

This Small Industrial Geared Motors Catalogue is intended to provide an easy guide to selection of small, compact high-quality geared motors such as are widely used in machinery, material handling, packaging, pharmaceutical machinery, textile machinery, etc.

The complete Bauer range of geared motors is listed in the Master Catalogue DG.. which is also available on CD-ROM.

The outer surfaces of the motor components listed in this catalogue (with the exception of P08LA..) have a smooth finish and are, therefore, particularly suited to use in areas where the accumulation of deposits and dirt has to be prevented for reasons of health, hygiene or quality, such as in the food, pharmaceutical, packaging or textile industries.

## 3-Phase AC Geared Motors

### Series BG with Helical Gearing

Motor outputs from 0.03 kW to 0.25 kW  
Torque ratings from 0.8 Nm to 120 Nm

### Series BS with Worm Gearing

Motor outputs from 0.03 kW to 0.25 kW  
Torque ratings from 0.8 Nm to 120 Nm

## Single-Phase AC Geared Motors

### Series BG with Helical Gearing

Motor outputs from 0.03 kW to 0.18 kW  
Torque ratings from 0.8 Nm to 120 Nm

### Series BS with Worm Gearing

Motor outputs from 0.03 kW to 0.18 kW  
Torque ratings from 0.8 Nm to 120 Nm

## DC Permanent Magnet Geared Motors

### Series BG with Helical Gearing

Motor outputs from 0.04 kW to 0.53 kW  
Torque ratings from 0.8 Nm to 200 Nm

### Series BS with Worm Gearing

Motor outputs from 0.04 kW to 0.53 kW  
Torque ratings from 0.8 Nm to 200 Nm



---

## Table of Contents

**Product Range**  
**CD-ROM, Website**  
**Conditions of Supply**

---

### **Three-Phase AC Geared Motors with Helical and Worm-Gearing**

Technical Data

Motor Data

Supplementary Dimensional Drawings for Motor Attachments

Selection Tables

Dimensional Drawings



---

### **Single-Phase AC Geared Motors with Helical and Worm-Gearing**

Technical Data

Motor Data

Supplementary Dimensional Drawings for Motor Attachments

Selection Tables

Dimensional Drawings



---

### **Permanent-Magnet DC Geared Motors with Helical and Worm-Gearing**

Technical Data

Motor Data

Supplementary Dimensional Drawings for Motor Attachments

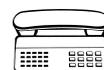
Selection Tables

Dimensional Drawings



---

## Where to contact us



# Contents

## 0 Product Range, Conditions of Supply

### 1 Characteristics of BAUER Geared Motors

- 1.1 BAUER Geared Motors
- 1.2 BAUER Gearboxes
- 1.3 BAUER Motors
- 1.4 BAUER Motor Brakes

### 2 Important Notes

- 2.1 Information Required for Enquiries and Orders
  - 2.1.1 Standard Versions
  - 2.1.2 Notes for Ordering
  - 2.1.3 Assistance with Drive Unit Design
- 2.2 Enquiry/Order Form
- 2.3 Orientation of Geared Motors
- 2.4 Safety Instructions
  - 2.4.1 Safety Guards on Rotating Components
  - 2.4.2 Touch Guards
- 2.5 Radial and Axial Forces on the Output Shaft
- 2.6 Dimensions and Fits for Output Shafts and Woodruff Key Slots
- 2.7 Fitting Transmission Components
  - 2.7.1 Gearbox with Solid Shaft
  - 2.7.2 Gearboxes with Hollow Shafts
- 2.8 Model Designation
  - 2.8.1 Bauer Helical Geared Motor
  - 2.8.2 Bauer Worm Geared Motor with Brake and Listed Attachment Versions

### 3 Three-Phase AC Motors

- 3.1 Torque Specifications
- 3.2 Power Supply Ratings
- 3.3 Power Supply Frequencies
- 3.4 Identification Plate
- 3.5 Terminal Box
- 3.6 Plug Connection
- 3.7 Motor Protection
  - 3.7.1 Thermistors and PTC Sensors
  - 3.7.2 Thermostats (bi-metallic switches)
- 3.8 Insulation
- 3.9 Enclosure Rating
- 3.10 Extra Corrosion Proofing
- 3.11 Speed of Output Shaft
- 3.12 Operating Mode
- 3.13 CE Mark
- 3.14 Foreign Regulations
- 3.15 Frequency Converter Operation
- 3.16 Technical Data of 50-Hz 3-Phase AC Motors
  - 3.16.1 2-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz
  - 3.16.2 4-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz
  - 3.16.3 2-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 50 Hz
  - 3.16.4 4-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 50 Hz
  - 3.16.5 2-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 50 Hz
  - 3.16.6 4-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 50 Hz
  - 3.16.7 4-Pole Motors, Series DU, Unventilated, Intermittent Duty Mode S3/S6, Supply Frequency 50 Hz
  - 3.16.8 4/2-Pole Motors,  $\Delta$ /YY, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz
  - 3.16.9 8/2-Pole Motors, Y/Y, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz
- 3.17 Technical Data of 60-Hz 3-Phase AC Motors
  - 3.17.1 2-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz
  - 3.17.2 4-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz
  - 3.17.3 2-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 60 Hz
  - 3.17.4 4-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 60 Hz
  - 3.17.5 2-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 60 Hz

- 3.17.6 4-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 60 Hz
- 3.17.7 4-Pole Motors, Series DU, Unventilated, Intermittent Duty Mode S3/S6, Supply Frequency 60 Hz
- 3.17.8 4/2-Pole Motors,  $\Delta$ /YY, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz
- 3.17.9 8/2-Pole Motors, Y/Y, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz
- 3.18 Technical Data of 50/60-Hz Variable Voltage Motors
  
- 4 Motor Attachments, Three-Phase and Single-Phase AC Motors
  - 4.1 Brakes
    - 4.1.1 Design Principle
    - 4.1.2 Overrun Tolerances
    - 4.1.3 Brake Model Designation
    - 4.1.4 Technical Data of Brakes
    - 4.1.5 Motor-Brake Combinations
    - 4.1.6 Electrical Connections
    - 4.1.7 Brake Connections when Running Off Frequency Converter
    - 4.1.8 Brake Connections for Pole-Changing Motors
    - 4.1.9 Manual Ventilation (HA, HN)
    - 4.1.10 Enclosure Rating
    - 4.1.11 Extra Corrosion Proofing
    - 4.1.12 CE Mark
  - 4.2 Motor Secondary Output Shaft (ZW)
  - 4.3 Pulse Generator (G)
  
- 5 Supplementary Dimensional Drawings for Motor Attachments and Motors without Gearbox
  - 5.1 Dimensional Drawing for Standard Version Terminal Box
  - 5.2 Dimensional Drawing for Terminal Box with Plug-in Connector (Standard Position)
  - 5.3 Dimensional Drawing for Standard Brake E003
  - 5.4 Dimensional Drawing for Motors with Cable Outlet
    - 5.4.1 Dimensional Drawing for Cable Lengths
  - 5.5 Dimensional Drawing for Motors with Secondary Output Shaft
  - 5.6 Dimensional Drawing for Motors without Gearbox, Surface Cooled
  - 5.7 Dimensional Drawing for Motors without Gearbox, Unventilated
  
- 6 Helical Geared Motors, Series BG
  - 6.1 Description of Helical Gearbox
    - 6.1.1 Sizes
    - 6.1.2 Type Designation and Modular Components of Series BG Helical Gearboxes
    - 6.1.3 Standard Orientation Options for Helical Geared Motors
    - 6.1.4 Positioning of Terminal Box and Cable Entry
    - 6.1.5 Bauer Load Factors ( $f_B$ ) for Helical Geared Motors
  - 6.2 Selection Tables for Helical Geared Motors**
  - 6.3 Dimensional Drawings for 3-Phase and Single-Phase AC Helical Geared Motors
  
- 7 Worm Geared Motors, Series BS
  - 7.1 Description of Worm Gearbox
    - 7.1.1 Sizes
    - 7.1.2 Type Designation and Modular Components of Series BS Worm Gearboxes
    - 7.1.3 Standard Orientation Options for Worm Geared Motors
    - 7.1.4 Positioning of Terminal Box and Cable Entry
    - 7.1.5 Efficiency
    - 7.1.6 Bauer Load Factors ( $f_B$ ) for Worm Geared Motors
  - 7.2 Selection Tables for Worm Geared Motors**
  - 7.3 Dimensional Drawings for 3-Phase and Single-Phase AC Worm Geared Motors
  
- 8 Single-Phase AC Motors**
  - 8.1 Power Supply Voltages
  - 8.2 Running Capacitor
  - 8.3 Speed Characteristics, Changing Direction of Rotation
  - 8.4 Motor Attachments and Motors without Gearboxes
  - 8.5 Technical Data of 50-Hz Single-Phase AC Motors
    - 8.5.1 2-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz
    - 8.5.2 4-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz
  - 8.6 Technical Data of 60-Hz Single-Phase AC Motors
    - 8.6.1 2-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz
    - 8.6.2 4-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz
  - 8.7 Type Codes for Helical Geared Motors
    - 8.7.1 Typical Designation of a Single-Phase AC Helical Geared Motor

<b>8.8</b>	<b>Selection Tables for Single-Phase AC Helical Geared Motors</b>
8.9	Dimensional Drawings for Single-Phase Helical Geared Motors
8.10	Type Codes for Worm Geared Motors
8.10.1	Typical Designation of a Single-Phase AC Worm Geared Motor
<b>8.11</b>	<b>Selection Tables for Single-Phase AC Worm Geared Motors</b>
8.12	Dimensional Drawings
<b>9</b>	<b>DC Permanent Magnet Motors</b>
9.1	EC Directives
9.1.1	Specification I
9.1.2	Specification II
9.2	Safety Note
9.3	Enclosure Rating
9.4	Insulation
9.5	External Finish, Corrosion Proofing
9.6	Motor Protection
9.7	Rated Speed
9.7.1	Speed Curves
9.7.2	Changing Speed
9.7.3	Changing Direction of Rotation
9.7.4	Starting Method
9.8	Rated Output
9.9	Power Supply Voltage
9.10	Filter
9.11	Brakes
9.12	Secondary Output Shaft
9.13	Pulse Generator
9.14	Power Converter Units for Open/Closed-Loop Speed Control
9.15	Technical Data of Motors
9.15.1	Specifications for Form Factor $F = 1.0$
9.15.2	Specifications for Form Factor $F = 1.2$
9.16	Fitting BAUER Gearboxes
9.16.1	Helical Gearbox
9.16.2	Shaft Mounted Gearbox
9.16.3	Bevel Gearbox
9.16.4	Worm Gearbox
9.17	Supplementary Dimensional Drawings for Motors and Motor Attachments
9.17.1	Motor Dimensional Drawing P-PN-PNF
9.17.2	Supplementary Dimensional Drawing for Motor Attachment N-PG
9.17.3	Supplementary Dimensional Drawing for Attached Brake N-PBR
9.17.4	Supplementary Dimensional Drawing for Fitted Pulse Generator N-PTA
9.17.5	Supplementary Dimensional Drawing for Power Rectifier in Motor Terminal Box N-PDS
9.17.6	Supplementary Dimensional Drawing for Secondary Output Shaft N-PZW
9.18	Type Codes for Helical Geared Motors
9.18.1	Typical Designation of a DC Permanent-Magnet Helical Geared Motor
<b>9.19</b>	<b>Selection Tables for DC Permanent-Magnet Helical Geared Motors</b>
9.20	Dimensional Drawings for DC Permanent-Magnet Helical Geared Motors
9.21	Type Codes for Worm Geared Motors
9.21.1	Typical Designation of a DC Permanent-Magnet Worm Geared Motor
<b>9.22</b>	<b>Selection Tables for DC Permanent-Magnet Worm Geared Motors</b>
9.23	Dimensional Drawings for DC Permanent-Magnet Worm Geared Motors
10	International Organisation

# Product Range

On request we can supply detailed technical information on all our products. In addition, there are free application-related brochures available which contain everything you need to know about practical use of geared motors.

## **Three-Phase AC Motors:**

- Helical geared motors
- Shaft mounted geared motors
- Bevel geared motors
- Worm geared motors
- Geared roller-table motors
- Roller-table motors
- Axial-cylinder motors
- Geared motors for monorail drives

## **Direct Current:**

- DC geared motors
- DC motors

## **Gearboxes:**

- Helical gearboxes
- Shaft mounted gearboxes
- Bevel gearboxes
- Worm gearboxes

## **Power Electronics:**

- Frequency converters
- Frequency converters attached to motor
- Frequency converters mounted in proximity to motor
- Power converter units
- Smooth-start and brake units
- Smooth change-over units for multi-speed motors

## **CD-ROM**

There is a CD-ROM available on request which considerably simplifies the process of selecting geared motors. The CD-ROM contains the details of the DG.. Catalogue product range and the three-phase AC geared motors in this catalogue as well as selection tables for pole-changing drive units, guides to selecting frequency converters and CAD dimensional drawings in .DXF file format..

## **Website**

More information is available on our website at [www.Danfoss-Bauer.com](http://www.Danfoss-Bauer.com)

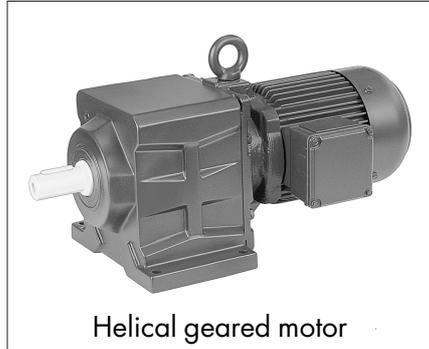
## **E-mail**

[SalesA@Danfoss-Bauer.de](mailto:SalesA@Danfoss-Bauer.de)



# Conditions of Supply

Supply of all products and services is subject exclusively to the Conditions of Supply of Danfoss Antriebs- und Regeltechnik GmbH. Dimensions, illustrations and descriptions are binding only as approximations subject to variation within the normal tolerances. Product designs are subject to change as a result of technical advances.





# 1 Characteristics of BAUER Geared Motors



- 1.1 BAUER Geared Motors**
  - Enclosure rating IP54 to EN 60034-5/EN 60529; also available with IP65 at extra cost on request. These motors are dustproof and sealed against occasional splash-water; they are not designed for use outdoors or in wet areas without special protection.
  - Gearbox and motor form a single, compact unit.
  - Every geared motor is subjected to a test run before delivery.
  - BAUER geared motors carry the CE mark.
  
- 1.2 BAUER Gearboxes**
  - We manufacture our own gearboxes
  - Tough cast gearbox housing
  - Wide variety of additional attachments possible
  - Gears designed according to the latest technological advances for high load capacity, quiet running and long service life
  - Designed for low-maintenance operation
  - Our gearboxes are lubricated for life. Please ask if you require motors for use in extreme operating conditions.
  - Output shafts and bearings designed to withstand high radial forces
  
- 1.3 BAUER Motors**
  - Three-phase AC, single-phase AC and DC permanent magnet motors manufactured at our own facilities.
  - AC motors available as single-speed or multi-speed models for 50 or 60 Hz. High quality windings make these motors also suitable for operation with converter supply.
  - BAUER motors conform to the requirements of EN60034-1.
  - Motor torque ratings matched to gearing
  - Available with plug-in electrical connections
  - Special winding designs available for special applications
  
- 1.4 BAUER Motor Brakes**
  - Enclosure rating IP54
  - High work capacity
  - Braking torque can be optimised to suit application
  - Brakes and wearing parts quick and easy to replace due to maintenance-friendly design
  - Manual-ventilation designs available



## 2 Important Notes



### 2.1 Information Required for Enquiries and Orders

#### 2.1.1 Standard Versions

- Effective torque requirement at the output shaft excluding safety margin according to calculations, measurement or estimation
- Required rated output including all margins
- Speed  $n_2$  at the output shaft at rated output
- Load factor or all details required for calculation of the load factor
- Load applied to output shaft by external forces with details of direction of force and distance of point of application from shaft collar (especially important for chainwheels, gears, V-belts or flat belts)
- Operating voltage and frequency
- Connection to terminal board or start-up mode
- Installation site/orientation
- Terminal box arrangement

#### 2.1.2 Notes for Ordering

When ordering please refer to any quotation received. If ordering replacements, please quote the motor number from the original order so that any special design features can be taken account of.

The form overleaf (2.2) will assist with the preparation of enquiries and orders.

#### 2.1.3 Assistance with Drive Unit Design

Our staff are available to assist you with planning and design.

## 2.2 Enquiry/Order Form

- Enquiry  
 Order  
(Please tick)

Bauer Antriebstechnik GmbH  
Fax: +49 (0711) 3518 381

Company \_\_\_\_\_  
Street/PO Box \_\_\_\_\_  
Postcode/Town \_\_\_\_\_  
Your ref. \_\_\_\_\_ Date \_\_\_\_\_  
Enquiry/Order no. \_\_\_\_\_  
Type of application \_\_\_\_\_  
(e.g. roller/worm conveyor, lifting drive, etc.)

**Quantity** \_\_\_\_\_ **Required delivery date** \_\_\_\_\_

Model \_\_\_\_\_

Output(s) \_\_\_\_\_ kW

Output shaft speed(s) \_\_\_\_\_ rpm

Torque rating(s) \_\_\_\_\_ Nm Load factor  $f_B =$  \_\_\_\_\_

Installation site/style \_\_\_\_\_ Terminal box position \_\_\_\_\_

Paint finish **RAL 7031** or Special RAL colour \_\_\_\_\_

Corrosion-proofing **Standard** or CORO1/CORO2/CORO3

Rated voltage \_\_\_\_\_ V Circuit \_\_\_\_\_

Frequency \_\_\_\_\_ Hz Temperature class \_\_\_\_\_

Thermistors \_\_\_\_\_ Thermostats \_\_\_\_\_

If run from converter Speeds from \_\_\_\_\_ rpm to \_\_\_\_\_ rpm

With attached converter Yes \_\_\_\_\_ No \_\_\_\_\_

Gearbox design \_\_\_\_\_ Pedestal with plain holes  
\_\_\_\_\_ Flange with plain holes,  $D =$  \_\_\_\_\_ mm  
\_\_\_\_\_ Flange with threaded holes  
\_\_\_\_\_ Torque brace with rubber buffers  
\_\_\_\_\_ Pedestal with threaded holes at bottom

Output shaft \_\_\_\_\_ Solid shaft  
\_\_\_\_\_ Hollow shaft with woodruff-key slot  
\_\_\_\_\_ Hollow shaft for contraction-fit pulley

Engine attachments \_\_\_\_\_ with brake

Model \_\_\_\_\_  $M_{Br} =$  \_\_\_\_\_ Nm

$U_{Br} =$  \_\_\_\_\_ V \_\_\_\_\_ Hz or \_\_\_\_\_ V DC

With/without manual ventilation

Special designs \_\_\_\_\_  
\_\_\_\_\_

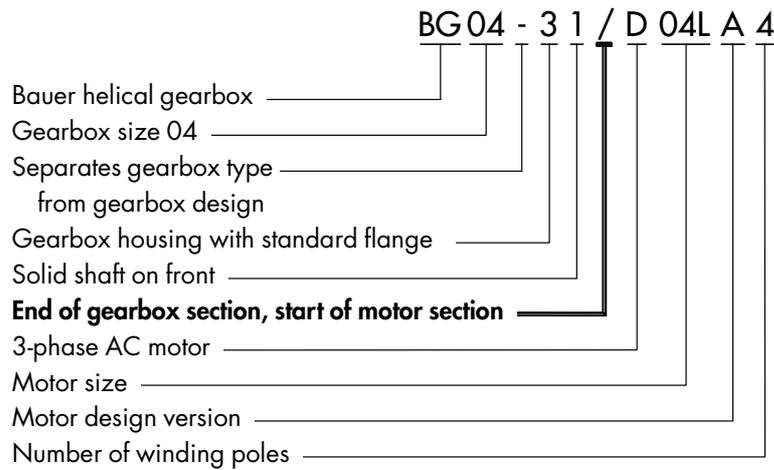
Signed \_\_\_\_\_

- 2.3 Orientation of Geared Motors** BAUER geared motors can be supplied for any installation position. If the unit is to be positioned with the motor section underneath the gearbox, the shaft seal between the motor and gearbox is subject to particularly high stresses. This particular orientation should therefore be avoided if high motor speeds are to be used.
- 2.4 Safety Instructions** When installing, please observe the safety instructions on Instruction Sheet 122...
- 2.4.1 Safety Guards on Rotating Components** The safety guards required by the German legislation on the safety of industrial technical equipment and accident prevention are not included as part of the standard specifications of the motors as their function is often performed by existing structures at the installation site and the risk of accident can be prevented by appropriate siting of the motor.  
Please observe the instructions on Instruction Sheet 122...
- 2.4.2 Touch Guards** The small D04LA and D05LA models have a motor housing with a smooth exterior. These versions have a number of advantages over the ribbed motor housings, especially for applications in the textile, pharmaceutical, food and equipment manufacturing industries. The surface temperature technically inherent in the smooth housings, especially when the motor is in constant operation, can make the fitting of a touch guard necessary in some cases.
- 2.5 Radial and Axial Forces on the Output Shaft** The output shafts and output-shaft bearings are dimensioned to suit the specific torque levels encountered. It is advisable to position the point of action of the transmission component as close as possible to the shaft collar in order to keep the loads resulting from external radial forces within reasonable limits. The permissible levels for the radial forces relative to the centre of the output shaft are detailed in the selection tables. If there are likely to be unusually high axial loads, we recommend that you seek advice from us.
- 2.6 Dimensions and Fits for Output Shafts and Keyways** The output shafts and second motor shaft ends as well as the keys and keyways are manufactured to the following DIN and ISO standards:
- Solid Shafts**
- |                |   |
|----------------|---|
| Shaft diameter | Up to D = 50 mm in ISO k6 (DIN 748 p. 1)<br>Over D = 50 mm in ISO m6 (DIN 748 p. 1) |
| Keyway         | ISO P9 (DIN 6885 p. 1)  |
| Key, high type | ISO h9 (DIN 6885 p. 1 and DIN 6880)   |
| Fitting bore   | ISO H7  |
- Hollow Shaft with Keyway**
- |                |                                     |
|----------------|-------------------------------------|
| Bore diameter  | ISO H7 (DIN 748)                    |
| Keyway         | ISO JS9 (DIN 6885 p. 1)             |
| Key, high type | ISO h9 (DIN 6885 p. 1 and DIN 6880) |
| Fitting shaft  | ISO h6                              |
- 2.7 Fitting Transmission Components**
- 2.7.1 Gearbox with Solid Shaft** The fitting of transmission components to the output shaft must be performed with care and, wherever possible, using the DIN 332 threaded hole provided. Heating the machine component to approx. 100° C has been shown to be helpful. The bore must be dimensioned in accordance with ISO H7.  
In the case of gearboxes with solid shafts on both ends (gearbox code -.3/), the tolerances as per DIN 7168, accuracy level "fine", apply to the alignment of the two keyways.
- 2.7.2 Gearboxes with Hollow Shaft** Hollow shafts are normally fitted onto solid shafts on the customer's equipment. The gearbox must be supported. If the hollow shaft is to act as a guide for a solid shaft inserted in it or if, for other reasons, a strict circular run-out tolerance relative to a reference point on the gearbox housing (e.g. a flange) is required, this must be agreed separately.

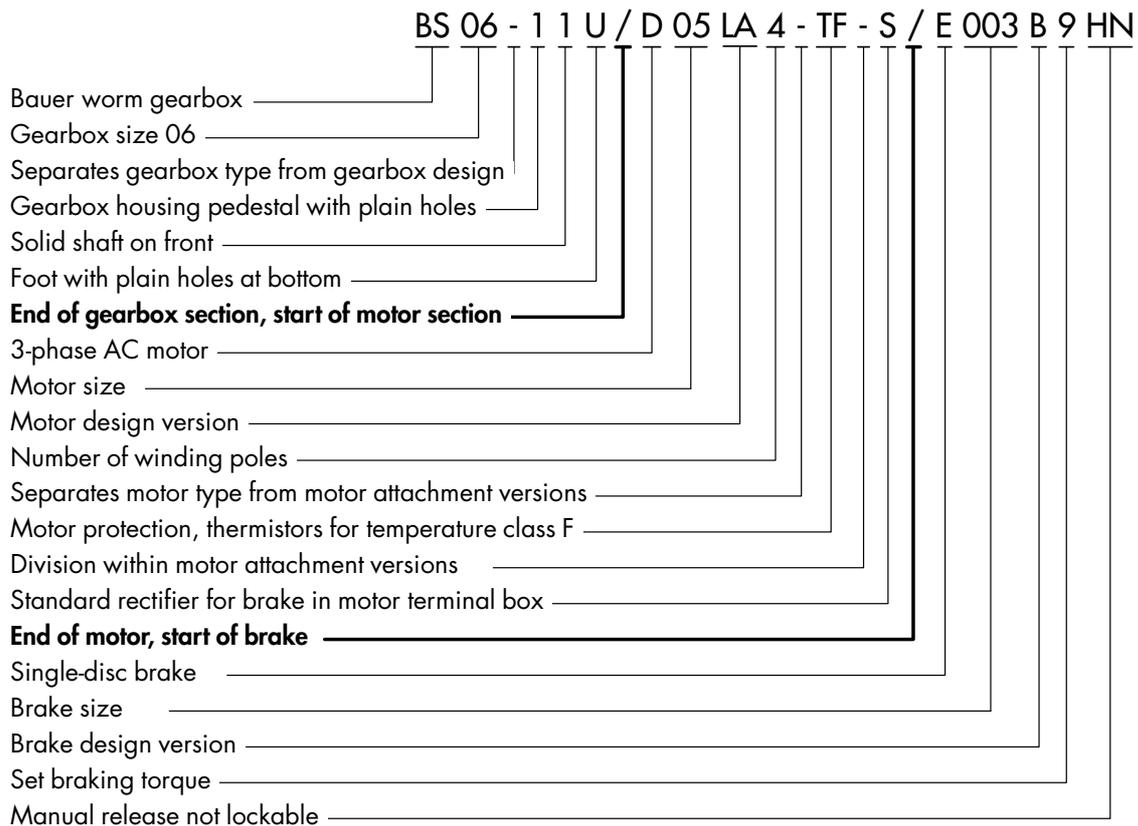
## 2.8 Model Designation

The model designation of a BAUER geared motor indicates all significant aspects of its design.

### 2.8.1 Bauer Helical Geared Motor



### 2.8.2 Bauer Worm Geared Motor with Brake and Listed Attachment Versions



### 3 Three-Phase AC Motors



BAUER geared motors for connection to a three-phase AC power supply are supplied with specially adapted asynchronous motors. The design enables the achievement of the highest levels of operational reliability coupled with high starting torque and low starting current.

Torque dips on the torque/speed curve are almost non-existent. The torque levels are optimised to suit the requirements and type of application of the motor. More information can be found in the BAUER Special Publication SD4...

#### 3.1 Torque Specifications

The torque figures quoted in the selection tables represent the levels fully effective at the output shaft. They apply at the maximum ambient temperature of 40° C and up to an installation altitude of 1000 m above sea level. Drive units for higher temperatures or altitudes are available on request. Gearbox efficiency levels that are below the normal levels for helical gearing are taken into account in the torque figures in the selection tables.

#### 3.2 Power Supply Ratings

BAUER motors are available as standard for the following 3-phase AC power supply ratings:

Motor size	Standard power supply ratings
D04LA4 - D05LA4	220 V $\Delta$ / 380 V Y 50 Hz
0.03 - 0.25 kW	230 V $\Delta$ / <b>400 V Y 50 Hz *</b>
	440 V Y / 60 Hz
	460 V Y / 60 Hz

\* = Voltage recommended by IEC 38 worldwide and by CENELEC in Europe.

Versions for other power supply ratings are available on request at extra cost.

Unless specified otherwise, a tolerance of +/- 5% as per IEC 60034-1 applies to the rated voltage.

4-pole motors with variable-voltage winding are available for international use (motor series DV...).

Motors with variable-voltage winding are suitable for the following voltage ranges:

200 ... 255 V  $\Delta$  / 380 ... 440 V Y 50 Hz, and

200 ... 280 V  $\Delta$  / 380 ... 480 V Y 60 Hz

(with same output as 50 Hz) and

240 ... 280 V  $\Delta$  / 420 ... 480 V Y 60 Hz

(with same torque as 50 Hz).

These voltage ranges may also vary by a tolerance of +/- 5%.

For applications in which the acceleration characteristics of the motor are important, the variable-voltage windings should not be used without first seeking advice as the starting and stalling torque levels vary by over 100% depending on power supply voltage.

### 3.3 Power Supply Frequencies

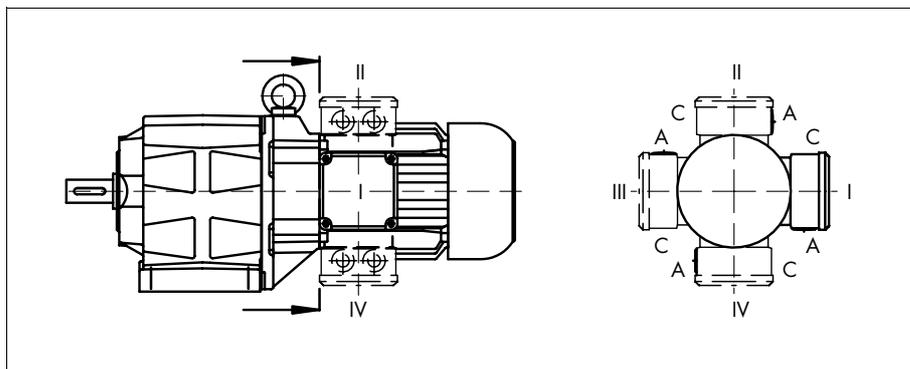
All motors are available for a power supply frequency of either 50 or 60 Hz with the same output rating. Higher-output versions are available on request.

