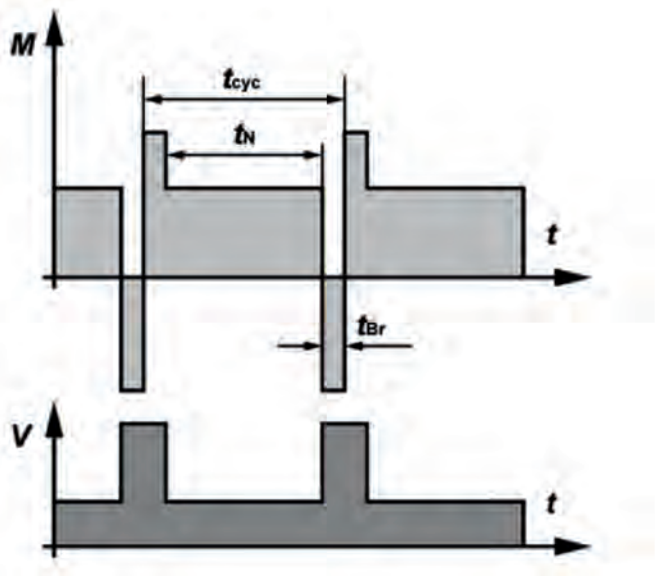
This type of duty corresponds to S3, with the exception that the equipment remains energised during the rest periods. In other words, it operates with no load during these periods. The duty cycle and cycle duration are specified the same way as for S3 duty.

The duty cycle can be determined as follows:

$$ED = \frac{t_N}{t_{cyc}} \times 100\% = \frac{t_N}{t_N + t_0} \times 100\%$$

Example: S6 – 40%

Continuous-operation periodic duty with electric braking (S7)

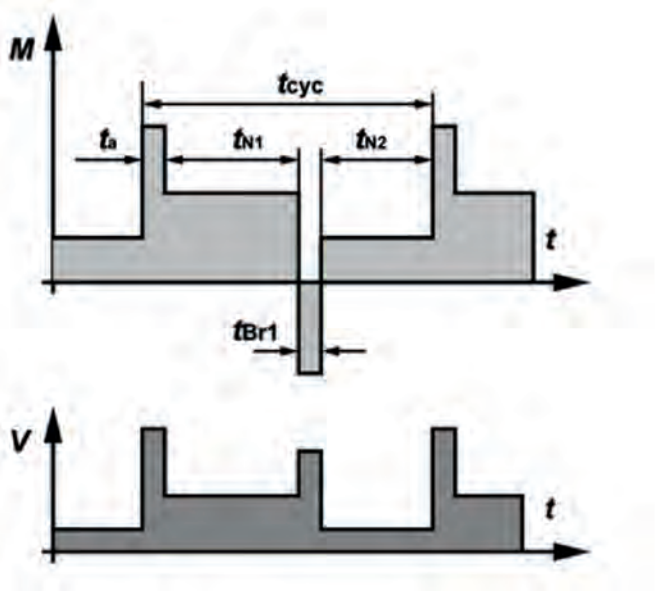


The machine starts up, operates under load, and then is braked electrically, for example by feeding it from a DC power source. Following this, it starts up again immediately. The machine can operate continuously in this manner if the specified moments of inertia of the motor J_M and of the load J_{Ext} as well as the specified duty cycle are not exceeded. If the cycle duration is not specified, it is assumed to be 10 minutes.

The duty cycle can be determined as follows: DC = 1
Example: S7 – J_M = 0.4 kgm², J_{ext} = 7.5 kgm²

Duty types as defined by EN 60034

Continuous-operation periodic duty with relative load/speed changes (S8)



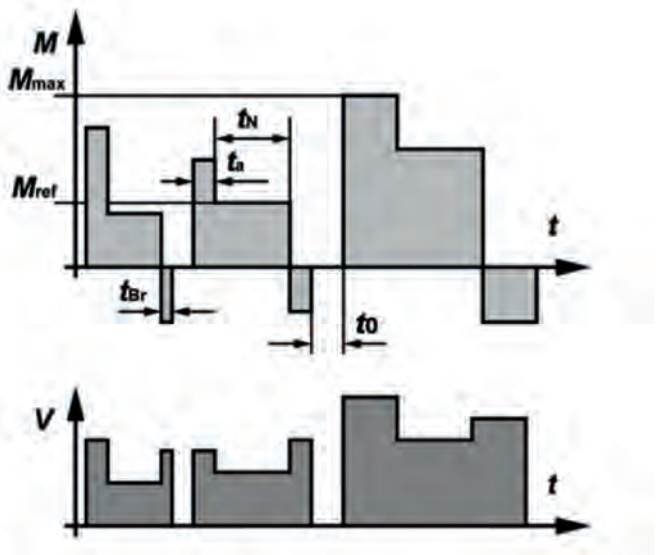
The machine runs continuously under variable load with frequent speed variations. The machine can operate continuously in this manner if at each speed the specified values are not exceeded (moments of inertia J_M and J_{Ext} cycle duration (if other than 10 minutes), rated output and duty cycle. With a moment of inertia of 1 kg m², the acceleration characteristics are the same as with a mass of 1 kg at a distance of 1 m from the axis of rotation).

The duty cycle can be determined as follows:

$$ED = \frac{t_a + t_{N1}}{t_{cyc}} \times 100\% = \frac{t_{Br} + t_{N2}}{t_{cyc}} \times 100\%$$

Example: S8 – $J_M = 0.5$ kgm², $J_{ext} = 6$ kgm²

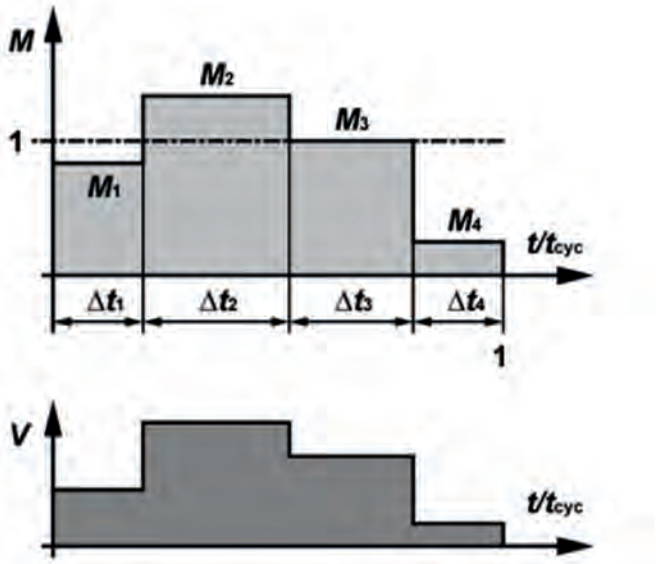
Duty with non-periodic load and speed variations (S9)



In S9 duty the load and the speed vary non-periodically within the permissible operating range. This includes frequently applied overloads, which must never exceed the reference load.
For this duty type, a constant load appropriately selected and based on duty type S1 shall be taken as the reference value M_{ref} for the overload.

Duty types as defined by EN 60034

Duty with discreet constant loads and speeds (S10)



S10 duty comprises operation with at most four different load levels, each of which is maintained long enough to allow the machine to reach thermal equilibrium.
The minimum load within a duty cycle may have a value of zero (no-load operation or at rest with the windings de-energised).
The appropriate abbreviation is S10 followed by the per unit quantities $p/\Delta t$ for the respective load and its duration and the per unit quantity *TL* for the relative thermal life expectancy of the insulation system. The reference value for the thermal life expectancy is the thermal life expectancy at rating for continuous running duty and permissible limits of temperature rise based on duty type S1. For a time de-energized and at rest, the load shall be indicated by the letter *r*.

Example: S10 $p/\Delta t$ = 1.1/0.4, 1/0.3, 0.9/0.2, *r*/0.1; *TL* = 0.6

4-pole IE3 motors for continuous operation S1, line frequency 50 Hz

P_N	Type	n_N	M_N	I_N	Connection	cosφ	η	η	η	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	Jrot
				(400 V)			(100% - Last)	(75% - Last)	(50% - Last)					
kW		1/min	Nm	A			%	%	%					kgm^2
0,12	**DPE05LA4**	1380	0,85	0,42	Y	0,61	67,9	66,0	59,4	3,5	3,0	2,9	3,0	0,000295
0,12	**DPE06LA4**	1380	0,85	0,42	Y	0,61	68,4	66,4	60,2	3,5	3,0	2,9	3,0	0,000295
0,18	**DPE07LA4**	1380	1,27	0,55	Y	0,68	70,4	69,8	63,6	3,0	2,8	2,7	2,8	0,000385
0,25	**DPE08MA4**	1420	1,65	0,75	Y	0,66	74,5	73,9	69,9	5,2	2,3	2,2	2,6	0,00115
0,37	**DPE08LA4**	1420	2,5	0,97	Y	0,69	79,0	79,5	77,3	5,0	2,8	2,5	3,0	0,0015
0,55	**DPE08XA4**	1420	3,6	1,38	Y	0,71	80,8	80,0	77,5	4,7	2,3	2,2	2,7	0,0017
0,75	**DPE09LA4**	1450	4,9	1,68	Y	0,76	84,0	82,9	79,5	6,6	3,3	2,7	3,7	0,0032
1,1	**DPE09XA4**	1450	7,2	2,4	Y	0,76	85,0	84,1	81,2	7,1	3,6	3,2	4,0	0,0038
1,5	**DPE09XA4C**	1450	9,8	3,2	Y	0,78	85,3	85,0	83,0	6,0	2,1	2,0	3,1	0,0053
2,2	**DPE11MA4**	1450	14,5	4,5	Y	0,81	87,0	86,5	84,6	7,8	3,7	3,0	4,0	0,0105
3	**DPE11LA4**	1450	19,7	6	D	0,81	88,2	87,9	86,2	8,3	3,6	3,0	4,2	0,014
4	**DPE11LA4C**	1450	26	7,9	D	0,82	88,7	88,5	86,5	7,6	2,3	1,8	3,6	0,0162
4	**DPE13MA4**	1460	26	7,9	D	0,82	89,1	89,1	87,5	7,7	3,4	2,5	3,7	0,029
5,5	**DPE13LA4**	1460	35,5	11,3	D	0,78	89,6	89,4	87,7	8,0	3,9	3,5	4,2	0,0345
7,5	**DPE13XA4**	1460	49	14,8	D	0,81	90,4	90,0	89,3	8,5	3,3	2,9	3,5	0,04
9,5	**DPE16LB4**	1470	61	19	D	0,79	91,6	91,8	90,9	8,3	3,5	2,8	3,7	0,0755
11	**DPE16LB4**	1470	71,5	22	D	0,79	91,4	91,6	90,8	7,8	3,3	2,7	3,5	0,0755
15	**DPE16XB4**	1470	97	28,8	D	0,82	92,1	92,7	92,6	7,6	3,2	2,5	3,2	0,097
18,5	**DPE18LB4**	1470	120	36	D	0,80	92,8	93,1	92,6	8,8	4,3	3,5	3,9	0,17
22	**DPE18XB4**	1470	142	41,5	D	0,82	93,0	93,4	93,1	8,5	4,0	3,2	3,6	0,195

P	Rated power at 50 Hz line frequency
n	Guideline value for rated speed at the rotor shaft at 50 Hz line frequency
M_N	Rated torque at the rotor shaft
I_N	Rated current at 400 V (the current can be converted as inverse ratios of voltages from 400 V to the desired special voltage)
cos φ	Power factor
I_A/I_N	Relative starting current
M_A/M_N	Relative breakaway torque
M_S/M_N	Relative pull-up torque
M_K/M_N	Relative breakdown torque
J_{rot}	Mass moment of inertia of the rotor
Brake	recommended standard brake for normal requirements (see chapter 16)

Winding configuration for standard motors for 400 V / 50 Hz.

All motors are suitable for the voltage range 380…420V or 400V +/- 10% if executed in insulation class F.

Important: Current, power factor and torque change as voltage deviates from 400 V.

See "www.bauergears.com" for more information.

4-pole IE3 motors for continuous operation S1, line frequency 60 Hz

P_N	Type	n_N	M_N	I_N	Connection	cosφ	η	η	η	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	Jrot
kW		1/min	Nm	(400 V) A			(100% - Last) %	(75% - Last) %	(50% - Last) %					kgm^2
0,12	on application													
0,12														
0,18														
0,25														
0,37														
0,55														
0,75	**DPE09LA4**	1750	4,1	1,5	Y	0,73	85,8	85,2	81,3	7,2	3,6	3,2	4,2	0,0032
1,1	**DPE09XA4**	1750	6	2,1	Y	0,73	86,7	84,8	81,5	8	4,2	3,7	4,5	0,0038
1,5	**DPE09XA4**	1740	8,2	2,9	Y	0,74	86,5	85,2	82,5	7,2	3,7	3,5	4,3	0,0038
2,2	**DPE11MA4**	1760	12	4	Y	0,78	89,5	89,0	86,5	8,5	4,5	3,6	4,9	0,0105
3	**DPE11LA4**	1760	16,3	5,3	D	0,8	89,5	89,5	87,1	9,1	3,9	3,3	4,6	0,014
4	**DPE11LA4C**	1760	21,5	6,8	D	0,82	89,5	88,5	85,6	8,3	2,5	2	4,4	0,0162
4	**DPE13MA4**	1760	21,6	7,2	D	0,78	89,5	89,1	88,4	8,4	3,7	2,7	4,1	0,029
5,5	**DPE13LA4**	1760	29,5	10,1	D	0,75	91,7	89,4	87,7	9,2	4,5	3,8	4,7	0,04
7,5	**DPE13XA4**	1760	40,5	12,9	D	0,80	91,7	91,7	90,3	9,3	3,9	3,5	4,2	0,04
9,5	**DPE16LB4**	1770	59	16,6	D	0,78	92,4	91,8	90,2	9,2	3,8	3,1	4,1	0,0755
11	**DPE16LB4**	1770	59	19,2	D	0,78	92,4	92,2	90,6	9,0	3,6	3,0	3,8	0,0755
15	**DPE16XB4**	1770	81	25,1	D	0,81	93,0	93,0	92,6	8,8	3,7	3,0	3,8	0,097
18,5	**DPE18LB4**	1770	100	31,5	D	0,79	93,6	93,5	92,1	9,6	4,7	3,8	4,3	0,17
22	**DPE18XB4**	1770	118	36	D	0,82	96,6	93,6	92,8	9,7	4,8	3,9	4,4	0,195

P	Rated power at 60 Hz line frequency
n	Guideline value for rated speed at the rotor shaft at 60 Hz line frequency
M_N	Rated torque at the rotor shaft
I_N	Rated current at 460 V (the current can be converted as inverse ratios of voltages from 460 V to the desired special voltage)
cos φ	Power factor
I_A/I_N	Relative starting current
M_A/M_N	Relative breakaway torque
M_S/M_N	Relative pull-up torque
M_K/M_N	Relative breakdown torque
J_{rot}	Mass moment of inertia of the rotor
Brake	recommended standard brake for normal requirements (see chapter 16)

Winding configuration for standard motors for 460 V / 60 Hz.

All motors are suitable for the voltage range 440…480V or 460V +/- 10% if executed in insulation class F.

Important: Current, power factor and torque change as voltage deviates from 460 V.

See "www.bauergears.com" for more information.

Operation with frequency converter

The figures given in the table below are for Bauer motors operating in conjunction with the frequency inverter. The torques referred to in tables can be entered for the respective frequencies in continuous operation (S1 = duty factor 100%).

Motor torques for frequency-converter range 5 Hz - 70 Hz, line frequency 50 Hz

P	**Type**	Connec-tion	5 Hz	10 Hz	20 Hz	30 Hz	50 Hz	60 Hz	70 Hz	5 Hz	10 Hz	20 Hz	30 Hz	50 Hz	60 Hz	70 Hz
			M	M	M	M	M	M	M	I	I	I	I	I	I	I
kW			Nm	Nm	Nm	Nm	Nm	Nm	Nm	A	A	A	A	A	A	A
0,03	**D04LA4**	Y	0,125	0,155	0,185	0,205	0,210	0,210	0,180	0,190	0,193	0,198	0,200	0,200	0,230	0,230
0,04	**D04LA4**	Y	0,165	0,210	0,250	0,275	0,280	0,275	0,205	0,190	0,193	0,198	0,200	0,200	0,230	0,200
0,06	**D04LA4**	Y	0,250	0,315	0,375	0,410	0,420	0,420	0,320	0,290	0,295	0,300	0,300	0,300	0,340	0,305
0,09	**D04LA4**	Y	0,375	0,470	0,56	0,62	0,63	0,63	0,52	0,435	0,440	0,450	0,450	0,450	0,51	0,495
0,12	**D04LA4**	Y	0,50	0,63	0,75	0,82	0,84	0,69	0,50	0,440	0,450	0,455	0,460	0,460	0,460	0,450
0,06	**D05LA4**	Y	0,250	0,315	0,375	0,410	0,420	0,420	0,360	0,300	0,315	0,340	0,350	0,350	0,395	0,400
0,09	**D05LA4**	Y	0,375	0,470	0,56	0,62	0,63	0,63	0,54	0,355	0,365	0,375	0,380	0,380	0,430	0,430
0,12	**D05LA4**	Y	0,51	0,63	0,76	0,83	0,85	0,81	0,59	0,370	0,385	0,410	0,420	0,420	0,455	0,410
0,18	**D05LA4**	Y	0,76	0,96	1,15	1,26	1,28	1,28	0,97	0,59	0,60	0,62	0,63	0,63	0,72	0,64
0,25	**D05LA4**	Y	1,05	1,31	1,57	1,72	1,75	1,74	1,28	0,85	0,86	0,87	0,88	0,88	1,00	0,88
0,06	**D06LA4**	Y	0,250	0,315	0,375	0,410	0,420	0,420	0,360	0,300	0,315	0,340	0,350	0,350	0,395	0,400
0,09	**D06LA4**	Y	0,375	0,470	0,56	0,62	0,63	0,63	0,54	0,355	0,365	0,375	0,380	0,38	0,430	0,430
0,12	**D06LA4**	Y	0,51	0,63	0,76	0,83	0,85	0,81	0,59	0,37	0,385	0,41	0,420	0,42	0,455	0,41
0,18	**D06LA4**	Y	0,76	0,96	1,15	1,26	1,28	1,28	0,97	0,59	0,60	0,62	0,63	0,63	0,72	0,64
0,25	**D06LA4**	Y	1,05	1,32	1,58	1,73	1,76	1,75	1,29	0,85	0,87	0,88	0,89	0,89	1,01	0,89
0,3	**D07LA4**	Y	1,27	1,59	1,9	2,0	2,1	2,1	1,81	1,25	1,27	1,29	1,30	1,30	1,47	1,47
0,37	**D07LA4**	Y	1,57	1,96	2,3	2,5	2,6	2,5	1,83	1,30	1,32	1,34	1,35	1,35	1,46	1,34
0,37	**DHE08MA4**	Y	1,47	1,83	2,2	2,4	2,4	2,4	2,1	1,18	1,19	1,2	1,2	1,2	1,36	1,36
0,55	**DHE08LA4**	Y	2,2	2,8	3,3	3,6	3,7	3,7	2,8	1,13	1,21	1,3	1,36	1,36	1,54	1,38
0,75	**DHE08XA4**	Y	3	3,8	4,5	4,9	5	5	4,2	1,68	1,75	1,83	1,88	1,88	2,2	2,2
0,75	**DHE09SA4**	Y	3	3,8	4,5	4,9	5	5	4,2	1,59	1,66	1,75	1,8	1,8	2,1	2,1
1,1	**DHE09LA4**	Y	4,3	5,4	6,5	7,2	7,3	7,3	6,2	2,2	2,4	2,5	2,6	2,6	2,9	2,9
1,5	**DHE09XA4**	Y	5,9	7,4	8,9	9,8	9,9	9,9	8,5	2,8	3,1	3,2	3,4	3,4	3,8	3,8
2,2	**DHE09XA4C**	Y	8,7	10,8	13	14,3	14,5	14,5	12,4	3,8	4,2	4,5	4,8	4,8	5,4	5,4
2,2	**DHE11SA4**	Y	8,7	10,8	13	14,3	14,5	14,5	12,4	3,6	3,9	4,4	4,6	4,6	5,2	5,3
3	**DHE11MA4**	Y	12	15	18	19,7	20	20	17,1	4,9	5,4	5,9	6,3	6,3	7,2	7,2
4	**DHE11LA4**	Y	15,9	19,8	23,5	26	26,5	26,5	22,5	6,5	7,2	7,9	8,4	8,4	9,5	9,5
5,5	**DHE11LA4C**	Y	21,5	27	32	35,5	36	36	30,5	8,1	9	10	10,7	10,7	12,1	12,1
5,5	**DHE13MA4**	Y	21,5	27	32	35,5	36	36	30,5	8,2	9,2	10,3	11	11	12,5	12,5
7,5	**DHE13LA4**	Y	29	36,5	44	48	49	49	42	11,2	12,6	14,1	15	15,1	17,1	17,1
9,5	**DHE16MB4**	Y	37	46,5	55	61	62	62	53	14,8	16,5	18,4	19,6	19,7	22,5	22,5
11	**DHE16LB4**	Y	42,5	53	64	70	71	71	61	17,2	19	21,5	22,5	22,5	25,5	25,5
15	**DHE16XB4**	Y	58	73	87	96	97	97	83	24	26,5	29,5	31	31	35	35,5
18,5	**DHE18LB4**	Y	72	90	108	118	120	120	102	25	28,5	32,5	35	35	39,5	40
22	**DHE18XB4**	Y	85	106	127	140	142	142	121	33,5	37	41	43,5	43,5	49,5	49,5

Field weakening for frequencies above 50 Hz, winding for standard voltage **400 V Y / 50 Hz**, Temperature Class F.