### 3.4 Rating Plate

BAUER geared motors are supplied as standard with a corrosion-proof rating plate. The standard rating plate is made of a special plastic that has been practice-proven over many years and is approved by the German PTB authority (Physikalisch-Technische-Bundesanstalt) for use in explosive atmospheres.

### 3.5 Terminal Box

The power cable can be fed into the motor terminal box from side A or C on models with or without brake.



The standard position of the motor terminal block is illustrated in the dimensional drawings of the geared motors (see Sections 6.3, 7.3, 8.9, 8.12, 9.20 and 9.23). If the space constraints of the installation site so demand, the terminal box can also be fixed in one of three other positions. The four possible positions represent movement of the terminal box through 90° relative to the motor axis (for dimensions and terminal box designation for standard version, see Section 5.1).

The terminal box can be supplied with PG or metric thread. Metric thread is the standard as of 01/01/2000.

### 3.6 Plug Connection

Size D04 and D05 BAUER motors are available with plug-in motor connections. Please ask if you require this option.

- 3.7 Motor Protection** To protect the motor windings, the switchgear for every geared motor has to be fitted with a current-dependent safety circuit-breaker or a thermally delayed excess-current relay. The details of the motor nominal currents required for setting the protective devices are quoted in the order acceptance confirmation. In the case of exceptional operating conditions (short or intermittent duty, high switching frequency, wide voltage fluctuations or impairment of cooling) and in the case of frequency converter operation, a thermal winding cut-out is also strongly recommended as an added means of protection.
- 3.7.1 Thermistors and PTC Sensors** Thermistors are temperature-dependent resistors that are fitted in each winding phase. In conjunction with an additional motor circuit-breaker, they enable the achievement of optimum winding protection even in the event of rapid rises in temperature. Characteristic to DIN 44081 and "Mark A" as per IEC 34-11-2. Thermistors are available on all motors at extra charge. The trigger device required is not supplied.
- 3.7.2 Thermostats (bi-metallic switches)** Thermostats are small bi-metallic switches that are incorporated in each winding phase and respond to gradual rises in temperature. Thermostats are available on all motors at extra charge.
- 3.8 Insulation** The geared motors listed in the selection tables in this catalogue conform to the requirements of temperature class B.  
Temperature class F compliance can be supplied on request at extra charge.
- 3.9 Enclosure Rating** Motor sizes D04 and D05 are supplied with a smooth outer surface to IP 54 (IP 65 available on request at extra charge). All motor terminal boxes conform to IP 65.
- 3.10 Extra Corrosion Resistance** If a greater level of corrosion resistance is required, BAUER geared motors can be supplied finished in the "CORO1" two-component external coating.
- 3.11 Speed of Output Shaft** The rated speeds quoted in the selection tables are guide figures based on load at rated output. They may vary (especially in the case of relatively small motors) according to load and motor temperature. Lower speeds are available on request by combining gearboxes.
- 3.12 Operating Mode** The single-speed motors listed in the tables are suitable for "Continuous mode S1".  
However, many drive units are operated in "Intermittent mode S3" or "Short duty mode S2". In such cases, unventilated motor components can also be used if required at extra charge.

### 3.13 CE Mark

BAUER geared motors carry the CE mark.

They conform to

- the **Machines Directive (89/392/EEC)**  
manufacturer's declaration available on request
- the **Low Voltage Directive (73/23/EEC)**  
documented by CE mark
- the **EMC Directive (89/336/EEC)**  
documented by CE mark
- the **Explosive Atmospheres Directive (94/9/EC)** (only for motors with "enhanced safety" rating EEx e)  
documented by CE mark; PTB design approval certificate and EC manufacturer's declaration supplied

For more information, refer to Danfoss Bauer Special Publication SD33.. .

### 3.14 Foreign Regulations

The electrical design of the motors conforms to the standard of the International Electrotechnical Commission (**IEC**) which is currently recognised by the following countries: Australia, Belgium, Denmark, Germany, Finland, France, United Kingdom, CIS, Israel, Italy, Japan, South Korea, Austria, Poland, Sweden, Switzerland, Slovakia, South Africa, Czech Republic, Turkey and Hungary.

Geared motors for export to North America conforming to the requirements of the Canadian Standards Association (**CSA**) or the National Electrical Manufacturers Association (**NEMA** or **ANSI**) can be supplied on request.

### 3.15 Frequency Converter Operation

The high quality of the windings in BAUER geared motors makes them entirely suitable for running on a frequency converter. The torque figures quoted in the catalogue for continuous duty at 30 to 50 Hz are also achievable with frequency converter operation. Any BAUER geared motor can be operated for short periods (in modes S2, S3 or S4) from a frequency converter at very low frequencies with full torque (e.g. for positioning operations). Wider speed adjustment ranges are possible.

Please specify the required frequency range in your order so that the motor can be suitably dimensioned (Y circuit for 50 or 60 Hz frequency, or Y circuit for 87 or 104 Hz frequency).

Our staff will be happy to advise on dimensioning. For more information, refer to Danfoss Bauer Special Publication SD29.. .

### 3.16 Technical Data of 50-Hz 3-Phase AC Motors

<b>50 Hz</b>
--------------

#### 3.16.1 2-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW		rpm	Nm	A							kgm <sup>2</sup>	
0,12	<b>D04LA2</b>	2700	0,410	0,430	Y	0,75	3,6	2,2	2,2	2,2	0,000110	E003B9
0,15	<b>D04LA2</b>	2700	0,52	0,50	Y	0,75	3,6	2,0	2,0	2,0	0,000110	E003B9
0,18	<b>D04LA2</b>	2700	0,63	0,60	Y	0,75	3,6	2,0	2,0	2,0	0,000110	E003B9
0,25	<b>D05LA2</b>	2700	0,88	0,71	Y	0,80	4,0	1,9	1,9	2,0	0,000200	E003B9
0,30	<b>D05LA2</b>	2700	1,05	1,05	Y	0,80	3,6	2,1	2,1	2,2	0,000200	E003B9
0,37	<b>D05LA2</b>	2700	1,30	1,05	Y	0,80	3,6	1,7	1,7	1,8	0,000200	E003B9

#### 3.16.2 4-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW		rpm	Nm	A							kgm <sup>2</sup>	
0,030	<b>D04LA4</b>	1350	0,210	0,160	Y	0,63	2,5	2,4	2,4	2,7	0,000175	E003B9
0,040	<b>D04LA4</b>	1350	0,280	0,180	Y	0,63	2,9	2,0	2,0	2,1	0,000175	E003B9
0,060	<b>D04LA4</b>	1350	0,420	0,370	Y	0,69	2,9	2,0	2,0	2,1	0,000175	E003B9
0,09	<b>D04LA4</b>	1350	0,63	0,460	Y	0,69	2,6	2,4	2,3	2,4	0,000175	E003B9
0,12	<b>D04LA4</b>	1350	0,84	0,450	Y	0,73	2,7	1,6	1,6	1,8	0,000175	E003B9
0,060	<b>D05LA4</b>	1350	0,420	0,350	Y	0,72	3,7	3,7	3,5	3,7	0,000295	E003B9
0,09	<b>D05LA4</b>	1350	0,63	0,380	Y	0,70	3,9	3,0	2,8	3,0	0,000295	E003B9
0,12	<b>D05LA4</b>	1350	0,85	0,420	Y	0,73	3,4	2,2	2,1	2,2	0,000295	E003B9
0,18	<b>D05LA4</b>	1350	1,28	0,63	Y	0,70	3,4	2,3	2,2	2,4	0,000295	E003B9
0,25	<b>D05LA4</b>	1350	1,75	0,88	Y	0,69	3,3	2,3	2,2	2,3	0,000295	E003B9

#### 3.16.3 2-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 50 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW		rpm	Nm	A							kgm <sup>2</sup>	
0,040	<b>DU04LA2</b>	2700	0,140	0,140	Y	0,67	4,4	2,6	2,5	2,7	0,000110	E003B9
0,060	<b>DU04LA2</b>	2700	0,210	0,230	Y	0,71	4,4	2,5	2,5	2,5	0,000110	E003B9
0,075	<b>DU04LA2</b>	2700	0,260	0,290	Y	0,71	4,4	2,6	2,6	2,6	0,000110	E003B9
0,12	<b>DU05LA2</b>	2700	0,420	0,360	Y	0,75	4,6	2,2	2,1	2,3	0,000200	E003B9
0,15	<b>DU05LA2</b>	2700	0,53	0,450	Y	0,75	4,5	2,2	2,2	2,3	0,000200	E003B9

- P Rated output at 50 Hz supply frequency
- n Guide figure for rated speed at rotor shaft at 50 Hz supply frequency
- M<sub>N</sub> Rated torque at rotor shaft
- I<sub>N</sub> Rated current at 400 V (the current for special voltages can be calculated on the basis of the current at 400 V as it alters in inverse proportion to voltage)
- cos φ Power factor
- I<sub>A</sub>/I<sub>N</sub> Relative starting current
- M<sub>A</sub>/M<sub>N</sub> Relative starting torque
- M<sub>S</sub>/M<sub>N</sub> Relative pull-up torque
- M<sub>K</sub>/M<sub>N</sub> Relative stalling torque
- J<sub>rot</sub> Mass inertia of rotor
- Brake Recommended standard brake for normal requirements

Standard motor winding designed for 400 V / 50 Hz

Note: current, power factor, and torque vary if voltage deviates from 400 V.

For more information, refer to Danfoss Bauer Special Publication SD4..

### 3.16.4 4-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 50 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW		rpm	Nm	A							kgm <sup>2</sup>	
0,030	<b>DU04LA4</b>	1350	0,210	0,140	Y	0,63	2,8	2,4	2,2	2,7	0,000175	E003B9
0,040	<b>DU04LA4</b>	1350	0,280	0,180	Y	0,63	2,8	2,0	2,0	2,1	0,000175	E003B9
0,055	<b>DU04LA4</b>	1350	0,400	0,220	Y	0,67	2,9	1,9	1,9	2,0	0,000175	E003B9
0,060	<b>DU05LA4</b>	1350	0,420	0,350	Y	0,72	3,7	3,7	3,7	3,7	0,000295	E003B9
0,09	<b>DU05LA4</b>	1350	0,64	0,450	Y	0,70	3,3	3,3	3,3	3,3	0,000295	E003B9
0,12	<b>DU05LA4</b>	1350	0,85	0,450	Y	0,71	2,3	2,0	2,0	2,0	0,000295	E003B9

### 3.16.5 2-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 50 Hz

P	DF	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW			rpm	Nm	A							kgm <sup>2</sup>	
0,25	15%	<b>D04LA2</b>	2700	0,88	0,75	Y	0,75	3,6	1,8	1,7	1,8	0,000110	E003B9
0,55	15%	<b>D05LA2</b>	2700	1,93	1,42	Y	0,85	2,2	1,4	1,4	1,5	0,000200	E003B9

### 3.16.6 4-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 50 Hz

P	DF	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW			rpm	Nm	A							kgm <sup>2</sup>	
0,15	15%	<b>D04LA4</b>	1350	1,05	0,60	Y	0,77	2,0	1,6	1,5	1,6	0,000175	E003B9
0,30	15%	<b>D05LA4</b>	1350	2,1	0,98	Y	0,75	2,6	1,9	1,8	1,9	0,000295	E003B9

### 3.16.7 4-Pole Motors, Series DU, Unventilated, Intermittent Duty Mode S3/S6, Supply Frequency 50 Hz

P	DF	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW			rpm	Nm	A							kgm <sup>2</sup>	
0,12	15%	<b>DU04LA4</b>	1350	0,84	0,460	Y	0,67	2,7	1,8	1,8	1,9	0,000175	E003B9
0,25	15%	<b>DU05LA4</b>	1350	1,76	0,80	Y	0,82	2,5	1,4	1,4	1,5	0,000295	E003B9

- P** Rated output at 60 Hz supply frequency, duty mode S3/S6  
**DF** Permissible relative duty factor per operating cycle  
**n** Guide figure for rated speed at rotor shaft at 60 Hz supply frequency  
**M<sub>N</sub>** Rated torque at rotor shaft  
**I<sub>N</sub>** Rated current at 400 V (the current for special voltages can be calculated on the basis of the current at 400 V as it alters in inverse proportion to voltage)  
**cos φ** Power factor  
**I<sub>A</sub>/I<sub>N</sub>** Relative starting current  
**M<sub>A</sub>/M<sub>N</sub>** Relative starting torque  
**M<sub>S</sub>/M<sub>N</sub>** Relative pull-up torque  
**M<sub>K</sub>/M<sub>N</sub>** Relative stalling torque  
**J<sub>rot</sub>** Mass inertia of rotor  
**Brake** Recommended standard brake for normal requirements (see 4.1)

Standard motor winding designed for 400 V / 50 Hz

For more information, refer to Danfoss Bauer Special Publication SD4..

### 3.16.8 4/2-Pole Motors, /YY, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N</sub> (400 V) A	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,030/0,060	<b>D04LA42</b>	1350/2700	0,210/0,210	0,230/0,250	Δ/YY	0,56/0,67	2,2/3,1	3,4/3,1	3,4/3,1	3,6/3,3	0,000175	E003B9
0,040/0,08	<b>D04LA42</b>	1350/2700	0,280/0,280	0,250/0,280	Δ/YY	0,60/0,75	2,0/2,8	3,0/2,1	3,0/2,1	3,3/2,2	0,000175	E003B9
0,060/0,12	<b>D05LA42</b>	1350/2700	0,420/0,420	0,450/0,450	Δ/YY	0,50/0,75	2,8/3,3	3,1/2,0	3,0/1,9	3,8/2,6	0,000295	E003B9
0,08/0,16	<b>D05LA42</b>	1350/2700	0,56/0,56	0,50/0,50	Δ/YY	0,55/0,75	2,8/3,3	3,1/1,8	2,7/1,7	3,4/2,3	0,000295	E003B9

### 3.16.9 8/2-Pole Motors, Y/Y, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N</sub> (400 V) A	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,030/0,12	<b>D05LA82</b>	680/2700	0,420/0,420	0,300/0,60	Y/Y	0,63/0,75	1,6/3,4	2,0/2,1	2,0/2,0	2,0/2,2	0,000295	E003B9

- P Rated output at 50 Hz supply frequency
- n Guide figure for rated speed at rotor shaft at 50 Hz supply frequency
- M<sub>N</sub> Rated torque at rotor shaft
- I<sub>N</sub> Rated current at 400 V Δ/YY and Y/Y (the current for special voltages can be calculated on the basis of the current at 400 V as it alters in inverse proportion to voltage)
- cos φ Power factor
- I<sub>A</sub>/I<sub>N</sub> Relative starting current
- M<sub>A</sub>/M<sub>N</sub> Relative starting torque
- M<sub>S</sub>/M<sub>N</sub> Relative pull-up torque
- M<sub>K</sub>/M<sub>N</sub> Relative stalling torque
- J<sub>rot</sub> Mass inertia of rotor
- Brake Recommended standard brake for normal requirements (see 4.1)

### 3.17 Technical Data of 60-Hz 3-Phase AC Motors

<b>60 Hz</b>
--------------

#### 3.17.1 2-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N</sub> (460 V) A	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,12	<b>D04LA2</b>	3240	0,340	0,400	Y	0,75	3,9	2,4	2,4	2,4	0,000110	E003B9
0,15	<b>D04LA2</b>	3240	0,430	0,460	Y	0,75	3,9	2,2	2,2	2,2	0,000110	E003B9
0,18	<b>D04LA2</b>	3240	0,52	0,56	Y	0,75	3,9	2,2	2,2	2,2	0,000110	E003B9
0,25	<b>D05LA2</b>	3240	0,73	0,65	Y	0,80	4,4	2,1	2,1	2,2	0,000200	E003B9
0,30	<b>D05LA2</b>	3240	0,87	0,97	Y	0,80	3,9	2,3	2,3	2,4	0,000200	E003B9
0,37	<b>D05LA2</b>	3240	1,08	0,97	Y	0,80	3,9	1,9	1,9	2,0	0,000200	E003B9

#### 3.17.2 4-Pole Motors, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N</sub> (460 V) A	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,030	<b>D04LA4</b>	1620	0,170	0,150	Y	0,63	2,8	2,6	2,6	3,0	0,000175	E003B9
0,040	<b>D04LA4</b>	1620	0,230	0,160	Y	0,63	3,2	2,2	2,2	2,3	0,000175	E003B9
0,060	<b>D04LA4</b>	1620	0,350	0,280	Y	0,60	3,2	3,1	3,1	3,1	0,000175	E003B9
0,09	<b>D04LA4</b>	1620	0,52	0,430	Y	0,69	2,8	2,6	2,5	2,6	0,000175	E003B9
0,12	<b>D04LA4</b>	1620	0,70	0,390	Y	0,73	3,0	1,8	1,8	2,0	0,000175	E003B9
0,060	<b>D05LA4</b>	1620	0,350	0,320	Y	0,72	4,1	4,1	3,8	4,1	0,000295	E003B9
0,09	<b>D05LA4</b>	1620	0,52	0,350	Y	0,70	4,3	3,3	3,1	3,3	0,000295	E003B9
0,12	<b>D05LA4</b>	1620	0,70	0,380	Y	0,73	3,7	2,4	2,3	2,4	0,000295	E003B9
0,18	<b>D05LA4</b>	1620	1,06	0,58	Y	0,70	3,7	2,5	2,4	2,6	0,000295	E003B9
0,25	<b>D05LA4</b>	1620	1,45	0,80	Y	0,69	3,6	2,5	2,4	2,5	0,000295	E003B9

#### 3.17.3 2-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 60 Hz

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N</sub> (460 V) A	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,040	<b>DU04LA2</b>	3240	0,110	0,130	Y	0,67	4,8	2,9	2,8	3,0	0,000110	E003B9
0,060	<b>DU04LA2</b>	3240	0,180	0,220	Y	0,71	4,8	2,8	2,8	2,8	0,000110	E003B9
0,075	<b>DU04LA2</b>	3240	0,210	0,270	Y	0,71	4,8	2,9	2,9	2,9	0,000110	E003B9
0,12	<b>DU05LA2</b>	3240	0,350	0,340	Y	0,75	5,0	2,4	2,3	2,5	0,000200	E003B9
0,15	<b>DU05LA2</b>	3240	0,440	0,410	Y	0,75	4,9	2,4	2,4	2,5	0,000200	E003B9

- P Rated output at 60 Hz supply frequency
- n Guide figure for rated speed at rotor shaft at 60 Hz supply frequency
- M<sub>N</sub> Rated torque at rotor shaft
- I<sub>N</sub> Rated current at 460 V (the current for special voltages can be calculated on the basis of the current at 460 V as it alters in inverse proportion to voltage)
- cos φ Power factor
- I<sub>A</sub>/I<sub>N</sub> Relative starting current
- M<sub>A</sub>/M<sub>N</sub> Relative starting torque
- M<sub>S</sub>/M<sub>N</sub> Relative pull-up torque
- M<sub>K</sub>/M<sub>N</sub> Relative stalling torque
- J<sub>rot</sub> Mass inertia of rotor
- Brake Recommended standard brake for normal requirements

Standard motor winding designed for 460 V / 60 Hz

Note: current, power factor, and torque vary if voltage deviates from 460 V.

For more information, refer to Danfoss Bauer Special Publication SD4.. .

### 3.17.4 4-Pole Motors, Series DU, Unventilated, Continuous Duty Mode S1, Supply Frequency 60 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (460 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW		rpm	Nm	A							kgm <sup>2</sup>	
0,030	<b>DU04LA4</b>	1620	0,180	0,130	Y	0,63	3,1	2,7	2,7	3,0	0,000175	E003B9
0,040	<b>DU04LA4</b>	1620	0,230	0,170	Y	0,63	3,1	2,2	2,2	2,3	0,000175	E003B9
0,055	<b>DU04LA4</b>	1620	0,330	0,200	Y	0,67	3,2	2,1	2,1	2,2	0,000175	E003B9
0,060	<b>DU05LA4</b>	1620	0,350	0,330	Y	0,72	4,1	4,1	4,1	4,1	0,000295	E003B9
0,09	<b>DU05LA4</b>	1620	0,53	0,420	Y	0,70	3,6	3,7	3,7	3,7	0,000295	E003B9
0,12	<b>DU05LA4</b>	1620	0,70	0,420	Y	0,71	2,5	2,2	2,2	2,2	0,000295	E003B9

### 3.17.5 2-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 60 Hz

P	DF	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW			rpm	Nm	A							kgm <sup>2</sup>	
0,25	15%	<b>D04LA2</b>	3240	0,73	0,69	Y	0,75	3,9	2,0	1,9	2,0	0,000110	E003B9
0,55	15%	<b>D05LA2</b>	3240	1,60	1,31	Y	0,85	2,4	1,5	1,5	1,7	0,000200	E003B9

### 3.17.6 4-Pole Motors, Series D, Surface Cooled, Intermittent Duty Mode S3/S6, Supply Frequency 60 Hz

P	DF	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW			rpm	Nm	A							kgm <sup>2</sup>	
0,15	15%	<b>D04LA4</b>	1620	0,87	0,56	Y	0,77	2,2	1,8	1,7	1,8	0,000175	E003B9
0,30	15%	<b>D05LA4</b>	1620	1,75	0,90	Y	0,75	2,8	2,1	2,0	2,1	0,000295	E003B9

### 3.17.7 4-Pole Motors, Series DU, Unventilated, Intermittent Duty Mode S3/S6, Supply Frequency 60 Hz

P	DF	Type	n	M <sub>N</sub>	I <sub>N</sub> (400 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	Standard Brake
kW			rpm	Nm	A							kgm <sup>2</sup>	
0,12	15%	<b>DU04LA4</b>	1620	0,70	0,430	Y	0,67	3,0	2,0	2,0	2,1	0,000175	E003B9
0,25	15%	<b>DU05LA4</b>	1620	1,46	0,74	Y	0,82	2,7	1,5	1,5	1,7	0,000295	E003B9

- P Rated output at 60 Hz supply frequency, duty mode S3/S6
- DF Permissible relative duty factor per operating cycle
- n Guide figure for rated speed at rotor shaft at 60 Hz supply frequency
- M<sub>N</sub> Rated torque at rotor shaft
- I<sub>N</sub> Rated current at 460 V (the current for special voltages can be calculated on the basis of the current at 460 V as it alters in inverse proportion to voltage)
- cos φ Power factor
- I<sub>A</sub>/I<sub>N</sub> Relative starting current
- M<sub>A</sub>/M<sub>N</sub> Relative starting torque
- M<sub>S</sub>/M<sub>N</sub> Relative pull-up torque
- M<sub>K</sub>/M<sub>N</sub> Relative stalling torque
- J<sub>rot</sub> Mass inertia of rotor
- Brake Recommended standard brake for normal requirements (see 4.1)

Standard motor winding designed for 460 V / 60 Hz

For more information, refer to Danfoss Bauer Special Publication SD4..

### 3.17.8 4/2-Pole Motors, /YY, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N</sub> (400 V) A	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,030/0,060	<b>D04LA42</b>	1620/3240	0,160/0,170	0,200/0,230	Δ/YY	0,56/0,67	2,4/3,4	3,8/3,4	3,8/3,4	4,0/3,7	0,000175	E003B9
0,040/0,08	<b>D04LA42</b>	1620/3240	0,230/0,230	0,230/0,260	Δ/YY	0,60/0,75	2,2/3,1	3,3/2,3	3,3/2,3	3,7/2,4	0,000175	E003B9
0,060/0,12	<b>D05LA42</b>	1620/3240	0,350/0,350	0,420/0,420	Δ/YY	0,50/0,75	3,1/3,6	3,4/2,2	3,3/2,1	4,2/2,9	0,000295	E003B9
0,08/0,16	<b>D05LA42</b>	1620/3240	0,470/0,470	0,460/0,460	Δ/YY	0,55/0,75	3,1/3,6	3,1/2,0	3,0/1,9	3,8/2,5	0,000295	E003B9

### 3.17.9 8/2-Pole Motors, Y/Y, Series D, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N</sub> (400 V) A	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>S</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,030/0,12	<b>D05LA82</b>	810/3240	0,350/0,350	0,280/0,56	Y/Y	0,63/0,75	1,8/3,7	2,2/2,3	2,2/2,2	2,2/2,4	0,000295	E003B9

- P Rated output at 60 Hz supply frequency
- n Guide figure for rated speed at rotor shaft at 60 Hz supply frequency
- M<sub>N</sub> Rated torque at rotor shaft
- I<sub>N</sub> Rated current at 460 V Δ/YY (the current for special voltages can be calculated on the basis of the current at 460 V as it alters in inverse proportion to voltage)
- cos φ Power factor
- I<sub>A</sub>/I<sub>N</sub> Relative starting current
- M<sub>A</sub>/M<sub>N</sub> Relative starting torque
- M<sub>S</sub>/M<sub>N</sub> Relative pull-up torque
- M<sub>K</sub>/M<sub>N</sub> Relative stalling torque
- J<sub>rot</sub> Mass inertia of rotor
- Brake Recommended standard brake for normal requirements (see 4.1)

### 3.18 Technical Data of 50/60-Hz Variable Voltage Motors

P kW	Type	n rpm	M <sub>N</sub> Nm	I <sub>N max</sub> Y/Δ A	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub> *	M <sub>S</sub> /M <sub>N</sub> *	M <sub>K</sub> /M <sub>N</sub> *	J <sub>rot</sub> kgm <sup>2</sup>	Standard Brake
0,060	<b>DV04LA4</b>	1350	0,420	0,78/0,450	0,51	2,6	1,8	1,8	2,0	0,000175	E003B9
0,09	<b>DV05LA4</b>	1350	0,64	0,78/0,450	0,50	3,6	1,8	1,7	1,8	0,000295	E003B9
0,12	<b>DV05LA4</b>	1350	0,85	1,20/0,70	0,53	3,1	2,0	1,9	2,0	0,000295	E003B9
0,18	<b>DV05LA4</b>	1350	1,28	1,80/1,05	0,53	3,0	1,8	1,7	1,8	0,000295	E003B9

Voltage ranges:

200 ... 255 V Δ / 380 ... 440 V Y 50 Hz

200 ... 280 V Δ / 380 ... 480 V Y 60 Hz

(same power output as 50 Hz)

240 ... 280 V Δ / 420 ... 480 V Y 60 Hz

(same torque output as 50 Hz)

Additional voltage range 100 ... 140 V ΔΔ 50/60 Hz available on request.

P Rated output at 50 Hz supply frequency (20% higher at 60 Hz assuming utilisation of equal torque, otherwise the same at 60 Hz)

n Guide figure for rated speed at rotor shaft at 50 Hz supply frequency (20% higher at 60 Hz)

M<sub>N</sub> Rated torque at rotor shaft at 50 Hz supply frequency (20% lower at 60 Hz assuming utilisation of equal power output, otherwise the same at 60 Hz)

I<sub>N max</sub> Thermally relevant rated current for Δ and Y circuits (highest level in voltage range)

cos φ Power factor (minimum figure)

I<sub>A</sub>/I<sub>N</sub> Relative starting current (maximum figure)

M<sub>A</sub>/M<sub>N</sub> Relative starting torque (minimum figure)

M<sub>S</sub>/M<sub>N</sub> Relative pull-up torque (minimum figure)

M<sub>K</sub>/M<sub>N</sub> Relative stalling torque (minimum figure)

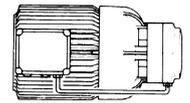
J<sub>rot</sub> Mass inertia of rotor

Brake Recommended standard brake for normal requirements (see 4.1)

\* Starting, pull-up and stalling torque figures are quoted for the lowest rated voltage (200 V Δ 60 Hz). At the highest voltage (440 V Y 50 Hz), the torque levels increase by a factor of 2.1.



## 4 Motor Attachments, Three-Phase and Single-Phase AC Motors



### 4.1 Brakes

On request, BAUER geared motors can be supplied with motor mounted spring-operated brake for defined braking of the driven mechanism and holding a given load.

#### 4.1.1 Design Principle

BAUER brakes are available as single or twin-disc designs. The braking torque is generated by spring action when de-energised. When the power is switched on, the brake is disengaged electromagnetically. The DC magnet is designed for continuous duty (mode S1).

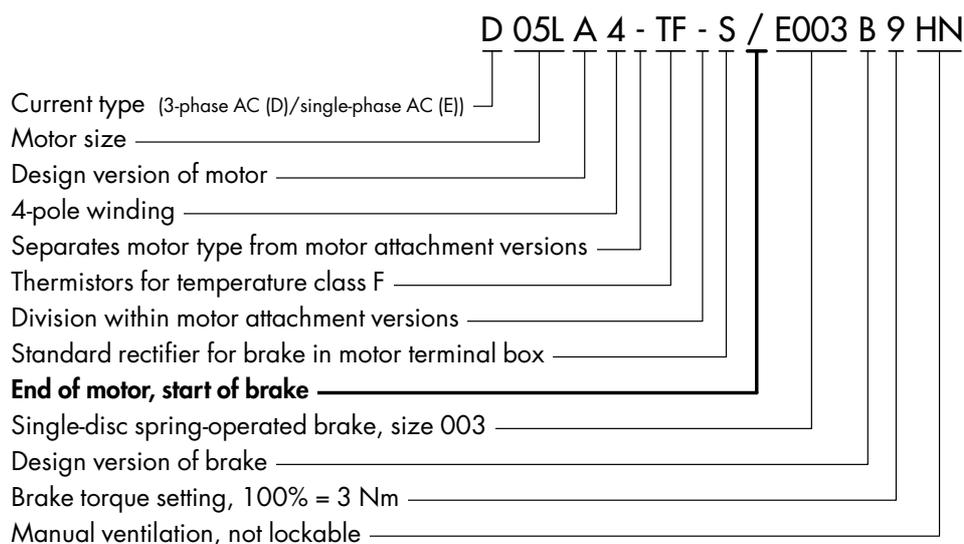
BAUER brakes are safety brakes which perform a load-holding function. They are attached to the motors. This makes them particularly maintenance-friendly (reduces inspection time). For motor types D04 and D05, the brakes are positioned under the fan cover on the B-side bearing plate.

The brake rectifier required for connection to an AC supply is fitted in the motor terminal box.

#### 4.1.2 Overrun Tolerances

The motor overrun during the response period  $t_A$  (see Table 4.1.4) is virtually unaffected by the load conditions and practically constant. This component can become relatively large as virtually the full speed is maintained over the response period. The figures for  $t_A$  shown in the tables apply to breaking of the magnet circuit on the DC side (see Operating Instructions) which is the method always recommended if short overrun is expected or a lifting function is being performed. The inherent delay of the switchgear and its spread must not be ignored. The overrun during the braking period  $t_A$  depends on the load, the external mass inertia and the braking torque. As a fluctuation of the friction parameters due to physical conditions can not be discounted, relatively generous tolerances should be assumed for safety reasons. We recommend that a tolerance of around  $\pm 25\%$  should be applied to the calculated figures for overall overrun time and overall overrun travel and that additional margins are built in for fluctuation of the general parameters (load, temperature, response times of switchgear and control units).

#### 4.1.3 Brake Model Designation



#### 4.1.4 Technical Data of Brakes

Type	M <sub>Br</sub> Nm	t <sub>A</sub> ms	P <sub>el</sub> W	W <sub>rot</sub> 10 <sup>3</sup> J	W <sub>th</sub> 10 <sup>3</sup> J	W <sub>L</sub> 10 <sup>6</sup> J	M <sub>red</sub> Nm
E003B	3	12	20	15	140	85	2,2 / 1,5

Larger brakes sizes available on request

M <sub>Br</sub>	Rated torque of brake
t <sub>A</sub>	Response time for breaking of brake circuit by mechanical switch on DC side (circuit breaking on AC side increases response time by at least 10 fold due to physical constraints and is therefore unsuitable for drive units performing positioning functions)
P <sub>el</sub>	Electrical power consumption of magnet coil
W <sub>rot</sub>	Permissible switching work per braking operation
W <sub>th</sub>	Thermally permissible switching work per hour
W <sub>L</sub>	Permissible switching work before replacement of brake discs at max. M <sub>Br.</sub>
M <sub>red</sub>	Setting for reduced braking torque (details of response times and permissible switching work on request)

#### 4.1.5 Motor-Brake Combinations

Motor	Brakes Attachable
D04	E003
D05	E003

#### 4.1.6 Electrical Connections

The electrical connections for the brakes are made at terminals or a rectifier in the motor terminal box. Standard voltages:

550 ... 575 V 60 Hz	(brake coil voltage 250 V DC)
440 ... 480 V 60 Hz	(brake coil voltage 207 V DC)
380 ... 420 V 50/60 Hz	(brake coil voltage 180 V DC)
220 ... 230 V 50/60 Hz	(brake coil voltage 104 V DC)
24 V DC	(brake coil voltage 24 V DC)

Other voltages can be supplied on request at extra charge.

##### 4.1.6.1 DC Connection at Terminal (K)

The brake has to be connected directly to the DC supply at separate terminals in the motor or brake terminal box. Standard voltages are 250 V DC, 207 V DC, 180 V DC, 104 V DC and 24 V DC. Brakes for other voltages can be supplied on request at extra charge.

##### 4.1.6.2 Standard Rectifier (S)

The brake has to be connected to the AC supply via the standard rectifier in the motor or brake terminal box. Standard voltages are 550 ... 575 V 60 Hz, 440 ... 480 V 60 Hz, 380 ... 420 V 50/60 Hz and 220 ... 230 V 50/60 Hz. Other voltages up to 575 V AC are possible at extra cost. With the standard rectifier, the brake circuit can be broken by an extra switch on the DC side in order to reduce the reaction time. This substantially reduces the braking time/ overrun travel.

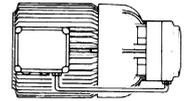
##### 4.1.6.3 Rectifier for Electronic Fast Cut-Out (E)

This rectifier enables breaking of the brake circuit on the DC side by electronic means. It does not require an additional lead to the rectifier. The safety resistor supplied prevents a fast switching motor contactor causing a mains short by the disconnection arc from its contacts. The reaction time of the brake is substantially improved in comparison with circuit breaking on the AC side. However, it is still slower than with circuit breaking on the DC side using a mechanical switch. The brake must be connected to the AC supply via the fast cut-out rectifier in the motor or brake terminal box. Standard voltages are 460 V 60 Hz, 380 ... 420 V 50/60 Hz and 220 ... 230 V 50/60 Hz. Other voltages up to 460 V are possible at extra charge.

- 4.1.7 Brake Connections when Running Off Frequency Converter** When running off a converter, the voltage at the motor terminal board is frequency-dependent. Brakes require a constant voltage and therefore separate electrical connections. For such applications, therefore, brakes are never connected to the motor terminals when they leave the factory.
- 4.1.8 Brake Connections for Pole-Changing Motors** In the case of pole-changing motors, the brake requires separate electrical connections. For these applications too, the brake is not connected to the motor terminals when it leaves the factory.
- 4.1.9 Manual Ventilation (HA, HN)** All brakes can be supplied with mechanical manual ventilation on request. The standard version is non-lockable manual ventilation (HN).
- 4.1.10 Enclosure Rating** The BAUER size 003 brake conforms to enclosure rating IP 54. Other enclosure ratings can also be supplied on request.
- 4.1.11 Extra Corrosion Resistance** Standard corrosion resistance is CORO1 (C1). If a greater level of corrosion resistance for the brakes is required, please contact us for advice.
- 4.1.12 CE Mark** BAUER geared motors with attached spring-operated brake carry the CE mark. They meet the requirements of
- the **Machines Directive (89/392/EEC)**  
manufacturer's declaration available on request
  - the **Low Voltage Directive (73/23/EEC)**  
documented by CE mark
  - the **EMC Directive (89/336/EEC)**  
documented by CE mark
- For more information, refer to Danfoss Bauer Special Publication SD33.. .
- 4.2 Motor Secondary Output Shaft (ZW)** The motors are available with a secondary output shaft if required. With a central drive arrangement the secondary output shaft can deliver half of the rated output. Details of permissible radial loads on request. Covers are not supplied (for dimensional drawing see Section 5.5). Motors with brakes can be supplied on request with a longer secondary output shaft extending beyond the brake.
- 4.3 Pulse Generator (G)** For special requirements, BAUER geared motors can be supplied with attached pulse generator. Please contact us for advice if you require this option.



## 5 Supplementary Dimensional Drawings for Motor Attachments and Motors without Gearbox



The external dimensions of the single-phase AC motors are the same as those of the comparable 3-phase AC motors, i.e.

E04 is the same as D04, EU04 is the same as DU04

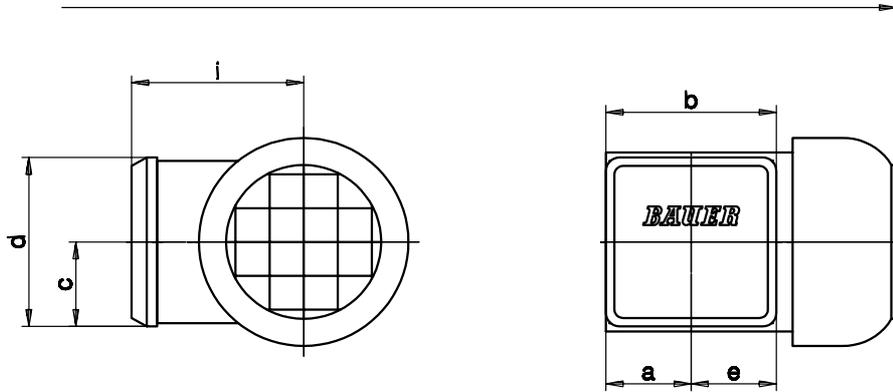
E05 is the same as D05, EU05 is the same as DU05.

The dimensional drawings for single-phase AC motors and single-phase AC geared motors and the supplementary dimensional drawings can thus be found in this section.

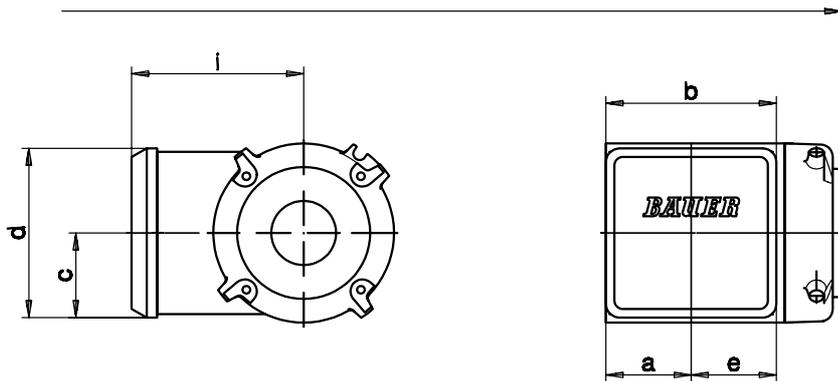
- 5.1 Dimensional Drawing for Standard Version Terminal Box
- 5.2 Dimensional Drawing for Terminal Box with Plug-in Connector
- 5.3 Dimensional Drawing for Standard Brake E003
- 5.4 Dimensional Drawing for Motors with Cable Outlet
  - 5.4.1 Dimensional Drawing for Cable Lengths
- 5.5 Dimensional Drawing for Motors with Secondary Output Shaft
- 5.6 Dimensional Drawing for Motors with Standard Terminal Box or Cable Outlet and without Gearbox, Surface Cooled
- 5.7 Dimensional Drawing for Motors with Standard Terminal Box or Cable Outlet and without Gearbox, Unventilated

5.1 Dimensional Drawing  
for Standard Version  
Terminal Box

Normallänge der Antriebseinheit  
Normal length of drive unit  
Longuer normale de l'unité d'entraînement



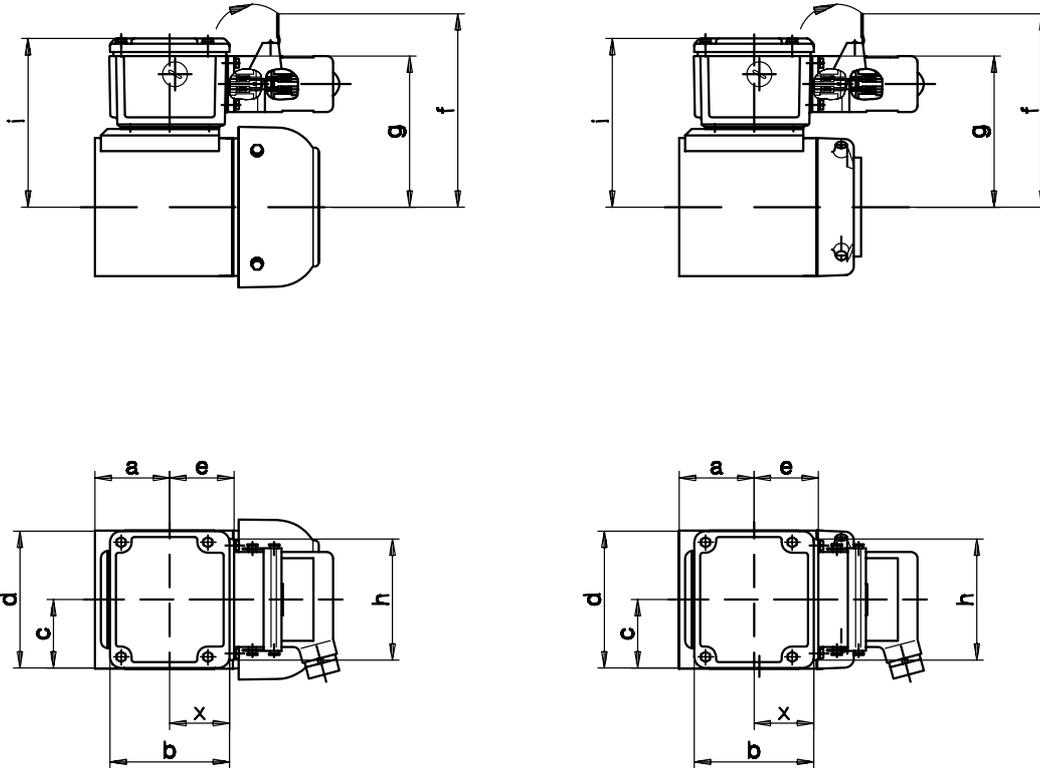
Normallänge der Antriebseinheit  
Normal length of drive unit  
Longuer normale de l'unité d'entraînement



Motor Motor Moteur	Maße(mm) Dimensions(mm) Cotes(mm)						Code	Kabeleinführung Cable entry Entrée de câbles Haupt/ Major/ Prinsipale (M) Neben/ Minor/ Côté (N)
	a	b	c	d	c	i		
D04.. und DU04	42.5	88	44	88	44	90	KAG1	M=2xM20x1.5
D05.. und DU05	50	100	50	100	50	100	KAG2	M=2xM25x1.5

Cable entries are metric.

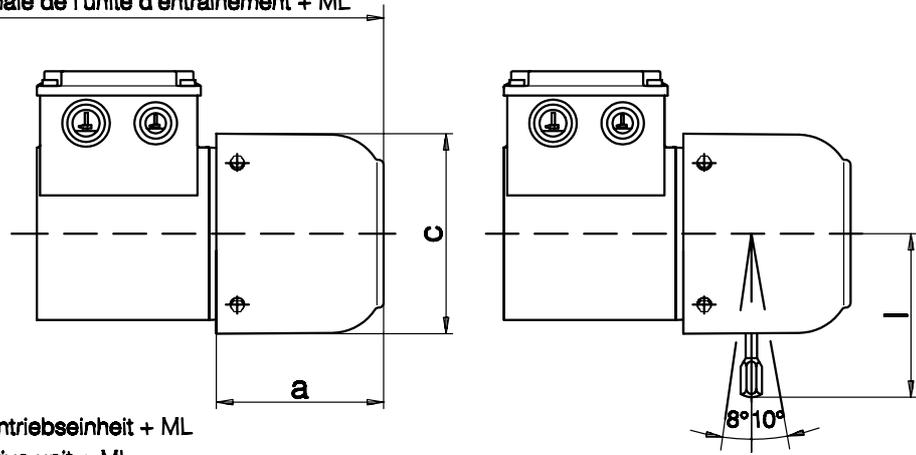
5.2 Dimensional Drawing  
for Terminal Box  
with Plug-in Connector  
(Standard Position)



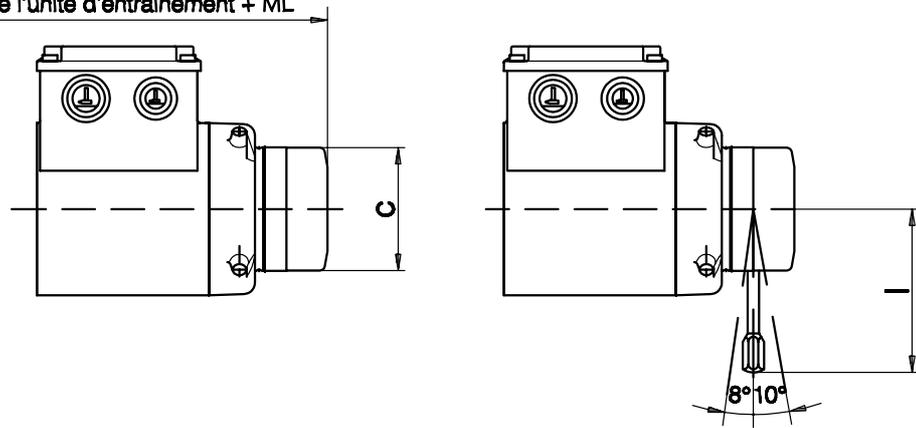
Motor Motor Moteur	Größe Klemmenkasten Size of Terminalbox Boîte à bornes	a	b	c	d	e	f	g	h	i	x
D04 u. DU04	TBS1	30	91	52.5	105	49	147	111	93	124.5	46
D05 u. DU05	TBS1	57	91	52.5	105	49	152	116	93	129.5	46

5.3 Dimensional Drawing for Standard Brake E003

Normallänge der Antriebseinheit + ML  
 Normal length of drive unit + ML  
 Longuer normale de l'unité d'entraînement + ML



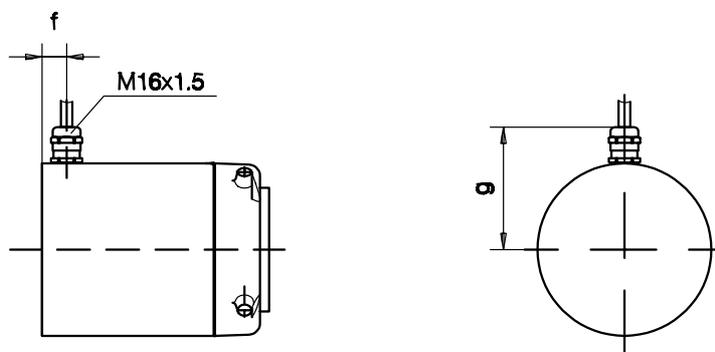
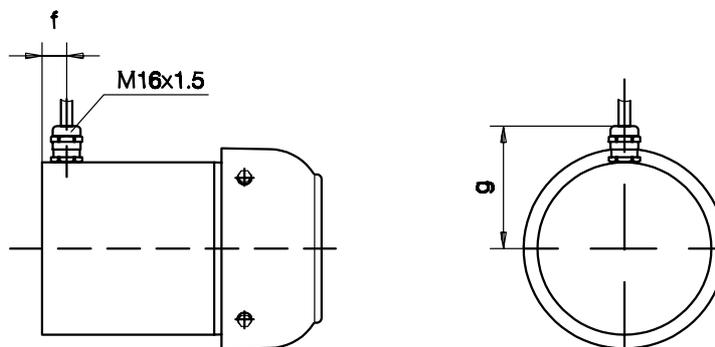
Normallänge der Antriebseinheit + ML  
 Normal length of drive unit + ML  
 Longuer normale de l'unité d'entraînement + ML



Motor Typ	Bremse Typ	Nennbremsmoment	ML(mm) Mehrlänge mit Bremse	Maße (mm)		
Motor Type	Brake Type	Rated brake torque	ML(mm) Additional length with brake	Dimensions (mm)		
Moteur Type	Frein Type	Couple nominal du frein	ML(mm) Longuer supplémentaire pour frein	Cotes (mm)		
		Nm		a	c	l
D04	E003	3	43.5 (49.5 bei Fußausführung ohne Getriebe)	97	111	100.5
D05	E003	3	42	102	123	100.5
DU04	E003	3	38.5	-	75.5	100.5
DU05	E003	3	39	-	75.5	100.5

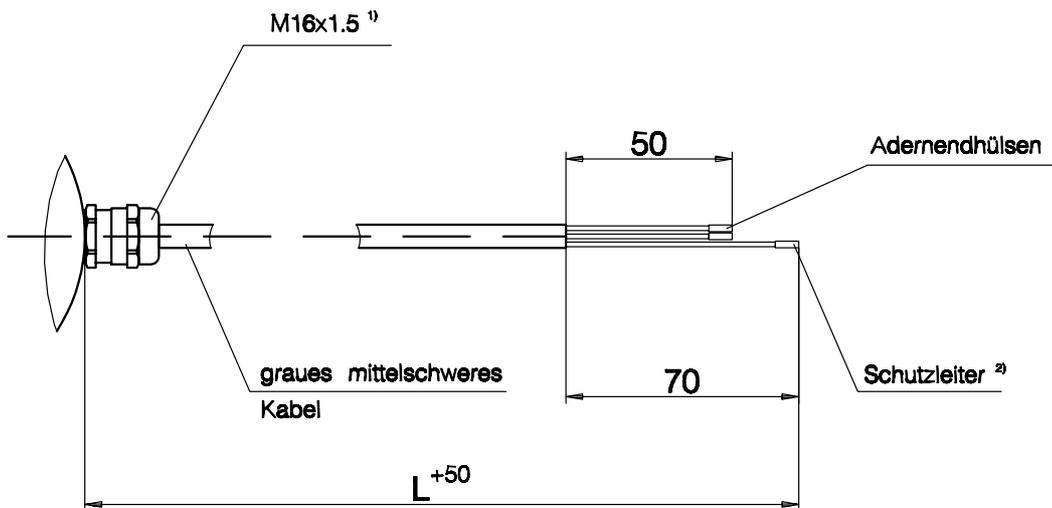
## 5.4 Dimensional Drawing for Motors with Cable Outlet

Fußausführung Code DN-KA



Typ	f	g
D04 u. DU04	12	74
D05 u. DU05	15	75

### 5.4.1 Dimensional Drawing for Cable Lengths

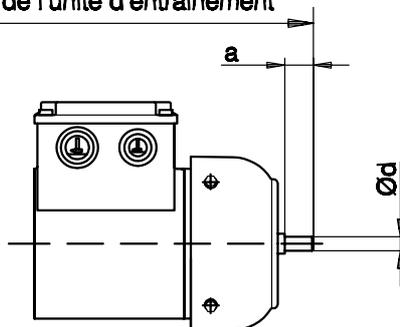


Leiterzahl	2	<sup>3)</sup> 2 + 1 <sup>2)</sup>	3 + 1 <sup>2)</sup>	6 + 1 <sup>2)</sup>
Litzenquerschnitt (mm <sup>2</sup> )	1.5	1.0	0.75	0.75
Litzenkennzeichnung	Farben	Farben	Farben	Farben
L Gesamtlänge (mm)	MWN0348 Pos-Nr. ...			
(160)	2.16	3.16	4.16	7.16
250	2.25	3.25	4.25	7.25
400	2.40	3.40	4.40	7.40
630	2.63	3.63	4.63	7.63
1000	2.100	3.100	4.100	7.100
1600	2.160	3.160	4.160	7.160
2500	2.250	3.250	4.250	7.250
(4000)	2.400	3.400	4.400	7.400

<sup>3)</sup> VDE-, UL-, SEV-approbiertes Kabel auf Anfrage.

## 5.5 Dimensional Drawing for Motors with Secondary Output Shaft

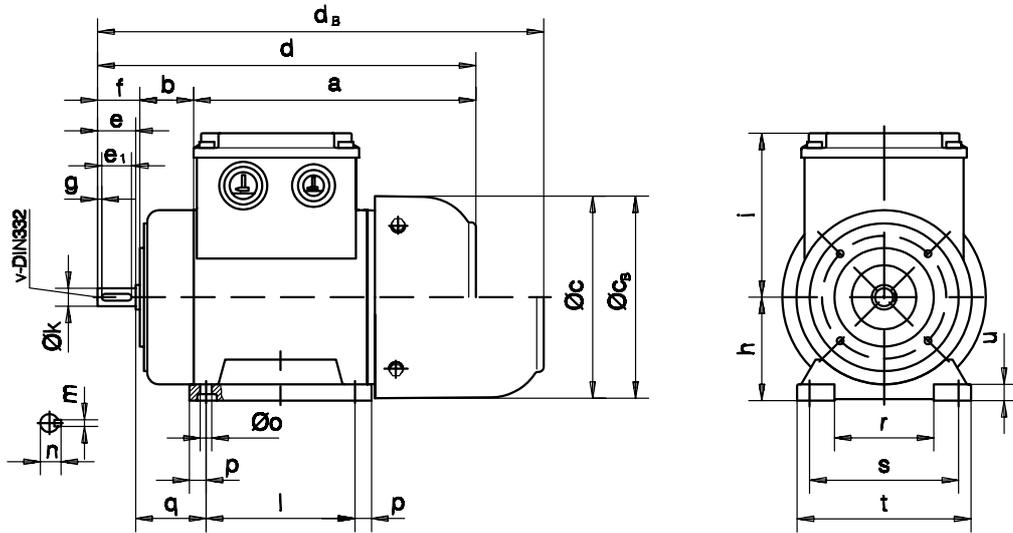
Normallänge der Antriebseinheit + ML  
 Normal length of drive unit + ML  
 Longueur normal de l'unité d'entraînement



Motor Motor Moteur	ML(mm) Mehrlänge bei zweitem Wellenende ML(mm) Add. length with second shaft extension ML(mm) Longueur suppl. pour bout d'arbre primaire dépassant	Maße(mm) Dimensions(mm) Cote(mm)	
		a	d
D04	20	15	8 g6
DU04	20	15	10 k6
D05	25	20	8 g6
DU05	24.5	20	10 k6

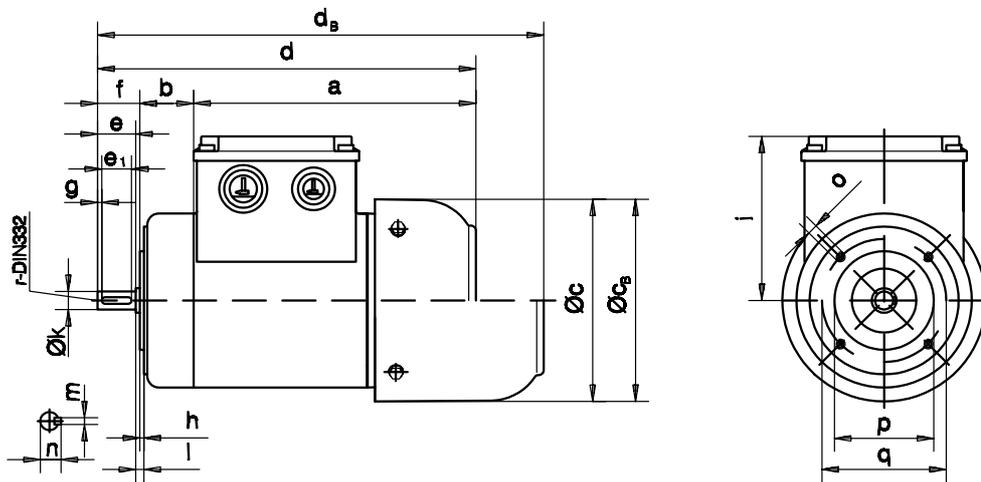
5.6 Dimensional Drawing  
for Motors without  
Gearbox, Surface Cooled

Fußausführung Code DN



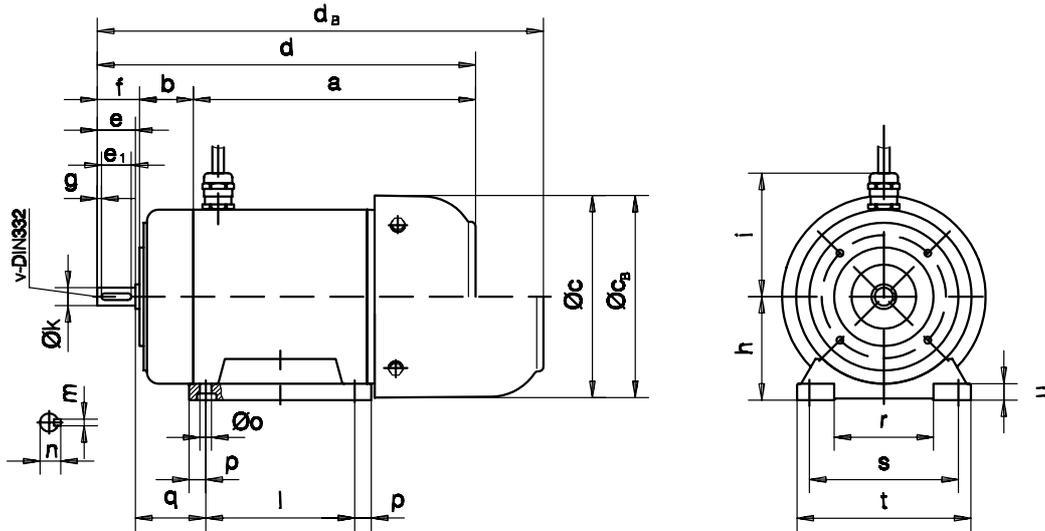
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	E003	
																							c <sub>B</sub>	d <sub>B</sub>
D04	148,5	27,5	111	198,5	20	15	22,5	2,5	56	90	9 <sub>k6</sub>	90	3	10,2	7	10	27,5	50	80	95	9	D3	111	242
D05	170,5	32,5	123	228,5	23	18	25,5	2,5	63	100	11 <sub>k6</sub>	90	4	12,5	7	10	42,5	60	90	105	10	D4	123	270,5