P	Rated output
n	Guideline value for rated speed at the rotor shaft
M	Permissible load torque (S1-100%) for operation with frequency inverter
M_N	Rated torque at the rotor shaft
I	Load current for operation with frequency inverter

Motors with standard windings can be switched from Y- to Δ- circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency inverter. Load current is lower if the load torque is below the values permitted for 30-70 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter

Motor torques for frequency-converter range 5 Hz - 100 Hz, line frequency 50 Hz

P kW	**Type**	Connection	5 Hz M Nm	8,7 Hz M Nm	10 Hz M Nm	20 Hz M Nm	87 Hz M Nm	100 Hz M Nm	5 Hz I A	8,7 Hz I A	10 Hz I A	20 Hz I A	87 Hz I A	100 Hz I A
0,03	**D04LA4**	D	0,125	0,15	0,155	0,185	0,21	0,21	0,33	0,335	0,335	0,345	0,35	0,38
0,04	**D04LA4**	D	0,165	0,2	0,21	0,25	0,28	0,28	0,33	0,335	0,335	0,345	0,35	0,38
0,06	**D04LA4**	D	0,25	0,3	0,315	0,375	0,42	0,42	0,51	0,51	0,51	0,52	0,52	0,57
0,09	**D04LA4**	D	0,375	0,45	0,47	0,56	0,63	0,63	0,76	0,76	0,77	0,78	0,78	0,86
0,12	**D04LA4**	D	0,5	0,6	0,63	0,75	0,84	0,75	0,76	0,77	0,78	0,79	0,8	0,8
0,06	**D05LA4**	D	0,25	0,3	0,315	0,375	0,42	0,42	0,52	0,54	0,55	0,59	0,61	0,67
0,09	**D05LA4**	D	0,375	0,45	0,47	0,56	0,63	0,63	0,62	0,63	0,63	0,65	0,66	0,73
0,12	**D05LA4**	D	0,51	0,61	0,63	0,76	0,85	0,85	0,64	0,67	0,67	0,71	0,73	0,8
0,18	**D05LA4**	D	0,76	0,92	0,96	1,15	1,28	1,28	1,01	1,04	1,04	1,07	1,1	1,2
0,25	**D05LA4**	D	1,05	1,25	1,31	1,57	1,75	1,75	1,46	1,48	1,49	1,51	1,53	1,68
0,06	**D06LA4**	D	0,25	0,3	0,315	0,375	0,42	0,42	0,52	0,54	0,55	0,59	0,61	0,67
0,09	**D06LA4**	D	0,375	0,45	0,47	0,56	0,63	0,63	0,62	0,63	0,63	0,65	0,66	0,73
0,12	**D06LA4**	D	0,51	0,61	0,63	0,76	0,85	0,85	0,64	0,67	0,67	0,71	0,73	0,8
0,18	**D06LA4**	D	0,76	0,92	0,96	1,15	1,28	1,28	1,01	1,04	1,04	1,07	1,1	1,2
0,25	**D06LA4**	D	1,05	1,26	1,32	1,58	1,76	1,76	1,47	1,49	1,5	1,53	1,55	1,69
0,3	**D07LA4**	D	1,27	1,52	1,59	1,9	2,1	2,1	2,2	2,2	2,2	2,2	2,3	2,5
0,37	**D07LA4**	D	1,57	1,88	1,96	2,3	2,6	2,6	2,2	2,3	2,3	2,4	2,4	2,6
0,37	**DHE08MA4**	D	1,47	1,76	1,83	2,2	2,4	2,4	2,1	2,1	2,1	2,1	2,1	2,3
0,55	**DHE08LA4**	D	2,2	2,6	2,8	3,3	3,7	3,7	1,95	2,1	2,1	2,2	2,4	2,6
0,75	**DHE08XA4**	D	3	3,6	3,8	4,5	5	5	3	3,1	3,1	3,2	3,3	3,6
0,75	**DHE09SA4**	D	3	3,6	3,8	4,5	5	5	2,8	2,8	2,9	3,1	3,2	3,5
1,1	**DHE09LA4**	D	4,3	5,2	5,4	6,5	7,3	7,3	3,8	4	4	4,2	4,5	4,9
1,5	**DHE09XA4**	D	5,9	7,1	7,4	8,9	9,9	9,9	4,6	5	5,1	5,5	5,9	6,4
2,2	**DHE09XA4C**	D	8,7	10,4	10,8	13	14,5	14,5	6,7	7,1	7,2	7,8	8,3	9,1
2,2	**DHE11SA4**	D	8,7	10,4	10,8	13	14,5	14,5	6,2	6,7	6,8	7,5	8	8,8
3	**DHE11MA4**	D	12	14,3	15	18	20	20	8,4	9,1	9,3	10,3	11	12
4	**DHE11LA4**	D	15,9	19	19,8	23,5	26,5	26,5	11,9	12,6	12,8	13,9	14,6	16
5,5	**DHE11LA4C**	D	21,5	25,5	27	32	36	36	14,2	15,6	15,9	17,8	19,1	21
5,5	**DHE13MA4**	D	21,5	25,5	27	32	36	36	14,1	15,5	15,8	17,7	19,1	21
7,5	**DHE13LA4**	D	29	35	36,5	44	49	49	19,3	21,5	22	24,5	26,5	29
9,5	**DHE16MB4**	D	37	44,5	46,5	55	62	62	26	28	29	32	34,5	37,5
11	**DHE16LB4**	D	42,5	51	53	64	71	71	30	32,5	33	36,5	39	43
15	**DHE16XB4**	D	58	70	73	87	97	97	41,5	45	46	51	54	59
18,5	**DHE18LB4**	D	72	86	90	108	120	120	43,5	48	49,5	56	61	67
22	**DHE18XB4**	D	85	102	106	127	142	142	58	63	64	71	76	83

Field weakening for frequencies above 87 Hz, winding for
230 V Δ/ 50 Hz (U_{max} = 400 V Δ/87 Hz), Temperature Class F.

P	Rated output
n	Guideline value for rated speed at the rotor shaft
M	P0ermissible load torque (S1-100%) for operation with frequency inverter
M_N	Rated torque at the rotor shaft
I	Load current for operation with frequency inverter

The load currents in the table are guideline values for selecting the size of frequency inverter. Load current is lower if the load torque is below the values permitted for 30-100 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter

Motor torques for frequency-converter range 6 Hz - 84 Hz, line frequency 60 Hz

P kW	**Type**	Connec-tion	6 Hz M Nm	12 Hz M Nm	24 Hz M Nm	36 Hz M Nm	60 Hz M Nm	72 Hz M Nm	84 Hz M Nm	6 Hz I A	12 Hz I A	24 Hz I A	36 Hz I A	60 Hz I A	72 Hz I A	84 Hz I A
0,03	**D04LA4**	Y	0,115	0,140	0,165	0,180	0,180	0,180	0,150	0,176	0,178	0,180	0,185	0,180	0,205	0,205
0,04	**D04LA4**	Y	0,145	0,180	0,215	0,235	0,230	0,230	0,180	0,176	0,178	0,180	0,185	0,180	0,205	0,190
0,06	**D04LA4**	Y	0,220	0,275	0,325	0,355	0,350	0,350	0,300	0,275	0,275	0,280	0,290	0,280	0,320	0,320
0,09	**D04LA4**	Y	0,330	0,410	0,485	0,53	0,520	0,520	0,445	0,400	0,400	0,400	0,415	0,400	0,455	0,455
0,12	**D04LA4**	Y	0,445	0,55	0,65	0,71	0,70	0,63	0,465	0,410	0,415	0,420	0,435	0,420	0,435	0,415
0,06	**D05LA4**	Y	0,220	0,275	0,325	0,355	0,350	0,350	0,300	0,280	0,295	0,315	0,330	0,320	0,365	0,365
0,09	**D05LA4**	Y	0,330	0,410	0,485	0,53	0,520	0,520	0,445	0,335	0,340	0,350	0,360	0,350	0,395	0,400
0,12	**D05LA4**	Y	0,445	0,55	0,65	0,71	0,70	0,70	0,53	0,345	0,36	0,375	0,395	0,38	0,43	0,385
0,18	**D05LA4**	Y	0,67	0,83	0,99	1,08	1,06	1,06	0,87	0,54	0,56	0,58	0,60	0,58	0,66	0,64
0,25	**D05LA4**	Y	0,92	1,14	1,36	1,48	1,45	1,45	1,15	0,78	0,79	0,8	0,83	0,8	0,91	0,85
0,06	**D06LA4**	Y	0,22	0,275	0,325	0,355	0,35	0,35	0,3	0,28	0,295	0,315	0,330	0,32	0,365	0,365
0,09	**D06LA4**	Y	0,33	0,41	0,485	0,53	0,52	0,52	0,445	0,335	0,34	0,35	0,360	0,35	0,395	0,4
0,12	**D06LA4**	Y	0,445	0,55	0,65	0,71	0,70	0,70	0,53	0,345	0,36	0,375	0,395	0,38	0,43	0,385
0,18	**D06LA4**	Y	0,67	0,83	0,99	1,08	1,06	1,06	0,87	0,54	0,56	0,58	0,60	0,58	0,66	0,64
0,25	**D06LA4**	Y	0,92	1,14	1,36	1,48	1,45	1,45	1,15	0,78	0,79	0,8	0,83	0,8	0,91	0,85
0,3	**D07LA4**	Y	1,12	1,38	1,65	1,80	1,76	1,76	1,5	1,18	1,19	1,20	1,24	1,2	1,36	1,36
0,37	**D07LA4**	Y	1,37	1,69	2,0	2,2	2,1	2,1	1,64	1,24	1,25	1,26	1,30	1,26	1,43	1,28
0,55	**D08MA4**	Y	1,98	2,4	2,9	3,1	3,1	3,1	2,4	1,29	1,36	1,44	1,51	1,47	1,66	1,55
0,75	**DHE08XA4**	Y	2,4	3,1	3,7	4,1	4,1	4,1	3,7	1,45	1,5	1,56	1,6	1,6	1,78	1,81
0,75	**DHE09SA4**	Y	2,4	3,1	3,7	4,1	4,1	4,1	3,7	1,34	1,43	1,53	1,6	1,6	1,78	1,81
1,10	**DHE09LA4**	Y	3,6	4,5	5,4	5,9	6	6	5,4	1,85	1,99	2,2	2,2	2,2	2,5	2,6
1,50	**DHE09XA4**	Y	4,9	6,1	7,3	8,1	8,2	8,2	7,3	2,4	2,6	2,8	3	3	3,3	3,4
2,2	**DHE09XA4C**	Y	7,2	9	10,8	11,8	12	12	10,8	3,5	3,7	3,9	4	4	4,5	4,5
2,2	**DHE11SA4**	Y	7,2	9	10,8	11,8	12	12	10,8	3,1	3,5	3,8	4	4	4,5	4,5
3,0	**DHE11MA4**	Y	9,9	12,3	14,8	16,2	16,5	16,5	14,8	4,2	4,7	5,2	5,5	5,5	6,1	6,3
4,0	**DHE11LA4**	Y	13	16,2	19,5	21	21,5	21,5	19,5	5,6	6,2	6,9	7,3	7,3	8,1	8,3
5,5	**DHE11LA4C**	Y	18	22,5	27	29,5	30	30	27	7	7,8	8,6	9,2	9,2	10,2	10,4
5,5	**DHE13MA4**	Y	18	22,5	27	29,5	30	30	27	7,3	8,1	9,1	9,7	9,7	10,8	11
7,5	**DHE13LA4**	Y	24	30	36	40	40,5	40,5	36	9,9	11	12,3	13,1	13,2	14,7	15
9,5	**DHE16LB4**	Y	30	37,5	45	49	50	50	45	12,8	14,1	15,5	16,4	16,5	18,3	18,7
11,0	**DHE16LB4**	Y	35	44	53	58	59	59	53	15	16,6	18,4	19,5	19,6	22	22,5
15,0	**DHE16XB4**	Y	48,5	60	72	80	81	81	72	21	23	25,5	27	27	30	31
18,5	**DHE18LB4**	Y	60	75	90	98	100	100	90	22	25,5	29	31	31	34,5	35,5
22	**DHE18XB4**	Y	70	88	106	116	118	118	106	29,5	32,5	36	38,5	38,5	43	43,5

Field weakening for frequencies above 60 Hz, winding for standard voltage **460 V Y / 60 Hz**, Temperature Class F.

P	Rated output
n	Guideline value for rated speed at the rotor shaft
M	permissible load torque (S1-100%) for operation with frequency inverter
M_N	Rated torque at the rotor shaft
I	Load current for operation with frequency inverter

Motors with standard windings can be switched from Y- to Δ- circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-84 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter

Motor torques for frequency-converter range 6 Hz - 120 Hz, line frequency 60 Hz

P kW	**Type**	Connec-tion	6 Hz M Nm	12 Hz M Nm	24 Hz M Nm	36 Hz M Nm	104 Hz M Nm	120 Hz M Nm	6 Hz I A	12 Hz I A	24 Hz I A	36 Hz I A	104 Hz I A	120 Hz I A
0,03	**D04LA4**	D	0,105	0,13	0,155	0,18	0,17	0,17	0,245	0,25	0,26	0,325	0,26	0,29
0,04	**D04LA4**	D	0,145	0,18	0,215	0,235	0,23	0,23	0,28	0,28	0,28	0,325	0,28	0,305
0,06	**D04LA4**	D	0,22	0,275	0,325	0,355	0,35	0,35	0,455	0,465	0,48	0,5	0,485	0,54
0,09	**D04LA4**	D	0,33	0,41	0,485	0,53	0,52	0,52	0,72	0,73	0,74	0,72	0,75	0,82
0,12	**D04LA4**	D	0,445	0,55	0,65	0,71	0,7	0,65	0,63	0,65	0,67	0,75	0,68	0,7
0,06	**D05LA4**	D	0,22	0,275	0,325	0,355	0,35	0,35	0,48	0,51	0,55	0,57	0,56	0,61
0,09	**D05LA4**	D	0,33	0,41	0,485	0,53	0,52	0,52	0,58	0,59	0,61	0,63	0,61	0,67
0,12	**D05LA4**	D	0,445	0,55	0,65	0,71	0,7	0,7	0,6	0,62	0,65	0,68	0,66	0,73
0,18	**D05LA4**	D	0,67	0,83	0,99	1,08	1,06	1,06	0,93	0,96	1	1,04	1,01	1,11
0,25	**D05LA4**	D	0,92	1,14	1,36	1,48	1,45	1,45	1,34	1,36	1,38	1,43	1,39	1,53
0,06	**D06LA4**	D	0,22	0,275	0,325	0,355	0,35	0,35	0,48	0,51	0,55	0,57	0,56	0,61
0,09	**D06LA4**	D	0,33	0,41	0,485	0,53	0,52	0,52	0,58	0,59	0,61	0,63	0,61	0,67
0,12	**D06LA4**	D	0,445	0,55	0,65	0,71	0,7	0,7	0,6	0,62	0,65	0,68	0,66	0,73
0,18	**D06LA4**	D	0,67	0,83	0,99	1,08	1,06	1,06	0,93	0,96	1	1,04	1,01	1,11
0,25	**D06LA4**	D	0,92	1,14	1,36	1,48	1,45	1,45	1,34	1,36	1,38	1,43	1,39	1,53
0,3	**D07LA4**	D	1,12	1,38	1,65	1,8	1,76	1,76	2,1	2,1	2,1	2,2	2,1	2,3
0,37	**D07LA4**	D	1,37	1,69	2	2,2	2,1	2,1	2,2	2,2	2,2	2,2	2,2	2,4
0,55	**D08MA4**	D	1,98	2,4	2,9	3,1	3,1	3,1	2,2	2,4	2,5	2,7	2,6	2,8
0,75	**DHE08XA4**	D	2,4	3,1	3,7	4,1	4,1	4,1	2,6	2,6	2,7	2,8	2,8	3,1
0,75	**DHE09SA4**	D	2,4	3,1	3,7	4,1	4,1	4,1	2,4	2,5	2,7	2,8	2,8	3,1
1,1	**DHE09LA4**	D	3,6	4,5	5,4	5,9	6	6	3,2	3,5	3,8	3,9	3,9	4,3
1,5	**DHE09XA4**	D	4,9	6,1	7,3	8,1	8,2	8,2	4,2	4,5	4,9	5,1	5,2	5,7
2,2	**DHE09XA4C**	D	7,2	9	10,8	11,8	12	12	5,7	6,1	6,6	6,9	7	7,7
2,2	**DHE11SA4**	D	7,2	9	10,8	11,8	12	12	5,4	5,9	6,5	6,9	7	7,7
3	**DHE11MA4**	D	9,9	12,3	14,8	16,2	16,5	16,5	7,4	8,1	9	9,5	9,6	10,5
4	**DHE11LA4**	D	13	16,2	19,5	21	21,5	21,5	10,7	11,4	12,2	12,6	12,7	13,9
5,5	**DHE11LA4C**	D	18	22,5	27	29,5	30	30	12,4	13,8	15,4	16,4	16,5	18,1
5,5	**DHE13MA4**	D	18	22,5	27	29,5	30	30	12,6	14,1	15,7	16,7	16,9	18,5
7,5	**DHE13LA4**	D	24	30	36	40	40,5	40,5	17,1	19,1	21,5	23	23	25,5
9,5	**DHE16LB4**	D	30,5	38	45,5	50	51	51	21,5	24	27	28,5	29	31,5
11	**DHE16LB4**	D	35	44	53	58	59	59	26	29	32	34	34	37,5
15	**DHE16XB4**	D	48,5	60	72	80	81	81	36,5	40	44	46,5	47	52
18,5	**DHE18LB4**	D	60	75	90	98	100	100	38	43,5	49,5	54	54	60
22	**DHE18XB4**	D	70	88	106	116	118	118	51	56	63	67	67	74

Field weakening for frequencies above 87 Hz, winding for standard voltage 265 V Δ / 60 Hz (Umax = 460 V Δ / 104 Hz), Temperature Class F.

P	Rated output
n	Guideline value for rated speed at the rotor shaft
M	permissible load torque (S1-100%) for operation with frequency inverter
M_N	Rated torque at the rotor shaft
I	Load current for operation with frequency inverter

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-120 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter

Notes on design

Use the torque required at the lowest operating speed to select motors for applications which require constant torque over the entire speed range, as is the case, for example, with lifting gear and conveyors. Bear in mind, too, the possibility of torque being lower in the field-weakening range.

Use only the torque required at the highest operating speed to select motors for applications which require square-law torque over the speed range, as is the case, for example, with pumps and fans. Field weakening is not permissible.

The motor's power is frequency-dependent. It can be approximated in kW from torque M in Nm, the 50 Hz or 60 Hz speed n and the frequency f in Hz by means of the equation

P = M x n / 9550 x f/50
or
P = M x n / 9550 x f/60

If a frequency inverter is used in conjunction with a pulse generator, the full 50 Hz or 60 Hz rated torque is available as holding torque at motor standstill (independent fan required for prolonged periods at standstill). In many instances, however, a mechanical brake is necessary for holding a position exactly or for safety reasons.

The use of thermistors for the thermal protection of the motor winding for frequency inverter duty are strictly recommended (available at extra cost for all motor sizes).

Increased torque with reduced duty factor

A reduction in duty factor increases the torque available at the low end of the frequency range (up to the transition frequency for field weakening) in accordance with the factors in the table below:

Duty factor	Motor torque with reduced duty factor	Increase in current requiremen-tapproximate
100 %	-	-
60 %	1,15 x S1 torque	1,15 x S1 current
40 %	1,30 x S1 torque	1,30 x S1 current
25 %	1,45 x S1 torque	1,45 x S1 current
15 %	1,60 x S1 torque	1,60 x S1 current

This, in turn, means that short-term overload by a factor of 1.6 is permissible for starting from a low speed, for example. An increase in torque in the field-weakening range due to a reduction in duty factor is possible only under certain conditions; the 1.6x S1 torque generally cannot be achieved

Increased torque with external fan

If an independent fan is used, the S1- torque in the lower frequency range (below 30 Hz) need not be reduced, i.e., when it has an independent fan the motor can provide the 50 Hz or 60 Hz rated torque throughout the entire frequency range to the cut-off frequency of the field weakening.

With a high quality frequency inverter of 160%, when independent ventilation is combined with a reduced duty factor the 50 Hz or 60 Hz torque is available from rest through to the transition frequency of the field weakening range.

External ventilation is available for motor types D08 and larger (see chapter 16 "Motor-independent fan (FV)). In many instances, a more economical alternative is to select a larger motor without external ventilation.

Operation with frequency converter

Energy-saving function

High quality frequency inverters reduce voltage in part-load operation to lower the motor current and thus improve efficiency. This converter function emulates the method of operation of commercially available "energy-saving devices".

Regeneration

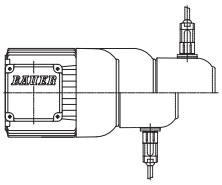
Regenerative torques (braking torques) are required for motors used in lifting gear, for example. In conjunction with high quality frequency inverters, the motor torques listed in the table can also be applied as regenerative torques. As with motor torque, an increase in regenerative torque with reduced duty factor is permissible.

Notes on operation with other-make frequency inverters

The precondition is that the motor current generated by the frequency converter is largely free of harmonics. The harmonics generated in the motor by some old-style frequency inverters result in additional losses and cut available torque by some 10% across the entire frequency range. There is also a risk of oscillation causing damage to the gear unit.

At frequencies below approximately 5 Hz, operation without pulse generators is possible only using a frequency inverter with state-of- the-art control. If frequency inverters are used that do not feature load-dependent frequency and current adjustment, the increase in the motor's current consumption means that, particularly in the case of small motors (D04-D..09), torque has to be reduced at frequencies below approximately 10 Hz even if an external fan is used or the duty factor is reduced. Regenerative operation is possible only under certain circumstances.

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Page

Motor-mounted components 427-450

Brake
Encoder system
Incremental encoder with Sin/Cos
Absolute encoder
Modular motor system

Functional description

The compression springs act on the anchor disc, which is free to move in the axial direction and presses the brake disc, which is keyed to the rotor shaft, against the friction plate or the motor bearing plate. This produces the braking torque.

When a DC voltage is applied to the coil in the electromagnet housing, it generates a magnetic force that opposes the spring force and causes the anchor disc to be pulled toward the electromagnet enclosure. This releases the brake disc and disengages the brake.

Brakes are classified into two types according to how they are used: holding brakes and service brakes.

Holding brake ES.. / ZS..
brake that in normal operation does not convert kinetic energy into frictional energy but is only used to hold a mechanism in a particular position, but which can also be used for motion braking in an emergency.

Service brake ESX.. / ZSX..
A brake that converts kinetic energy into frictional energy in normal operation, which means that it brakes mechanical motion.
When a service brake is used as a holding brake, the braking torque tolerance of up to -30% (in new condition) must be taken into account.