Flanschausführung Code DNF



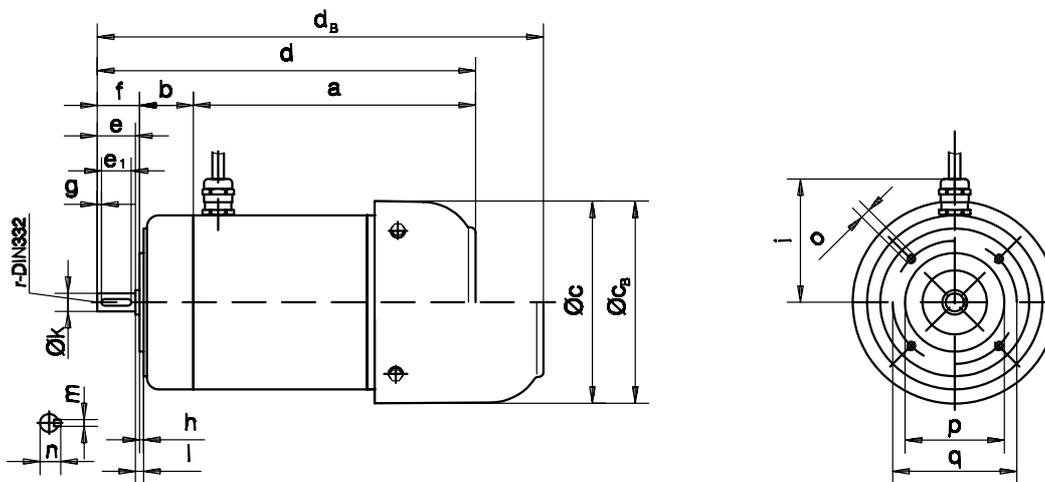
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	E003	
																			c <sub>B</sub>	d <sub>B</sub>
D04	142,5	27,5	111	192,5	20	15	22,5	2,5	2,5	90	9 <sub>k6</sub>	5	3	10,2	M5	50 <sub>j6</sub>	65	D3	111	236
D05	170,5	32,5	123	228,5	23	18	25,5	2,5	2,5	100	11 <sub>k6</sub>	5	4	12,5	M5	60 <sub>h6</sub>	75	D4	123	270,5

Fußausführung Code DN-KA



Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	E003	
																							c <sub>B</sub>	d <sub>B</sub>
D04	148,5	27,5	111	198,5	20	15	22,5	2,5	56	74	9 <sub>k6</sub>	90	3	10,2	7	10	27,5	50	80	95	9	D3	111	242
D05	170,5	32,5	123	228,5	23	18	25,5	2,5	63	75	11 <sub>k6</sub>	90	4	12,5	7	10	42,5	60	90	105	10	D4	123	270,5

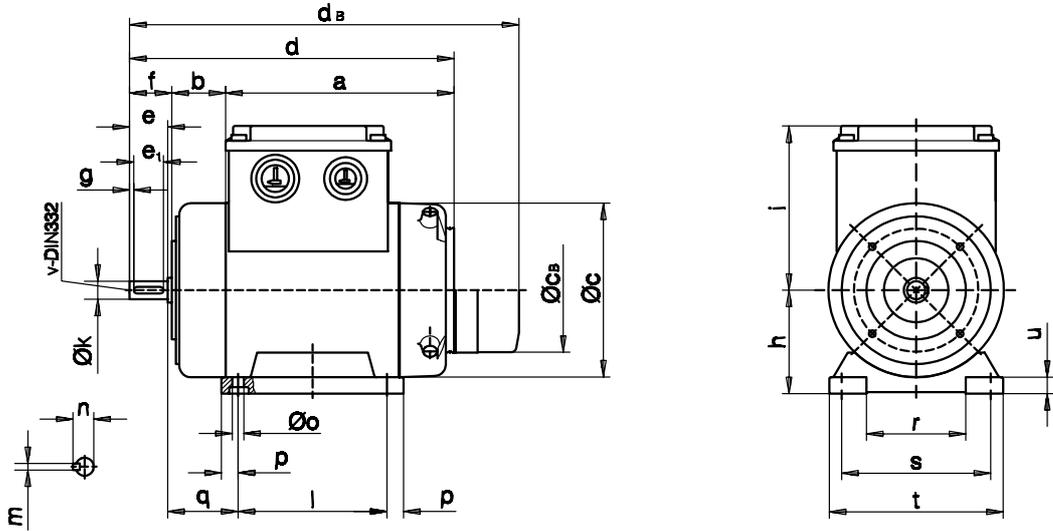
Flanschausführung Code DNF-KA



Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	E003	
																			c <sub>B</sub>	d <sub>B</sub>
D04	142,5	27,5	111	192,5	20	15	22,5	2,5	2,5	74	9 <sub>k6</sub>	5	3	10,2	M5	50 <sub>j6</sub>	65	D3	111	236
D05	170,5	32,5	123	228,5	23	18	25,5	2,5	2,5	75	11 <sub>k6</sub>	5	4	12,5	M5	60 <sub>h8</sub>	75	D4	123	270,5

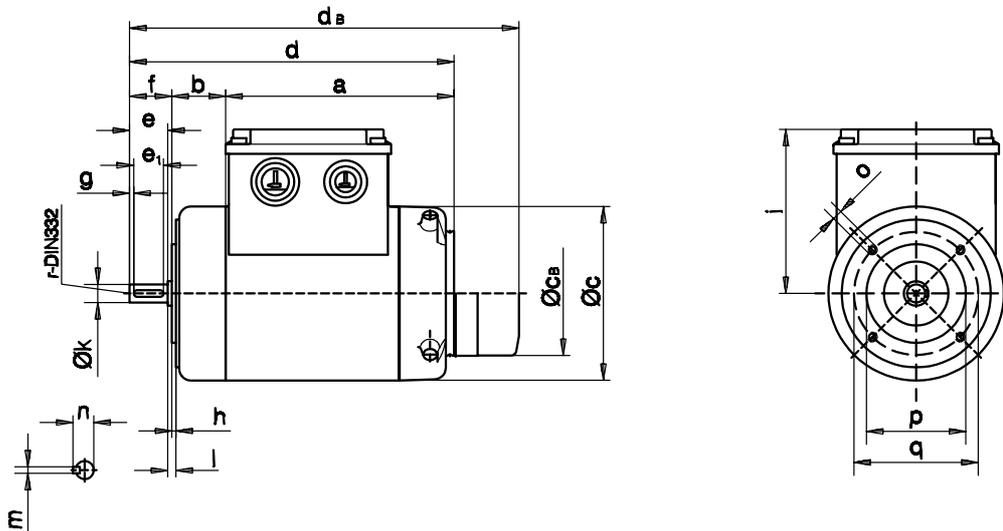
5.7 Dimensional Drawing  
for Motors without  
Gearbox, Unventilated

Fußausführung Code DNU



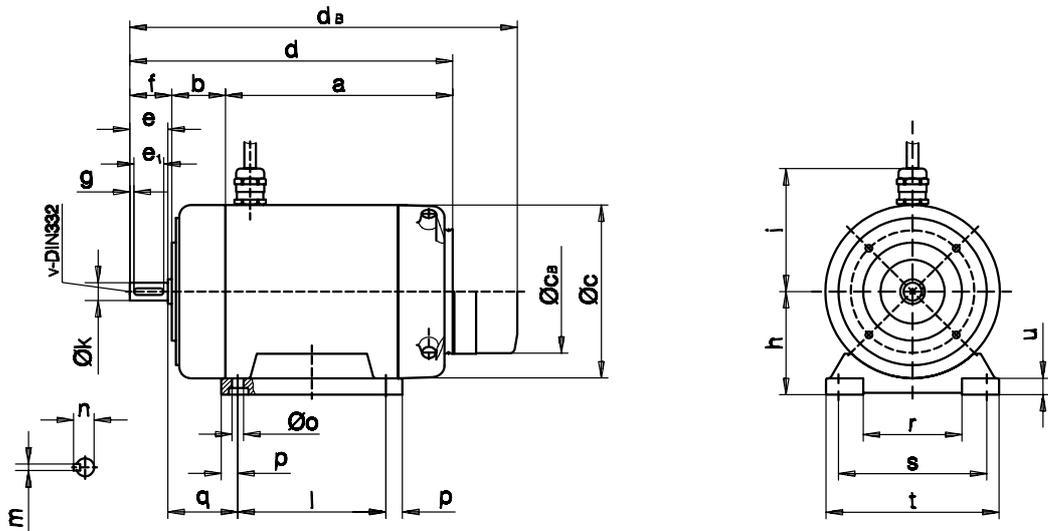
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	E003	
																							c <sub>B</sub>	d <sub>B</sub>
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	56	90	9 k6	90	3	10.2	7	10	27.5	50	80	95	9	D3	76	203
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	63	100	11 k6	90	4	12.5	7	10	42.5	60	90	105	10	D4	76	235.5

Flanschausführung Code DNFU



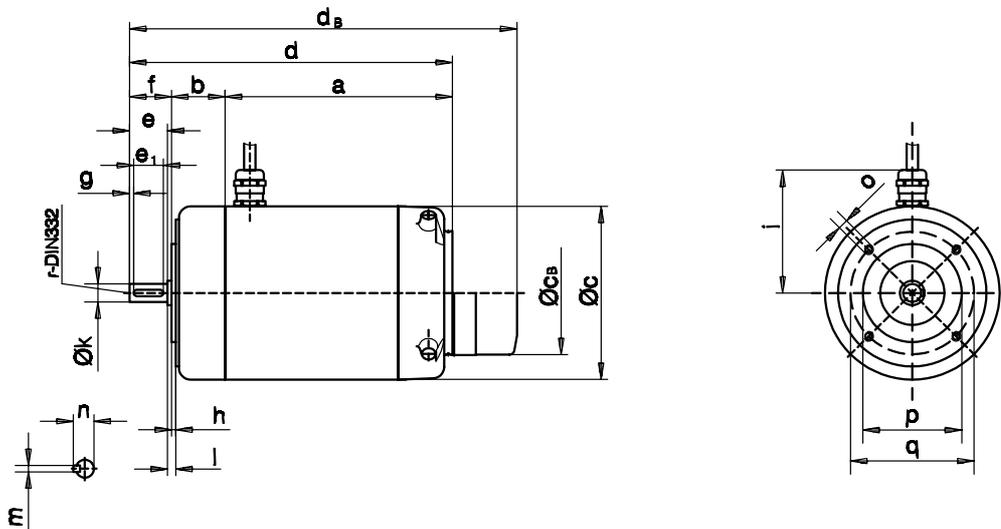
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	E003	
																			c <sub>B</sub>	d <sub>B</sub>
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	2.5	90	9 k6	5	3	10.2	M5	50 j6	65	D3	76	203
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	2.5	100	11 k6	5	4	12.5	M5	60 h8	75	D4	76	235.5

Fußausführung Code DNU-KA



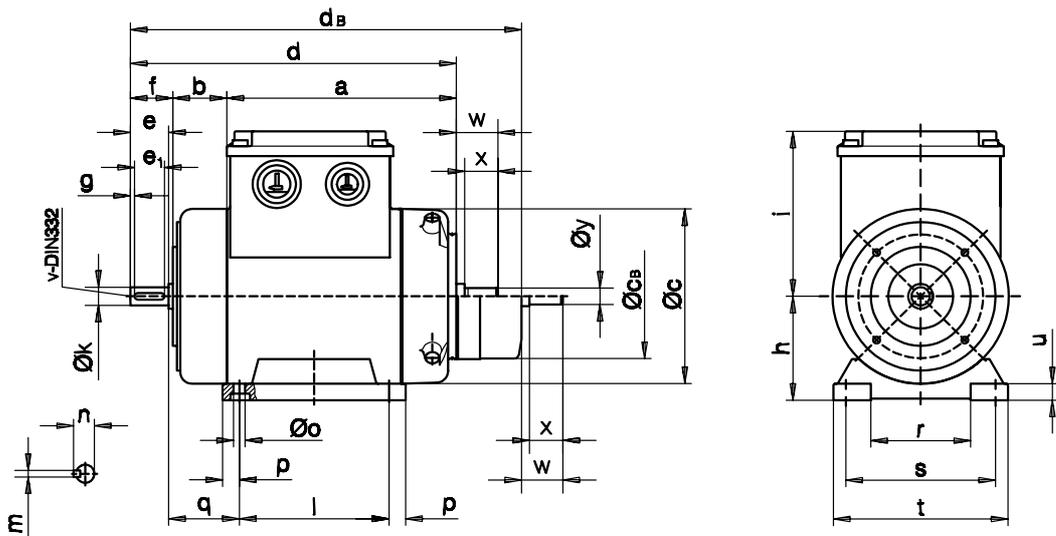
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	E003	
																							c <sub>B</sub>	d <sub>B</sub>
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	56	74	9 <sub>k6</sub>	90	3	10.2	7	10	27.5	50	80	95	9	D3	76	203
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	63	75	11 <sub>k6</sub>	90	4	12.5	7	10	42.5	60	90	105	10	D4	76	235.5

Flanschausführung Code DNFU-KA



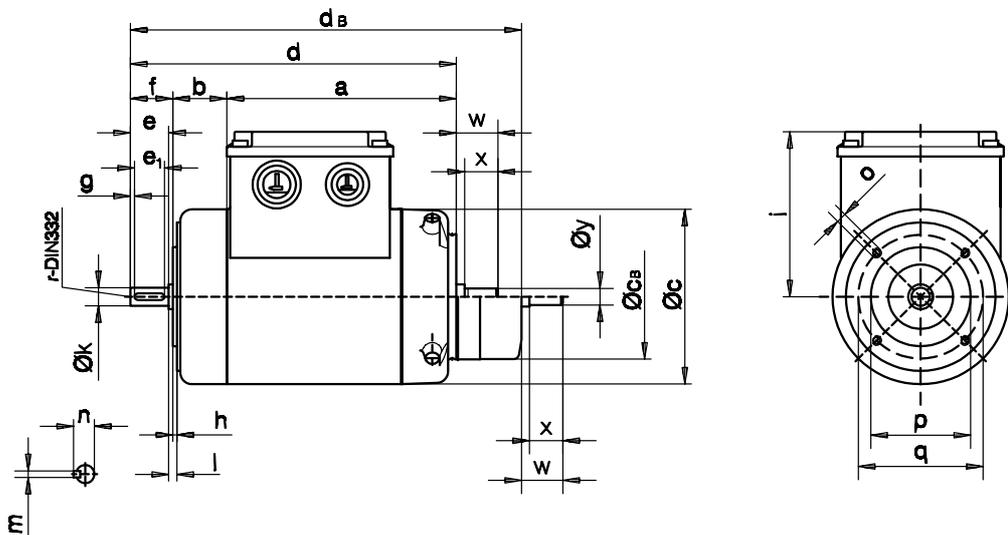
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	E003	
																			c <sub>B</sub>	d <sub>B</sub>
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	2.5	74	9 <sub>k6</sub>	5	3	10.2	M5	50 <sub>B</sub>	65	D3	76	203
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	2.5	75	11 <sub>k6</sub>	5	4	12.5	M5	60 <sub>B</sub>	75	D4	76	235.5

Fußausführung Code DNU-ZW



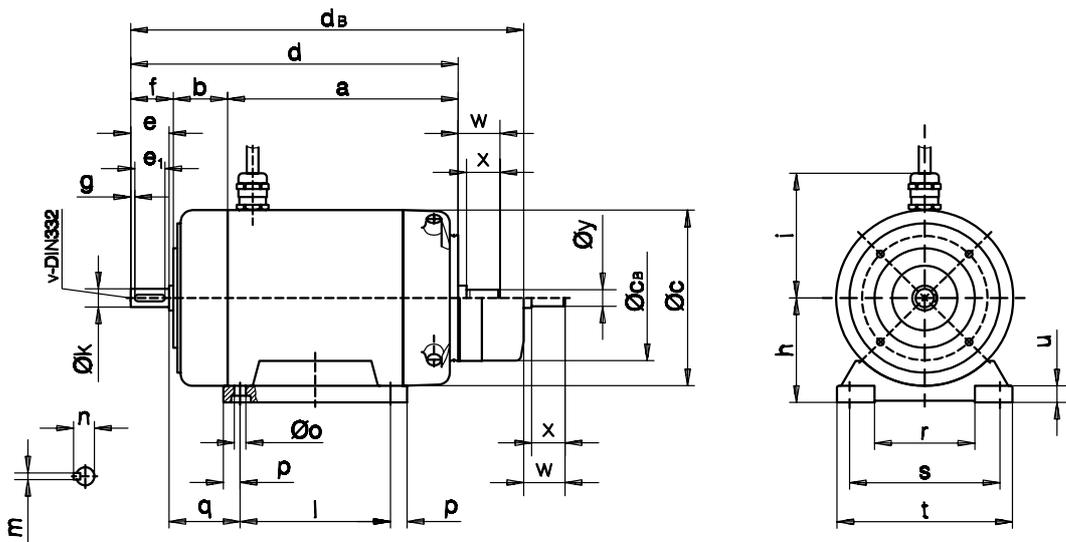
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	E003	
																										c <sub>B</sub>	d <sub>B</sub>
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	56	90	9 k6	90	3	10.2	7	10	27.5	50	80	95	9	D3	20	15	8 g6	76	203
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	63	100	11 k6	90	4	12.5	7	10	42.5	60	90	105	10	D4	24.5	20	10 k6	76	235.5

Flanschausführung Code DNFU-ZW



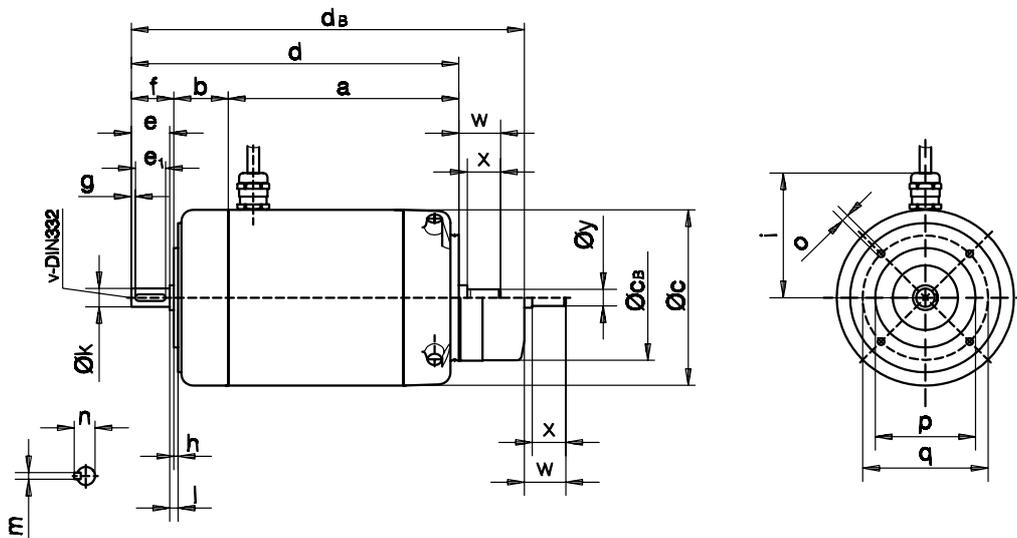
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	w	x	y	E003	
																						c <sub>B</sub>	d <sub>B</sub>
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	2.5	90	9 k6	5	3	10.2	M5	50 j6	65	D3	20	15	8 g6	76	203
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	2.5	100	11 k6	5	4	12.5	M5	60 h8	75	D4	24.5	20	10 k6	76	235.5

Fußausführung Code DNU-ZW-KA



																							E003				
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	c <sub>B</sub>	d <sub>B</sub>
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	56	74	9 <sub>k6</sub>	90	3	10.2	7	10	27.5	50	80	95	9	D3	20	15	8 <sub>g6</sub>	76	203
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	63	75	11 <sub>k6</sub>	90	4	12.5	7	10	42.5	60	90	105	10	D4	24.5	20	10 <sub>k6</sub>	76	235.5

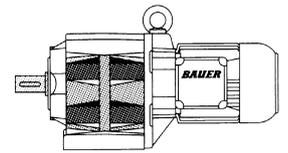
Flanschausführung Code DNFU-ZW-KA



																							E003	
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	w	x	y	c <sub>B</sub>	d <sub>B</sub>	
DU04	114.5	27.5	96	164.5	20	15	22.5	2.5	2.5	74	9 <sub>k6</sub>	5	3	10.2	M5	50 <sub>g6</sub>	65	D3	20	15	8 <sub>g6</sub>	76	203	
DU05	138.5	32.5	106	196.5	23	18	25.5	2.5	2.5	75	11 <sub>k6</sub>	5	4	12.5	M5	60 <sub>h8</sub>	75	D4	24.5	20	10 <sub>k6</sub>	76	235.5	



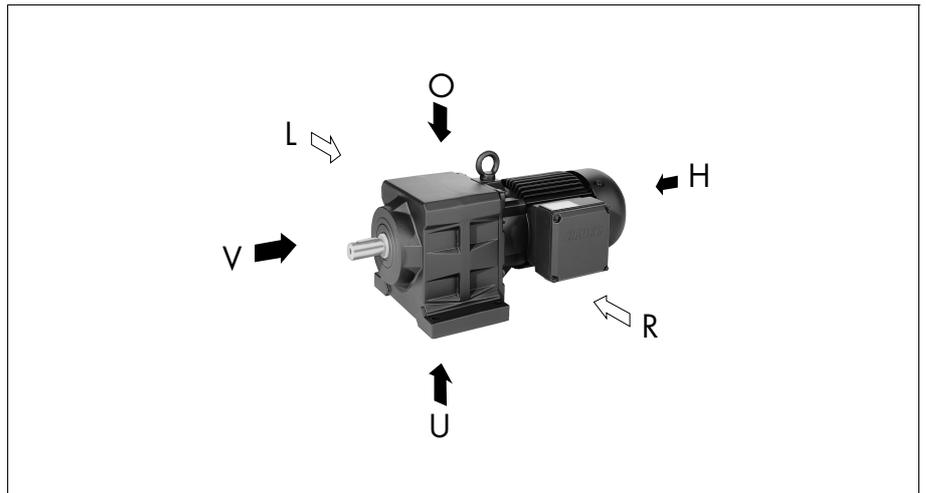
## 6 Helical Geared Motors, Series BG



### 6.1 Description of Helical Gearbox

#### 6.1.1 Sizes

BAUER Series BG helical gearboxes are available in 13 listed sizes offering torque ratings from 20 Nm to 16,800 Nm. Higher torque ratings are available on request. These gearboxes have a tough cast housing. The choice in this list is limited to 4 sizes.

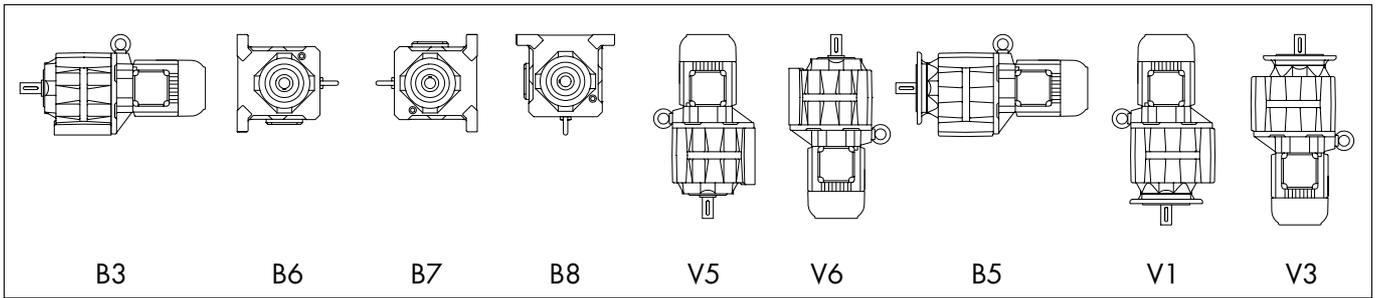


#### 6.1.2 Type Designation and Modular Components of Series BG Helical Gearboxes

<b>BG..-</b>	<b>Bauer helical gearbox</b> Gearbox size (BG04, 05, 06, 10, 20,30,40,50, 60, 70, 80, 90, 100)
<b>BG..Z..</b>	Gearbox with pre-reducer stage (e.g. BG40Z..)
<b>BG..G..-</b>	Double gearbox (e.g. BG90G50..)
	<b>Gearbox housing designs</b>
<b>BG..-1.</b>	Foot version with plain holes
<b>BG..-2.</b>	Small A flange (standard flange)
<b>BG..-3.</b>	Standard A flange (standard flange)
<b>BG..-4.</b>	Large A flange (standard flange)
<b>BG..-6.LR</b>	Foot with threaded holes left and right
<b>BG..-7.</b>	C flange with threaded holes
<b>BG..-9.L</b>	Foot with plain holes, left
<b>BG..-9.R</b>	Foot with plain holes, right
<b>BG..-9.LR</b>	Foot with plain holes, left and right
	<b>Output shaft designs</b>
<b>BG..-1</b>	Standard solid shaft
<b>BG..-7</b>	Solid shaft for flange version BG10 or larger (shaft collar flush with standard A flange)
	<b>Additional features</b>
<b>BG...W</b>	Double shaft seal

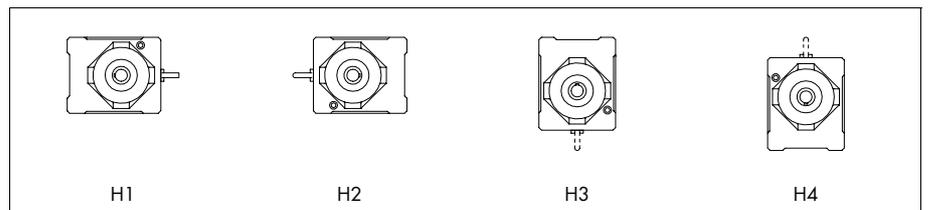
**6.1.3 Standard Orientation Options for Helical Geared Motors**

The standard orientation options for BAUER helical geared motors are illustrated below.



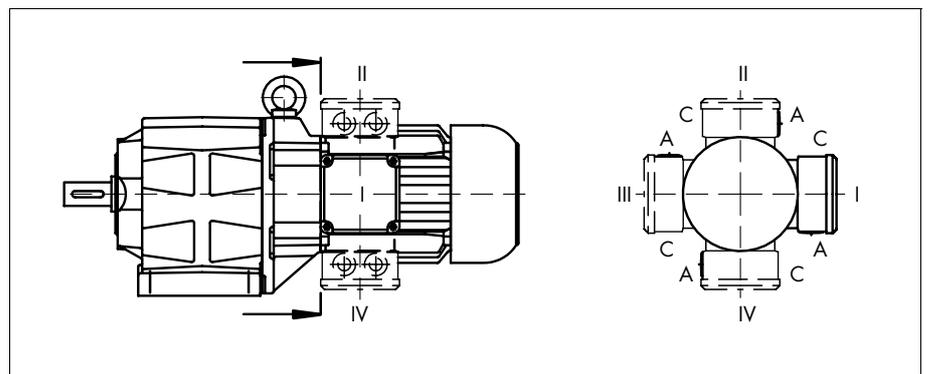
**Additional Mounting Options:**

BAUER Series BG helical geared motors in the sizes BG10 to BG60 can be supplied with foot threaded holes in the larger side of the cuboid gearbox housing (see dimensional drawing 6.3, code -61). The smaller side then becomes the vertical side and this arrangement gives an extremely low centre height. This produces a very low gearbox height with sideways mounting. For sizes BG10 to BG40 there are also foot plates available which allow mounting via plain holes where vertical clearance is restricted (see dimensional drawing 6.3, code -91). For these versions, the designs H1, H2, H3 and H4 have been defined so that the lubricant volume can be adjusted to suit the installation position.



**6.1.4 Positioning of Terminal Box and Cable Entry**

The standard position for the terminal box on helical geared motors is Position I. For permanent-magnet DC helical geared motors, Position II is standard for reasons of accessibility of the carbon brushes. The cable can enter through Side A or C.



### 6.1.5 Bauer Load Factors ( $f_B$ ) for Helical Geared Motors

There are numerous factors which determine the overall load on a gearbox. Among the most important are:

- average torque (rated torque)
- daily hours of operation
- strength of torque shocks (shock level)
- frequency of torque shocks (intermittent operation)

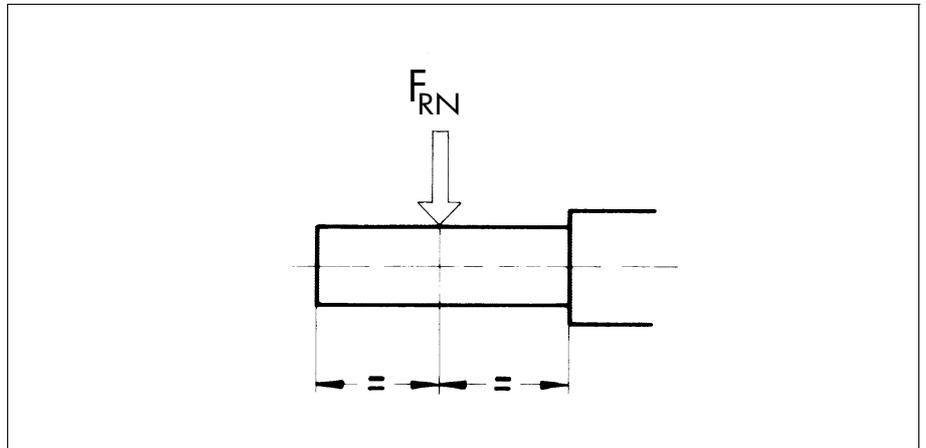
For practical purposes, those effects can simply be referred to as "load factors".

For more information, refer to Master Catalogue DG.. and Danfoss Special Publication SD32..

### 6.2 Selection Tables for Helical Geared Motors

#### Explanation of Abbreviations

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

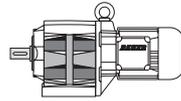


The selection tables can be used to determine the size of the geared motor. The gearbox design can be unambiguously defined by means of code numbers (see dimensional drawing 6.3).