Product description of type ES(X) spring-actuated brakes

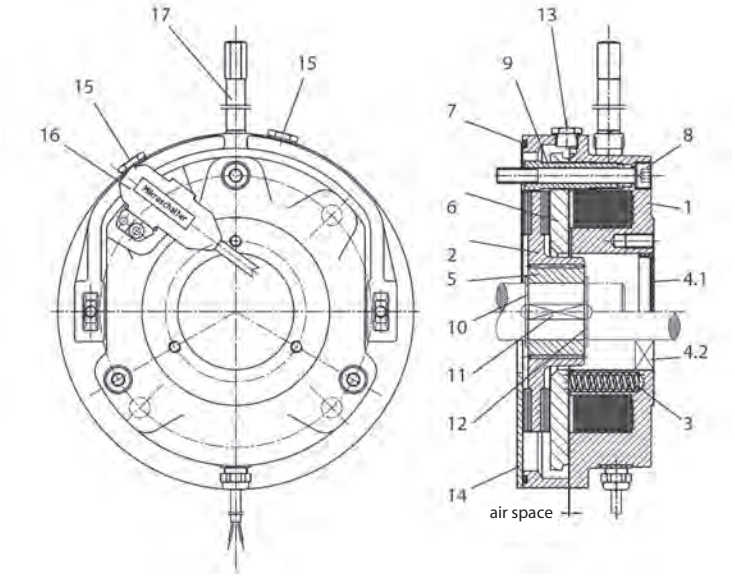


Figure 1: Construction of ES(X) brake

Brake mounting

ES and ESX: Brake mounting is under the fan cover
EH and EHX: Brake mounting is on the fan cover

Options

- Manual release, non-locking or locking
- Microswitch for monitoring operation or wear

Construction

1	Electromagnet housing
2	Brake disc
3	Compression spring
4.1	Cover plate with closed brake
4.2	Shaft seal with through shaft
5	Drive bush
6	Anchor disc
7	O-ring
8	Fitting screw with copper washer
9	Hollow screw
10	Retaining ring
11	Key
12	Retaining ring
13	Screw plug for checking air gap
14	Friction plate (only with motor size Dxx08 or Dxx09)
15	Screw plug for checking microswitch setting
16	Microswitch (optional)
17	Manual release (optional)

Product description of type ZS(X) spring-actuated brakes

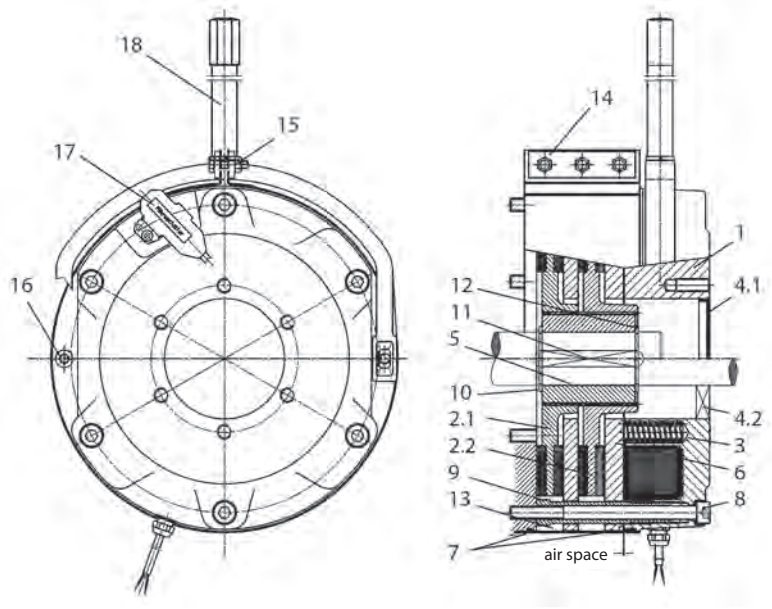


Figure 2: ZS(X) brake construction

Options

- Manual release, non-locking or locking
- Microswitch for monitoring operation or wear

Construction

1	Electromagnet housing
2	Brake disc 2.1 and 2.2
3	Compression spring
4.1	Cover plate
4.2	Shaft seal with through shaft
5	Drive bush
6	Anchor disc
7	O-ring
8	Fitting screw with copper washer
9	Hollow screw
10	Retaining ring
11	Key
12	Retaining ring
13	Cover
14	Fitting screws
15	Bracket
16	Assembly screw/assembly aid
17	Microswitch (optional)
18	Manual release (optional)

Brake selection and sizing

If the service brake is undersized, it will have increased wear and a shorter lifetime. If it is oversized, the resulting mechanical forces may overload the drive.

If specific application data is not available, in the case of horizontally driven equipment we recommend selecting a braking torque with a safety factor (K) of 1 to 1.5 times the rated torque of the motor.
For braking to standstill, the selected braking torque should be at least 80% of the rated torque of the drive.

Rated torque:

$$M_{Berf} = \frac{P \times 9550}{n_2} \times K$$

M_{Berf}	Braking torque	[Nm]
P	Motor power	[kW]
n	Rated speed at rotor shaft [rpm]	

For lifting operation, a braking torque equal to twice the rated motor torque should always be chosen for safety reasons.

If the moment of inertia, speed and allowable deceleration time of the machine are known, the braking torque can be calculated as described below.

External moments of inertia

If the masses to be decelerated by the brake do not run at the same speed as the rotor shaft, the moment of inertia (J_{ext}) must be reduced to the value at the rotor shaft

$$J_{ext'} = \frac{J_{ext1} \times n_1^2 + J_{ext2} \times n_2^2 + \ldots + J_{extn} \times n_n^2}{i^2}$$

or the external moment of inertia reduced by the gear ratio of the gear unit to the value at the rotor shaft.

$$J_{ext'} = \frac{J_{ext}}{i^2}$$

J_{ext}	Total external moment of inertia [kgm²]
$J_{ext'}$	Total external moment of inertia referenced to the rotor shaft [kgm²]
$J_{ext1,2,...}$	Individual external moments of inertia [kgm²]
i	Gear reduction ratio
n	Rotor shaft speed
$n_{1,2...}$	Speeds of the individual moments of inertia [rpm]

Load torque under static load

$$M_L = F \times r$$

M_L	Load torque [Nm]
F	Force [N]
r	radius [m]

Braking torque with dynamic load

A purely dynamic load is present when flywheels, rolls, etc. must be decelerated and the static load torque is negligible.

$$M_a = \frac{J_{ges} \times n_a}{9{,}55 \times (t_a - t_A)} = \frac{(J_{ext'} + J_{rot} + J_{Br}) \times n_a}{9{,}55 \times (t_a - t_A)}$$

J_{br}	Moment of inertia of the brake [kgm²]
J_{rot}	Moment of inertia of the rotor shaft and rotor [kgm²]
M_a	Deceleration torque [Nm]
n_a	Initial speed at start of deceleration [rpm]
t_a	Total deceleration time (from switch-off until drive is stationary) [s]
t_A	The response time of the brake for braking corresponds to t_{AC} or t_{DC} in the specification tables [s]

Dynamic and static loads

In most application situations, both static and dynamic loads are present.

$M_{Berf} = (M_a \pm M_L) \times K$ where $M_{Berf} \leq M_{Br}$ must hold true.

M_L	braking (positive) or driving (negative) load torque [Nm]

Heat generated by each brake cycle

Friction converts the kinetic energy of the moving masses into heat.
This amounts to

$$W = \frac{J_{ges} \times n^2}{182{,}5} = \frac{(J_{ext'} + J_{rot} + J_{Br}) \times n_a^{\,2}}{182{,}5}$$ where $W \leq W_{max}$ must hold true.

W	Braking energy for each brake cycle [J]
M_{max}	Maximum permissible frictional energy per brake cycle (see brake tables)

Thermally allowable braking energy of service brakes

With a uniform sequence of brake cycles, which means a certain average number of brake cycles per hour, the temperature rises until an equilibrium between heat input and heat dissipation is reached. The temperature rise must be sized to avoid overheating the coil and the friction layer, taking the ambient temperature into account.

Braking to standstill:

$$W_Z = W \times Z \leq W_{th}$$

W_{th} Maximum allowable braking energy per hour
W_Z Braking energy with Z brake cycles
Z Number of brake cycles per hour

Lifting operation

In lowering operation, the drive motor acts as a generator and its braking effect results in a steady downward motion (constant speed). If we ignore transmission losses, under full load the drive must brake the load with the rated motor torque. If a mechanical brake with a braking torque equal to the braking torque of the motor is applied after the drive is switched off, the downward motion will continue at the same speed. This means that additional braking torque is necessary to stop the motion of the load. For example, if the brake is dimensioned for 200% braking torque, approximately 100% is used for "static" deceleration and the rest is used for "dynamic" deceleration.
If part of the braking torque is required for braking the load during lowering (downward motion), the brake engagement time is greater, and the thermal load is therefore greater.

In this case

$$W_H = \frac{M_{Br}}{M_{Br} - M_L} \times W_Z$$

W_H Friction energy per hour in lifting operation
M_{Br} Braking torque of the brake

Brake lifetime
The energy absorbed during braking causes the brake disc to wear, which increases the air gap. If the air gap increases beyond a certain maximum gap size, the magnetic field is so weak that the pulling force of the electromagnet is no longer sufficient to release the brake. A proper air gap must be restored by adjusting the air gap or by replacing the brake disc, depending on the type of brake construction.

The maximum number of brake cycles until service is necessary can be calculated as follows:

$$Z_L = \frac{W_L}{W}$$

Z_L Number of brake cycles until the air gap limit is reached
W_L Maximum allowable braking energy until maintenance; i.e. replacing the brake disc or adjusting the air gap. Adjustment of the air gap is possible only with type ZXSxx brakes.

Deceleration time
The pure braking time from the start of mechanical braking to standstill depends on the braking deceleration.
Especially with lifting operation, but also in other types of operation, it is necessary to check whether the load torque reinforces the braking effect or counters the braking effect.

The deceleration time is therefore calculated as follows:

$$t_a = \frac{J_{ges} \times n_a}{9{,}55 \times (M_{Br} \pm M_L)}$$

Electrical connection

General

There are two basic options for providing the supply voltage for the DC electromagnet:
1. Externally from an existing DC control voltage mains or a rectifier in the cabinet.
2. From a rectifier built into the motor or brake terminal box. In this case, the rectifier can be powered either directly from the motor terminal board or from the mains.

Note that in the following cases the rectifier is not allowed to be connected to the terminal board of the motor:

- Pole-changing motors and motors with wide operating voltage range
- Operation from a frequency converter
- Other configurations in which the motor voltage is not constant, such as operation with soft-start devices, start-up transformers, etc.

Release

When the rated voltage is applied to the electromagnet coil, the current through the coils increases exponentially and with it the generated magnetic field. The current must rise to a certain value ($I_{release}$) before it overcomes the spring force and starts to release the brake.

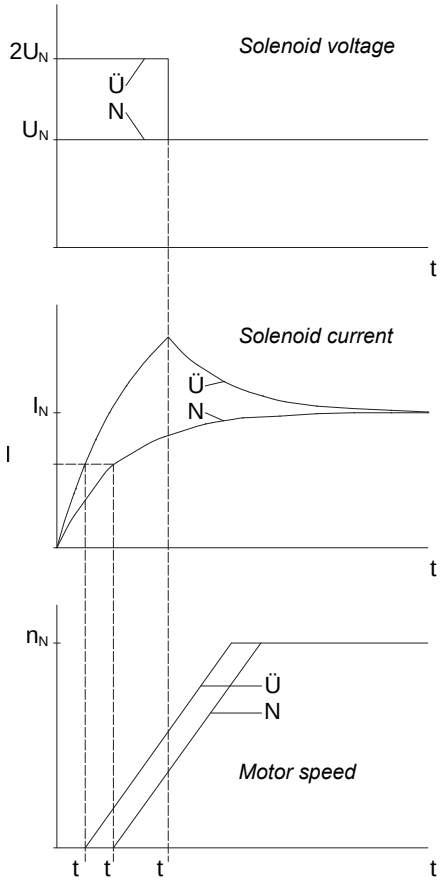


Figure 3: Idealised curves of coil voltage, coil current and motor speed with normal excitation (N) and overexcitation (Ü). $t_{Ü}$: overexcitation time; t_{AN}, $t_{AÜ}$: Response time with normal excitation and overexcitation.

Two different situations can arise during the response time tA, assuming that the voltage is applied to the motor and the brake simultaneously:

- The motor is locked if $M_A < M_L + M_{Br}$
  The motor draws its locked-rotor current, which increases the thermal load on the motor.
  This situation is illustrated in Figure 3.
- The brake slips if $M_A > M_L + M_{Br}$
  In this case, the brake is also thermally stressed during start-up and wears faster.

M_A: locked rotor torque of the motor; M_L: load torque; M_{Br}: braking torque

As can be seen, there is an additional load on the motor and brake in both cases. The effect of the response time increases with increasing brake size. Consequently, it is advisable to reduce the response time, especially with medium-sized and large brakes and with a high cycle rate. This can be achieved relatively easily by means of electrical overexcitation. With this approach, the coil is briefly operated at twice its rated voltage after switch-on.

This causes the current to rise faster than with normal excitation, and it reduces the response time by approximately 50%. This overexcitation function is built into the type MSG special rectifier.

The release current increases with increasing air gap, and with it the response time. When the release current exceeds the rated coil current, the brake will not be released with normal excitation and the brake has reached its wear limit.

Braking
The brake does not start generating braking torque immediately after the coil voltage is switched off. First the magnetic energy must decline to the point that the spring force can overcome the magnetic force. This occurs at the holding current I_{hold}, which is lower than the release current.
The response time depends on how the voltage is switched off.

Switching off the AC supply voltage to a type SG standard rectifier

a) Rectifier powered from the motor terminal board (Figure 4, curve 1)
   Response time t_{A1}: very long

Cause: Due to the residual magnetism of the motor, after the motor voltage is switched off a slowly decaying voltage is induced, and it continues to supply power to the rectifier and thereby to the brake. In addition, the magnetic energy of the brake coil is dissipated relatively slowly in the freewheel circuit of the rectifier.

b) Rectifier powered separately (Figure 4, curve 2)
   Response time t_{A2}: long

Cause: After the rectifier voltage is switched off, the magnetic energy of the brake coil is dissipated relatively slowly in the freewheel circuit of the rectifier.

If the supply voltage is interrupted on the AC side, no significant switch-off voltage occurs on the electromagnet coil.

Interrupting the DC circuit of the electromagnet coil (Figure 4, curve 3)

a) By a mechanical switch
- with separate power supply from a DC control voltage mains or
- at the DC switch contacts (A2 and A3) of the type SG standard rectifier
Response time t_{A3}: very short

Cause: The magnetic energy of the brake coil is dissipated very quickly by arcing across the switch contacts.

b) Electronic

Using a type ESG or MSG special rectifier
Response time t_{A3}: short

Cause: The magnetic energy of the brake coil is dissipated quickly by a varistor integrated in the rectifier.

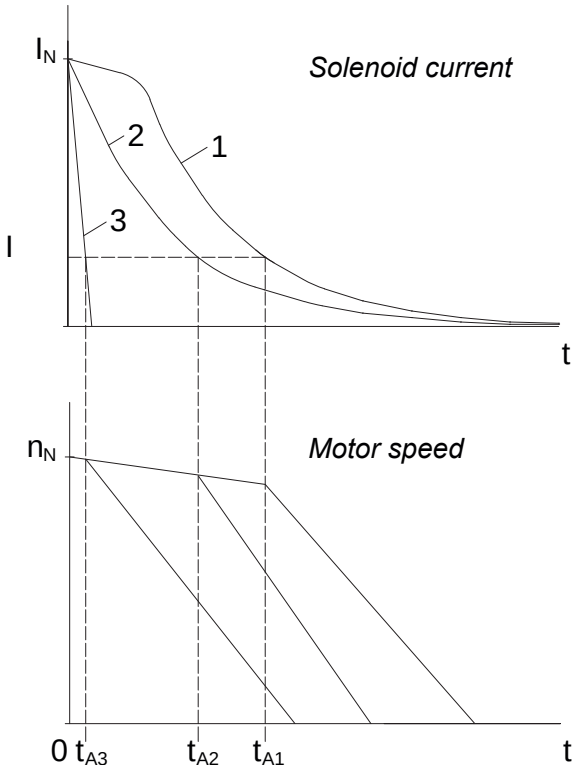


Figure 4: Idealised coil current and motor speed curves after switching off power on the AC side (1 and 2) or DC side (3)

If the circuit is interrupted on the DC side, a high voltage u_q is induce by the electromagnet coil. The magnitude of this voltage depends on the inductance L of the coil and the switch-off speed di/dt according to the formula

$$u_q = L \cdot \frac{di}{dt}$$

Due to the winding design, the inductance L increases with increasing rated coil voltage. Consequently, the voltage spikes induced at switch-off can reach hazardous levels with relatively high coil voltages. For this reason, a varistor is included in the circuit for all brakes with voltages greater than 24 V.
This varistor is solely intended to protect the electromagnet coil; it is not intended to protect adjacent electronic components or devices against electromagnetic interference. On request, brakes with rated voltages of 24 V or less can also be fitted with a varistor.
If the circuit is interrupted on the DC side by a mechanical switch, the resulting arcing over the switch contacts causes strong erosion of the contacts. For this reason, only special DC contactors or adapted AC contactors with contacts rated for use class AC3 as specified in EN 60947-4-1 may be used.

Specifications of holding brakes with emergency stop capability

The maximum allowable friction energy values stated here do not apply to brake motors for use in areas with potentially explosive atmospheres.
Refer to separate data in appropriate documents for explosion-proof drives.

Type	M_{Br}	W_{max}	W_{th}	W_L	t_A	t_{AC}	t_{DC}	P_{el}	J
	[Nm]	[10^3 J]	[10^3 J]	[10^6 J]	[ms]	[ms]	[ms]	[W]	[10-3 kgm^2]
E003B9	3	1,5	-	-	35	150	15	20	0,01
E003B7	2,2	1,8	-	-	28	210	20		
E003B4	1,5	2,1	-	-	21	275	30		
E004B9	5	2,5	-	-	37	125	15	30	0,017
E004B8	4	3	-	-	30	160	18		
E004B6	2,8	3,6	-	-	23	230	26		
E004B4	2	4,1	-	-	18	290	37		
E004B2	1,4	4,8	-	-	15	340	47		
ES010AX	15▪	3	-	-	110	-	30	35	0,045
ES010A9	10	3	-	-	60	100	15		
ES010A8	8	3	-	-	55	150	20		
ES010A5	5	3	-	-	45	220	20		
ES010A4	4	3	-	-	30	250	20		
ES010A2	2,5	3	-	-	25	350	25		
ES027AX	32▪	2,5	-	-	80	-	30	50	0,172
ES/EH027A9	27	2,5	-	-	120	100	15		
ES/EH027A7	20	2,5	-	-	100	130	20		
ES/EH027A6	16	2,5	-	-	80	170	25		
ES/EH040A9	40	3,5	-	-	100	100	20	65	0,45
ES/EH040A8	34	3,5	-	-	80	200	25		
ES/EH040A7	27	3,5	-	-	70	250	30		
ES070AX	90▪	3,5	-	-	120	-	40	85	0,86
ES070A9	70	3,5	-	-	120	150	18		
ES070A8	63	3,5	-	-	120	200	20		
ES070A7	50	3,5	-	-	90	220	25		
ES/EH125A9▪	125	4,5	-	-	170	220	25	105	1,22
ES/EH125A8	105	4,5	-	-	150	320	28		
ES/EH125A7	85	4,5	-	-	135	350	30		
ES/EH125A6	70	4,5	-	-	120	440	35		
ES125A5	57	4,5	-	-	100	600	40		
ES125A3	42	4,5	-	-	90	700	45		
ES/EH200A9 *	200	8	-	-	400	150	22	105	2,85
ES/EH200A8 *	150	8	-	-	280	250	35		
ES/EH200A7 *	140	8	-	-	200	320	35		
ES250AX *	350▪	9	-	-	180	-	70	135	6,65
ES250A9 *	250	9	-	-	300	500	45		
ES250A8 *	200	9	-	-	200	960	60		
ES250A6 *	150	9	-	-	160	1100	60		
ES250A5 *	125	9	-	-	150	1500	90		
ES250A4 *	105	9	-	-	130	1800	110		
ZS300A9 *	300	8	-	-	280	220	35	75	5,7
ZS300A8 *	250	8	-	-	210	380	45		
EH400A9 *	400	10	-	-	300	600	60	180	19,5
EH400A7 *	300	10	-	-	200	850	75		
EH400A5 *	200	10	-	-	150	1400	85		
ZS500A9 *	500	9	-	-	320	320	50	100	13,3
ZS500A8 *	400	9	-	-	260	600	60		

* Requires overexcitation; permissible only with MSG rectifier
* cannot be combined with current motor sizes

Braking torque tolerance: -10 / +30%

W_{th} and WL are not specified because little or no braking energy is dissipated by holding brakes when they are used as intended.

For versions with braking torque marked with *, which may only be used with an MSG rectifier, the values of t_A and t_{DC} apply to operation with an MSG rectifier; i.e. t_A for overexcitation or t_{DC} for electronic circuit interruption on the DC side.

Due to the effects of operating temperature and manufacturing tolerances, actual response times may differ from the guideline values listed here.

Specifications of service brakes

The maximum braking energy values stated here do not apply to brake motors for use in areas with potentially explosive atmospheres.
Refer to separate data in appropriate documents for explosion-proof drives.

Type	M_{Br} [Nm]	W_{max} [10^3 J]	W_{th} [10^3 J]	W_L [10^6 J]		t_A [ms]	t_{AC} [ms]	t_{DC} [ms]	P_{el} [W]	J [10^{-3} kgm^2]
				without HL	with HL					
E003B9	3	1,5	36	55	55	35	150	15	20	0,01
E003B7	2,2	1,8	36	90	90	28	210	20		
E003B4	1,5	2,1	36	140	140	21	275	30		
E004B9	5	2,5	60	50	50	37	125	15	30	0,017
E004B8	4	3	60	100	100	30	160	18		
E004B6	2,8	3,6	60	180	180	23	230	26		
E004B4	2	4,1	60	235	235	18	290	37		
E004B2	1,4	4,8	60	310	310	15	340	47		
ESX010AX	15▪	3	250	120	120	110	-	30	35	0,045
ESX010A9	10	3	250	120	120	60	100	15		
ESX010A8	8	3	250	150	150	55	150	20		
ESX010A5	5	3	250	240	240	45	220	20		
ESX010A4	4	3	250	300	240	30	250	20		
ESX010A2	2,5	3	250	390	240	25	350	25		
ESX027AX	27▪	10	350	150	150	80	-	30	50	0,172
ESX/EHX027A9	22	10	350	150	150	120	100	15		
ESX/EHX027A7	16	10	350	300	300	100	130	20		
ESX/EHX027A6	13	10	350	350	350	80	170	25		
ESX/EHX040A9	32	20	450	420	420	100	100	20	65	0,45
ESX/EHX040A8	27	20	450	560	490	80	200	25		
ESX/EHX040A7	22	20	450	700	490	70	250	30		
ESX070AX	72▪	28	550	700	700	120	-	40	85	0,86
ESX070A9	58	28	550	500	500	120	150	18		
ESX070A8	50	28	550	800	700	120	200	20		
ESX070A7	40	28	550	1200	700	90	220	25		
ESX/EHX125AX	100▪	40	700	1900	1900	100	-	70	105	1,22
ESX/EHX125A9	85	40	700	1700	1700	150	320	28		
ESX/EHX125A8	70	40	700	1900	1700	135	350	30		
ESX/EHX125A7	58	40	700	2700	1700	120	440	35		
ESX125A5	45	40	700	3300	1700	100	600	40		
ESX125A3	34	40	700	3300	1700	90	700	45		
ESX/EHX200AX *	160▪	60	850	2000	2000	105	-	70	105	2,85
ESX/EHX200A9 *	120	60	850	1700	1700	280	250	35		
ESX/EHX200A8 *	110	60	850	2600	2600	200	320	35		
ESX250AX *	280▪	84	1000	2300	2300	180	-	70	135	6,65
ESX250A9 *	200	84	1000	2800	2800	300	500	45		
ESX250A8 *	160	84	1000	6800	5700	200	960	60		
ESX250A6 *	120	84	1000	8500	5700	160	1100	60		
ESX250A5 *	100	84	1000	11000	5700	150	1500	90		
ESX250A4 *	85	84	1000	11000	5700	130	1800	110		
ZSX300A9 *	250	60	850	1300	1300	280	220	35	75	5,7
ZSX300A8 *	200	60	850	2000	2000	210	380	45		
EHX400A9 *	320	120	1100	3000	3000	300	600	60	180	19,5
EHX400A7 *	240	120	1100	4800	4800	200	850	75		
EHX400A5 *	160	120	1100	6000	4800	150	1400	85		
ZSX500A9 *	400	84	1000	2800	2800	320	320	50	100	13,3
ZSX500A8 *	320	84	1000	4000	4000	260	600	60		

* Requires overexcitation; permissible only with MSG rectifier
* cannot be combined with current motor sizes

Braking torque tolerance:
E003 / E004: -10 / +30%
ESXxx / ZSXxx: -20 / +30% after run-in; up to -30% in new condition.

For versions with braking torque marked with *, which may only be used with an MSG rectifier, the values of t_A and t_{DC} apply for operation with an MSG rectifier; i.e. t_A for overexcitation or t_{DC} for electronic circuit interruption on the DC side.

The values for W_L are guidelines; actual values may vary significantly depending on the application situation. Periodic inspection of the air gap or brake disc thickness is recommended.

Actual response times may differ from the times listed here due to the effects of operating temperature, brake disc wear and manufacturing tolerances.

Key to symbols

M_{Br}	Rated braking torque
W_{max}	Maximum allowable friction energy for an emergency stop with a holding brake
W_{max}	Maximum allowable friction energy for each brake cycle with service brakes
W_{th}	Maximum allowable braking energy per hour
W_L	Maximum allowable braking energy until maintenance; i.e. brake disc replacement or air gap adjustment. Air gap adjustment is possible only with type ZSXxx brakes.
H_L	Manual release
t_A	Response time for release with normal excitation. Overexcitation with a type MSG special rectifier reduces the response time by approximately 50%.
t_{AC}	Response time for brakes with AC-side switch-off, i.e. by switching off the supply voltage to a separately powered standard rectifier. If the supply voltage for the rectifier is taken from the motor terminals, considerably longer response times should be expected (depending on the motor size and winding design).
t_{DC}	Response time for braking with DC-side circuit interruption by a mechanical switch. In the case of electronic circuit interruption on the DC side by a type ESG or MSG special rectifier, the response times will be approximately two to three times as long.
P_{el}	Electromagnet coil power consumption at 20 °C. Depending on the rated voltage of the coil, the actual power may differ from the guideline value stated here.
J	Moment of inertia of the drive bush and brake disc(s)

Connection

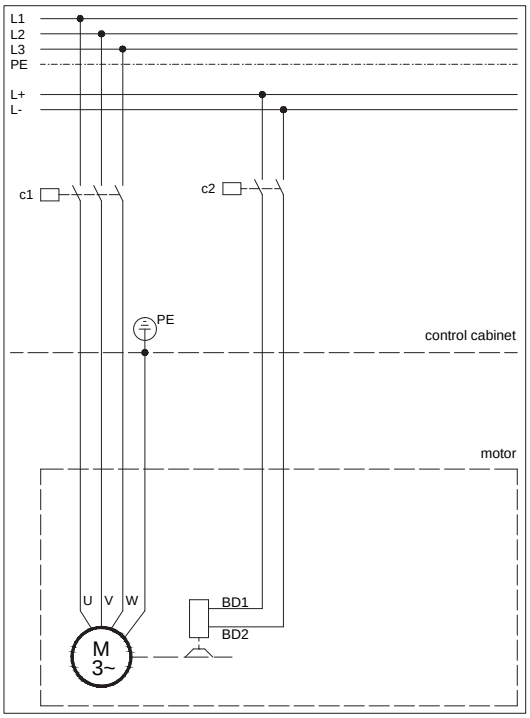
The electrical connections to the brake are made in the motor terminal box using terminals or the rectifier. Standard voltages:

380–420 V 50/60 Hz (brake coil voltage 180 V DC)
220–230 V 50/60 Hz (brake coil voltage 105 V DC)
24 V DC (brake coil voltage 24 V DC)

Other voltages are available at additional cost.

DC connection via terminals (K)

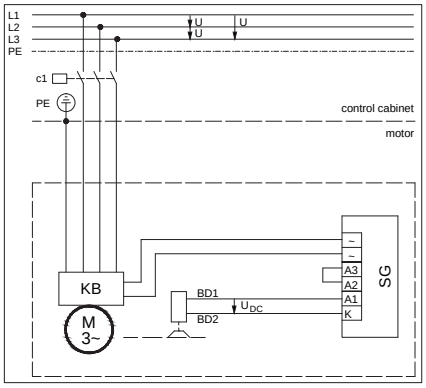
The brake must be connected via separate terminals in the motor or brake terminal box directly to the DC voltage. The standard voltages are 180 V DC, 105 V DC and 24 V DC. Brakes with other operating voltages are available at additional cost.

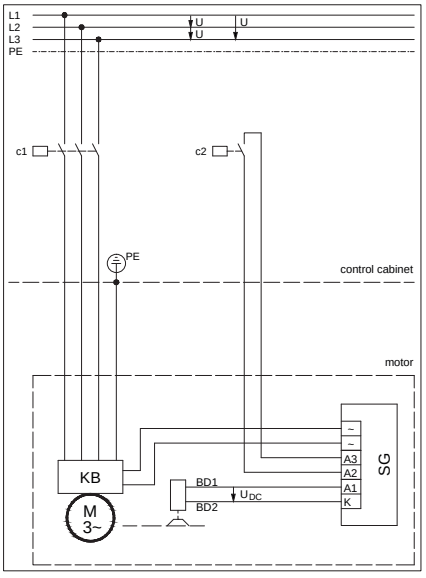


Standard rectifier (S)

Working principle	Half-wave rectifier with switch contacts for DC-side circuit interruption
Input voltage U1	max. 575 VAC +5%
Output voltage	0.45 x U1 VDC
Max. output current	2.5 A DC
Ambient temperature	-40 to +40 °C
Connection	Caged Clamp terminals with clamp lever
Clampable conductor cross-section	max. 1.5 mm^2 without wire end sleeve max. 1.5 mm^2 with wire end sleeve
Approvals	c-CSA-us c-UL-us (only in combination with B2000 geared motors and brakes in the ES(X) or ZS(X) product series

The brake must be connected to the AC supply via the standard rectifier in the motor terminal box or brake terminal box. The standard voltages are 380 ... 420 V 50/60 Hz or 220 ... 230 V 50/60 Hz. Other voltages up to 575 V are available at extra cost. In a configuration with standard rectifier, the brake circuit can be interrupted by an extra contact on the d.c. side in order to reduce the response time. This significantly reduces the braking time and overtravel distance.



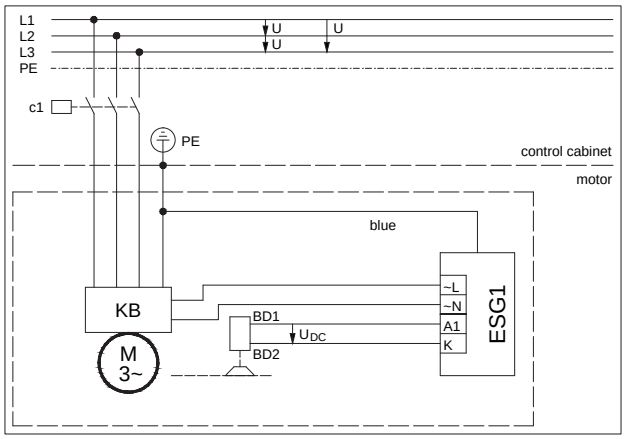


Voltage connection for the rectifier from the motor terminal block or cage clamp (see Rectifier Connection on Motor Terminal Block or Cage Clamp)

Rectifier for electronic rapid shutdown (E)

Working principle	Half-wave rectifier with electronic DC-side circuit interruption
Input voltage U1	220–460 V AC ±5%, 50/60 Hz
Output voltage	0.45 x U1 V DC
Max. output current	1 A DC
Ambient temperature	-20 °C to +40 °C
Clampable conductor cross-section	max. 1.5 mm^2

This rectifier permits electronic DC-side interruption of the brake circuit. No additional cable to the rectifier is necessary. The rectifier is supplied complete with a protective resistor which prevents a mains short- circuit via the shutdown arc of the high-speed motor contactor. Brake response times are significantly shorter than those achievable by AC-side interruption of the brake circuit. They are, however, longer than those achievable with DC-side interruption by a mechanical switch. The brake must be connected to the alternating current via the rapid shutdown rectifier in the motor terminal box or the brake terminal box. The standard voltages are 380 ... 420 V 50/60 Hz or 220 ... 230 V 50/60 Hz. Other voltages up to 460 V are available at extra cost.



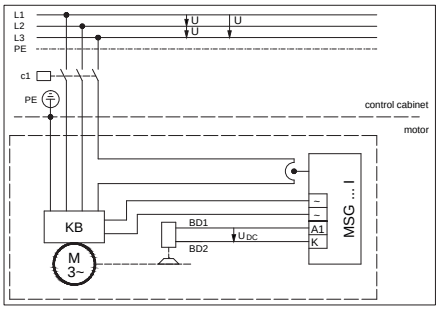
Voltage connection for the rectifier from the motor terminal block or cage clamp (see Rectifier Connection on Motor Terminal Block or Cage Clamp)

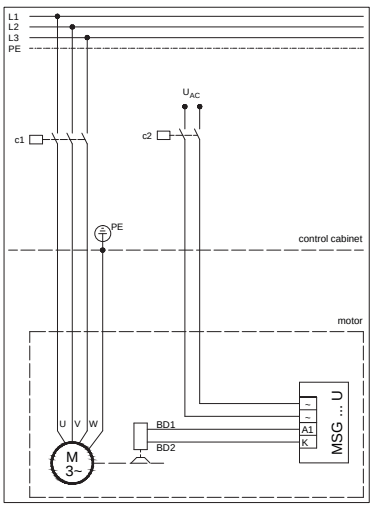
Standard rectifier (M)

Working principle	MSG 1.5.480I Half-wave rectifier with time-limited overexcitation and electronic DC-side circuit interruption Fast shutdown due to no motor current in one phase
Input voltage U1	220–480 V AC +6 / -10%, 50/60 Hz
Output voltage	0.9 x U1 V DC during overexcitation 0.45 x U1 V DC over overexcitation period
Overexcitation time	0.3 s
Max. output current	1.5 A DC
Ambient temperature	-20 °C to +40 °C
Clampable conductor cross-section	max. 1.5 mm^2

Working principle	MSG 1.5.500U Half-wave rectifier with time-limed overexcitation and electronic DC-side circuit interruption Fast shutdown due to the absence of input voltage
Input voltage U1	220–500 V AC ±10%, 50/60 Hz
Output voltage	0.9 x U1 V DC during overexcitation 0.45 x U1 V DC over overexcitation period
Overexcitation time	0.3 s
Max. output current	1.5 A DC
Ambient temperature	-20 °C to +40 °C
Clampable conductor cross-section	max. 1.5 mm^2

In cases where there are high motor switching frequencies, the brake can be de-energised more rapidly with this rectifier thereby significantly reducing the thermal stress on the motor. In addition, interrupting the brake's DC circuit by electronic means significantly reduces response times. Depending on the circumstances in which they are to be used, either the MSG 1.5.500 U (rapid shutdown brought about by removed supply voltage) or MSG 1.5.480 I (rapid shutdown brought about by removed motor current in a phase) is used. Power supply 220 to 480 V AC.





Brake connection, operation with frequency converter

The voltage present at the motor terminal block when operating with a frequency converter is frequency-dependent. Brakes require a constant voltage, so they need a seperate electrical connection. This is the reason why the brake is not connected to the motor terminals ex- works.

Manual release (HA, HN)

All brakes are available with mechanical manual release on request. Non-latching manual release is the standard version (HN). A latching manual release (HA) can be supplied if required for all brake sizes.

Degree of protection

All BAUER brakes comply with degree of protection IP 65.

Special corrosion protection

If high requirements for corrosion resistance apply, the brakes are available with two levels of enhanced corrosion protection:

CORO1 (C1): Finished with two-component paint to protect against chemically aggressive gases and vapours.

CORO2 (C2): Same finish as CORO1. The screws for the terminal-box cover are non- rusting steel. The mechanical internals of the brake are made of corrosion- proofed material.

CE mark

BAUER geared motors with externally mounted spring-loaded brakes bear the CE mark.

The brakes comply with:

- the **Machinery Directive (2006/42/EG)**
  Manufacturer's declaration available on request
- the **Low-Voltage Directive (2006/95/EG)**
  Documented by the CE mark
- the **EMC Directive (2004/108/EG)**
  Documented by the CE mark

See BAUER special print SD33.. for more information.

Second motor shaft extension (ZW, ZV)

The motors are also available on request with a second motor shaft extension in design ZW (shaft with key) or ZV (shaft with square end).

Half the central motor's rated power is available at each of the two shafts. Permissible radial loads available on request. Guards are not included in the scope of supply (for dimensional drawing see chapter 17).

Motors with brakes are available on request with a second shaft stub extended through the brake.

Protective fan cowl (D)

A protective hood over the fan cowl is recommended for outdoor installations where the motor is pointing upward and subject to severe or prolonged exposure to water (dimensional drawing, see chapter 17).

A special fan cowl for the textiles industry is available on request at extra cost. This design prevents airborne fibres and fluff clogging the fan cowl.

Motor-independent fan (FV)

For special applications, standard motors and brake motors of size S08 and larger are available with externally mounted motor-independent fans. The standard line voltage of the motor-independent fan matches the voltage of the geared motor (dimensional drawing for motor-independent fan, see chapter 17).

Standard enclosure IP65.

Technical Data:
Multivolt Conception Running capacitor for single phase duty enclosed as standard.

Mode	Frame size	Blower diameter	Range of voltage		max. permissible current	max. power input
		(mm)	50 Hz	60 Hz	(A)	W
1 ~ ⊥ (Δ)	63	118	230-277	230-277	0,12	32
	71	132	230-277	230-277	0,12	33
	80	150	230-277	230-277	0,14	37
	90	169	230-277	230-277	0,29	65
	100	187	230-277	230-277	0,30	75
	112	210	230-277	230-277	0,37	94
	132	250	230-277	230-277	0,60	149
	160-200	300	230-277	---	0,96	236
3 ~ Y	63	118	380-500	380-575	0,06	28
	71	132	380-500	380-575	0,06	29
	80	156	380-500	380-575	0,06	34
	90	169	380-500	380-575	0,19	75
	100	187	380-500	380-575	0,17	94
	112	210	380-500	380-575	0,17	99
	132	250	380-500	380-575	0,25	148
	160-200	300	380-500	380-575	0,54	360
3 ~ Δ	63	118	220-290	220-332	0,10	28
	71	132	220-290	220-332	0,10	28
	80	156	220-290	220-332	0,10	34
	90	169	220-290	220-332	0,33	78
	100	187	220-290	220-332	0,31	87
	112	210	220-290	220-332	0,31	103
	132	250	220-290	220-332	0,45	146
	160-200	300	220-290	220-332	0,91	360

Shaft encoder (G)

Bauer gear motors can be fitted with either an incremental encoder or an absolute encoder for special applications. Both the standard incremental encoder and the absolute encoder are optimised and suitable for use with all modern inverters.

Bauer standard encoders are protected against mechanical damage by means of a protective cover (Additional Dimension Sheet see chapter 17).

Special features: standard absolute encoder

- Enclosure: IP65
- Steps per revolution: 8192 (13 Bit)
- Number of turns: 4096 (12 Bit) shaft turns
- Execution of electronic: SSI (Synchronous-Serial Interface)
- Output code: Gray-Code
- Supply voltage: 11-27 VDC
- Loss efficiency (no load): ≤ 3 Watt
- Output driver: RS-422 (2-wire)

Motor Mounted Components

Incremental feedback with Sin/Cos

Functional description



The SinCos feedback system is a combination of incremental sensor and absolute sensor. The absolute value is initially only defined when the device is switched on and transmitted to an external counter, which then continues counting incrementally from this absolute value with the analogue Sinus/Cosinus interface.

Hollow shaft	diameter 10.00 mm
Speed	Max. 6000 RPM
Enclosure rating	IP 65
Interface	Sinus
Connection type	Cable M23-socket
Resolution	max. 5000 Imp.
Temperature	-20...+80°C
Supply voltage 10...30 VDC	5 VDC

Shock resistance in accordance with EN 60068-2-27	1000 m/s2, 6 ms
Vibration resistance in accordance with EN 60068-2-6	100 m/s2, 10 ... 2000 Hz ^

Electrical specifications

Output circuit	SinCos, U=1 Vss	SinCos, U=1 Vss
Supply voltage	5 V (± 5 %)	10 ... 30 V DC
Current conversion with inversion (without load)	typ. 65 mA / max. 110 mA	typ. 65 mA / max. 110 mA
-3 dB frequency	≤ 180 kHz	≤ 180 kHz
Signal level channels A/B	1 Vss (±20%)	1 Vss (±20%)
Channel 0	0,1 ... 1,2 V	0,1 ... 1,2 V
Short-circuit proof outputs*	yes	yes
Reverse polarity protection of the supply voltage	no	yes
CE-compliant in accordance with EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		

* If supply voltage is correctly installed

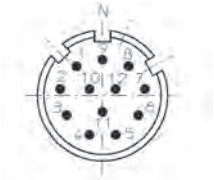
Terminal assignment

Signal	0 V	0 V Sensor**	+UB	+UB Sensor**	A	Ā	B	B	0	0	Signal
	A	Ā	B	B	0	0					
M23-socket, Pin 12-pin	10	11	12	2	5	6					PH*
Core colour	WH 0,5 mm²	WH	BN 0,5 mm²	BN	GN	YE	GY	PK	BU	RD	

* PH = The shielding touches the plug housing.

** The sensor lines are connected with the power supply internally. Special power supply units correct for the loss of voltage on long lines.

Views of the socket face, male contact base



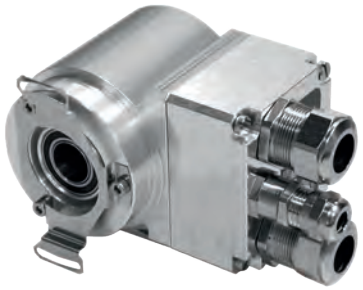
M23 socket, 12-pin

Absolute rotary encoders

Functional description

Absolute encoders detect both angular and rotational motions and convert them into electrical signals. In contrast to incremental encoders, with absolute encoders the current position is directly available. If an absolute encoder is moved mechanically while it is switched off, after the power is switched on again the current position can be read out immediately and directly. Absolute encoders are available in single-turn and multi-turn versions.