The torque figures marked (\*) are maximum permissible levels for a load factor of  $f_B = 1.0$ .

#### Protection Against Overload by Motor Output

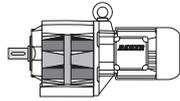
The rated outputs of the motors, particularly in conjunction with gearboxes with four or more speeds, are very generously dimensioned in some cases. For that reason, as with low motor outputs, the rated current is not a measure of gearbox load capacity utilisation and can not be taken as an indication of overload protection for the gearbox. If there is a risk of excessive load or jamming, it is advisable to protect the gearbox by mechanical means (e.g. one-way clutch, free hub, shear pin, etc.).


**P = 0.03 kW**

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
370	0.77	6.5	3.65	BG04-../D04LA4	4.4	390	-	445	0.64	7.8
310	0.92	7.6	4.39	"	"	380	-	370	0.77	9.1
255	1.12	8.0	5.36	"	"	380	-	305	0.93	9.7
205	1.39	7.2	6.67	"	"	410	-	245	1.16	8.6
158	1.81	6.1	8.58	"	"	410	-	189	1.51	7.3
150	1.91	6.3	9.00	"	"	470	-	180	1.59	7.5
137	2.05	6.3	9.90	"	"	480	-	164	1.74	7.5
125	2.25	6.2	10.82	"	"	480	-	150	1.91	7.3
114	2.5	6.0	11.90	"	"	490	-	137	2.05	7.3
108	2.65	5.7	12.55	"	"	490	-	130	2.2	6.8
103	2.75	5.8	13.20	"	"	500	-	123	2.3	7.0
93	3.05	5.6	14.52	"	"	510	-	112	2.55	6.7
83	3.45	5.2	16.44	"	"	530	-	99	2.85	6.3
75	3.8	4.7	18.08	"	"	540	-	90	3.15	5.7
64	4.45	4.3	21.12	"	"	560	-	77	3.7	5.1
59	4.85	4.1	23.23	"	"	600	-	70	4.05	4.9
56	5.1	3.9	24.45	"	"	610	-	67	4.25	4.7
51	5.6	3.6	26.89	"	"	650	-	61	4.65	4.3
44	6.5	3.1	30.91	"	"	690	-	53	5.4	3.7
40	7.1	2.8	34.00	"	"	720	-	48	5.9	3.4
38.5	7.4	2.7	35.35	"	"	730	-	46	6.2	3.2
35	8.1	2.5	38.89	"	"	750	-	42	6.8	2.9
32	8.9	2.2	42.24	"	"	750	-	38.5	7.4	2.7
29.5	9.7	2.1	46.47	"	"	750	-	35	8.1	2.5
28.5	10	2.0	47.52	"	"	750	-	34.5	8.3	2.4
26	11	1.8	52.28	"	"	750	-	31	9.2	2.2
25	11.4	1.75	54.97	"	"	750	-	29.5	9.7	2.1
22.5	12.7	1.55	60.47	"	"	750	-	27	10.6	1.9
31	9.2	3.3	43.57	BG05-../D04LA4	5.1	900	-	37.5	7.6	3.9
29	9.8	3.1	47.00	"	"	930	-	34.5	8.3	3.6
26.5	10.8	2.8	51.27	"	"	970	-	32	8.9	3.4
25.5	11.2	2.7	53.44	"	"	980	-	30.5	9.3	3.2
23.5	12.1	2.5	58.30	"	"	1000	-	28	10.2	2.9
20.5	13.9	3.2	66.79	BG06-../D04LA4	6.1	1070	-	24.5	11.6	3.9

**P = 0.04 kW**

370	1.03	4.9	3.65	BG04-../D04LA4	4.4	390	-	445	0.85	5.9
310	1.23	5.7	4.39	"	"	380	-	370	1.03	6.8
255	1.49	6.0	5.36	"	"	380	-	305	1.25	7.2
205	1.86	5.4	6.67	"	"	410	-	245	1.55	6.5
158	2.4	4.6	8.58	"	"	410	-	189	2.0	5.5
150	2.5	4.8	9.00	"	"	470	-	180	2.1	5.7
137	2.75	4.7	9.90	"	"	480	-	164	2.3	5.7
125	3.05	4.6	10.82	"	"	480	-	150	2.5	5.6
114	3.35	4.5	11.90	"	"	490	-	137	2.75	5.5
108	3.5	4.3	12.55	"	"	490	-	130	2.9	5.2
103	3.7	4.3	13.20	"	"	500	-	123	3.1	5.2
93	4.1	4.1	14.52	"	"	510	-	112	3.4	5.0
83	4.6	3.9	16.44	"	"	530	-	99	3.85	4.7
75	5.0	3.6	18.08	"	"	540	-	90	4.2	4.3
64	5.9	3.2	21.12	"	"	560	-	77	4.95	3.8
59	6.4	3.1	23.23	"	"	600	-	70	5.4	3.7
56	6.8	2.9	24.45	"	"	610	-	67	5.7	3.5
51	7.4	2.7	26.89	"	"	650	-	61	6.2	3.2
44	8.6	2.3	30.91	"	"	690	-	53	7.2	2.8
40	9.5	2.1	34.00	"	"	720	-	48	7.9	2.5
38.5	9.9	2.0	35.35	"	"	730	-	46	8.3	2.4

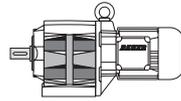


**P = 0.04 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
35	10.9	1.85	38.89	BG04-../D04LA4	4.4	750	-	42	9.0	2.2
32	11.9	1.7	42.24	"	"	750	-	38.5	9.9	2.0
29.5	12.9	1.55	46.47	"	"	750	-	35	10.9	1.85
28.5	13.4	1.5	47.52	"	"	750	-	34.5	11	1.8
26	14.6	1.35	52.28	"	"	750	-	31	12.3	1.65
25	15.2	1.3	54.97	"	"	750	-	29.5	12.9	1.55
22.5	16.9	1.2	60.47	"	"	750	-	27	14.1	1.4
39	9.7	3.1	35.00	BG05-../D04LA4	5.1	810	-	46.5	8.2	3.7
35.5	10.7	2.8	38.18	"	"	850	-	42.5	8.9	3.4
34	11.2	2.7	39.94	"	"	860	-	41	9.3	3.2
31	12.3	2.4	43.57	"	"	900	-	37.5	10.1	3.0
29	13.1	2.3	47.00	"	"	930	-	34.5	11	2.7
26.5	14.4	2.1	51.27	"	"	970	-	32	11.9	2.5
25.5	14.9	2.0	53.44	"	"	980	-	30.5	12.5	2.4
23.5	16.2	1.85	58.30	"	"	1000	-	28	13.6	2.2
27	14.1	3.2	50.38	BG06-../D04LA4	6.1	940	-	32.5	11.7	3.8
26	14.6	3.1	52.56	"	"	950	-	31	12.3	3.7
24	15.9	2.8	57.34	"	"	1000	-	28.5	13.4	3.4
22.5	16.9	2.7	61.22	"	"	1020	-	26.5	14.4	3.1
20.5	18.6	2.4	66.79	"	"	1070	-	24.5	15.5	2.9
18	19.1	2.1	75.99	BG06G04-../D04LA4	8.4	1070	-	21.5	15.6	2.6
15	22.5	2.0	93.00	"	"	1070	-	17.5	19.2	2.3
11.5	29	1.55	122.0	"	"	1070	-	13.5	24	1.9
9.1	36.5	1.25	149.0	"	"	1070	-	11	29.5	1.55
7.3	46.5	0.97	185.4	"	"	1070	-	8.8	37.5	1.2

**P = 0.06 kW**

370	1.54	3.2	3.65	BG04-../D04LA4	4.4	390	-	445	1.28	3.9
310	1.84	3.8	4.39	"	"	380	-	370	1.54	4.5
255	2.2	4.1	5.36	"	"	380	-	305	1.87	4.8
205	2.75	3.6	6.67	"	"	410	-	245	2.3	4.3
158	3.6	3.1	8.58	"	"	410	-	189	3.0	3.7
150	3.8	3.2	9.00	"	"	470	-	180	3.15	3.8
137	4.15	3.1	9.90	"	"	480	-	164	3.45	3.8
125	4.55	3.1	10.82	"	"	480	-	150	3.8	3.7
114	5.0	3.0	11.90	"	"	490	-	137	4.15	3.6
108	5.3	2.8	12.55	"	"	490	-	130	4.4	3.4
103	5.5	2.9	13.20	"	"	500	-	123	4.65	3.4
93	6.1	2.8	14.52	"	"	510	-	112	5.1	3.3
83	6.9	2.6	16.44	"	"	530	-	99	5.7	3.2
75	7.6	2.4	18.08	"	"	540	-	90	6.3	2.9
64	8.9	2.1	21.12	"	"	560	-	77	7.4	2.6
59	9.7	2.1	23.23	"	"	600	-	70	8.1	2.5
56	10.2	1.95	24.45	"	"	610	-	67	8.5	2.4
51	11.2	1.8	26.89	"	"	650	-	61	9.3	2.2
44	13	1.55	30.91	"	"	690	-	53	10.8	1.85
40	14.3	1.4	34.00	"	"	720	-	48	11.9	1.7
38.5	14.8	1.35	35.35	"	"	730	-	46	12.4	1.6
35	16.3	1.25	38.89	"	"	750	-	42	13.6	1.45
32	17.9	1.1	42.24	"	"	750	-	38.5	14.8	1.35
29.5	19.4	1.05	46.47	"	"	750	-	35	16.3	1.25
28.5	20	1.0	47.52	"	"	750	-	34.5	16.6	1.2
26	22	0.91	52.28	"	"	750	-	31	18.4	1.1
25	22.5	0.89	54.97	"	"	750	-	29.5	19.4	1.05
22.5	25	0.8	60.47	"	"	750	-	27	21	0.95
72	7.9	3.3	18.82	BG05-../D04LA4	5.1	680	-	87	6.5	4.0

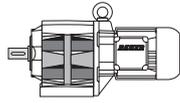

**P = 0.06 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
66	8.6	3.1	20.53	BG05-../D04LA4	5.1	700	-	79	7.2	3.8
57	10	2.8	24.00	"	"	740	-	68	8.4	3.3
52	11	2.6	26.18	"	"	760	-	62	9.2	3.2
49	11.6	2.6	27.82	"	"	770	-	59	9.7	3.1
44.5	12.8	2.3	30.35	"	"	760	-	54	10.6	2.8
39	14.6	2.1	35.00	"	"	810	-	46.5	12.3	2.4
35.5	16.1	1.85	38.18	"	"	850	-	42.5	13.4	2.2
34	16.8	1.8	39.94	"	"	860	-	41	13.9	2.2
31	18.4	1.65	43.57	"	"	900	-	37.5	15.2	1.95
29	19.7	1.5	47.00	"	"	930	-	34.5	16.6	1.8
26.5	21.5	1.4	51.27	"	"	970	-	32	17.9	1.7
25.5	22	1.35	53.44	"	"	980	-	30.5	18.7	1.6
23.5	24	1.25	58.30	"	"	1000	-	28	20	1.5
42	13.6	3.3	32.22	BG06-../D04LA4	6.1	890	-	51	11.2	4.0
38.5	14.8	3.0	35.15	"	"	880	-	46.5	12.3	3.7
37	15.4	2.9	36.91	"	"	890	-	44	13	3.5
34	16.8	2.7	40.26	"	"	890	-	40.5	14.1	3.2
29.5	19.4	2.3	46.19	"	"	890	-	35.5	16.1	2.8
27	21	2.1	50.38	"	"	940	-	32.5	17.6	2.6
26	22	2.0	52.56	"	"	950	-	31	18.4	2.4
24	23.5	1.9	57.34	"	"	1000	-	28.5	20	2.3
22.5	25	1.8	61.22	"	"	1020	-	26.5	21.5	2.1
20.5	27.5	1.65	66.79	"	"	1070	-	24.5	23	1.95
18	29.5	1.35	75.99	BG06G04-../D04LA4	8.4	1070	-	21.5	24.5	1.65
15	35.5	1.25	93.00	"	"	1070	-	17.5	30	1.5
11.5	45.5	0.99	122.0	"	"	1070	-	13.5	38.5	1.15
20	28.5	3.0	67.54	BG10Z-../D04LA4	11	2000	2800	24	23.5	3.7
17.5	32.5	3.1	77.40	"	"	2000	2800	21	27	3.7
16	35.5	2.8	85.76	"	"	2000	2800	19	30	3.3
15	38	2.6	92.19	"	"	2000	2800	18	31.5	3.2
13.5	42	2.4	102.1	"	"	2000	2800	16	35.5	2.8
12.5	45.5	2.2	109.8	"	"	2000	2800	15	38	2.6
11.5	49.5	2.0	121.7	"	"	2000	2800	13.5	42	2.4
10.5	54	1.85	131.8	"	"	2000	2800	12.5	45.5	2.2
9.3	61	1.65	146.0	"	"	2000	2800	11.5	49.5	2.0
8.2	69	1.45	166.0	"	"	2000	2800	9.8	58	1.7
7.4	77	1.3	184.0	"	"	2000	2800	8.9	64	1.55
7.0	81	1.25	194.6	"	"	2000	2800	8.4	68	1.45
6.3	90	1.1	215.7	"	"	2000	2800	7.6	75	1.35
5.7	100	1.0	240.4	"	"	2000	2800	6.8	84	1.2
5.1	112	0.89	266.3	"	"	2000	2800	6.1	93	1.1
4.9	116	0.86	276.0	"	"	2000	2800	5.9	97	1.05

**P = 0.09 kW**

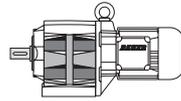
370	2.3	2.2	3.65	BG04-../D04LA4	4.4	390	-	445	1.93	2.6
310	2.75	2.5	4.39	"	"	380	-	370	2.3	3.0
255	3.35	2.7	5.36	"	"	380	-	305	2.8	3.2
205	4.15	2.4	6.67	"	"	410	-	245	3.5	2.9
158	5.4	2.0	8.58	"	"	410	-	189	4.5	2.4
150	5.7	2.1	9.00	"	"	470	-	180	4.75	2.5
137	6.2	2.1	9.90	"	"	480	-	164	5.2	2.5
125	6.8	2.1	10.82	"	"	480	-	150	5.7	2.5
114	7.5	2.0	11.90	"	"	490	-	137	6.2	2.4
108	7.9	1.9	12.55	"	"	490	-	130	6.6	2.3
103	8.3	1.95	13.20	"	"	500	-	123	6.9	2.3
93	9.2	1.85	14.52	"	"	510	-	112	7.6	2.2
83	10.3	1.75	16.44	"	"	530	-	99	8.6	2.1

P = 0.09 kW



*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
75	11.4	1.6	18.08	BG04-../D04LA4	4.4	540	-	90	9.5	1.9
64	13.4	1.4	21.12	"	"	560	-	77	11.1	1.7
59	14.5	1.4	23.23	"	"	600	-	70	12.2	1.65
56	15.3	1.3	24.45	"	"	610	-	67	12.8	1.55
51	16.8	1.2	26.89	"	"	650	-	61	14	1.45
44	19.5	1.05	30.91	"	"	690	-	53	16.2	1.25
40	21	0.95	34.00	"	"	720	-	48	17.9	1.1
38.5	22	0.91	35.35	"	"	730	-	46	18.6	1.1
35	24.5	0.82	38.89	"	"	750	-	42	20	1.0
130	6.6	2.9	10.40	BG05-../D04LA4	5.1	510	-	156	5.5	3.5
128	6.7	3.0	10.59	"	"	590	-	153	5.6	3.6
117	7.3	2.9	11.55	"	"	600	-	141	6.0	3.5
113	7.6	2.8	12.05	"	"	510	-	135	6.3	3.3
108	7.9	2.8	12.60	"	"	610	-	129	6.6	3.3
99	8.6	2.7	13.75	"	"	630	-	118	7.2	3.2
89	9.6	2.5	15.23	"	"	640	-	107	8.0	3.0
82	10.4	2.4	16.62	"	"	660	-	98	8.7	2.9
72	11.9	2.2	18.82	"	"	680	-	87	9.8	2.7
66	13	2.1	20.53	"	"	700	-	79	10.8	2.5
57	15	1.85	24.00	"	"	740	-	68	12.6	2.2
52	16.5	1.75	26.18	"	"	760	-	62	13.8	2.1
49	17.5	1.7	27.82	"	"	770	-	59	14.5	2.1
44.5	19.3	1.55	30.35	"	"	760	-	54	15.9	1.9
39	22	1.35	35.00	"	"	810	-	46.5	18.4	1.65
35.5	24	1.25	38.18	"	"	850	-	42.5	20	1.5
34	25	1.2	39.94	"	"	860	-	41	20.5	1.45
31	27.5	1.1	43.57	"	"	900	-	37.5	22.5	1.35
29	29.5	1.0	47.00	"	"	930	-	34.5	24.5	1.2
26.5	32	0.94	51.27	"	"	970	-	32	26.5	1.15
25.5	33.5	0.9	53.44	"	"	980	-	30.5	28	1.05
23.5	36.5	0.82	58.30	"	"	1000	-	28	30.5	0.98
65	13.2	3.0	20.82	BG06-../D04LA4	6.1	800	-	78	11	3.6
60	14.3	3.0	22.71	"	"	810	-	72	11.9	3.6
53	16.2	2.8	25.48	"	"	850	-	64	13.4	3.4
49	17.5	2.6	27.80	"	"	840	-	59	14.5	3.1
42	20	2.3	32.22	"	"	890	-	51	16.8	2.7
38.5	22	2.0	35.15	"	"	880	-	46.5	18.4	2.4
37	23	1.95	36.91	"	"	890	-	44	19.5	2.3
34	25	1.8	40.26	"	"	890	-	40.5	21	2.1
29.5	29	1.55	46.19	"	"	890	-	35.5	24	1.9
27	31.5	1.45	50.38	"	"	940	-	32.5	26	1.75
26	33	1.35	52.56	"	"	950	-	31	27.5	1.65
24	35.5	1.25	57.34	"	"	1000	-	28.5	30	1.5
22.5	38	1.2	61.22	"	"	1020	-	26.5	32	1.4
20.5	41.5	1.1	66.79	"	"	1070	-	24.5	35	1.3
18	45.5	0.88	75.99	BG06G04-../D04LA4	8.4	1070	-	21.5	37.5	1.05
15	54	0.83	93.00	"	"	1070	-	17.5	46.5	0.97
26.5	32	3.1	51.57	BG10-../D05LA4	11	2000	2800	31.5	27	3.7
23.5	36.5	2.7	57.48	"	"	2000	2800	28.5	30	3.3
21.5	39.5	2.5	63.69	"	"	2000	2800	25.5	33.5	3.0
20.5	41.5	2.4	66.00	"	"	2000	2800	25	34	2.9
18.5	46	2.2	73.13	"	"	2000	2800	22.5	38	2.6
17.5	49	2.0	77.40	BG10Z-../D05LA4	13	2000	2800	21	40.5	2.5
16	53	1.9	85.76	"	"	2000	2800	19	45	2.2
15	57	1.75	92.19	"	"	2000	2800	18	47.5	2.1
13.5	63	1.6	102.1	"	"	2000	2800	16	53	1.9
12.5	68	1.45	109.8	"	"	2000	2800	15	57	1.75
11.5	74	1.35	121.7	"	"	2000	2800	13.5	63	1.6

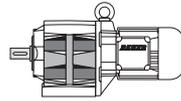


### P = 0.09 kW

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
10.5	81	1.25	131.8	BG10Z-../D05LA4	13	2000	2800	12.5	68	1.45
9.3	92	1.1	146.0	"	"	2000	2800	11.5	74	1.35
8.2	104	0.96	166.0	"	"	2000	2800	9.8	87	1.15
7.4	116	0.86	184.0	"	"	2000	2800	8.9	96	1.05
7.0	122	0.82	194.6	"	"	2000	2800	8.4	102	0.98

### P = 0.12 kW

370	3.05	1.65	3.65	BG04-../D04LA4	4.4	390	-	445	2.55	1.95
310	3.65	1.9	4.39	"	"	380	-	370	3.05	2.3
255	4.45	2.0	5.36	"	"	380	-	305	3.75	2.4
205	5.5	1.8	6.67	"	"	410	-	245	4.65	2.2
158	7.2	1.55	8.58	"	"	410	-	189	6.0	1.85
150	7.6	1.6	9.00	"	"	470	-	180	6.3	1.9
137	8.3	1.55	9.90	"	"	480	-	164	6.9	1.9
125	9.1	1.55	10.82	"	"	480	-	150	7.6	1.85
114	10	1.5	11.90	"	"	490	-	137	8.3	1.8
108	10.6	1.4	12.55	"	"	490	-	130	8.8	1.7
103	11.1	1.45	13.20	"	"	500	-	123	9.3	1.7
93	12.3	1.4	14.52	"	"	510	-	112	10.2	1.65
83	13.8	1.3	16.44	"	"	530	-	99	11.5	1.55
75	15.2	1.2	18.08	"	"	540	-	90	12.7	1.4
64	17.9	1.05	21.12	"	"	560	-	77	14.8	1.3
59	19.4	1.05	23.23	"	"	600	-	70	16.3	1.25
56	20	1.0	24.45	"	"	610	-	67	17.1	1.15
51	22	0.91	26.89	"	"	650	-	61	18.7	1.05
295	3.85	3.1	4.59	BG05-../D04LA4	5.1	490	-	355	3.2	3.8
250	4.55	3.1	5.46	"	"	490	-	300	3.8	3.7
205	5.5	2.9	6.60	"	"	510	-	250	4.55	3.5
174	6.5	2.8	7.80	"	"	530	-	210	5.4	3.3
166	6.9	2.6	8.15	"	"	510	-	199	5.7	3.2
159	7.2	2.6	8.51	"	"	550	-	191	6.0	3.2
130	8.8	2.2	10.40	"	"	510	-	156	7.3	2.6
128	8.9	2.2	10.59	"	"	590	-	153	7.4	2.7
117	9.7	2.2	11.55	"	"	600	-	141	8.1	2.6
113	10.1	2.1	12.05	"	"	510	-	135	8.4	2.5
108	10.6	2.1	12.60	"	"	610	-	129	8.8	2.5
99	11.5	2.0	13.75	"	"	630	-	118	9.7	2.4
89	12.8	1.9	15.23	"	"	640	-	107	10.7	2.2
82	13.9	1.8	16.62	"	"	660	-	98	11.6	2.2
72	15.9	1.65	18.82	"	"	680	-	87	13.1	2.0
66	17.3	1.55	20.53	"	"	700	-	79	14.5	1.85
57	20	1.4	24.00	"	"	740	-	68	16.8	1.65
52	22	1.3	26.18	"	"	760	-	62	18.4	1.6
49	23	1.3	27.82	"	"	770	-	59	19.4	1.55
44.5	25.5	1.2	30.35	"	"	760	-	54	21	1.45
39	29	1.05	35.00	"	"	810	-	46.5	24.5	1.2
35.5	32	0.94	38.18	"	"	850	-	42.5	26.5	1.15
34	33.5	0.9	39.94	"	"	860	-	41	27.5	1.1
31	36.5	0.82	43.57	"	"	900	-	37.5	30.5	0.98
110	10.4	3.2	12.30	BG06-../D04LA4	6.1	670	-	132	8.6	3.8
105	10.9	3.0	12.98	"	"	600	-	125	9.1	3.6
92	12.4	2.7	14.78	"	"	730	-	110	10.4	3.3
84	13.6	2.6	16.13	"	"	740	-	101	11.3	3.1
78	14.6	2.6	17.40	"	"	760	-	94	12.1	3.1
72	15.9	2.5	18.98	"	"	770	-	86	13.3	3.0
65	17.6	2.3	20.82	"	"	800	-	78	14.6	2.7
60	19.1	2.3	22.71	"	"	810	-	72	15.9	2.7

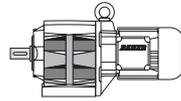


### P = 0.12 kW

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
53	21.5	2.1	25.48	BG06-../D04LA4	6.1	850	-	64	17.9	2.5
49	23	1.95	27.80	"	"	840	-	59	19.4	2.3
42	27	1.65	32.22	"	"	890	-	51	22	2.0
38.5	29.5	1.55	35.15	"	"	880	-	46.5	24.5	1.85
37	30.5	1.5	36.91	"	"	890	-	44	26	1.75
34	33.5	1.35	40.26	"	"	890	-	40.5	28	1.6
29.5	38.5	1.15	46.19	"	"	890	-	35.5	32	1.4
27	42	1.05	50.38	"	"	940	-	32.5	35	1.3
26	44	1.0	52.56	"	"	950	-	31	36.5	1.25
24	47.5	0.95	57.34	"	"	1000	-	28.5	40	1.15
22.5	50	0.9	61.22	"	"	1020	-	26.5	43	1.05
20.5	55	0.82	66.79	"	"	1070	-	24.5	46.5	0.97
34.5	33	3.0	39.70	BG10-../D05LA4	11	1780	2450	41	27.5	3.6
31	36.5	2.7	43.99	"	"	1880	2600	37	30.5	3.3
29.5	38.5	2.6	46.55	"	"	1920	2650	35	32.5	3.1
26.5	43	2.3	51.57	"	"	2000	2800	31.5	36	2.8
23.5	48.5	2.1	57.48	"	"	2000	2800	28.5	40	2.5
21.5	53	1.9	63.69	"	"	2000	2800	25.5	44.5	2.2
20.5	55	1.8	66.00	"	"	2000	2800	25	45.5	2.2
18.5	61	1.65	73.13	"	"	2000	2800	22.5	50	2.0
17.5	65	1.55	77.40	BG10Z-../D05LA4	13	2000	2800	21	54	1.85
16	71	1.4	85.76	"	"	2000	2800	19	60	1.65
15	76	1.3	92.19	"	"	2000	2800	18	63	1.6
13.5	84	1.2	102.1	"	"	2000	2800	16	71	1.4
12.5	91	1.1	109.8	"	"	2000	2800	15	76	1.3
11.5	99	1.0	121.7	"	"	2000	2800	13.5	84	1.2
10.5	109	0.92	131.8	"	"	2000	2800	12.5	91	1.1
9.3	123	0.81	146.0	"	"	2000	2800	11.5	99	1.0

### P = 0.18 kW

400	4.25	2.4	3.38	BG05-../D05LA4	7.0	460	-	480	3.55	2.8
295	5.8	2.1	4.59	"	"	490	-	355	4.8	2.5
250	6.8	2.1	5.46	"	"	490	-	300	5.7	2.5
205	8.3	1.95	6.60	"	"	510	-	250	6.8	2.4
174	9.8	1.85	7.80	"	"	530	-	210	8.1	2.2
166	10.3	1.75	8.15	"	"	510	-	199	8.6	2.1
159	10.8	1.75	8.51	"	"	550	-	191	9.0	2.1
130	13.2	1.45	10.40	"	"	510	-	156	11	1.75
128	13.4	1.5	10.59	"	"	590	-	153	11.2	1.8
117	14.6	1.45	11.55	"	"	600	-	141	12.1	1.75
113	15.2	1.4	12.05	"	"	510	-	135	12.7	1.65
108	15.9	1.4	12.60	"	"	610	-	129	13.3	1.65
99	17.3	1.35	13.75	"	"	630	-	118	14.5	1.6
89	19.3	1.25	15.23	"	"	640	-	107	16	1.5
82	20.5	1.2	16.62	"	"	660	-	98	17.5	1.45
72	23.5	1.1	18.82	"	"	680	-	87	19.7	1.3
66	26	1.05	20.53	"	"	700	-	79	21.5	1.25
57	30	0.93	24.00	"	"	740	-	68	25	1.1
52	33	0.88	26.18	"	"	760	-	62	27.5	1.05
49	35	0.86	27.82	"	"	770	-	59	29	1.05
230	7.4	3.2	5.96	BG06-../D05LA4	8.0	570	-	275	6.2	3.9
193	8.9	2.9	7.01	"	"	580	-	235	7.3	3.6
161	10.6	2.6	8.39	"	"	600	-	194	8.8	3.2
144	11.9	2.5	9.38	"	"	640	-	173	9.9	3.0
132	13	2.4	10.24	"	"	640	-	159	10.8	2.9
120	14.3	2.2	11.28	"	"	670	-	144	11.9	2.7
110	15.6	2.1	12.30	"	"	670	-	132	13	2.5