Profibus DP interface



Specifications

Supply voltage	11–27 VDC
No-load current consumption	< 350 mA
Total resolution [1]	≤ 33 bits
Number of steps per revolution, standard/extended [1]	≤ 8,192 / ≤ 32,768
Number of turns, standard/extended [1]	≤ 4,096 / ≤ 256,000
Profibus DP V0	IEC 61158, IEC 61784
PNO encoder profile	Class 1/Class 2
parameters [1]	Counting direction switchover, scaling function, etc.
Output code [1]	Binary, Gray, truncated Gray
Address	3–99, set using a rotary switch
Baud rate	9.6 kbit/s to 12 Mbit/s
TR-specific functions [1]	Gear and speed outputs
Data width on bus for actual position	≤ 25 bits
Permissible mechanical speed	≤ 12,000 rpm
Shaft load	Own mass
Bearing life	≥ 3.9×10^{10} revolutions at
- speed	≤ 6,000 rpm
- operating temperature	≤ 60 °C
Shaft diameter [mm]	10H7
Permissible angular acceleration	≤ 10^4 rad/s^2
Moment of inertia	2.5×10^{-6} kg m^2 (typical)
Start-up torque at 20 °C	2 Ncm (typical)
Weight	0.3–0.5 kg

1 Configurable parameter

Ambient conditions

Vibration (EN 60068-2-6:1996)	≤ 100 m/s^2, sinusoidal 50–2,000 Hz
Shock (EN 60068-2-27:1995)	≤ 1000 m/s^2, half-cycle sinusoidal 11 ms
EMC	
- Interference emission compliant with EN 61000-6-3:2007	
- Interference immunity compliant with EN 61000-6-2:2006	
Operating temperature	0 °C to +60 °C; optionally -20 °C to +70 °C
Storage temperature	-30 °C to +80 °C, dry
Relative humidity (EN 60068-3-4:2002)	98%, non condensing
Enclosure rating (EN 60529:1991)[2]	IP 65

2 With mating connector fitted and/or cable glands fitted and tightened

SSI interface



Specifications

Supply voltage	11–27 VDC
No-load current consumption	< 350 mA
Total resolution [1]	≤ 25 bits
Number of steps per revolution [1]	≤ 8,192
Number of rotations, standard [1]	≤ 4,096
Number of rotations, extended [1]	≤ 256,000
SSI	Synchronous Serial Interface
Clock input	Optocoupler
Data output	RS-422, 2-wire
Clock frequency	80 kHz – 1 MHz
Monostable time t_M	16 µs ≤ t_M ≤ 25 µs (20 µs typical)
Output code [1]	Binary, Gray, BCD
Output format [1]	Standard, Tannenbaum, SSI + CRC, 26-bit cycle, variable number of data bits
Negative values [1]	Sign and magnitude, twos complement
SSI or parallel special bits [1]	Limit switch, overspeed, direction indication, motion indication, error indication, parity
F/R [1]	Counting direction
Preset [1]	Electronic alignment
Logic levels	"0" < +2 VDC; "1" = supply voltage
Permissible mechanical speed	≤ 12,000 rpm
Shaft load	Own mass
Bearing life	≥ 3.9 x 10^{10} revolutions at
- speed	≤ 6,000 rpm
- operating temperature	≤ 60 °C
Shaft diameter [mm]	10H7
Permissible angular acceleration	≤ 10^4 rad/s^2
Moment of inertia	2.5 x 10^{-6} kg m^2 (typical)
Start-up torque at 20 °C	2 Ncm (typical)
Weight	0.3–0.5 kg
Optional	
- incremental signals, RS422 levels	K1+, K1-, K2+, K2- with 1024 or 2048 pulses

[1)] Configurable parameter

Ambient conditions

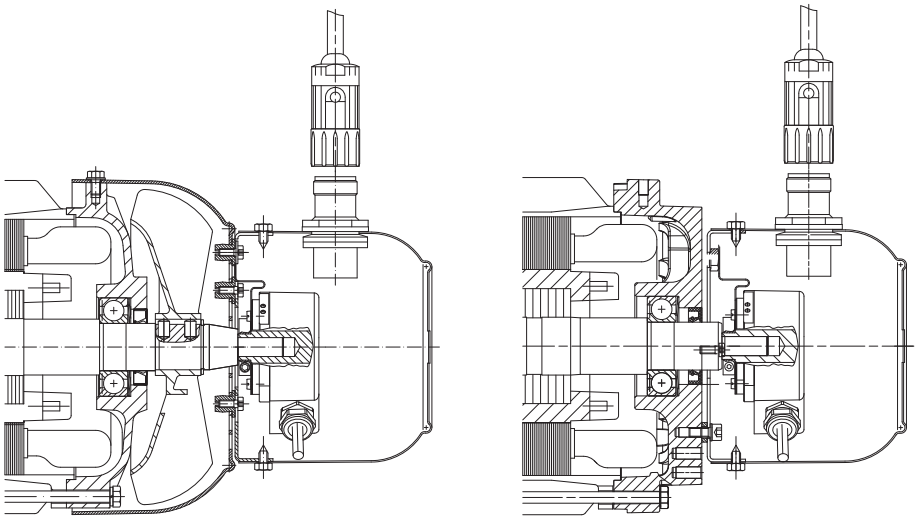
Vibration (EN 60068-2-6:1996)	≤ 100 m/s^2, sinusoidal 50–2,000 Hz
Shock (EN 60068-2-27:1995)	≤ 1000 m/s^2, half-cycle sinusoidal 11 ms
EMC	
- Interference emission compliant with EN 61000-6-3:2007	
- Interference immunity compliant with EN 61000-6-2:2006	
Operating temperature	0 °C to +60 °C; optionally -20 °C to +70 °C
Storage temperature	-30 °C to +80 °C, dry
Relative humidity (EN 60068-3-4:2002)	98%, non condensing
Enclosure rating (EN 60529:1991)[2]	IP 65

[2)] With mating connector fitted and/or cable glands fitted and tightened

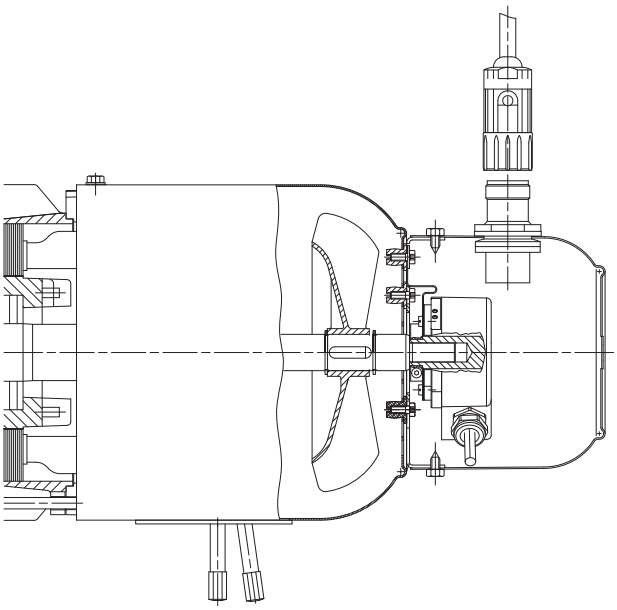
In addition to the angular position within a rotation, multiturn encoders detect multiple rotations. An internal reduction gear mechanism connected to the motor shaft is used to detect the number of turns. Consequently, the value measured by a multiturn encoder consists of the current angular position and the number of turns. As with incremental encoders, the reading is calculated and output via various interface modules, depending on the interface.

On request, a large range of motor frames can be fitted with sensor bearings. The output signal from the sensor allows the direction of rotation to be determined, among other things. The number of possible pulse counts depends on the frame size. Please enquire for more information.

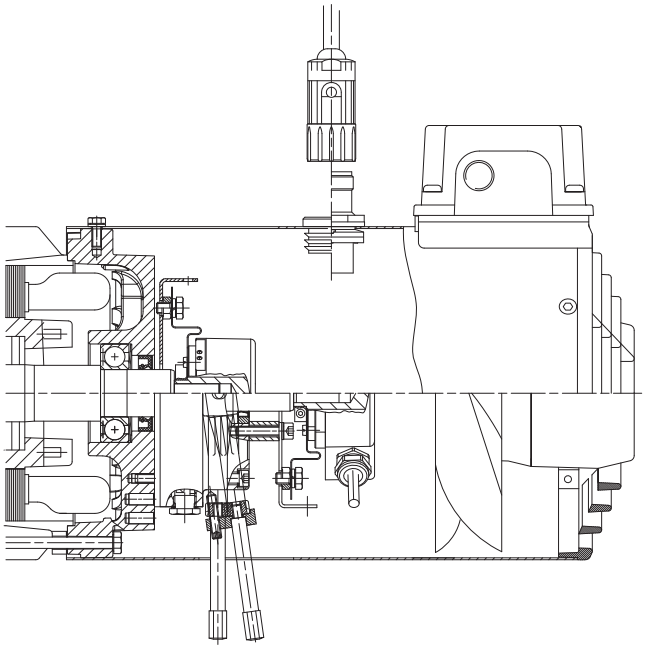
Motor and encoder



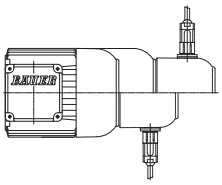
Motor, brake and encoder



Motor and forced ventilation



16

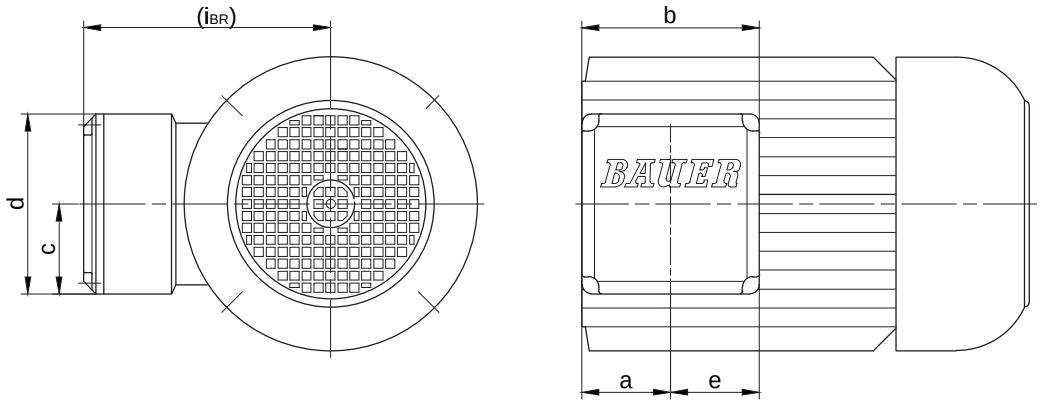


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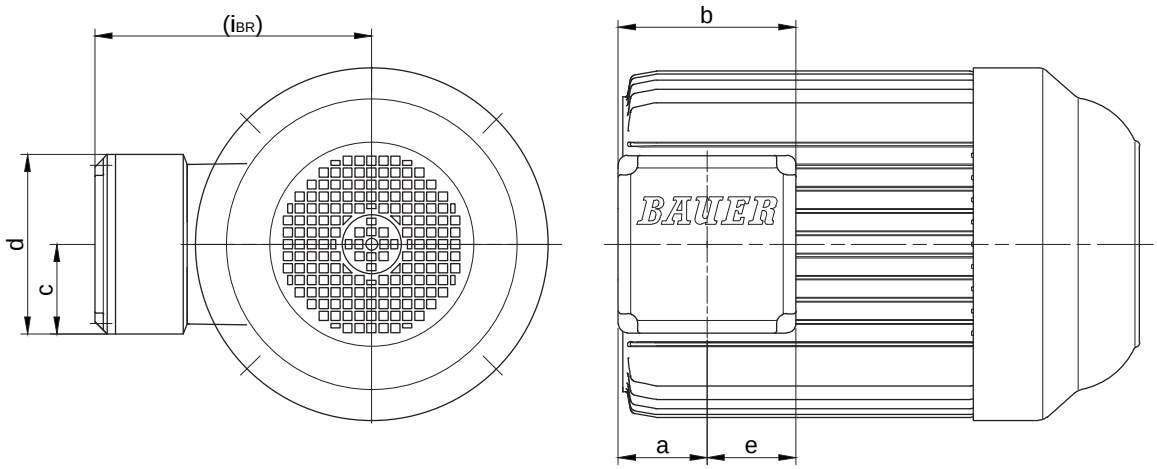
Additional dimensional drawings for motor-mounted components 451-470

Dimensional drawing, standard terminal box
Dimensional drawing, plug-connector terminal box
Dimensional drawings, standard brakes without terminal box
Dimensional drawings for brakes with terminal box
Dimensional drawing, motor with back stop
Dimensional drawing, motor with second shaft end
Dimensional drawing, motor with protective hood
Dimensional drawing, motor with independent fan
Dimensional drawing, motor with brake and independent fan
Dimensional drawing, motor with encoder
Dimensional drawing, motor with brake and encoder
Dimensional drawing, motor in IEC design

Standard terminal box



D04 - D..13



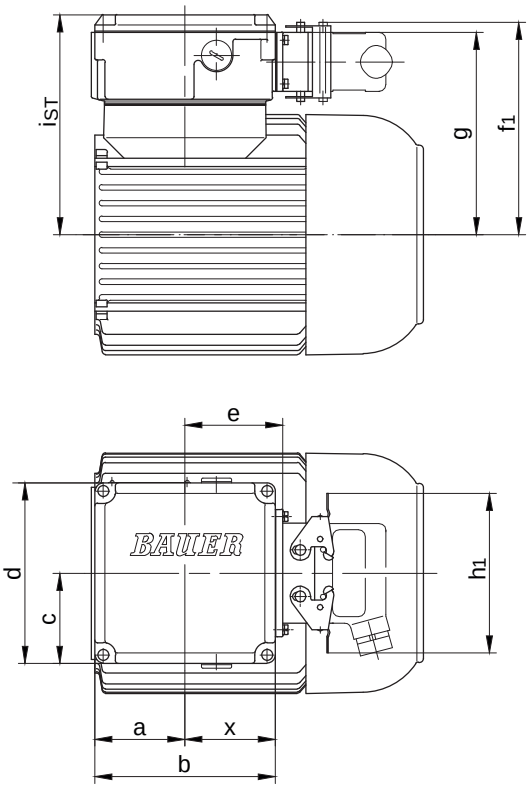
D..16 - D..18

Motor/ Motor with Brake	Dimensions (mm)						Code	Cable entry Major (M) Minor (N)	max. wrench size for cable entry gland
	a	b	c	d	e	i / i_{BR}			
D04..	42.5	88	44	88	44	90	KAG1	M=2xM20x1.5	24 mm
D05..	50	100	50	100	50	100	KAG2	M=2xM25x1.5	29 mm
D06..	50	100	50	100	50	100	KAG2	M=2xM25x1.5	29 mm
D07..	50	100	50	100	50	100	KAG2	M=2xM25x1.5	29 mm
D..08..	50	100	50	100	50	115	KAG2	M=2xM25x1.5	29 mm
D..09..	50	100	50	100	50	124	KAG2	M=2xM25x1.5	29 mm
D..11..	62	132	66.5	135	66	181	TB222	M=2xM32x1.5; N=2xM25x1.5	-
D..13..	78	156	78.5	158	78	217	TB322	M=2xM40x1.5; N=2xM25x1.5	-
D..16..	74	156	78.5	158	78	243	TB322	M=2xM40x1.5; N=2xM25x1.5	-
D..18..	94	200	100.5	201	100	288	TB422	M=2xM50x1.5; N=2xM25x1.5	-

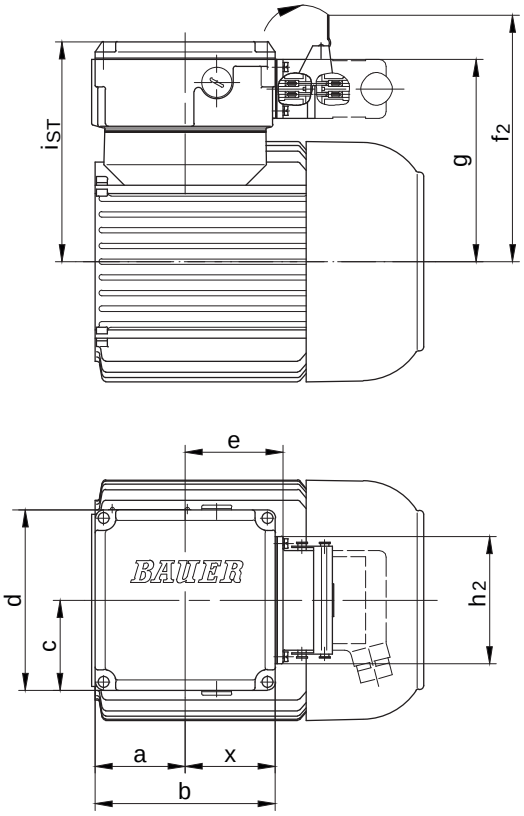
The actual gearbox design can vary from the geometry shown.

Plug-connector terminal box

Standard design (two brackets)



Optional for DESINA (one bracket)

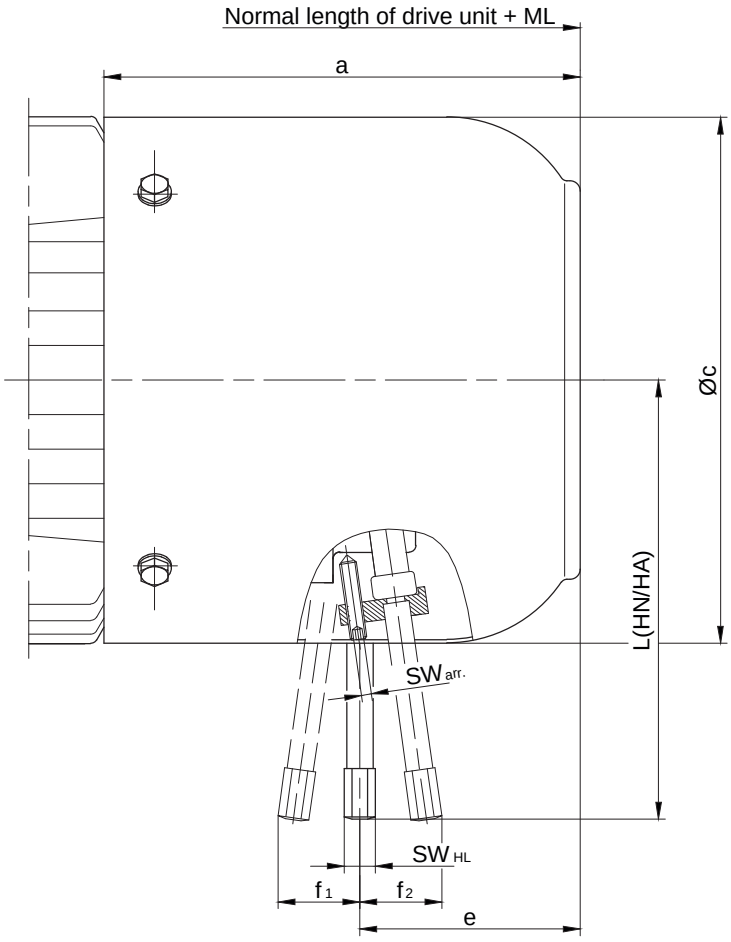


Fan cover geometry for D..16 and D..18, see dimensional drawing: terminal box as standard version

Motor	Size of terminal box	a	b	c	d	e	f_1	f_2	g	h_1	h_2	i_{ST}	x
D04	TBS1	30	90	52.5	106	49	118.5	147	111	117	93	124.5	46
D05	TBS1	57	90	52.5	106	49	123.5	152	116	117	93	129.5	46
D06	TBS1	45	90	52.5	106	49	125.5	154	118	117	93	131.5	46
D07	TBS1	45	90	52.5	106	49	125.5	154	118	117	93	131.5	46
D..08	TBS1	45	90	52.5	106	49	143.5	172	136	117	93	149.5	46
D..09	TBS2	62	132	66	135	71.5	158.5	187	158	117	93	164	68.5
D..11	TBS2	62	132	66	135	71.5	175.5	191	166	117	93	181	68.5
D..13	TBS3	78	156	78	158	83.5	199	227.5	191.5	117	93	216	79.5
D..16	TBS3	74	156	78	158	83.5	225	253.5	225	117	93	242	79.5
D..18	TBS4	94	200	100	201	105.5	257	299	257	117	93	287	100.5

The actual gearbox design can vary from the geometry shown.

Standard brakes

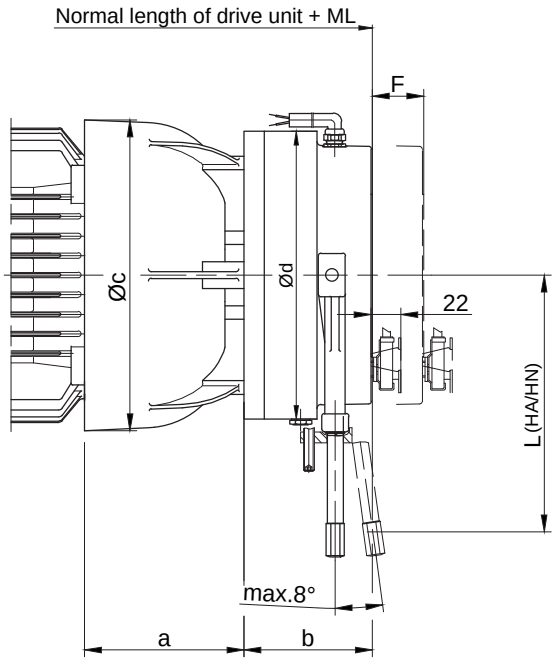


Motor Type	Brake Type	ML(mm) Additional length with brake	Dimensions (mm)								Add. weight
			a	Øc	e	f_1	f_2	L(HN/HA)	SW_{HL}	$SW_{arr.}$	kg
D04	E003	43.5	97	110.5	58.5	20.5	24	96/102	11	11	1.0
D05 D06	E003	42	102	123	60						
D07	E003 / E004				58.5						
D..08	ES(X)010	66	141	156	68	-	29	132	8	2.5	2.6
D..09	ES(X)010	93	173	176	99	-	29	132	8	2.5	2.7
	ES(X)027				91	-	35.5	162			4.2
D..11	ES(X)027	98	195	218	103	-	35.5	162	8	2.5	4.5
	ES(X)040				100	-	37	172			6.3
	ES(X)070				96	-	34.5	190	12	4	8.5
D..13	ES(X)040	111	225	258	125	-	41	202	12	4	6.5
	ES(X)070				121	-	38	225			8.5
	ES(X)125				116	-	45	223			12.5
D..16	ES(X)125	144	290	310	148	-	48.5	244	12	4	13.5
	ES(X)200				141	-	50	256			19
	ZS(X)300				112	-					22
D..18	ES(X)250	150	339	348	153	-	58.5	286	12	4	28
	ZS(X)500				123	-			19	5	30

HN = Manual release non-locking HA = Manual release locking

The actual gearbox design can vary from the geometry shown.

“Heavy-Duty“- brake

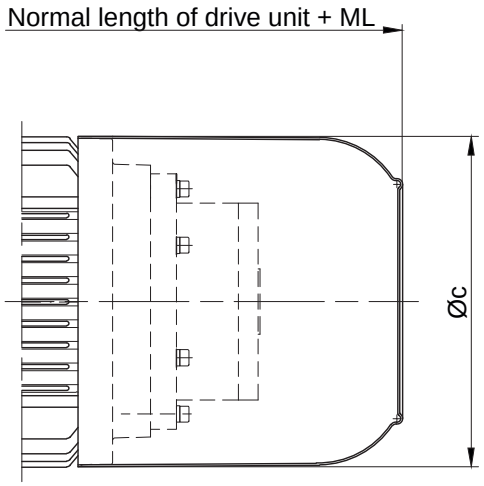


Motor	Brake	ML(mm) Additional length with brake		Dimensions (mm)					Add. weight
		Standard	Micro s.	a	b	c	Ød	L (HA/HN)	kg
D..08	EH(X)027	79	101	83.5	66.5	166	145	162	5.5
D..09	EH(X)040	90	112	102	73	191	168	172	8.3
D..11	EH(X)125	114	136	120	95	231	213	208.5	19.5
D..13	EH(X)200	128	150	140	106	274.5	245	221	29.3
D..16	EH(X)400	141	163	155	124	326	324	313	55.8
D..18		152	174	183		366			61

The actual gearbox design can vary from the geometry shown.

Dimension

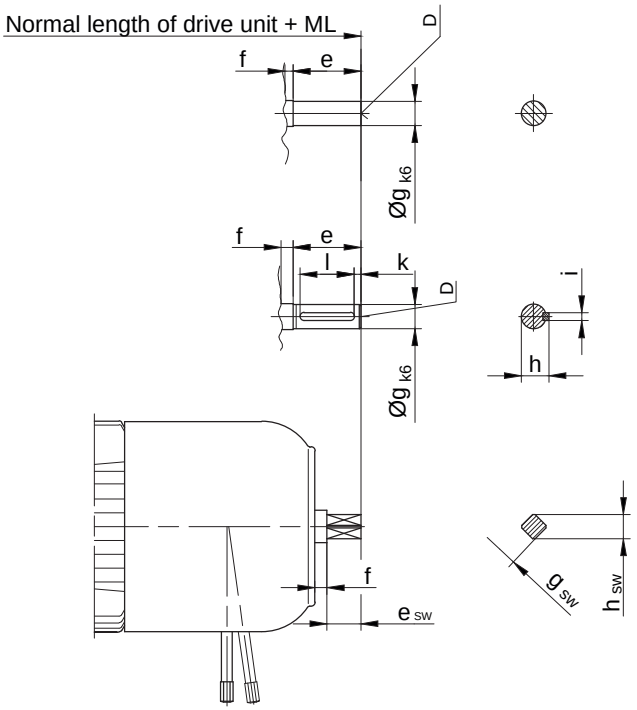
Motor with back stop



Motor	ML (mm) Add. length with backstop	Dimensions (mm) c	Add. weight kg
D..08	66	156	6.5
D..09	93	181	6.5
D..11	98	228	8
D..13	111	258	13.5
D..16	144	310	16
D..18	150	348	17

The actual gearbox design can vary from the geometry shown.