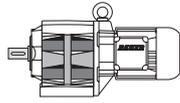
### P = 0.18 kW

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
105	16.3	2.0	12.98	BG06-../D05LA4	8.0	600	-	125	13.7	2.4
92	18.6	1.85	14.78	"	"	730	-	110	15.6	2.2
84	20	1.75	16.13	"	"	740	-	101	17	2.1
78	22	1.75	17.40	"	"	760	-	94	18.2	2.1
72	23.5	1.7	18.98	"	"	770	-	86	19.9	2.0
65	26	1.55	20.82	"	"	800	-	78	22	1.8
60	28.5	1.5	22.71	"	"	810	-	72	23.5	1.85
53	32	1.4	25.48	"	"	850	-	64	26.5	1.7
49	35	1.3	27.80	"	"	840	-	59	29	1.55
42	40.5	1.1	32.22	"	"	890	-	51	33.5	1.35
38.5	44.5	1.0	35.15	"	"	880	-	46.5	36.5	1.25
37	46	0.98	36.91	"	"	890	-	44	39	1.15
34	50	0.9	40.26	"	"	890	-	40.5	42	1.05
56	30.5	3.3	24.42	BG10-../D05LA4	11	1410	1970	67	25.5	3.9
52	33	3.0	26.26	"	"	1460	2000	62	27.5	3.6
46.5	36.5	2.7	29.09	"	"	1540	2150	56	30.5	3.3
43	39.5	2.5	31.52	"	"	1600	2200	52	33	3.0
39	44	2.3	34.92	"	"	1690	2350	46.5	36.5	2.7
34.5	49.5	2.0	39.70	"	"	1780	2450	41	41.5	2.4
31	55	1.8	43.99	"	"	1880	2600	37	46	2.2
29.5	58	1.7	46.55	"	"	1920	2650	35	49	2.0
26.5	64	1.55	51.57	"	"	2000	2800	31.5	54	1.85
23.5	73	1.35	57.48	"	"	2000	2800	28.5	60	1.65
21.5	79	1.25	63.69	"	"	2000	2800	25.5	67	1.5
20.5	83	1.2	66.00	"	"	2000	2800	25	68	1.45
18.5	92	1.1	73.13	"	"	2000	2800	22.5	76	1.3
17.5	98	1.0	77.40	BG10Z-../D05LA4	13	2000	2800	21	81	1.25
16	107	0.93	85.76	"	"	2000	2800	19	90	1.1
15	114	0.88	92.19	"	"	2000	2800	18	95	1.05

### P = 0.25 kW

400	5.9	1.7	3.38	BG05-../D05LA4	7.0	460	-	480	4.95	2.0
295	8.0	1.5	4.59	"	"	490	-	355	6.7	1.8
250	9.5	1.45	5.46	"	"	490	-	300	7.9	1.75
205	11.6	1.4	6.60	"	"	510	-	250	9.5	1.7
174	13.7	1.3	7.80	"	"	530	-	210	11.3	1.6
166	14.3	1.25	8.15	"	"	510	-	199	11.9	1.5
159	15	1.25	8.51	"	"	550	-	191	12.5	1.5
130	18.3	1.05	10.40	"	"	510	-	156	15.3	1.25
128	18.6	1.1	10.59	"	"	590	-	153	15.6	1.3
117	20	1.05	11.55	"	"	600	-	141	16.9	1.25
113	21	1.0	12.05	"	"	510	-	135	17.6	1.2
108	22	1.0	12.60	"	"	610	-	129	18.5	1.2
99	24	0.96	13.75	"	"	630	-	118	20	1.15
89	26.5	0.91	15.23	"	"	640	-	107	22	1.1
82	29	0.86	16.62	"	"	660	-	98	24	1.05
360	6.6	3.0	3.78	BG06-../D05LA4	8.0	520	-	430	5.5	3.6
300	7.9	2.8	4.54	"	"	530	-	360	6.6	3.3
230	10.3	2.3	5.96	"	"	570	-	275	8.6	2.8
193	12.3	2.1	7.01	"	"	580	-	235	10.1	2.6
161	14.8	1.9	8.39	"	"	600	-	194	12.3	2.3
144	16.5	1.8	9.38	"	"	640	-	173	13.8	2.2
132	18	1.7	10.24	"	"	640	-	159	15	2.1
120	19.8	1.6	11.28	"	"	670	-	144	16.5	1.95
110	21.5	1.55	12.30	"	"	670	-	132	18	1.85
105	22.5	1.45	12.98	"	"	600	-	125	19.1	1.75
92	25.5	1.35	14.78	"	"	730	-	110	21.5	1.6

**P = 0.25 kW**



*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
84	28	1.25	16.13	BG06-../D05LA4	8.0	740	-	101	23.5	1.5
78	30.5	1.25	17.40	"	"	760	-	94	25	1.5
72	33	1.2	18.98	"	"	770	-	86	27.5	1.45
65	36.5	1.1	20.82	"	"	800	-	78	30.5	1.3
60	39.5	1.1	22.71	"	"	810	-	72	33	1.3
53	45	1.0	25.48	"	"	850	-	64	37	1.2
49	48.5	0.93	27.80	"	"	840	-	59	40	1.15
42	56	0.8	32.22	"	"	890	-	51	46.5	0.97
73	32.5	3.1	18.51	BG10-../D05LA4	11	1210	1690	88	27	3.7
66	36	2.8	20.51	"	"	1290	1800	79	30	3.3
62	38.5	2.6	22.04	"	"	1330	1860	74	32	3.1
56	42.5	2.4	24.42	"	"	1410	1970	67	35.5	2.8
52	45.5	2.2	26.26	"	"	1460	2000	62	38.5	2.6
46.5	51	1.95	29.09	"	"	1540	2150	56	42.5	2.4
43	55	1.8	31.52	"	"	1600	2200	52	45.5	2.2
39	61	1.65	34.92	"	"	1690	2350	46.5	51	1.95
34.5	69	1.45	39.70	"	"	1780	2450	41	58	1.7
31	77	1.3	43.99	"	"	1880	2600	37	64	1.55
29.5	80	1.25	46.55	"	"	1920	2650	35	68	1.45
26.5	90	1.1	51.57	"	"	2000	2800	31.5	75	1.35
23.5	101	0.99	57.48	"	"	2000	2800	28.5	83	1.2
21.5	111	0.9	63.69	"	"	2000	2800	25.5	93	1.1
20.5	116	0.86	66.00	"	"	2000	2800	25	95	1.05



### 6.3 Dimensional Drawings for 3-Phase and Single-Phase AC Helical Geared Motors

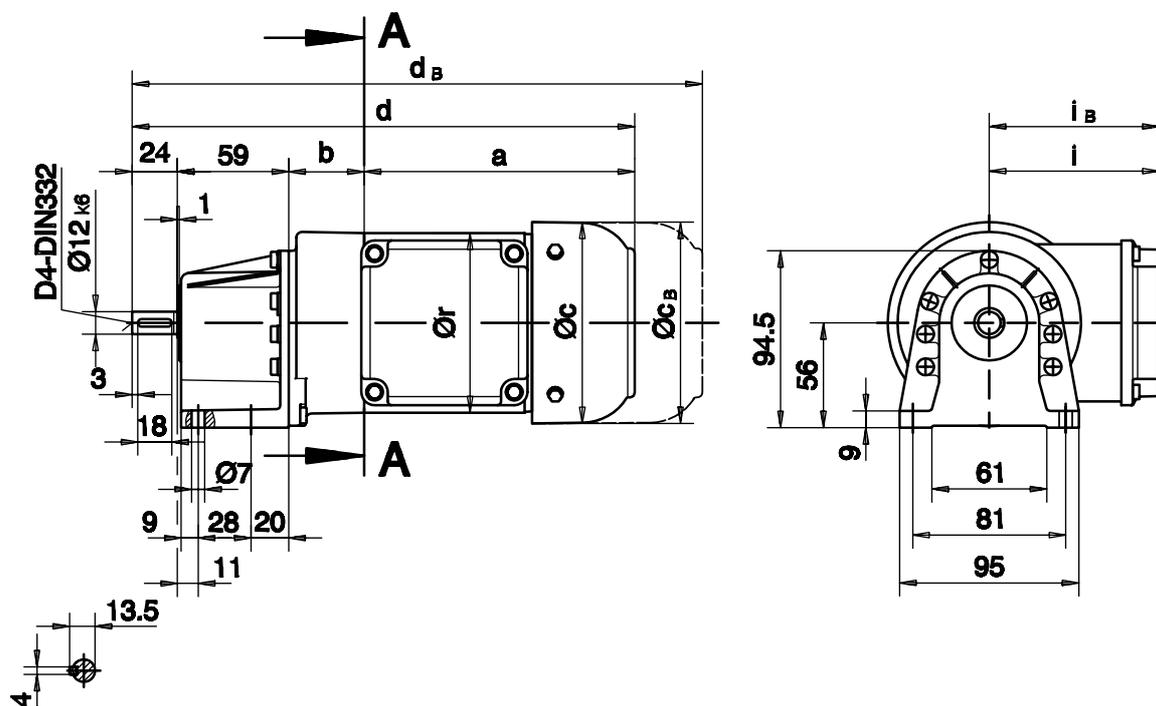
The external dimensions of the single-phase AC motors are the same as those of the comparable 3-phase AC motors, i.e.

E04 is the same as D04, EU04 is the same as DU04

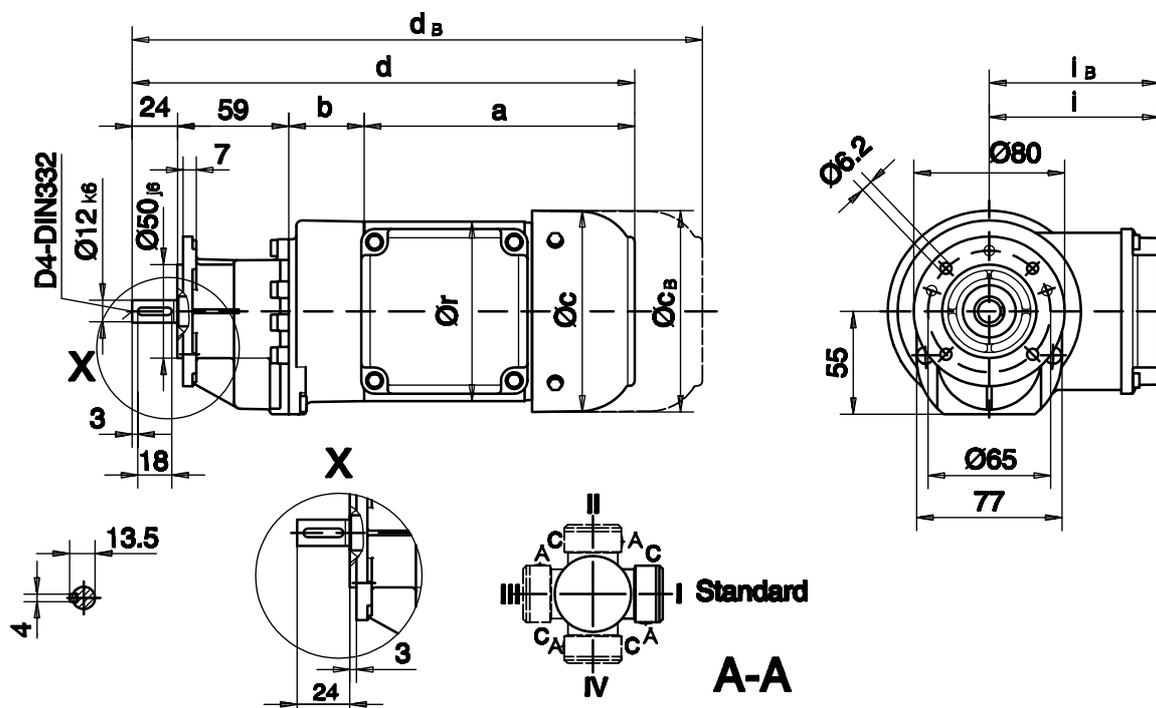
E05 is the same as D05, EU05 is the same as DU05.

The dimensional drawings for single-phase AC motors and single-phase AC geared motors and the supplementary dimensional drawings can thus be found in this section.

Fußausführung/Foot mounting/fixation à pied  
 Code -11/

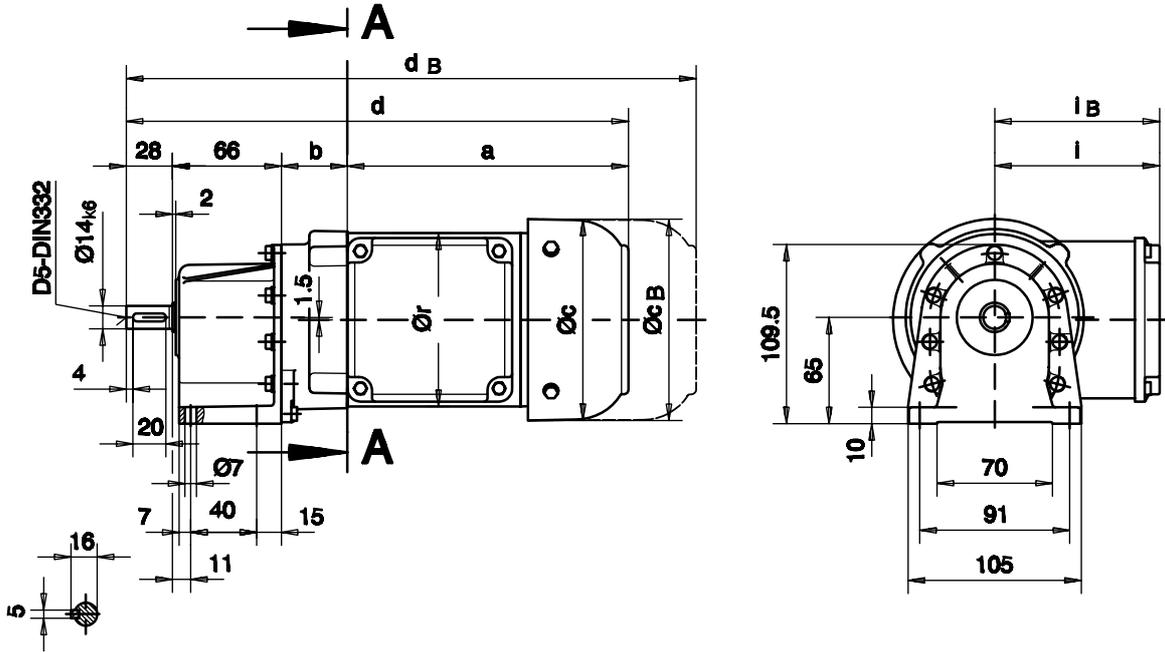


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/

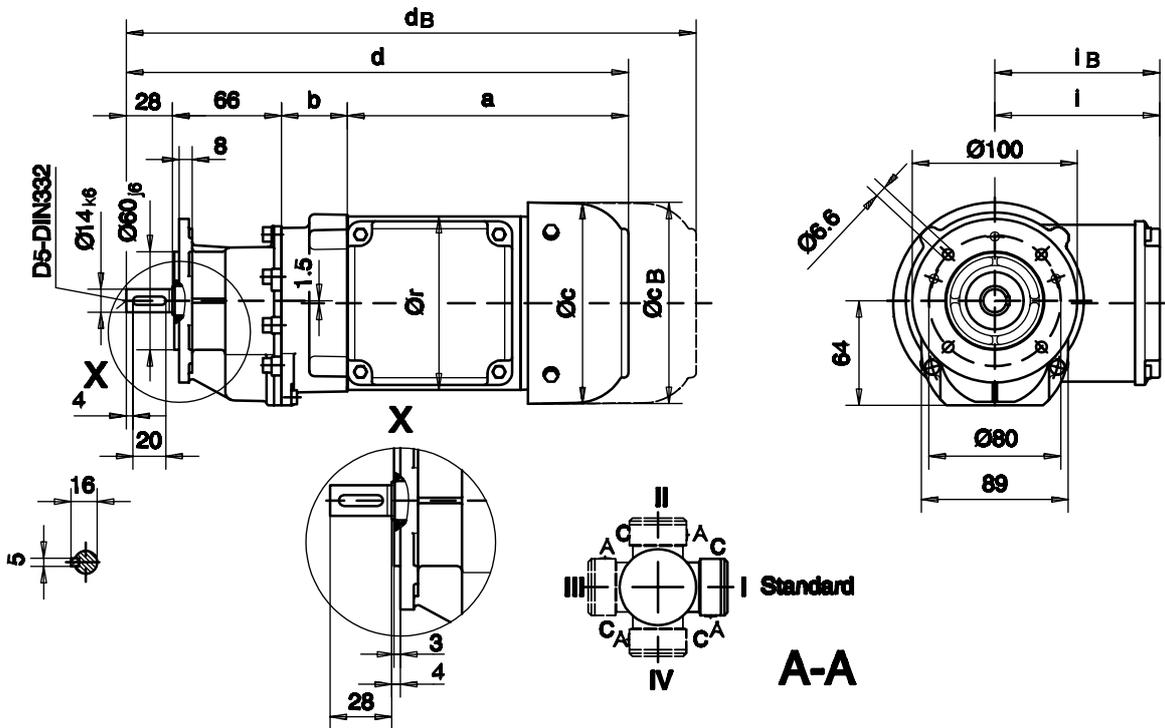


Typ/Type/Type	a	b	c	d	l	r	l <sub>B</sub>	Ausführung mit Bremse / with brake / avec frein												
								Typ: E003												
								c <sub>B</sub>	d <sub>B</sub>											
BG04-../D04..	143	40	111	266	90	96	90	111	309											

Fußausführung/Foot mounting/fixation à pied  
 Code -11/

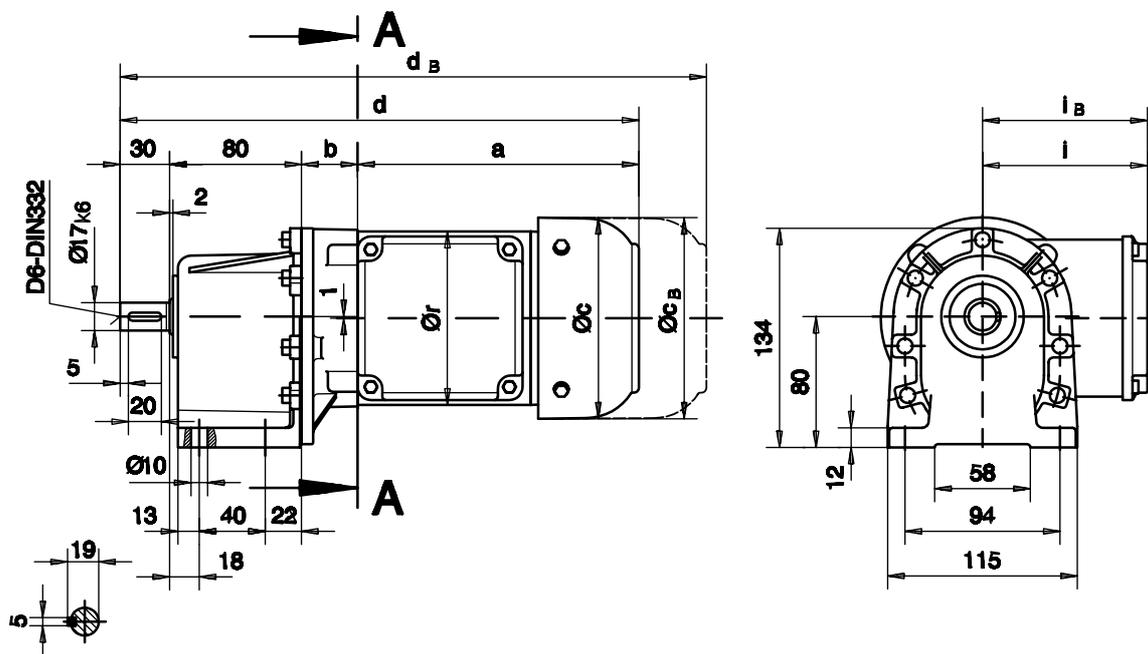


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/

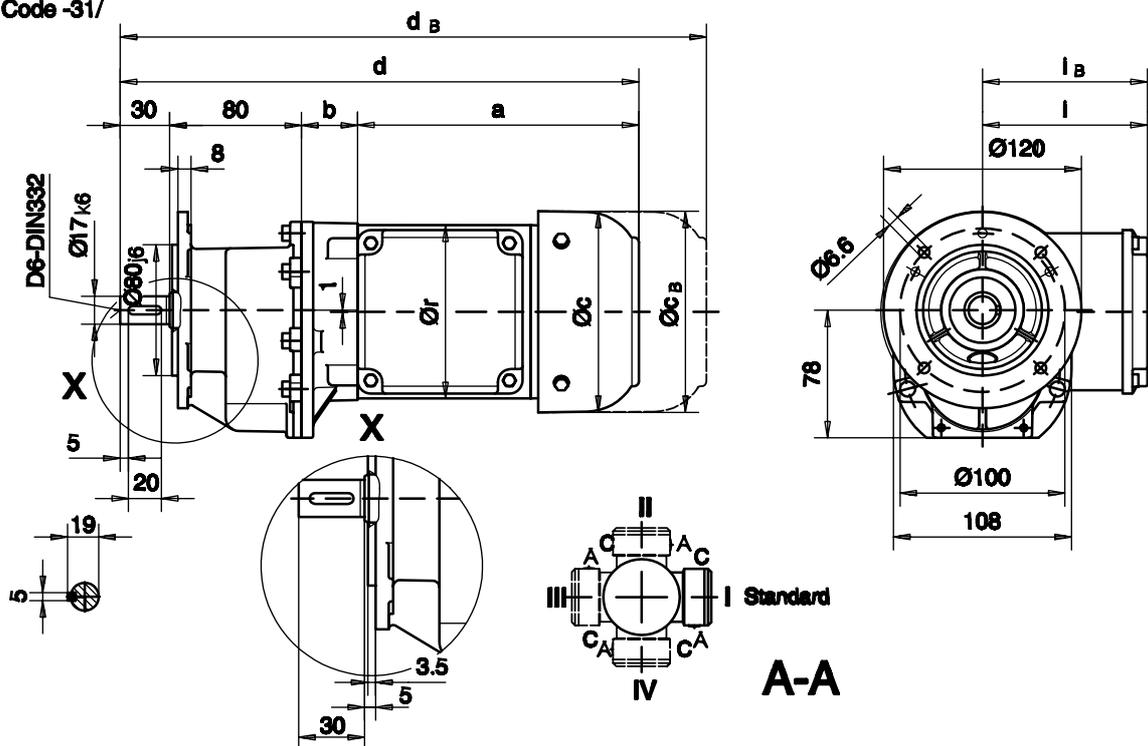


Typ/Type/Type	a	b	c	d	l	r	l <sub>B</sub>	Ausführung mit Bremse / with brake / avec frein									
								Typ: E003									
								c <sub>B</sub>	d <sub>B</sub>								
BG05-../D04..	143	38	111	275	90	96	90	111	318								
BG05-../D05..	170	40	123	304	100	106	100	123	347								
BG05-../D06..	170	40	123	304	100	121	100	123	347								

Fußausführung/Foot mounting/fixation à pied  
 Code -11/

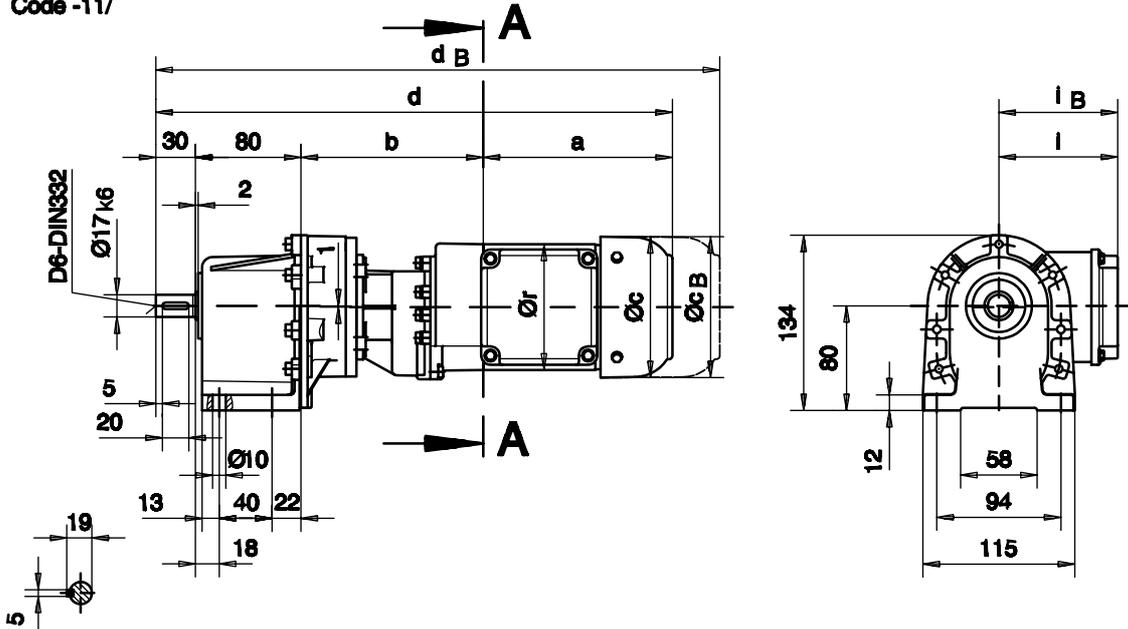


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/

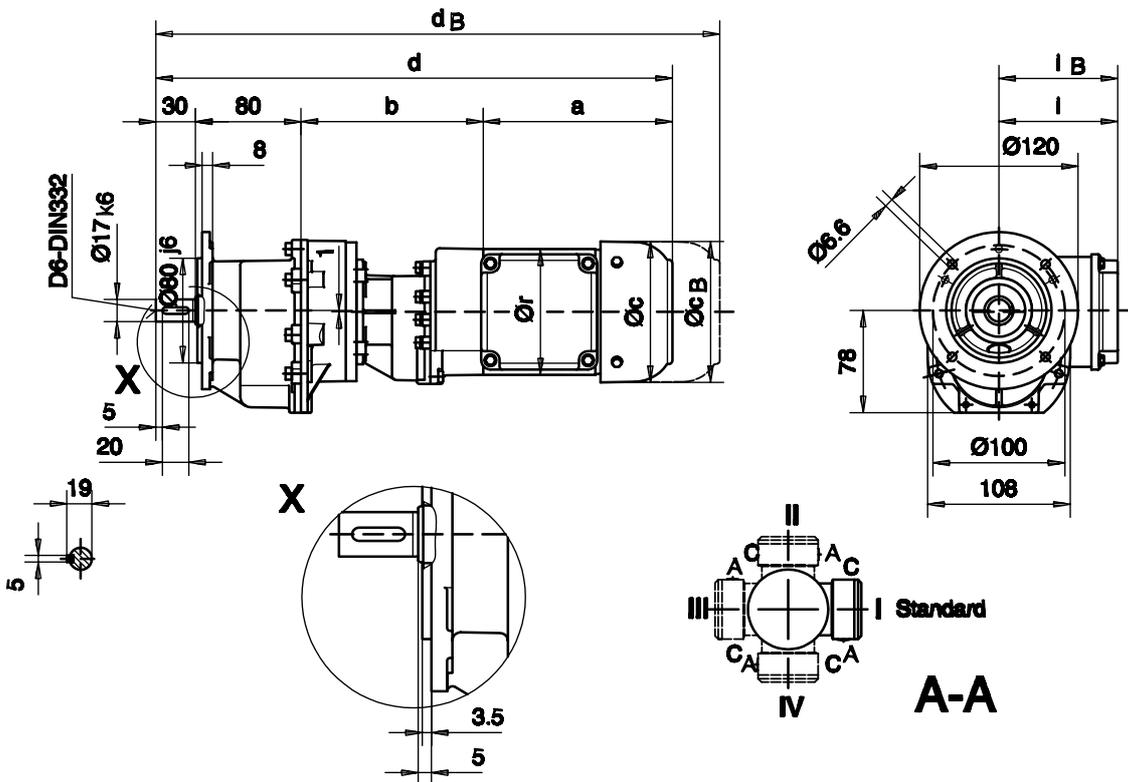


Typ/Type/Type	a	b	c	d	l	r	l <sub>B</sub>	Ausführung mit Bremse / with brake / avec frein									
								E003		E005-E008		Z005-Z008					
								c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>				
BG06-../D04..	143	32	111	285	90	96	90	111	328								
BG06-../D05..	170	34	123	314	100	106	100	123	356								
BG06-../D06..	170	34	123	314	100	121	100	123	356								
BG06-../D08..	200	78	156	384	115	156	115			156	471	156	471				

Fußausführung/Foot mounting/fixation à pied  
 Code -11/

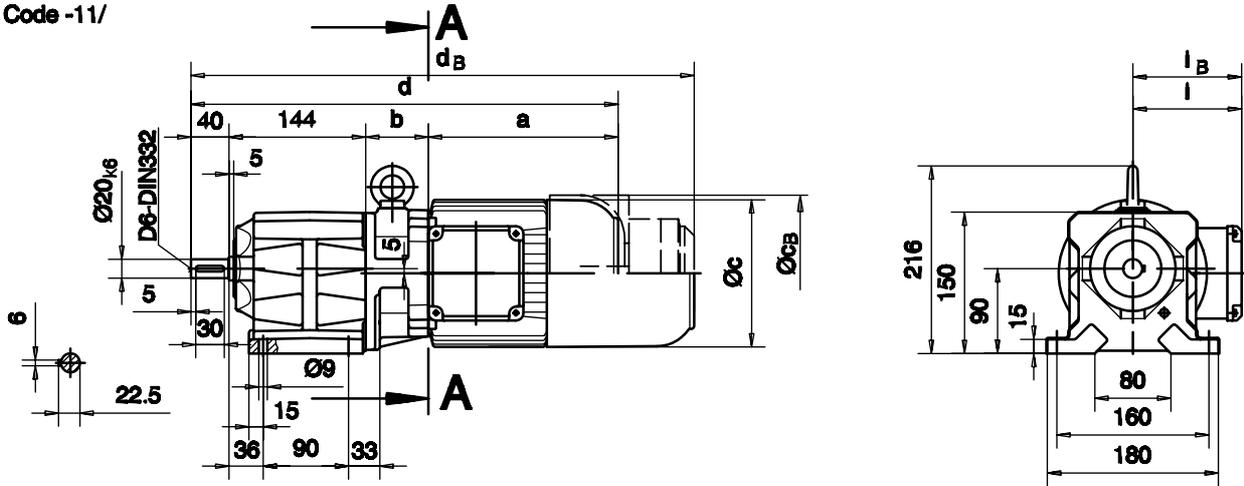


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/

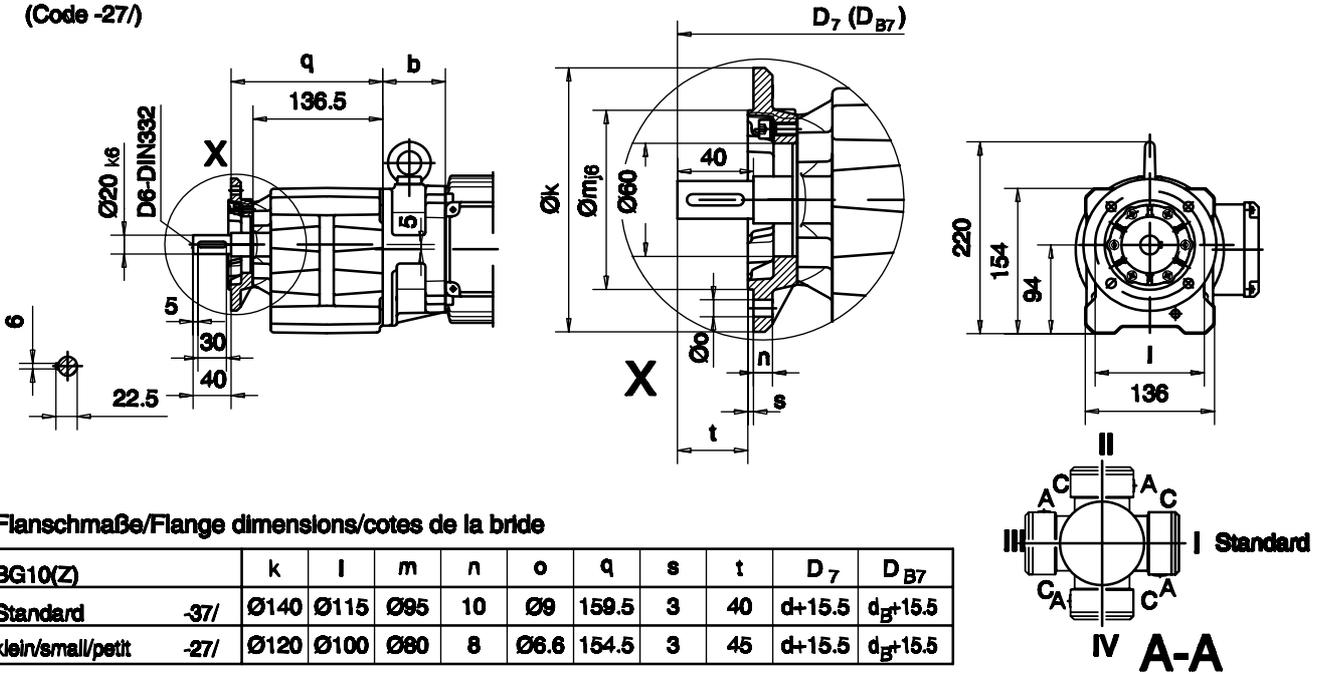


Typ/Type/Type	a	b	c	d	l	r	l <sub>B</sub>	Ausführung mit Bremse / with brake / avec frein				
								Typ: E003		Typ:	Typ:	
								c <sub>B</sub>	d <sub>B</sub>			
BG06G04-../D04..	143	138	111	391	90	96	90	111	434			

Fußausführung mit Durchgangslöchern/Foot mounting with through holes/  
 fixation à pied avec trous débouchants  
 Code -11/



Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -37/  
 (Code -27/)

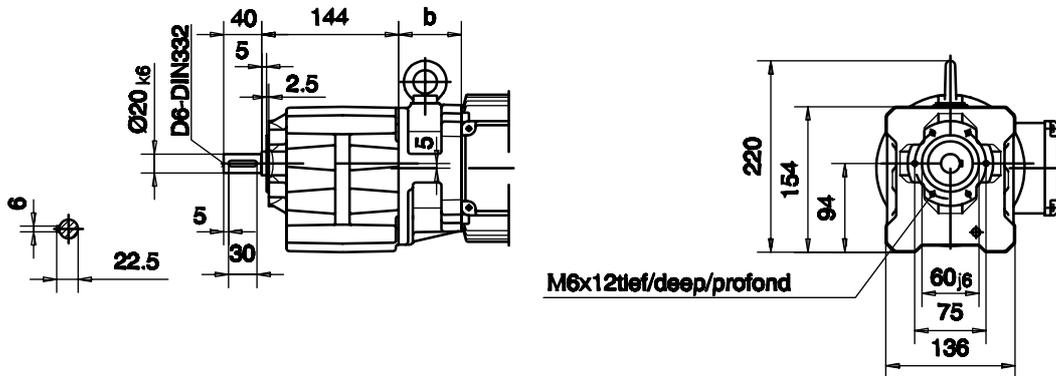


Flanschmaße/Flange dimensions/cotes de la bride

BG10(Z)		k	l	m	n	o	q	s	t	D <sub>7</sub>	D <sub>B7</sub>
Standard	-37/	Ø140	Ø115	Ø95	10	Ø9	159.5	3	40	d+15.5	d <sub>B</sub> +15.5
klein/small/petit	-27/	Ø120	Ø100	Ø80	8	Ø6.6	154.5	3	45	d+15.5	d <sub>B</sub> +15.5

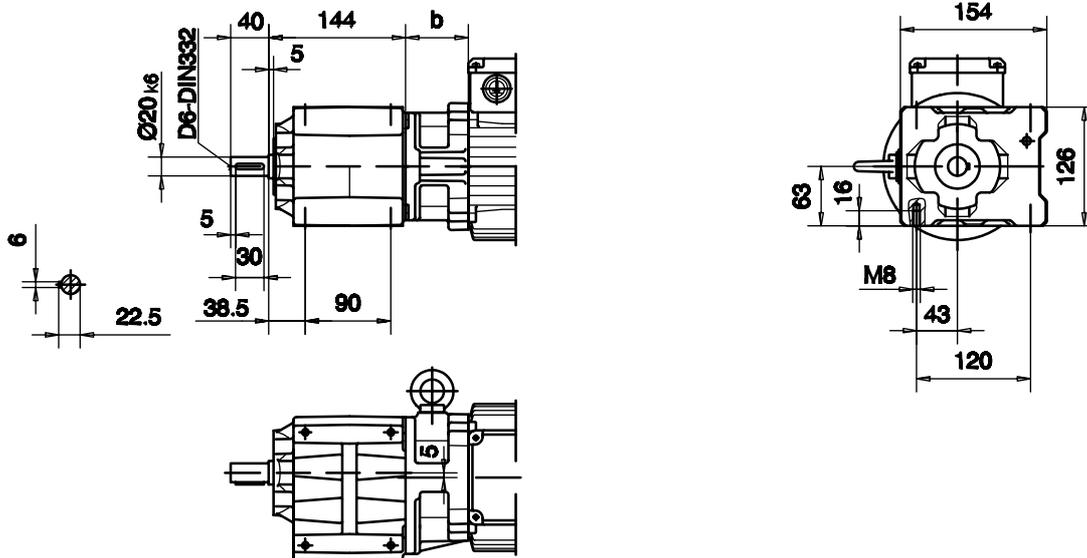
Typ/Type/Type	a	b	c	d	l	l <sub>B</sub>	Ausführung mit Bremse / with brake / avec frein													
							E003		E005-E008		Z005-Z008									
							c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>								
BG10Z-.1/D04..	143	86	111	413	90	90	111	456												
BG10-.1/D05..	170	62	123	416	100	100	123	459												
BG10Z-.1/D05..	170	88	123	442	100	100	123	485												
BG10-.1/D06..	170	62	123	416	100	100	123	459												
BG10Z-.1/D06..	170	88	123	442	100	100	123	485												
BG10-.1/D08..	200	66	156	450	115	115			156	537	156	537								
BG10Z-.1/D08..	200	132	156	516	115	115			156	603	156	603								
Typ/Type/Type	a	b	c	d	l	l <sub>B</sub>	E005-E008		Z005-Z008		E010-E015		Z010-Z015		E025		Z025			
							c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>
BG10-.1/D09..	251	81	176	516	124	124	192	595	192	609	192	601	192	615	192	618	192	637		

Flansch mit Gewindelöchern/flange with tapped holes/bride avec trous taraudés  
 Code -71/



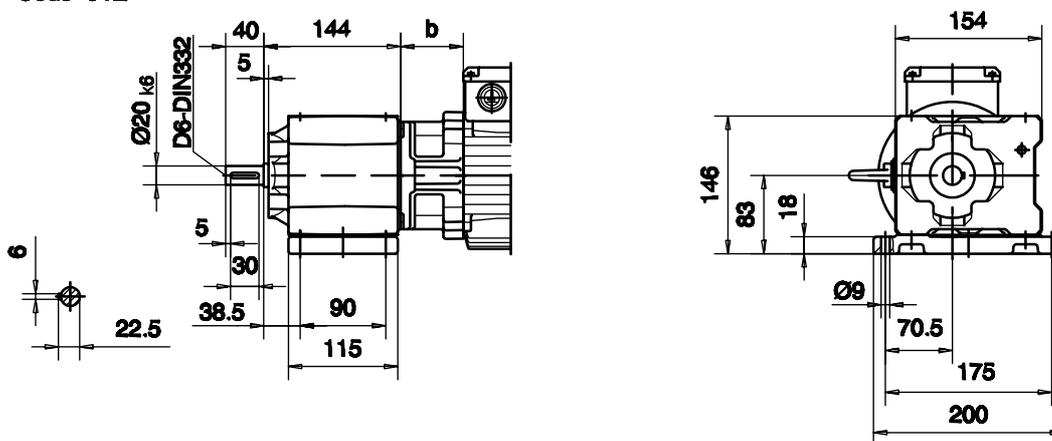
Fuß mit Gewindelöchern links und rechts/foot with tapped holes left and right/  
 fixation: trous taraudés à gauche et à droite

Code -61LR/

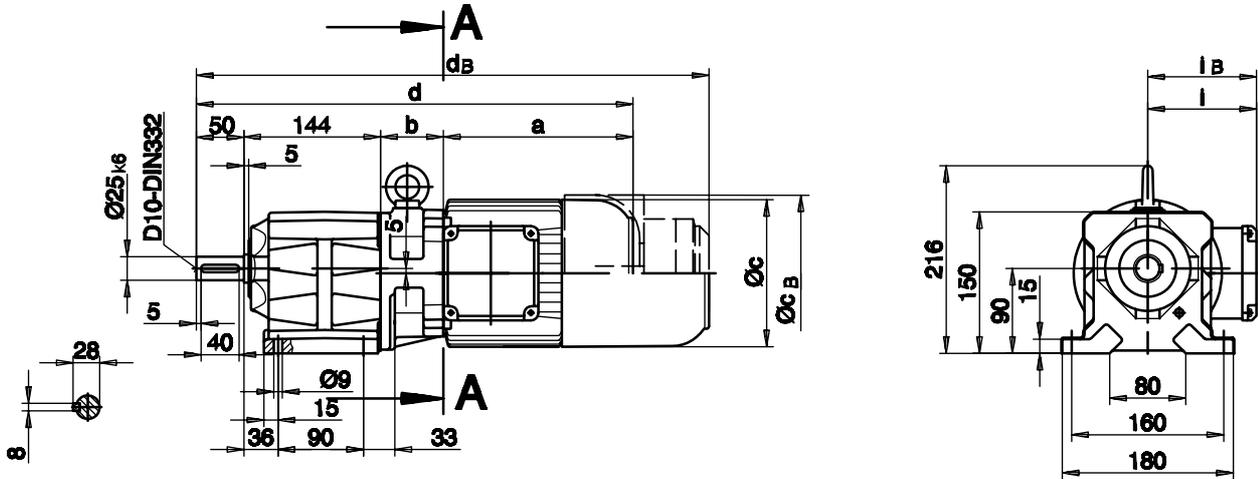


Fußplatte links/foot plate left/fixation du pied à gauche

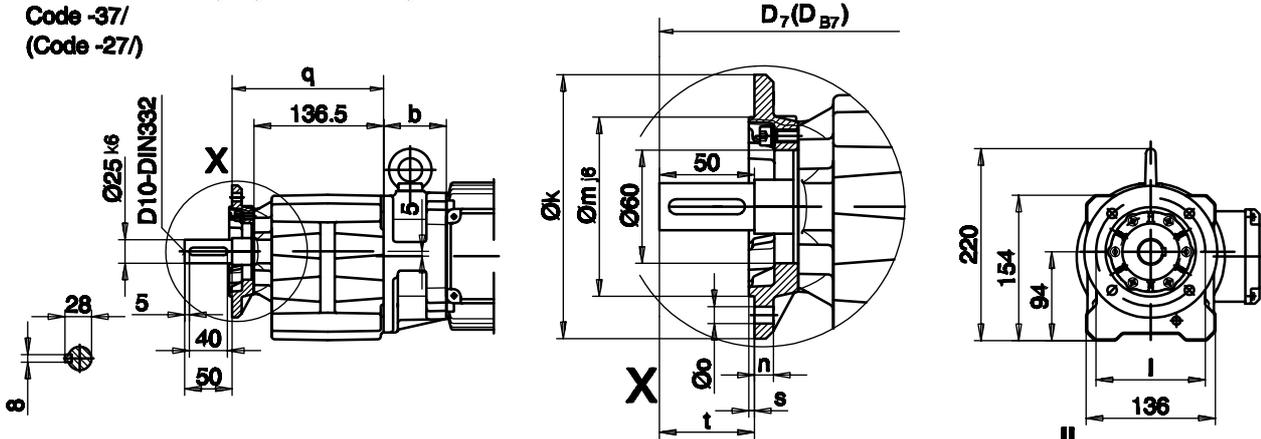
Code -91L/



Fußausführung mit Durchgangslöchern/Foot mounting with clearance holes/  
 fixation à pied avec trous débouchants  
 Code -11/

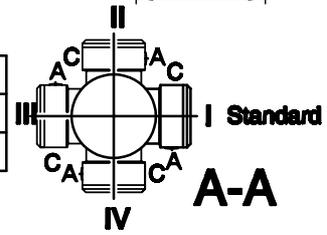


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -37/  
 (Code -27/)



Flanschmaße/Flange dimensions/cotes de la bride

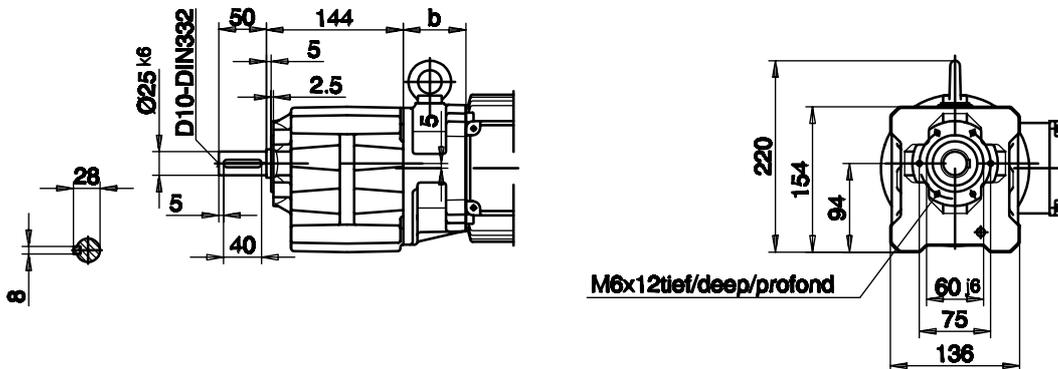
BG10X(Z)	k	l	m	n	o	q	s	t	D <sub>7</sub>	D <sub>B7</sub>
Standard -37/	Ø140	Ø115	Ø95	10	Ø9	159.5	3	50	d+15.5	d <sub>B</sub> +15.5
klein/small/petit -27/	Ø120	Ø100	Ø80	8	Ø6.6	154.5	3	55	d+15.5	d <sub>B</sub> +15.5



		Ausführung mit Bremse / with brake / avec frein																
Typ/Type/Type	a	b	c	d	i	i <sub>B</sub>	E003		E005-E008		Z005-Z008							
							c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>						
BG10XZ-.1/D04..	143	86	111	423	90	90	111	466										
BG10X-.1/D05..	170	62	123	426	100	100	123	469										
BG10XZ-.1/D05..	170	88	123	452	100	100	123	495										
BG10X-.1/D06..	170	62	123	426	100	100	123	469										
BG10XZ-.1/D06..	170	88	123	452	100	100	123	495										
BG10X-.1/D08..	200	66	156	460	115	115			156	547	156	547						
BG10XZ-.1/D08..	200	132	156	526	115	115			156	613	156	613						
Typ/Type/Type	a	b	c	d	i	i <sub>B</sub>	E005-E008		Z005-Z008		E010-E015		Z010-Z015		E025		Z025	
							c <sub>B</sub>	d <sub>B</sub>										
BG10X-.1/D09..	251	81	176	526	124	124	192	605	192	619	192	611	192	625	192	628	192	647

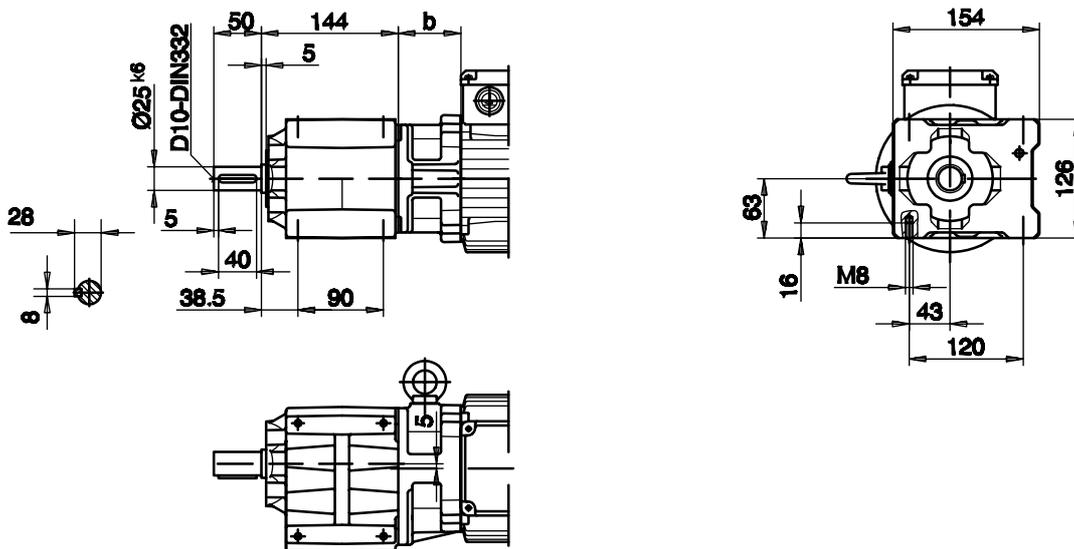
Flansch mit Gewindelöchern/flange with tapped holes/bride avec trous taraudés

Code -71/



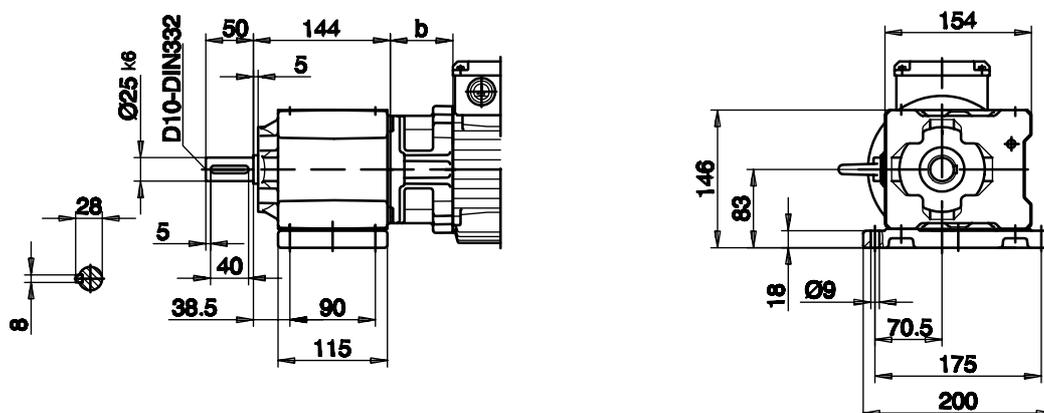
Fuß mit Gewindelöchern links und rechts/foot with tapped holes left and right/  
 fixation: trous taraudés à gauche et à droite

Code -61LR/



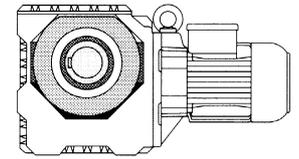
Fußplatte links/foot plate left/fixation du pied à gauche

Code -91L/





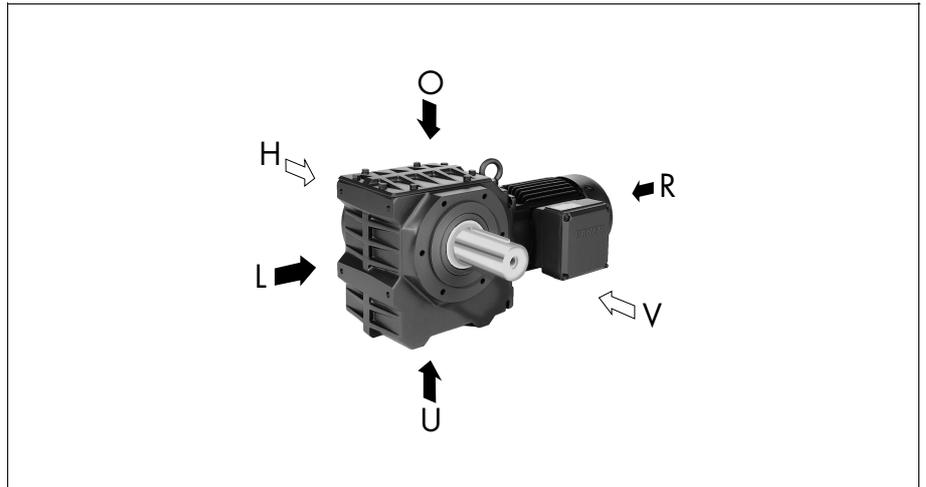
# 7 Worm Geared Motors, Series BS



## 7.1 Description of Worm Gearbox

### 7.1.1 Sizes

BAUER Series BS worm gearboxes are available in 8 listed sizes offering torque ratings from 25 Nm to 1,000 Nm. Higher torque ratings are available on request. These gearboxes have a tough cast housing. The choice in this list is limited to 4 sizes.

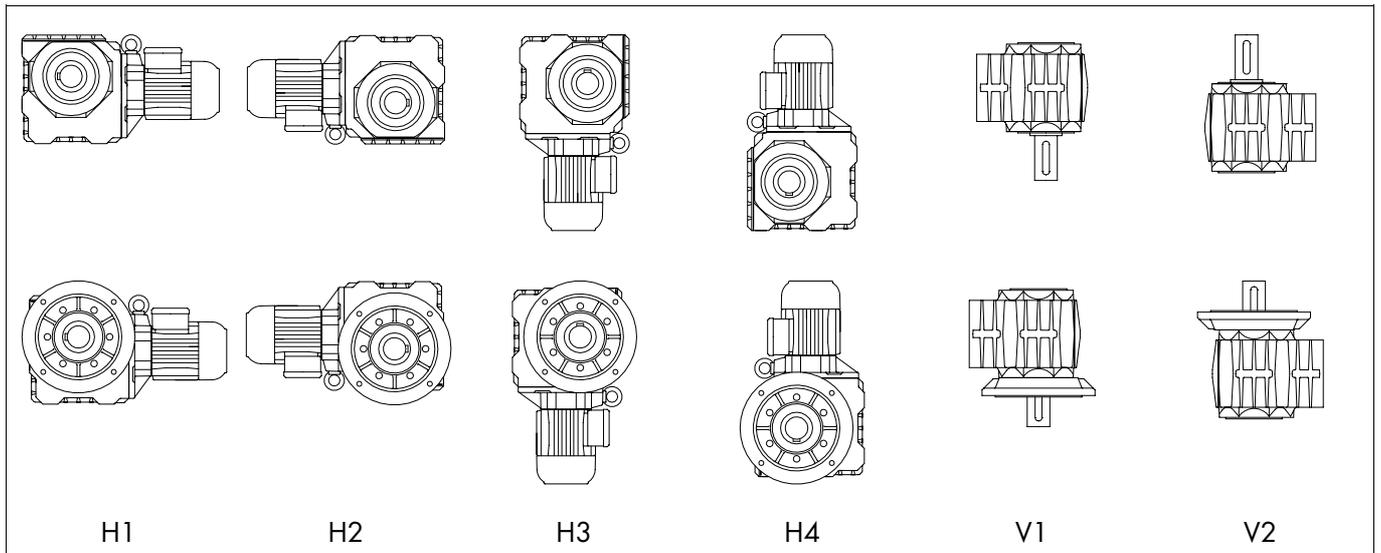


### 7.1.2 Type Designation and Modular Components of Series BS Worm Gearboxes

<b>BS..-</b>	<b>Bauer worm gearbox</b> Gearbox size (BS02, 03, 04, 06, 10, 20, 30, 40)	<b>BS..-6.U</b>	Foot with threaded holes bottom
<b>BS..-Z..</b>	Gearbox with pre-reducer stage (e.g. BS10Z..)	<b>BS..-6.L</b>	Foot with threaded holes left
<b>BS..-G..-..</b>	Double gearbox (e.g. BS40G10..)	<b>BS..-6.O</b>	Foot with threaded holes top
	<b>Gearbox housing designs</b>	<b>BS..-7.V</b>	C flange with threaded holes front
<b>BS..-1.U</b>	Foot with plain holes bottom	<b>BS..-7.H</b>	C flange with threaded holes rear
<b>BS..-1.L</b>	Foot with plain holes left	<b>BS..-7.VH</b>	C flange with threaded holes front and rear
<b>BS..-1.O</b>	Foot with plain holes top		<b>Output shaft designs</b>
	<b>Small flange with plain holes</b>	<b>BS..-1</b>	Solid shaft front
<b>BS..-2.V</b>	A flange at front (standard flange)	<b>BS..-2</b>	Solid shaft rear
<b>BS..-2.H</b>	A flange at rear (standard flange)	<b>BS..-3</b>	Solid shaft front and rear
<b>BS..-2.VH</b>	A flange at front and rear (standard flange)	<b>BS..-4</b>	Hollow shaft with woodruff key slot
	<b>Standard flange with plain holes</b>	<b>BS..-5</b>	Hollow shaft for shrink disk rear
<b>BS..-3.V</b>	A flange at front (standard flange)	<b>BS..-6</b>	Hollow shaft with shrink disk front = special version
<b>BS..-3.H</b>	A flange at rear (standard flange)	<b>BS..-7</b>	Solid shaft, front, for flange version, BS02 and BS03 only
<b>BS..-3.VH</b>	A flange at front and rear (standard flange)	<b>BS..-8</b>	Solid shaft, rear, for flange version, BS02 and BS03 only
	<b>Large flange with plain holes</b>		<b>Additional features</b>
<b>BS..-4.V</b>	A flange at front (standard flange)	<b>BS..-..W</b>	Double shaft seal on size BS10 or above
<b>BS..-4.H</b>	A flange at rear (standard flange)	<b>BS..-..A</b>	Cover for shrink disk SSV on size BS10 or above
<b>BS..-4.VH</b>	A flange at front and rear (standard flange)		
<b>BS..-5.VL</b>	Torque arm front left		
<b>BS..-5.VO</b>	Torque arm front above		
<b>BS..-5.VU</b>	Torque arm front below		
<b>BS..-5.HL</b>	Torque arm rear left		
<b>BS..-5.HO</b>	Torque arm rear above		
<b>BS..-5.HU</b>	Torque arm rear below		

**7.1.3 Standard Orientation Options for Worm Geared Motors**

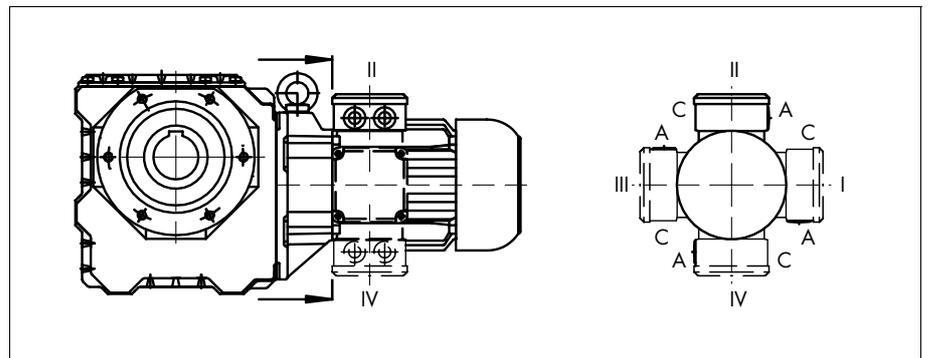
The standard orientation options for BAUER worm geared motors are illustrated below.



**7.1.4 Positioning of Terminal Box and Cable Entry**

The standard position for the terminal box on 3-phase AC, single-phase AC and permanent-magnet DC worm geared motors is Position II. With this configuration, the worm geared motor is flattest.

The cable can enter through Side A or C.



**7.1.5 Efficiency**

The efficiency of worm geared motors depends on a large number of factors including lubrication, degree to which the motor has been run-in, temperature and any vibration. The theoretical efficiency can therefore only be taken as a guide figure. If efficiency or self-locking are important considerations with regard to the type of application, we recommend that you contact us for advice with details of the operating parameters.