Motors with brake and second shaft end



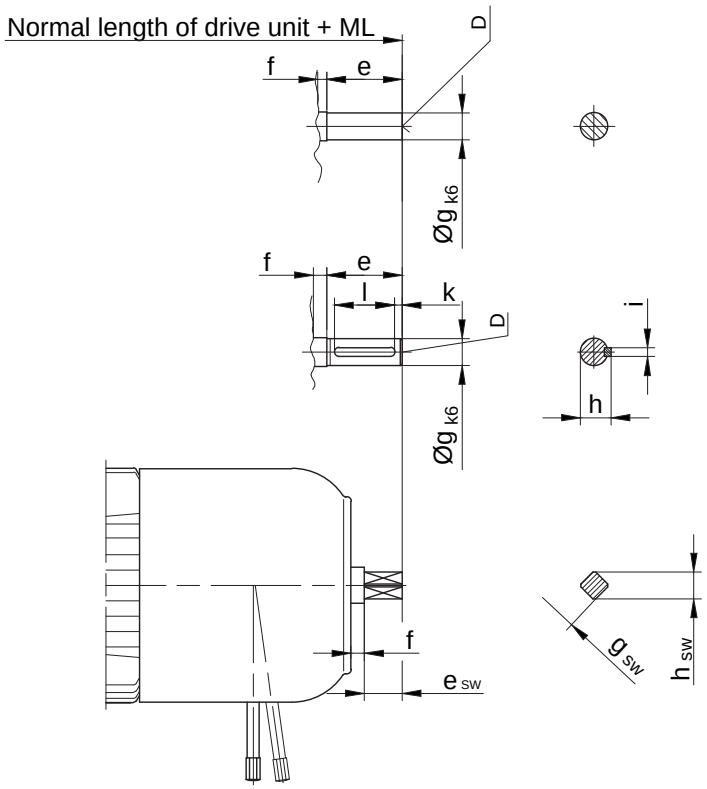
Motor	Brake	Additional length		Dimensions (mm)											Center D DIN332	
		ML	ML_{SW}	e	e_{SW}	f	g	g_{SW}	h	h_{SW}	i	k	l			$_{SW}$
D04	E003	63	-	15	-	5	8	-	-	-	-	-	-	-	-	-
D05				20			10									
D06																
D07	E003 / E004															
D..08	ES(X)..	121	96 *	50	25 *	5	18	SW14 *	20.5	18 *	6	5	40	D6	D4 *
D..09		98	123 *													
D..11		153.5 *	128	50 *	25		20 *	SW14	22.5 *	18	6 *	5 *	40 *	D6 *	D4
D..13		176 *	156	60 *	40		28 *	SW22	31 *	28	8 *		50 *	D10 *	D10
D..16	ES(X).. / ZS(X)..	208.5 *	188.5			4.5									
D..18		359 *	194.5			5									

* Special design

** with manual release

The actual gearbox design can vary from the geometry shown.

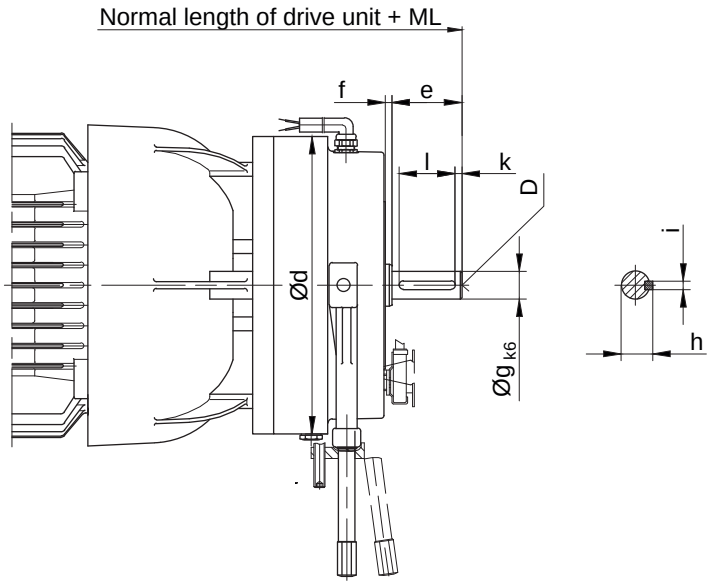
Motors with brake and second shaft end



Motor	Brake	Additional length		Dimensions (mm)											Center D DIN332	
		ML	ML_{SW}	e	e_{SW}	f	g	g_{SW}	h	h_{SW}	i	k	l			SW
D04	E003	63	-	15	-	5	8	-	-	-	-	-	-	-	-	-
D05				20			10									
D06																
D07	E003 / E004															
D..08	ES(X)..	121	96 *	50	25 *	5	18	SW14 *	20.5	18 *	6	5	40	D6	D4 *
D..09		98	123 *													
D..11		153.5 *	128	50 *	25		20 *	SW14	22.5 *	18	6 *	5 *	40 *	D6 *	D4
D..13		176 *	156	60 *	40		28 *	SW22	31 *	28	8 *		50 *	D10 *	D10
D..16	ES(X).. / ZS(X)..	208.5 *	188.5			4.5									
D..18		359 *	194.5			5									

The actual gearbox design can vary from the geometry shown.

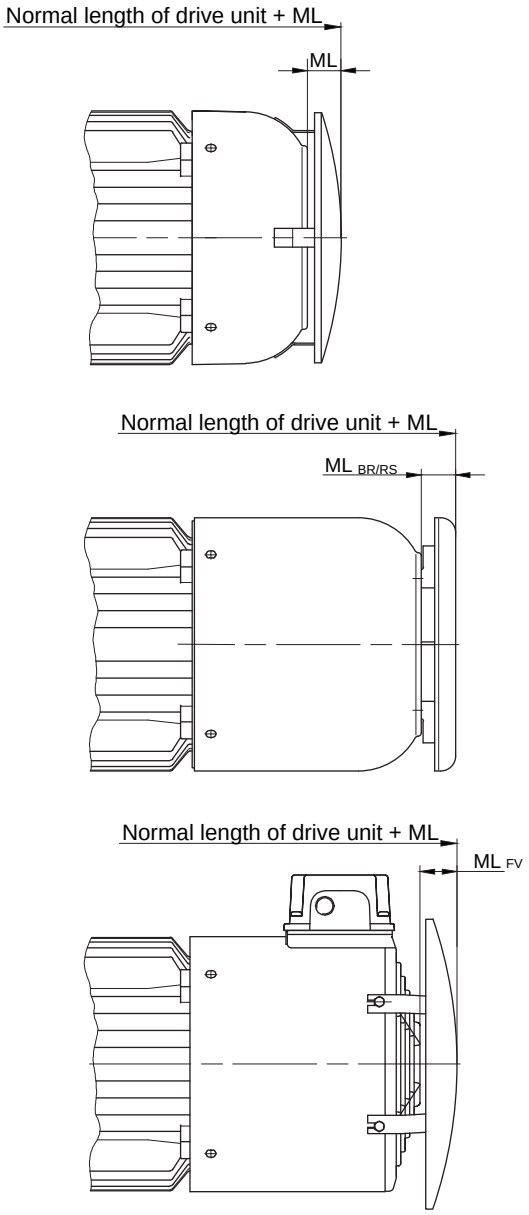
Motor with “heavy duty“ brake and second shaft end



Motor	Brake	ML(mm) Additional length with brake and encoder	Dimensions (mm)								Centring D 332	Add. weight
			Ød	e	f	g	h	i	k	k		kg
D..08	EH(X)027	132	145	50	4	18	20.5	6	5	6	D06	6
D..09	EH(X)040	144	168		5							9
D..11	EH(X)125	169	213			20	22.5					20
D..13	EH(X)200	192	245	60		28	31	8		8	D10	29.5
D..16	EH(X)400	205.5	324									56
D..18		216.5				30	33					61

The actual gearbox design can vary from the geometry shown.

Motor with protective hood

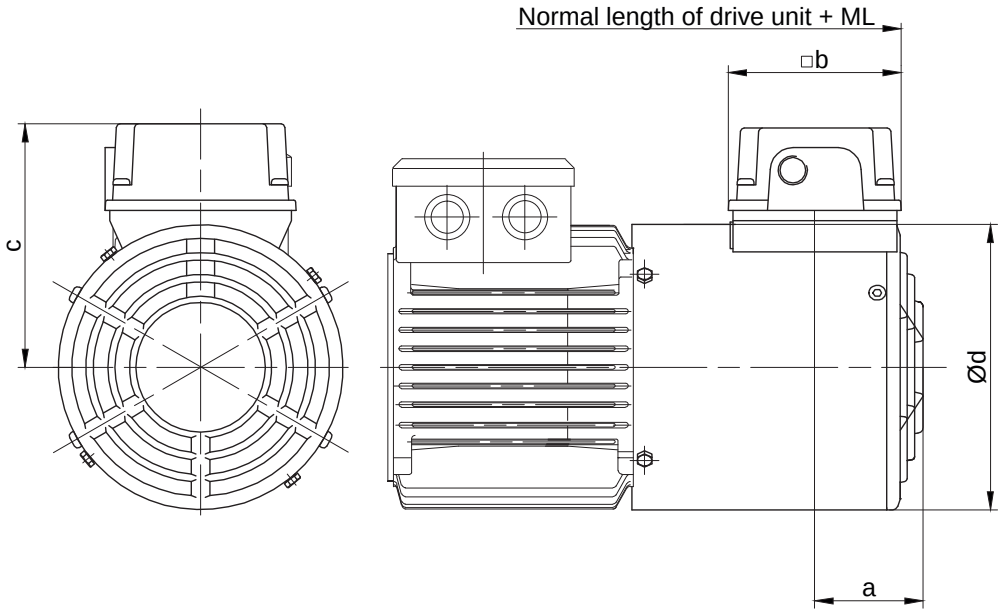


Fan cover geometry for D..16 and D..18,
see dimensional drawing: terminal box as standard version

Motor	ML(mm) Add. length with attached protective cover				Add. weight
	ML	ML_{BR}	ML_{RS}	ML_{FV}	kg
D06	18	-	-	-	0.15
D07	18	-	-	-	0.15
D..08	14.5	24.5	24.5	40	0.20
D..09	22	24.5	24.5	30	0.30
D..11	29	29.5	29.5	33	0.40
D..13	30	29.5	29.5	25	0.6
D..16	30.5	34.5	34.5	32	1.8
D..18	30.5	34.5	34.5	32	5.5

The actual gearbox design can vary from the geometry shown.

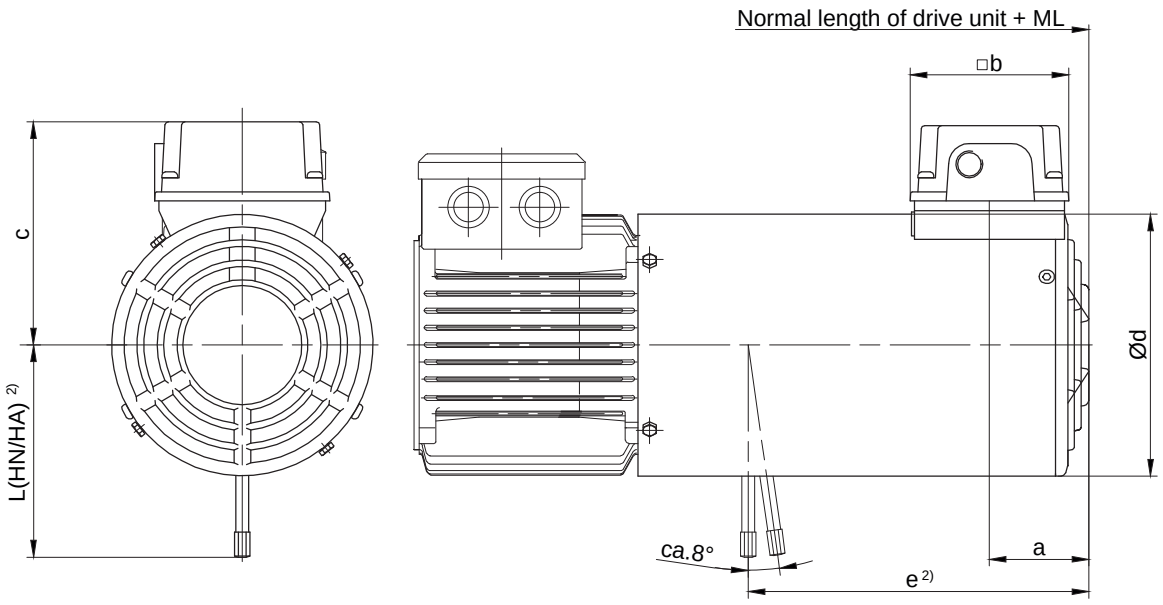
Motor with independent fan



Drive Motor	Fan Motor			400 V	ML (mm) Additional length forced vent.	Dimensions (mm)				Add. weight
Type	Type	kW	r/min	A		a	b	c	d	~ kg
D..08	FV D08	0.019	2670	0.029	92	69.5	95	131.5	157	2.2
D..09	FV D09	0.046	2820	0.106	97	69.5	95	141.5	176	2.7
D..11	FV D11	0.051	2660	0.110	97	79.5	95	162.5	219	3.2
D..13	FV D13	0.073	2820	0.169	119	78.8	95	182	258	4.6
D..16✳	FV D16	0.154	2760	0.347	144	78.8	95	208.5	311	6.4
D..18✳	FV D18	0.154	2760	0.347	303	78.8	95	208.5	348	8.4

The actual gearbox design can vary from the geometry shown.

Motor with brake and independent fan



Motor	Brake	ML (mm) 1) Additional length with attached brake and forced ventilation	Dimensions (mm)						Add. weight
			a	b	c	Ød	e 2)	L(HN/HA) 2)	~kg
D..08	ES(X)010	202	59	95	131.5	157	204	132	5.0
D..09	ES(X)010	214	69.5	95	141.5	176	220	132	5.5
	ES(X)027						212	162	7.5
D..11✳	ES(X)027	221	69.5	95	162.5	219	226	162	8.0
	ES(X)040						223	172	10
	ES(X)070						218	184	12
D..13✳	ES(X)040	237	79.5	95	182	258	254	202	11.5
	ES(X)070						250	225	13.5
	ES(X)125						245	223	17.5
D..16✳	ES(X)125	294	78.8	95	208.5	311	298	244	19.5
	ES(X)200						291	256	25
	ZS(X)300						262		27
D..18✳	ES(X)250	303	78.8	95	208.5	348	307	286	37
	ZS(X)500						277		38.5

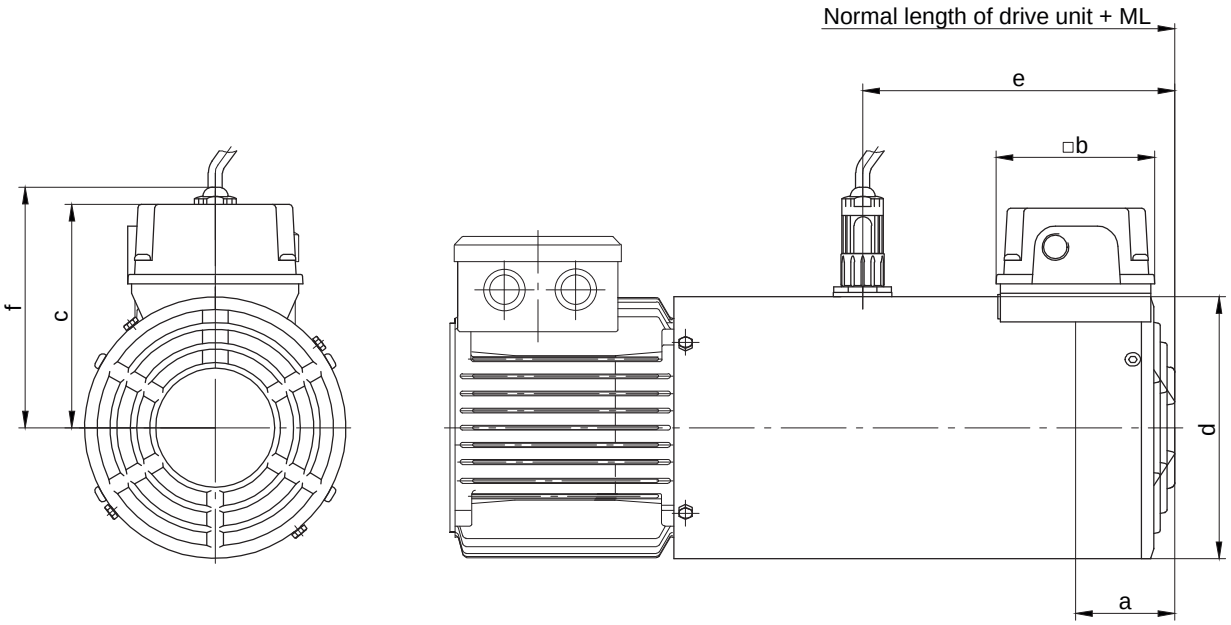
✳ bayonet joint

1) The additional length is for normal motor unit without brake.
Other dimensions see the appropriate normal dimensioned sketch

2) Brake release on request

The actual gearbox design can vary from the geometry shown.

Motor with encoder with built-on independent fan



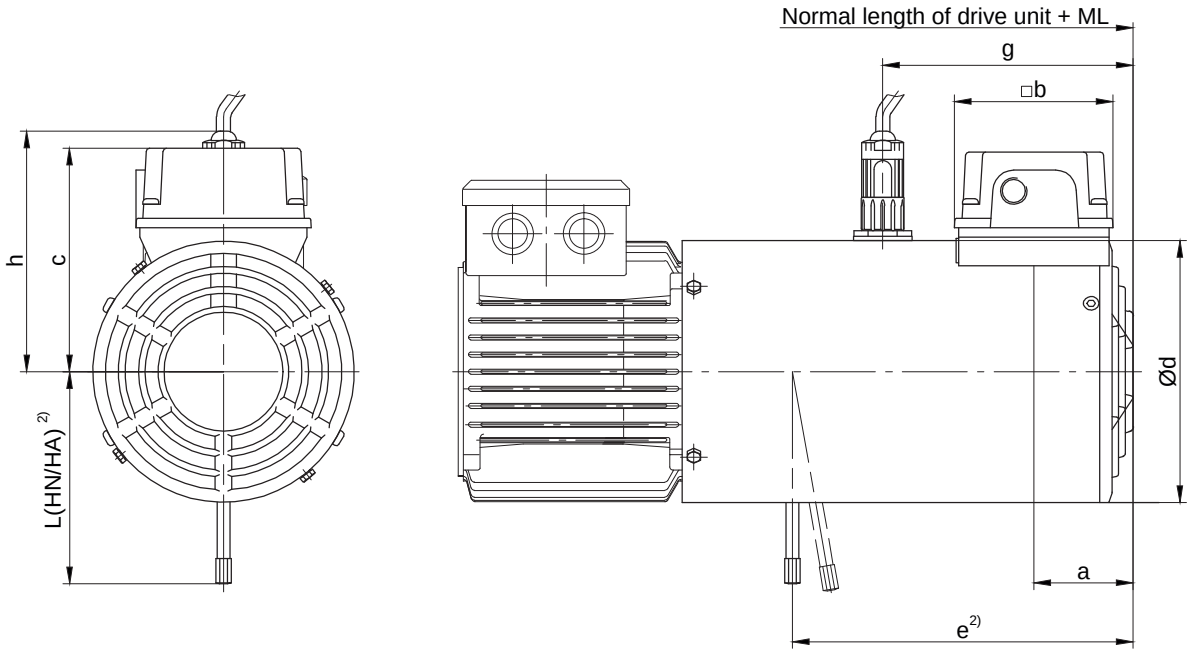
Motor	ML(mm)[1] Additional length with attached encoder and forced ventilation	Dimensions (mm)						Add. weight
		a	b	c	d	e	f	~ kg
D..08	202	59	95	131.5	157	187	144	2.6
D..09	214	69.5	95	141.5	176	192	153.5	3.3
D..11✳	221	69.5	95	162.5	218	192	-	4.0
D..13✳	240	79.5	95	182	258	217	-	5.7
D..16✳	294	78.8	95	208.5	311	252	-	7.9
D..18✳	303	78.8	95	208.5	348	267	-	10.9

✳ with bayonet joint

1) The additional length is for normal motor unit without brake.
Other dimensions see the appropriate normal dimensioned sketch

The actual gearbox design can vary from the geometry shown.

Motor with brake and encoder with built-on independent fan



Motor	Brake	ML (mm) 1) Additional length with attached brake, encoder and forced ventilation	Dimensions (mm)								Add. weight
			a	b	c	Ød	e 2)	g	h	L(HN/HA) 2)	~ kg
D..08	ES(X)010	202	59	95	131.5	157	204	150	150	132	6.0
D..09	ES(X)010	214	69.5	95	141.5	176	220	160	160	132	6.5
	ES(X)027						212	160		162	8.5
D..11✳	ES(X)027	221	69.5	95	162.5	219	226	155	155	162	9.0
	ES(X)040						223	155		172	11.5
	ES(X)070						218	155		184	13.5
D..13✳	ES(X)040	240	79.5	95	182	258	254	175	175	202	13
	ES(X)070						250	175		225	15
	ES(X)125						245	175		223	19
D..16✳	ES(X)125	294	78.8	95	208.5	311	298	195	195	244	21
	ES(X)200						291	195		256	27
	ZS(X)300						262	195			29
D..18✳	ES(X)250	303	78.8	95	208.5	348	207	212	212	286	39
	ZS(X)500						277	212			40.5

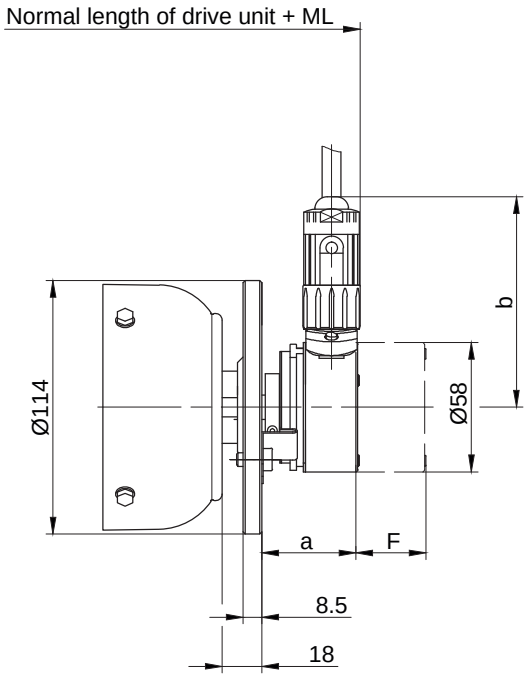
bayonet joint

1) The additional length is for normal motor unit without brake.
Other dimensions see the appropriate normal dimensioned sketch

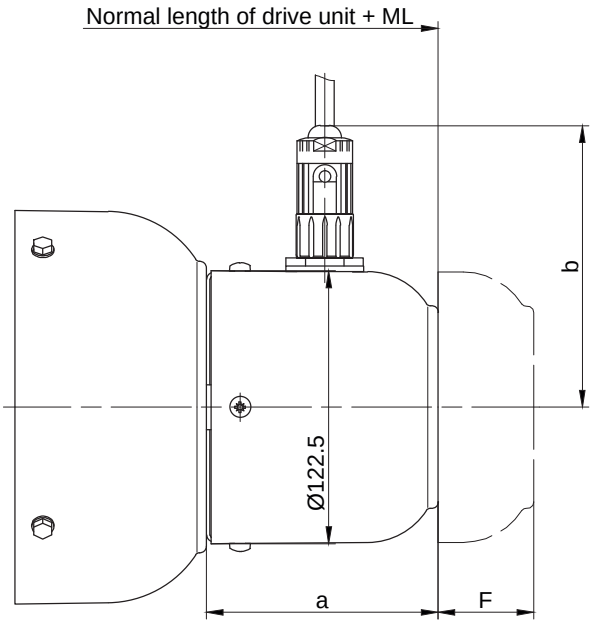
2) Brake release on request

The actual gearbox design can vary from the geometry shown.

Motor with encoder



D04



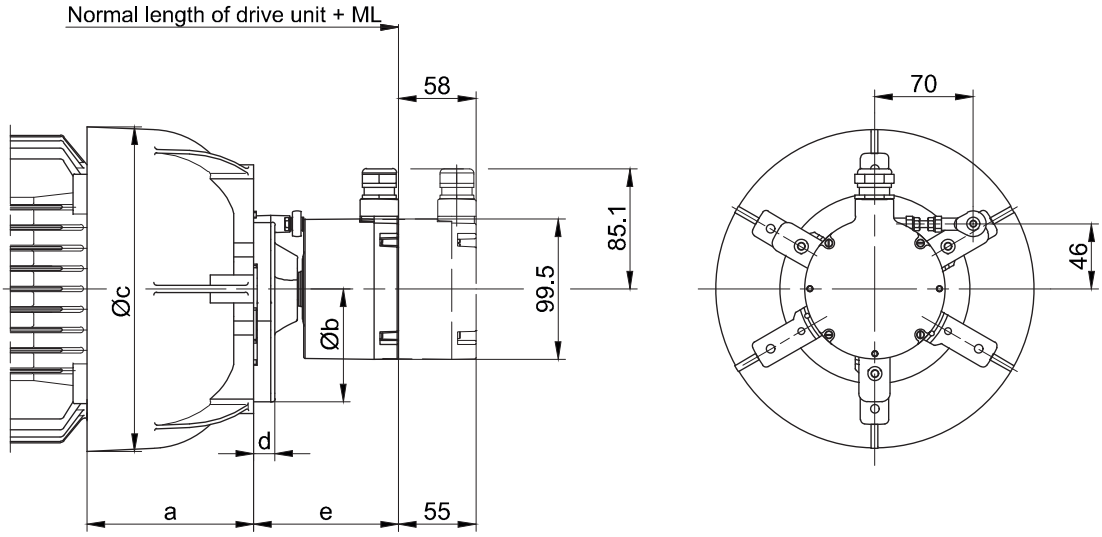
D05 - D..18

Fan cover geometry for D..16 and D..18, see dimensional drawing: terminal box as standard version

Motor	ML(mm) Additional length with encoder	Dimensions (mm)				Add. weight	Free space for removing encoder "F"	
		incremental encoder Fa. Kübler Typ 5820		absolute encoder Fa. TR Typ CS58-M			incremental encoder Fa. Kübler Typ 5820	absolute encoder Fa. TR Typ CS58-M
		a	b	a	b	kg		
D04	62.5	43.5	95	69.5	109.5	0.7	30	55
D05	103	98.5	127	98.5	127	0.9	63	88
D06								
D07								
D..08	107	107.5		107.5			41	66
D..09		104		104		0.8	43	68
D..11								
D..13								
D..16	110							
D..18								

The actual gearbox design can vary from the geometry shown.

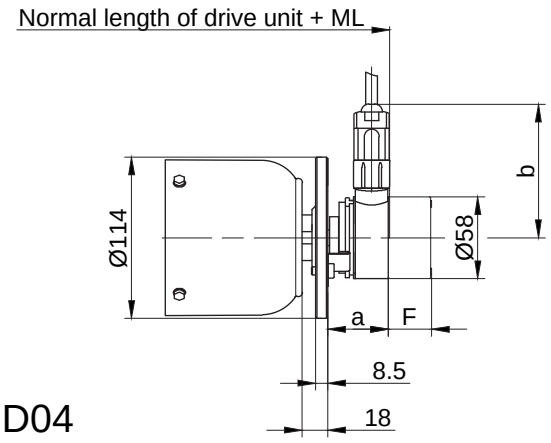
Motor with “heavy duty“ encoder



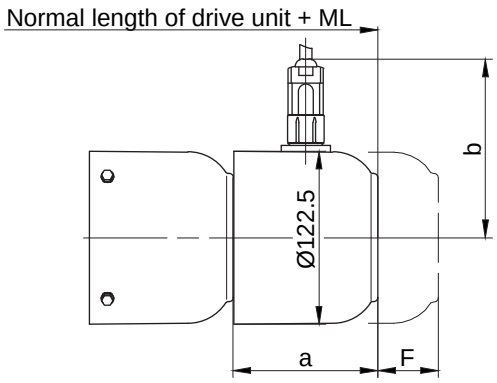
Motor	ML(mm) Additional length with encoder	Dimensions (mm)					Add. weight
		a	b	c	d	e	kg
D..08	114	83.5	160	166	15	102.5	2
D..09	118.5	102		191			
D..11	121.5	120		231			5.4
D..13	115.5	140	185	274.5	17	94.5	8.6
D..16	113.5	155		326			9.6
D..18	122.5	183		366			11.5

The actual gearbox design can vary from the geometry shown.

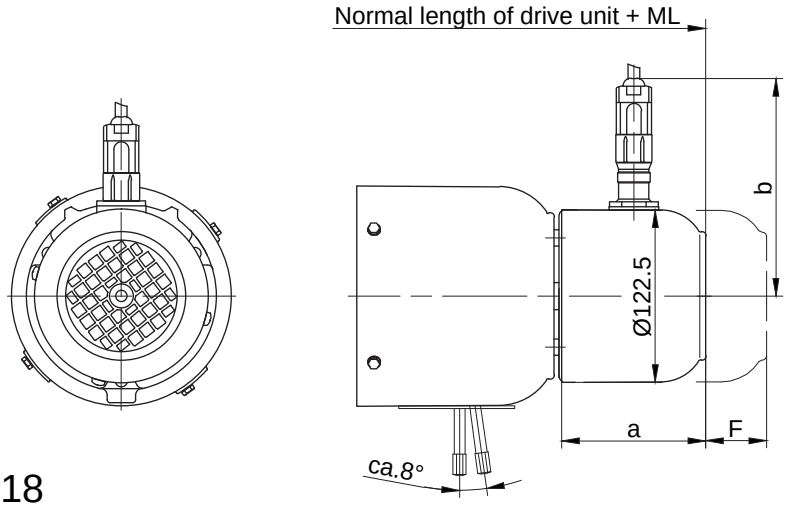
Motor with brake and encoder



D04



D05-D07

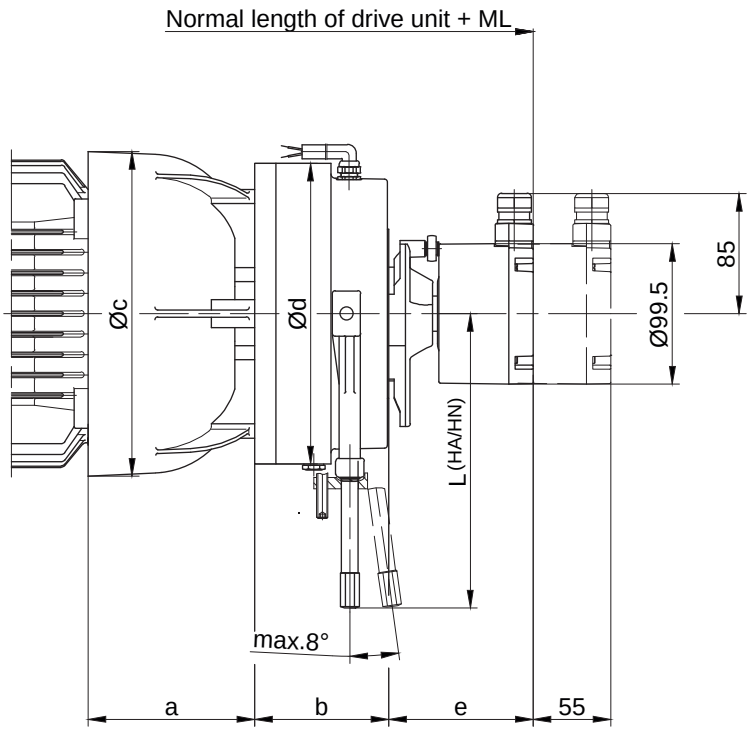


D08-D18

Motor	Brake	ML(mm) Additional length with brake and encoder	Dimensions (mm) incremental encoder Fa. Kübler Typ 5820 a	b	absolute encoder Fa. TR Typ CS58-M a	b	Add. weight kg	Free space for removing encoder "F" incremental encoder Fa. Kübler Typ 5820	absolute encoder Fa. TR Typ CS58-M
D04	E003	105.5	43.5	95	69.5	109.5	0.7	30	55
D05	E003	145	102	127	102	127	0.9	63	88
D06	E003	145	102	127	102	127	0.9	63	88
D07	E003 / E004	145	102	127	102	127	0.9	63	88
D..08	ES(X)..	173.5	102	127	102	127	0.8	49	74
D..09	ES(X)..	197	102	127	102	127	0.8	49	74
D..11	ES(X)..	200	102	127	102	127	0.8	49	74
D..13	ES(X)..	212	102	127	102	127	0.8	49	74
D..16	ES(X).. / ZS(X)..	248	104	127	102	127	0.8	49	74
D..18	ES(X).. / ZS(X)..	247.5	104	127	102	127	0.8	49	74

The actual gearbox design can vary from the geometry shown.

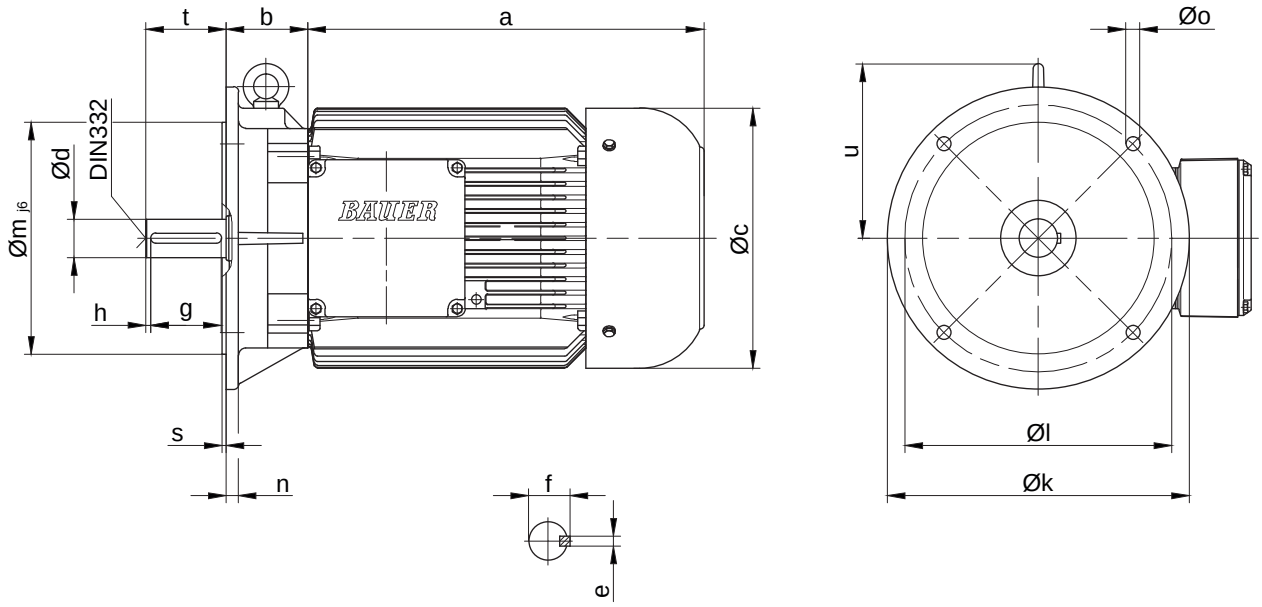
Motor with “heavy duty“ brake and encoder



Motor	Brake	ML(mm) Additional length with brake and encoder	Dimensions (mm)						Add. weight
			a	b	c	Ød	e	L (HA/HN)	kg
D..08	EH(X)027	180.5	83.5	66.5	166	145	102.5	162	7.1
D..09	EH(X)040	191.5	102	73	191	168		172	10
D..11	EH(X)125	216.5	120	95	231	213		208.5	21.4
D..13	EH(X)200	259	140	106	274.5	245	94.5	221	32
D..16	EH(X)400	243	155	124	326	324		313	58
D..18		254	183		366				61

The actual gearbox design can vary from the geometry shown.

Motor in IEC design

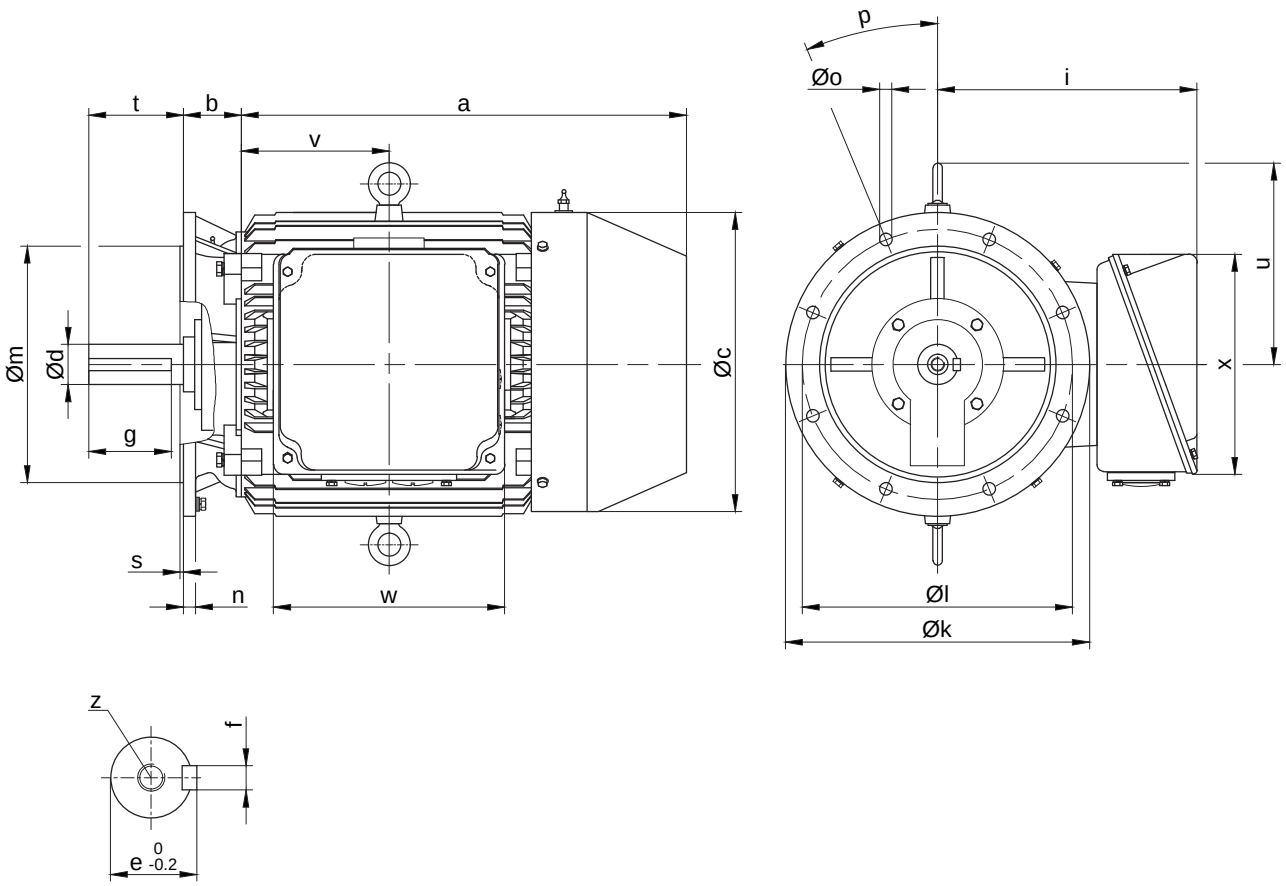


Fan cover geometry for D..16 and D..18, see dimensional drawing: terminal box as standard version

Motor	Dimensions (mm)																Center
	a	b	c	d	e	f	g	h	k	l	m	n	o	s	t	u	DIN 332
D06	170	45	123	11_{j6}	4	12.5	18	2.5	140	115	95	9	10	2.75	23	-	D4
D07	190	45	123	11_{j6}	4	12.5	18	2.5	140	115	95	9	10	2.75	23	-	D4
D..08	200	49	156	19_{j6}	6	21.5	35	2.5	200	165	130	10	12	3.5	40	-	D4
D..09	251	66	176	24_{j6}	8	27	40	5	200	165	130	10	12	3.5	50	128.5	D6
D..11	319	75	218	28_{j6}	8	31	50	5	250	215	180	11	14.5	4	60	145.5	D8
D..13	393	81	266	38_{k6}	10	41	70	5	300	265	230	12	14	4	80	173	D12
D..16	454.5	98.5	310	42_{k6}	12	45	90	10	350	300	250	13	18.5	5	110	215.5	D16

The actual gearbox design can vary from the geometry shown.

Motor in IEC-design



Motor	Dimensions (mm)																
	a	b	c	d	e	f	g	i	k	l	m	n	o	p	s	t	u
DNF18	551	79	355	$48^{+0.018}_{+0.002}$	14	51.5	80	293	350	300	250	16	Ø19	4x45°	5	110	240
DNF20	613	82	395	$55^{+0.030}_{+0.011}$	16	59	91	313	400	350	300	16	Ø19	4x45°	5	110	270
DNF22	659	86	442	$60^{+0.030}_{+0.011}$	18	64	122	390	450	400	350	18	Ø19	8x22.5°	5	140	300
DNF25	730	95	485	$65^{+0.030}_{+0.011}$	18	69	126	415	550	500	450	18	Ø19	8x22.5°	5	140	330
DNF28	797	98	544	$75^{+0.030}_{+0.011}$	20	79.5	124	445	550	500	450	18	Ø19	8x22.5°	5	140	380

Motor				Center bore	Weight
	v	w	x	z	kg
DNF18	194	200	221	M16x2x24	215
DNF20	203.5	200	221	M20x2.5x30	293
DNF22	218.5	342	326	M20x2.5x30	395
DNF25	247.5	342	326	M20x2.5x30	487
DNF28	276	342	326	M20x2.5x30	692

The actual gearbox design can vary from the geometry shown.

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Page

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Ukraine	Bauer Gear Motor GmbH	47m Mandrykovskaya str. OC «DnZMO», office 508 49000 Dnipropetrovsk	**Phone** **Fax**	+38 (095) 2680598 +38 (056) 7637701	Andriy.Balanyuk@bauergears.com http://www.bauergears.com
Ukraine	AIDAR	Ilicha avenue 46 83003 Donetsk	**Phone** **Fax**	+38 (062) 3455511 +38 (062) 3452606	sa@aidar.in.ua www.aidar.com.ua
Ukraine	CHP Rychko	Artelnaya str, 10 49081 Dnepropetrovsk	**Phone** **Fax**	+38 (067) 5654420	serg_64@ua.fm
Ukraine	Comfort Company	N.Grinchenko str., 4 03038 Kyiv	**Phone** **Fax**	+38 (044) 3623676 +38 (044) 3623686	info@comfort-co.com http://www.comfort-co.com
Ukraine	Comfort Group	Bykova str., 16 50036 Krivoy Rog	**Phone**	+38 (050) 3218998	dir@komfortgroup.com.ua http://www.comfortgroup.com.ua
Ukraine	Fedama	Dragomannova str., 48 79005 Lvov	**Phone**	+38 (032) 2445560	fedama@lviv.farlep.net
Ukraine	Leko Trade	Akademicheskaya str, 6/1 83037 Donetsk	**Phone**	+38 (062) 633905	leko_trade@bk.ru www.leko.dn.ua
Ukraine	Nadezhda	Lenina st, 47 61103 Kharkov	**Phone**	+38 (057) 7177698	nadezhda@ilt.kharkov.ua
Ukraine	Pryvid Plus LLC	Krasnopolskaya str.9, of.434 49000 Dnepropetrovsk	**Phone**	+38 (056) 7637701	ot@privod-plus.com.ua http://www.privod-plus.com.ua
Ukraine	Service-Avtomatika	Peremogi st, 56 04080 Kiev	**Phone** **Fax**	+38 (044) 3325423 +38 (044) 2230913	serv-avtomatika@ukr.net http://www.s-a.org.ua
Ukraine	ZEVS	Elektrikov str.26 04040 Kiev	**Phone**	+38 (044) 4980782	yarik100@gmail.com www.z-e-v-s.com.ua



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Israel	I. Ettner - Representations Ltd.	17, Mazal Dli St. Hod Hasharon 45309 69086 Tel-Aviv	**Phone** **Fax**	+972 (9)7453552 +972 (9)7452554	israel@ettner.co.il
South Africa	Bauer a Division of Hudaco Trading (Pty) Ltd.	72 Acacia Road 1401 Primrose	**Phone** **Fax**	+27 (11) 8289715 +27 (11) 8224135	johnB@gbauer.co.za
Turkey	CEFIP - Makina & Endüstriyel Ürünler San. ve Dis Tic. Ltd. Sti.	Perpa Ticaret Merkezi A Blok Kat: 2 No: 9-0033 34384 Okmeydani - Istanbul	**Phone** **Fax**	+90 (212) 2101890 +90 (212) 2101597	cefip@cefip.com.tr http://www.cefip.com.tr
Turkey	Senka Enerji Sanayi ve Ticaret Ltd Sti	Kara Hasan Atli Is Merkezi Sok. No: 1203/11 Kat.: 4/419 Yenisehir / Izmir	**Phone** **Fax**	+90 (232) 4695555 +90 (232) 4334371	senka@senka.org
United Arab Emirates	Dubai Drydocks Afloat Repair Division	P.O. BOX 8988 Dubai	**Phone** **Fax**	+971 (4) 3451353 +971 (4) 3450116	drydocks@drydocks.gov.ae http://www.drydocks.gov.ae



APAC



Australia	Altra Industrial Motion	Unit 51/9 Hoyle Avenue, Castle Hill N.S.W. 2153 - Australia	**Phone**	+61 (2) 98940133	www.altramotion.com
Australia	Transmission Australia Pty Ltd	22 Corporate Ave PO Box 2334 VIC 3178 Rowville	**Phone** **Fax**	+61 (3) 97554444 +61 (3) 97554411	info@transaus.com.au http://www.transaus.com.au
Indonesia	PT. Cahaya Mekar Sejati	Jl. Agung Utara Raya Blok A36 D/46 14350 Jakarta	**Phone** **Fax**	+62 (21) 6401803 +62 (21) 64715082	cahkarti@cbn.net.id http://www.bauergearmotor.com
Japan	Leybold Co., Ltd.	5th Floor, Tokyo Tatemono Bldg 1-9-9, Yaesu 1-Chome, Chuo-Ku 103-0028 Tokyo	**Phone** **Fax**	+81 (3) 32721861 +81 (3) 32814490	koki@leybold-kk.com
Korea, Republic Of	Chemiko Trading Co. Ltd.	Rm 1612, Namwoon Officetel, 229-10, Mooguh-Dong Nam-Gu Ulsan	**Phone** **Fax**	+82 (52) 2772107 +82 (52) 2472195	chemiko@choillian.net http://www.chemiko.net
Korea, Republic Of	Chemiko Trading Co. Ltd.	Chung Rok Bldg, 721-29 Yeoksam – Dong, Kangnam-Gu Seoul	**Phone** **Fax**	+82 (2) 5675336 +82 (2) 5541284	chemiko@chol.com http://www.chemiko.net
Malaysia	Greenvi Technologies (M) Sdn Bhd Industrial Automation	No. 64-02, Jalan Molek 2/2 Taman Molek 81100 Johor Bahru, Johor	**Phone** **Fax**	+60 (7) 3543006 +60 (7) 3542006	bpchin@greenvi-tech.com http://www.greenvi-tech.com
Philippines	Optima Equipment Corporation	Unit 503 I-Care Building 167 Legazpi St. Corner Dela Rosa St. 1229 Legazpi Village, Makati City	**Phone** **Fax**	+63 (2) 845-0765 +63 (2) 893-6768	vandel@optima-equipment.com
Singapore	Altra Industrial Motion	16 Boon Lay Way ,#01-47 Singapore 609965	**Phone** **Fax**	+65 64874464 +65 64876674	www.altramotion.com
Singapore	AVM Diesel (F.E.) Pte Ltd Gear Centre Southeast Asia	BLK 27 TUAS AVE 13 #01-23 638993 Singapore	**Phone** **Fax**	+65 (6) 8636933 +65 (6) 8636900	sales@avmdiesel.com http://www.avmdiesel.com
Singapore	AVM Diesel (F.E.) PTE Gear Centre Southeast	AVM Diesel (F.E.) PTE Ltd. Gear Centre Southeast Asia 638993 Singapore	**Phone** **Fax**	+65 (6) 8636933 +65 (6) 8636900	sales@avmdiesel.com http://www.avmdiesel.com
Thailand	Kasetphand Industry Co.,LTD	100 M. 3 SOI Suksawad 76 Suksawad rd. Bangjark, Phrapradaeng 10130 Samutprakarn	**Phone** **Fax**	+66 (2) 8176410 +66 (2) 8176437	sakchai_engineer@hotmail.com http://www.ksp.co.th
Vietnam	GNN CO., LTD.	33 Hoa hong 2, W. 2 Phu Nhuan District	**Phone** **Fax**	+84 (8) 35174923 +84 (8) 35174924	http://www.gnnvietnam.com



China



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China	Altra Industrial Motion (ShenZhen) Co., Ltd.	Suite 703, Universal Mansion 168 Yuyuan Road 200040 Shanghai	**Phone** **Fax**	+86 (21) 5169 9255 +86 (21) 6248 5387	yang.yang@bauergears.com.cn
China	Shanghai Jinxin Inverter Company	No. 248-5, Xinshi Road 200083 Shanghai	**Phone** **Fax**	+86 (21) 65618877 +86 (21) 65600454	 http://www.sinodrive.com
Hong Kong	A-CALL Company	Flat 8A, 8th Floor Wing Cheong Industrial Building 109 How Ming Street Kwun Tong Kowloon	**Phone** **Fax**	+852 (27) 930250 +852 (27) 930620	kent@a-call.com.hk http://www.a-call.com.hk
Taiwan	Saturn Power Ltd.	9F, No. 69-5, Sec. 2 Chung Cheng E. Rd. Tanshui District 105 New Taipei City	**Phone** **Fax**	+886 (2) 28095890 +886 (2) 28096770	service@saturnpowerltd.com http://www.saturnpowerltd.com

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WORLD FIRST

Energy Efficient Drive Technology for Explosion Hazardous Areas

EU Regulation 640/2009/EC exempts motors for use in explosion hazardous areas from the minimum efficiency requirements for placing new products on the market, because explosion protection takes precedence over the energy savings that can be achieved with motors. This does not mean that there is no potential for energy savings with the electric motors used in the chemical industry.

This is why the VIK pamphlet „VIK Recommendation 1: Three-Phase Induction Motors – Technical Requirements“ recommends the use of efficiency class IE2 (High Efficiency) for motors with explosion protection types Ex d and Ex nA and efficiency class IE1 (Standard Efficiency) for motors with explosion protection type Ex e.

For many years, only encapsulated motors (type Ex d) could be used for variable speed operation in explosion hazardous areas. With the launch of motors with explosion protection type Ex e for use next to the inverter, customers now have a economical alternative to encapsulated motors when procuring motors for use in explosion hazardous areas.

Variable speed drives create opportunities for major energy savings. For applications in explosion hazardous areas as well as other areas, retrofitting frequency inverters in existing plants and achieving higher energy savings by using highly efficient motors are both attractive options.

Most currently available variable-speed three-phase induction motors with explosion protection type Ex e are only available in standard efficiency class IE1. This means that potential energy savings are only partially utilised.

For the **first time ever**, the S series of permanent magnet synchronous motors (PMSM) from **Bauer Gear Motor GmbH** offers variable-speed motors in **efficiency class IE4** for use in explosion hazardous areas. This is the highest energy efficiency that can be achieved with the current state of motor technology.

Bauer Gear Motor GmbH helps the chemical industry fully exploit potential energy savings with high efficiency IE4 motors, even at the highest level.

PMSM S-series in IE4 for explosion hazardous areas

Design torque M_N:

5 Nm – 48 Nm

Rated power P_N:

0,75 kW – 15 kW

Protection type: Increased Safety – Zone 1
Ⓔx II 2 G Ex e IIC T1 - T3 Gb

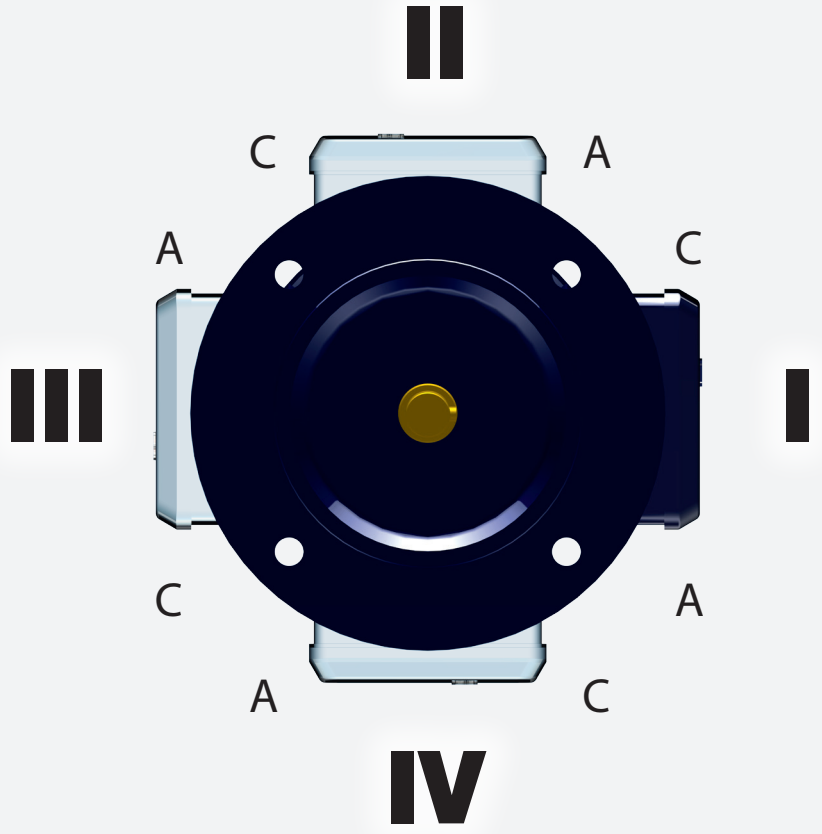
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S.XE.08LA4
S.XE.09SA4
S.XE.09XA4
S.XE.11SA6
S.XE.11MA6
S.XE.11LA6

Dust explosion protection – Zone 21
Ⓔx II 2 D Ex tb IIIC T 160°C ... 120° Db

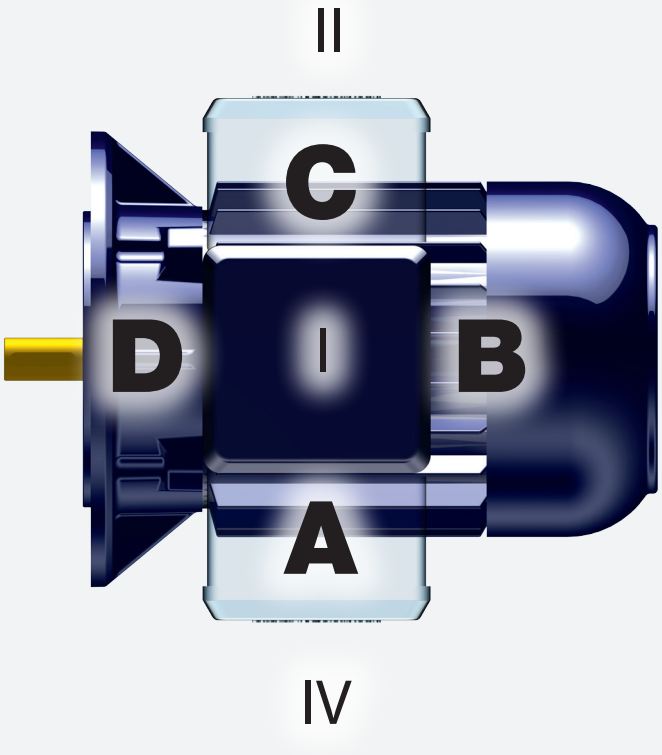
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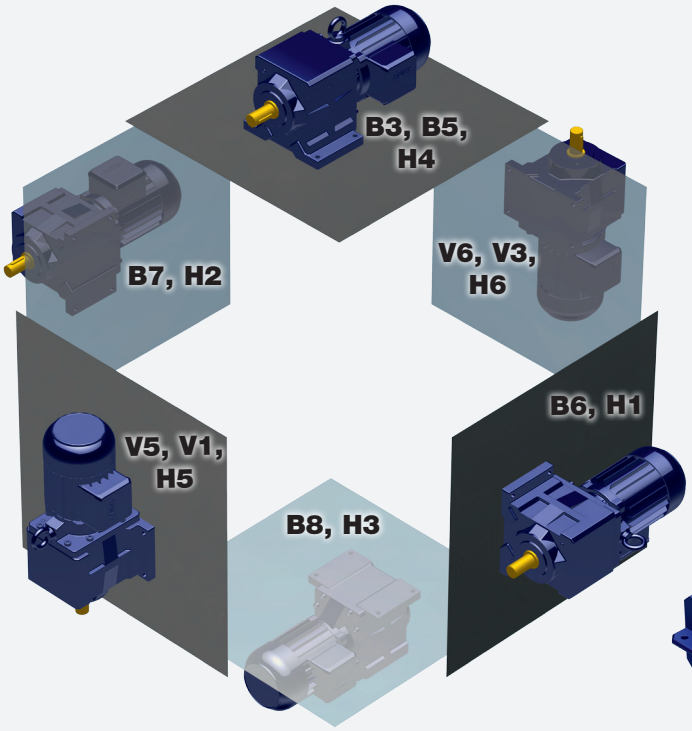
Terminal Box Position



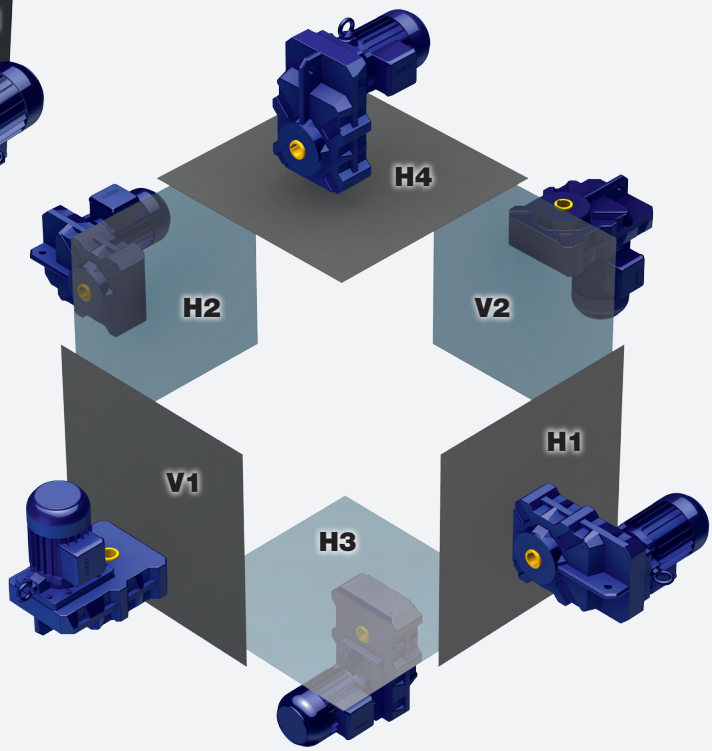
Cable entry Position



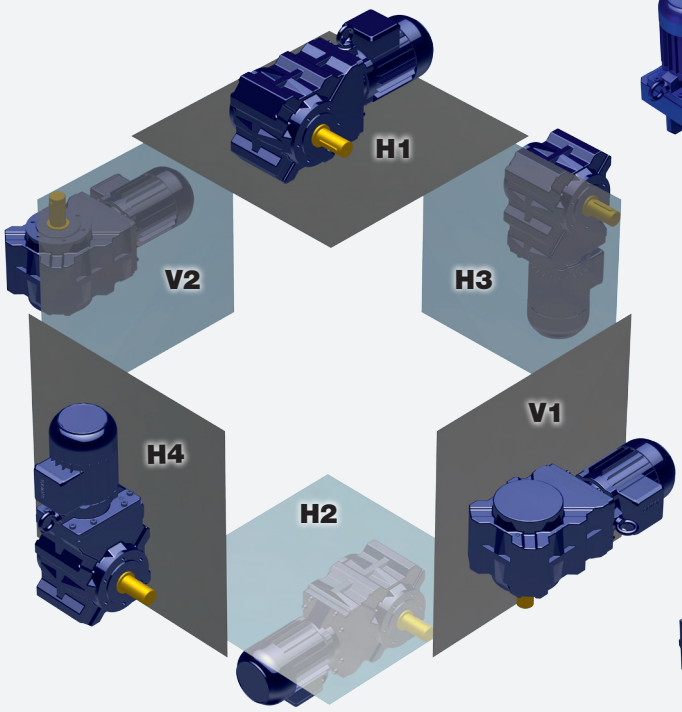
Mounting Positions



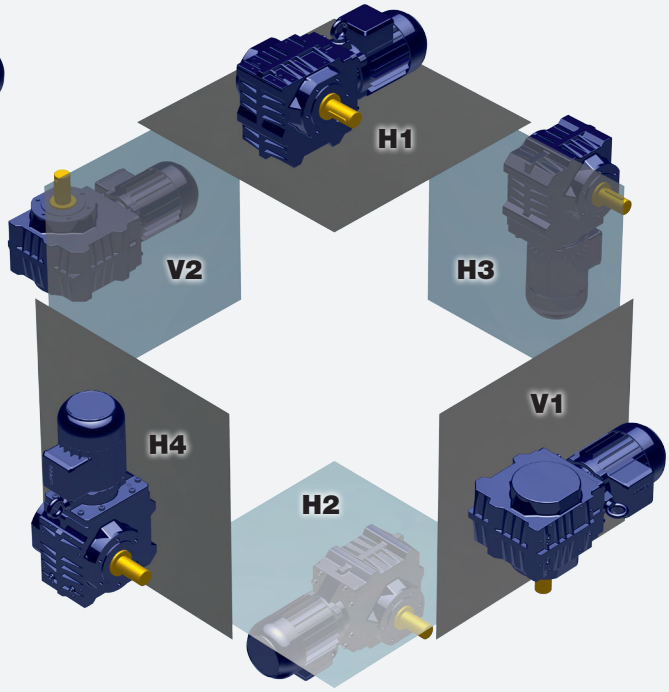
Helical Geared Motors



Parallel Shaft Geared Motors



Bevel Geared Motors



Worm Geared Motors

Altra Industrial Motion

All Customer Service phone numbers shown in bold

Couplings

Ameridrives Couplings
Mill Spindles, Ameriflex, Ameridisc
Erie, PA - USA
1-814-480-5000
Gear Couplings
San Marcos, TX - USA
1-800-458-0887

Bibby Turboflex
Disc, Gear, Grid Couplings, Overload Clutches
Dewsbury, England
+44 (0) 1924 460801
Boksburg, South Africa
+27 (0) 11 918 4270

TB Wood's
Elastomeric Couplings
Chambersburg, PA - USA
1-888-829-6637– Press #5
For application assistance: 1-888-829-6637 – Press #7
General Purpose Disc Couplings
San Marcos, TX - USA
1-888-449-9439

Ameridrives Power Transmission
Universal Joints, Drive Shafts, Mill Gear Couplings
Green Bay, WI - USA
1-920-593-2444

Huco Dynatork
Precision Couplings and Air Motors
Hertford, England
+44 (0) 1992 501900
Chambersburg, PA - USA
1-888-829-6637

Lamiflex Couplings
Flexible Couplings, Bearing Isolators, and Coupling Guards
São Paulo, SP - Brasil
+55 **(11) 5679-6533**

Guardian Couplings
Flywheel, Jaw, Shear, Gear, Grid, Disc and Engine Couplings
Michigan City, IN - USA
1-219-874-5248

Engineered Bearing Assemblies

Kilian Manufacturing
Engineered Bearing Assemblies
Syracuse, NY - USA
1-315-432-0700

Electromagnetic Clutches and Brakes

Warner Electric
Electromagnetic Clutches and Brakes
New Hartford, CT - USA
1-800-825-6544
For application assistance: 1-800-825-9050
Saint Barthélémy d'Anjou, France
+33 (0) 2 41 21 24 24

Precision Electric Coils and Electromagnetic Clutches and Brakes
Columbia City, IN - USA
1-260-244-6183

Matrix International
Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes
Brechin, Scotland
+44 (0) 1356 602000
New Hartford, CT - USA
1-800-825-6544

Inertia Dynamics
Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes
New Hartford, CT - USA
1-800-800-6445

Overrunning Clutches

Formsprag Clutch
Overrunning Clutches and Holdbacks
Warren, MI - USA
1-800-348-0881– Press #1
For application assistance: 1-800-348-0881 – Press #2

Marland Clutch
Roller Ramp and Sprag Type Overrunning Clutches and Backstops
South Beloit, IL - USA
1-800-216-3515

Stieber Clutch
Overrunning Clutches and Holdbacks
Heidelberg, Germany
+49 (0) 6221 30 47 0

Belted Drives and Sheaves

TB Wood's
Belted Drives
Chambersburg, PA - USA
1-888-829-6637 – Press #5
For application assistance: 1-888-829-6637 – Press #7

Heavy Duty Clutches and Brakes

Wichita Clutch
Pneumatic Clutches and Brakes
Wichita Falls, TX - USA
1-800-964-3262
Bedford, England
+44 (0) 1234 350311

Twiflex Limited
Caliper Brakes and Thrusters
Twickenham, England
+44 (0) 20 8894 1161

Industrial Clutch
Pneumatic and Oil Immersed Clutches and Brakes
Waukesha, WI - USA
1-262-547-3357

Svendborg Brakes
Industrial Brakes and Brake Systems
Vejstrup. Denmark
+45 63 255 255

Gearing

Boston Gear
Enclosed and Open Gearing, Electrical and Mechanical P.T. Components
Charlotte, NC - USA
1-800-825-6544
For application assistance: 1-800-816-5608

Bauer Gear Motor
Geared Motors
Esslingen, Germany
+49 (711) 3518-0
Somerset, NJ - USA
1-732-469-8770

Nuttall Gear and Delroyd Worm Gear
Worm Gear and Helical Speed Reducers
Niagara Falls, NY - USA
1-716-298-4100

Linear Products

Warner Linear
Linear Actuators
Belvidere, IL - USA
1-800-825-6544
For application assistance: 1-800-825-9050
Saint Barthélémy d'Anjou, France
+33 (0) 2 41 21 24 24

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