### 7.1.6 Bauer Load Factors ( $f_B$ ) for Worm Geared Motors

In worm gearboxes, the torque is transferred exclusively by friction between sliding surfaces so that, due to their inherent physical characteristics, they produce higher energy losses and heat than helical gearboxes.

There are numerous factors which determine the overall load on a worm gearbox. Among the most important are:

- average torque (rated torque)
- daily hours of operation
- strength of torque shocks (shock level)
- frequency of torque shocks (switching)
- ambient temperature

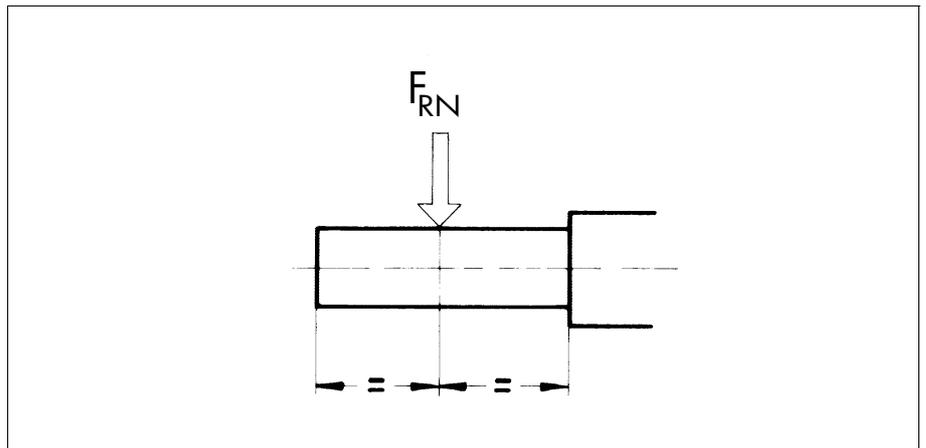
For practical purposes, those effects can simply be referred to as "load factors".

For more information, refer to Master Catalogue DG.. and Danfoss Special Publication SD32..

### 7.2 Selection Tables for Worm Geared Motors

#### *Explanation of Abbreviations*

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



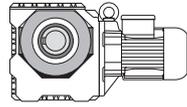
The selection tables can be used to determine the size of the geared motor. The gearbox and output shaft design can be unambiguously defined by means of code numbers (see dimensional drawing 7.3).

The torque figures marked (\*) are maximum permissible levels for a load factor of  $f_B = 1.0$ .

#### *Protection Against Overload by Motor Output*

The rated outputs of the motors, particularly in conjunction with gearboxes with four or more speeds, are very generously dimensioned in some cases. For that reason, as with low motor outputs, the rated current is not a measure of gearbox load capacity utilisation and can not be taken as an indication of overload protection for the gearbox. If there is a risk of excessive load or jamming, it is advisable to protect the gearbox by mechanical means (e.g. one-way clutch, free hub, shear pin, etc.).

P = 0.03 kW

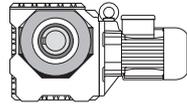


*Danfoss*

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
295	0.85	18	4.60	BS02-../D04LA4	3.5	450	-	355	0.71	21
250	1.0	20	5.40	"	"	510	-	300	0.84	24
200	1.23	20	6.75	"	"	590	-	240	1.02	25
164	1.46	17	8.25	"	"	600	-	197	1.22	20
127	1.84	14	10.67	"	"	600	-	152	1.54	16
100	2.2	11	13.50	"	"	600	-	120	1.86	13
75	2.8	8.9	18.00	"	"	600	-	90	2.35	11
62	3.2	7.8	22.00	"	"	600	-	74	2.7	9.3
50	3.6	6.9	27.00	"	"	600	-	60	3.0	8.3
41	4.15	6.0	33.00	"	"	600	-	49.5	3.45	7.2
31.5	5.6	4.3	43.00	"	"	600	-	38	4.65	5.2
25	6.5	3.4	54.00	"	"	600	-	30	5.4	4.1
19.5	7.4	2.7	70.00	"	"	600	-	23.5	6.2	3.2
15	12.4	3.1	90.00	BS04-../D04LA4	3.9	1000	-	18	10.3	3.7
14.5	11.6	3.3	93.92	"	"	1000	-	17.5	9.6	4.0
13.5	13.5	2.8	102.9	"	"	1000	-	16	11.4	3.3
12	13.6	2.8	117.0	"	"	1000	-	14	11.6	3.3
11	16.4	2.5	123.0	"	"	1000	-	13.5	13.3	3.1
9.8	18.1	2.3	138.4	"	"	1000	-	12	14.8	2.8
9.0	17.5	2.2	150.3	"	"	1000	-	11	14.3	2.7
8.5	20.5	1.8	160.1	"	"	1000	-	10.5	16.6	2.2
7.8	19.8	2.0	174.0	"	"	1000	-	9.4	16.4	2.4
6.2	24	1.65	220.0	"	"	1000	-	7.4	20.5	1.95
5.4	27.5	1.5	251.6	"	"	1000	-	6.5	22.5	1.8
4.5	32	1.35	300.7	"	"	1000	-	5.4	27	1.6
4.0	35.5	1.25	338.3	"	"	1000	-	4.8	29.5	1.5
3.5	40	1.15	391.3	"	"	1000	-	4.2	33	1.35
5.4	30.5	3.2	252.0	BS06-../D04LA4	8.4	2000	-	6.5	25.5	3.9
4.3	37.5	2.8	315.3	"	"	2000	-	5.2	31	3.4
3.8	42	2.6	358.9	"	"	2000	-	4.6	34.5	3.2
3.3	47.5	2.3	418.0	"	"	2000	-	3.9	40	2.8

P = 0.04 kW

295	1.13	13	4.60	BS02-../D04LA4	3.5	450	-	355	0.94	16
250	1.34	15	5.40	"	"	510	-	300	1.12	18
200	1.64	15	6.75	"	"	590	-	240	1.36	18
164	1.95	13	8.25	"	"	600	-	197	1.62	15
127	2.45	10	10.67	"	"	600	-	152	2.05	12
100	2.95	8.5	13.50	"	"	600	-	120	2.45	10
75	3.75	6.7	18.00	"	"	600	-	90	3.1	8.1
62	4.3	5.8	22.00	"	"	600	-	74	3.6	6.9
50	4.8	5.2	27.00	"	"	600	-	60	4.0	6.3
41	5.5	4.5	33.00	"	"	600	-	49.5	4.6	5.4
31.5	7.5	3.2	43.00	"	"	600	-	38	6.2	3.9
25	8.7	2.5	54.00	"	"	600	-	30	7.2	3.1
19.5	9.9	2.0	70.00	"	"	600	-	23.5	8.2	2.4
22	11.6	3.3	61.50	BS04-../D04LA4	3.9	1000	-	26.5	9.6	4.0
21.5	11.1	3.2	64.06	"	"	1000	-	25.5	9.4	3.8
19	13.2	2.9	71.18	"	"	1000	-	23	10.9	3.5
18	12.9	2.9	77.00	"	"	1000	-	21.5	10.8	3.5
15	16.5	2.3	90.00	"	"	1000	-	18	13.7	2.8
14.5	15.5	2.5	93.92	"	"	1000	-	17.5	12.8	3.0
13.5	18.1	2.1	102.9	"	"	1000	-	16	15.2	2.5
12	18.1	2.1	117.0	"	"	1000	-	14	15.5	2.5
11	21.5	1.9	123.0	"	"	1000	-	13.5	17.8	2.3
9.8	24	1.75	138.4	"	"	1000	-	12	19.7	2.1
9.0	23	1.7	150.3	"	"	1000	-	11	19.1	2.0



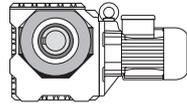
*Danfoss*

**P = 0.04 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
8.5	27	1.35	160.1	BS04-../D04LA4	3.9	1000	-	10.5	22	1.7
7.8	26	1.55	174.0	"	"	1000	-	9.4	21.5	1.85
6.2	32.5	1.25	220.0	"	"	1000	-	7.4	27	1.5
5.4	36.5	1.1	251.6	"	"	1000	-	6.5	30.5	1.35
4.5	43	1.0	300.7	"	"	1000	-	5.4	36	1.2
4.0	47.5	0.93	338.3	"	"	1000	-	4.8	39.5	1.1
3.5	53	0.85	391.3	"	"	1000	-	4.2	44.5	1.0
7.9	30.5	2.9	171.0	BS06-../D04LA4	8.4	2000	-	9.5	25.5	3.5
7.8	29	3.4	174.0	"	"	2000	-	9.4	24	4.1
6.2	36	2.7	220.0	"	"	2000	-	7.4	30	3.3
5.4	41	2.4	252.0	"	"	2000	-	6.5	34	2.9
4.3	50	2.1	315.3	"	"	2000	-	5.2	41.5	2.6
3.8	56	1.95	358.9	"	"	2000	-	4.6	46.5	2.4
3.3	63	1.75	418.0	"	"	2000	-	3.9	53	2.1

**P = 0.06 kW**

295	1.7	8.8	4.60	BS02-../D04LA4	3.5	450	-	355	1.42	11
250	2.0	10	5.40	"	"	510	-	300	1.68	12
200	2.45	10	6.75	"	"	590	-	240	2.05	12
164	2.9	8.6	8.25	"	"	600	-	197	2.4	10
127	3.65	6.8	10.67	"	"	600	-	152	3.05	8.2
100	4.45	5.6	13.50	"	"	600	-	120	3.7	6.8
75	5.6	4.5	18.00	"	"	600	-	90	4.7	5.3
62	6.4	3.9	22.00	"	"	600	-	74	5.4	4.6
50	7.2	3.5	27.00	"	"	600	-	60	6.0	4.2
41	8.3	3.0	33.00	"	"	600	-	49.5	6.9	3.6
31.5	11.2	2.1	43.00	"	"	600	-	38	9.3	2.6
25	13	1.7	54.00	"	"	600	-	30	10.8	2.0
19.5	14.9	1.35	70.00	"	"	600	-	23.5	12.4	1.6
35.5	11.1	3.3	38.42	BS04-../D04LA4	3.9	1000	-	42.5	9.3	4.0
28.5	13.6	2.8	47.86	"	"	1000	-	34	11.4	3.3
22	17.4	2.2	61.50	"	"	1000	-	26.5	14.4	2.6
21.5	16.7	2.2	64.06	"	"	1000	-	25.5	14.1	2.6
19	19.9	1.9	71.18	"	"	1000	-	23	16.4	2.3
18	19.4	1.95	77.00	"	"	1000	-	21.5	16.2	2.3
15	24.5	1.55	90.00	"	"	1000	-	18	20.5	1.85
14.5	23	1.65	93.92	"	"	1000	-	17.5	19.3	1.95
13.5	27	1.4	102.9	"	"	1000	-	16	22.5	1.7
12	27	1.4	117.0	"	"	1000	-	14	23	1.65
11	32.5	1.25	123.0	"	"	1000	-	13.5	26.5	1.55
9.8	36	1.15	138.4	"	"	1000	-	12	29.5	1.4
9.0	35	1.1	150.3	"	"	1000	-	11	28.5	1.35
8.5	41	0.9	160.1	"	"	1000	-	10.5	33	1.1
7.8	39.5	1.0	174.0	"	"	1000	-	9.4	32.5	1.25
6.2	48.5	0.82	220.0	"	"	1000	-	7.4	41	0.98
11.5	32	2.9	118.8	BS06-../D04LA4	8.4	2000	-	14	26.5	3.5
10.5	36.5	2.8	129.0	"	"	2000	-	13	29.5	3.5
9.5	38.5	2.5	142.2	"	"	2000	-	11.5	31.5	3.1
9.2	40	2.7	146.8	"	"	2000	-	11.5	32	3.3
7.9	46	1.9	171.0	"	"	2000	-	9.5	38.5	2.3
7.8	44	2.2	174.0	"	"	2000	-	9.4	36.5	2.7
6.2	54	1.8	220.0	"	"	2000	-	7.4	45.5	2.2
5.4	61	1.6	252.0	"	"	2000	-	6.5	51	1.95
4.3	75	1.4	315.3	"	"	2000	-	5.2	62	1.7
3.8	84	1.3	358.9	"	"	2000	-	4.6	69	1.6
3.3	95	1.15	418.0	"	"	2000	-	3.9	80	1.4



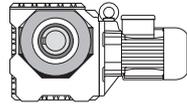
*Danfoss*

**P = 0.09 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
295	2.55	5.9	4.60	BS02-../D04LA4	3.5	450	-	355	2.1	7.1
250	3.0	6.7	5.40	"	"	510	-	300	2.5	8.0
200	3.65	6.8	6.75	"	"	590	-	240	3.05	8.2
164	4.4	5.7	8.25	"	"	600	-	197	3.65	6.8
127	5.5	4.5	10.67	"	"	600	-	152	4.6	5.4
100	6.7	3.7	13.50	"	"	600	-	120	5.5	4.5
75	8.4	3.0	18.00	"	"	600	-	90	7.0	3.6
62	9.7	2.6	22.00	"	"	600	-	74	8.1	3.1
50	10.8	2.3	27.00	"	"	600	-	60	9.0	2.8
41	12.5	2.0	33.00	"	"	600	-	49.5	10.4	2.4
31.5	16.9	1.4	43.00	"	"	600	-	38	14	1.7
25	19.5	1.15	54.00	"	"	600	-	30	16.3	1.35
19.5	22	0.91	70.00	"	"	600	-	23.5	18.6	1.1
56	11.6	2.9	24.25	BS04-../D04LA4	3.9	1000	-	67	9.7	3.5
52	11.7	3.2	26.21	"	"	1000	-	62	9.8	3.9
43	13.9	2.7	31.50	"	"	1000	-	52	11.5	3.3
35.5	16.7	2.2	38.42	"	"	1000	-	42.5	13.9	2.7
28.5	20.5	1.85	47.86	"	"	1000	-	34	17.1	2.2
22	26	1.45	61.50	"	"	1000	-	26.5	21.5	1.75
21.5	25	1.45	64.06	"	"	1000	-	25.5	21	1.7
19	29.5	1.3	71.18	"	"	1000	-	23	24.5	1.55
18	29	1.3	77.00	"	"	1000	-	21.5	24	1.6
15	37	1.05	90.00	"	"	1000	-	18	31	1.25
14.5	34.5	1.1	93.92	"	"	1000	-	17.5	28.5	1.35
13.5	40.5	0.94	102.9	"	"	1000	-	16	34	1.1
12	40.5	0.94	117.0	"	"	1000	-	14	34.5	1.1
11	49	0.84	123.0	"	"	1000	-	13.5	40	1.05
21.5	27	3.0	64.06	BS06-../D04LA4	8.4	2000	-	25.5	22.5	3.6
19	32	2.9	71.18	"	"	2000	-	23	26.5	3.5
18	31.5	2.7	77.00	"	"	2000	-	21.5	26.5	3.2
15	40	2.5	90.00	"	"	2000	-	18	33	3.0
13.5	43.5	2.3	103.1	"	"	2000	-	16	37	2.7
11.5	48.5	1.95	118.8	"	"	2000	-	14	39.5	2.4
10.5	54	1.95	129.0	"	"	2000	-	13	44	2.4
9.5	57	1.7	142.2	"	"	2000	-	11.5	47.5	2.1
9.2	60	1.75	146.8	"	"	2000	-	11.5	48.5	2.2
7.9	69	1.3	171.0	"	"	2000	-	9.5	57	1.55
7.8	66	1.5	174.0	"	"	2000	-	9.4	54	1.8
6.2	81	1.2	220.0	"	"	2000	-	7.4	68	1.45
5.4	92	1.1	252.0	"	"	2000	-	6.5	76	1.3
4.3	113	0.94	315.3	"	"	2000	-	5.2	94	1.15
3.8	126	0.87	358.9	"	"	2000	-	4.6	104	1.05

**P = 0.12 kW**

295	3.4	4.4	4.60	BS02-../D04LA4	3.5	450	-	355	2.8	5.4
250	4.0	5.0	5.40	"	"	510	-	300	3.35	6.0
200	4.9	5.1	6.75	"	"	590	-	240	4.1	6.1
164	5.8	4.3	8.25	"	"	600	-	197	4.85	5.2
127	7.3	3.4	10.67	"	"	600	-	152	6.1	4.1
100	8.9	2.8	13.50	"	"	600	-	120	7.4	3.4
75	11.3	2.2	18.00	"	"	600	-	90	9.4	2.7
62	12.9	1.95	22.00	"	"	600	-	74	10.8	2.3
50	14.4	1.75	27.00	"	"	600	-	60	12	2.1
41	16.7	1.5	33.00	"	"	600	-	49.5	13.8	1.8
31.5	22.5	1.05	43.00	"	"	600	-	38	18.6	1.3
25	26	0.85	54.00	"	"	600	-	30	21.5	1.0



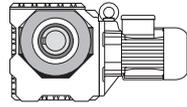
*Danfoss*

**P = 0.12 kW**

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
83	10.6	3.3	16.31	BS04-../D04LA4	3.9	1000	-	100	8.8	4.0
65	13.3	2.8	20.96	"	"	1000	-	78	11.1	3.3
56	15.5	2.2	24.25	"	"	1000	-	67	12.9	2.6
52	15.6	2.4	26.21	"	"	1000	-	62	13.1	2.9
43	18.6	2.0	31.50	"	"	1000	-	52	15.4	2.5
35.5	22	1.7	38.42	"	"	1000	-	42.5	18.6	2.0
28.5	27	1.4	47.86	"	"	1000	-	34	22.5	1.7
22	34.5	1.1	61.50	"	"	1000	-	26.5	28.5	1.35
21.5	33.5	1.05	64.06	"	"	1000	-	25.5	28	1.3
19	39.5	0.96	71.18	"	"	1000	-	23	32.5	1.15
18	38.5	0.99	77.00	"	"	1000	-	21.5	32.5	1.15
14.5	46.5	0.82	93.92	"	"	1000	-	17.5	38.5	0.99
28	29	3.0	48.60	BS06-../D04LA4	8.4	2000	-	33.5	24.5	3.6
23.5	34.5	2.6	58.15	"	"	2000	-	28	29	3.1
21.5	36	2.2	64.06	"	"	2000	-	25.5	30.5	2.6
19	42.5	2.2	71.18	"	"	2000	-	23	35	2.7
18	42.5	2.0	77.00	"	"	2000	-	21.5	35.5	2.4
15	53	1.85	90.00	"	"	2000	-	18	44.5	2.2
13.5	58	1.7	103.1	"	"	2000	-	16	49	2.0
11.5	64	1.45	118.8	"	"	2000	-	14	53	1.75
10.5	73	1.4	129.0	"	"	2000	-	13	59	1.75
9.5	77	1.25	142.2	"	"	2000	-	11.5	63	1.55
9.2	80	1.35	146.8	"	"	2000	-	11.5	64	1.65
7.9	92	0.96	171.0	"	"	2000	-	9.5	77	1.15
7.8	88	1.1	174.0	"	"	2000	-	9.4	73	1.35
6.2	109	0.9	220.0	"	"	2000	-	7.4	91	1.1
5.4	123	0.8	252.0	"	"	2000	-	6.5	102	0.97

**P = 0.18 kW**

295	5.1	2.9	4.60	BS02-../D05LA4	5.3	450	-	355	4.25	3.5
250	6.0	3.3	5.40	"	"	510	-	300	5.0	4.0
200	7.3	3.4	6.75	"	"	590	-	240	6.1	4.1
164	8.8	2.8	8.25	"	"	600	-	197	7.3	3.4
127	11	2.3	10.67	"	"	600	-	152	9.2	2.7
100	13.4	1.85	13.50	"	"	600	-	120	11.1	2.3
75	16.9	1.5	18.00	"	"	600	-	90	14.1	1.75
62	19.4	1.3	22.00	"	"	600	-	74	16.2	1.55
50	21.5	1.15	27.00	"	"	600	-	60	18	1.4
41	25	1.0	33.00	"	"	600	-	49.5	20.5	1.2
72	18.1	3.0	19.00	BS03-../D05LA4	5.4	800	-	86	15.1	3.6
54	21.5	2.6	25.00	"	"	800	-	65	18.2	3.0
41	25.5	2.2	33.00	"	"	800	-	49.5	21	2.6
35	31	1.75	39.00	"	"	800	-	42	26	2.1
27	36.5	1.5	50.00	"	"	800	-	32.5	30.5	1.8
22	41	1.15	62.00	"	"	800	-	26.5	34	1.4
18	48.5	0.82	75.00	"	"	800	-	22	39.5	1.0
126	10.6	3.0	10.73	BS04-../D05LA4	5.8	1000	-	151	8.8	3.6
104	12.7	2.6	13.09	"	"	1000	-	124	10.6	3.1
83	15.9	2.2	16.31	"	"	1000	-	100	13.2	2.7
65	20	1.85	20.96	"	"	1000	-	78	16.7	2.2
56	23	1.5	24.25	"	"	1000	-	67	19.4	1.75
52	23	1.65	26.21	"	"	1000	-	62	19.6	1.95
43	27.5	1.4	31.50	"	"	1000	-	52	23	1.65
35.5	33	1.1	38.42	"	"	1000	-	42.5	27.5	1.35
28.5	41	0.93	47.86	"	"	1000	-	34	34	1.1



*Danfoss*

**P = 0.18 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
56	24.5	3.1	24.25	BS06-../D05LA4	10	2000	-	67	20.5	3.8
52	24	3.2	26.21	"	"	2000	-	62	20	3.9
43	29	2.8	31.50	"	"	2000	-	52	24	3.3
33	37.5	2.3	41.29	"	"	2000	-	39.5	31	2.8
28	44	2.0	48.60	"	"	2000	-	33.5	36.5	2.4
23.5	51	1.8	58.15	"	"	2000	-	28	43.5	2.1
21.5	54	1.5	64.06	"	"	2000	-	25.5	45.5	1.75
19	64	1.45	71.18	"	"	2000	-	23	53	1.75
18	63	1.35	77.00	"	"	2000	-	21.5	53	1.6
15	80	1.25	90.00	"	"	2000	-	18	66	1.5
13.5	87	1.15	103.1	"	"	2000	-	16	74	1.35
11.5	97	0.97	118.8	"	"	2000	-	14	79	1.2
10.5	109	0.95	129.0	"	"	2000	-	13	88	1.2
9.5	115	0.85	142.2	"	"	2000	-	11.5	95	1.05
9.2	121	0.88	146.8	"	"	2000	-	11.5	97	1.1

**P = 0.25 kW**

295	7.1	2.1	4.60	BS02-../D05LA4	5.3	450	-	355	5.9	2.5
250	8.4	2.4	5.40	"	"	510	-	300	7.0	2.9
200	10.2	2.5	6.75	"	"	590	-	240	8.5	2.9
164	12.2	2.0	8.25	"	"	600	-	197	10.1	2.5
127	15.4	1.6	10.67	"	"	600	-	152	12.8	1.95
100	18.6	1.35	13.50	"	"	600	-	120	15.5	1.6
75	23.5	1.05	18.00	"	"	600	-	90	19.6	1.3
62	26.5	0.94	22.00	"	"	600	-	74	22.5	1.1
50	30	0.83	27.00	"	"	600	-	60	25	1.0
100	18.6	3.0	13.50	BS03-../D05LA4	5.4	800	-	120	15.5	3.5
72	25	2.2	19.00	"	"	800	-	86	21	2.6
54	30.5	1.8	25.00	"	"	800	-	65	25	2.2
41	35.5	1.55	33.00	"	"	800	-	49.5	29	1.9
35	43.5	1.25	39.00	"	"	800	-	42	36	1.55
27	51	1.1	50.00	"	"	800	-	32.5	42.5	1.3
22	57	0.84	62.00	"	"	800	-	26.5	47.5	1.0
152	12.2	2.5	8.93	BS04-../D05LA4	5.8	1000	-	182	10.2	2.9
126	14.7	2.2	10.73	"	"	1000	-	151	12.3	2.6
104	17.6	1.9	13.09	"	"	1000	-	124	14.8	2.2
83	22	1.6	16.31	"	"	1000	-	100	18.3	1.9
65	27.5	1.35	20.96	"	"	1000	-	78	23	1.6
56	32	1.05	24.25	"	"	1000	-	67	27	1.25
52	32.5	1.15	26.21	"	"	1000	-	62	27	1.4
43	38.5	0.99	31.50	"	"	1000	-	52	32	1.2
35.5	46	0.8	38.42	"	"	1000	-	42.5	38.5	0.96
82	23	3.1	16.56	BS06-../D05LA4	10	2000	-	98	19.4	3.7
69	27.5	2.7	19.82	"	"	2000	-	82	23	3.3
56	34	2.3	24.25	"	"	2000	-	67	28.5	2.7
52	33.5	2.3	26.21	"	"	2000	-	62	28	2.8
43	40.5	2.0	31.50	"	"	2000	-	52	33.5	2.4
33	52	1.65	41.29	"	"	2000	-	39.5	43.5	2.0
28	61	1.45	48.60	"	"	2000	-	33.5	51	1.75
23.5	72	1.25	58.15	"	"	2000	-	28	60	1.5
21.5	75	1.05	64.06	"	"	2000	-	25.5	63	1.25
19	89	1.05	71.18	"	"	2000	-	23	73	1.3
18	88	0.97	77.00	"	"	2000	-	21.5	74	1.15
15	111	0.88	90.00	"	"	2000	-	18	92	1.05
13.5	122	0.82	103.1	"	"	2000	-	16	102	0.98

### 7.3 Dimensional Drawings for 3-Phase and Single-Phase AC Worm Geared Motors

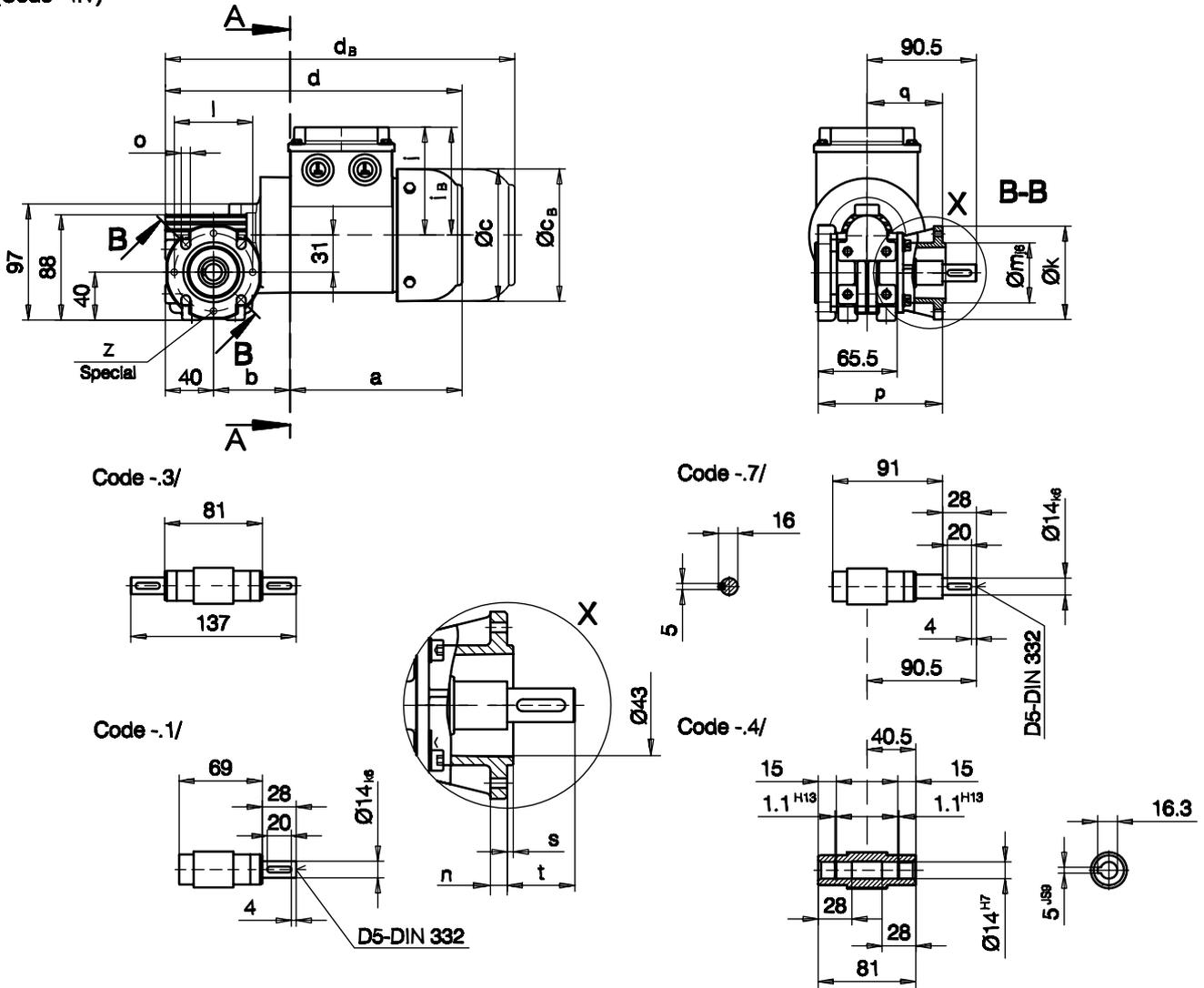
The external dimensions of the single-phase AC motors are the same as those of the comparable 3-phase AC motors, i.e.

E04 is the same as D04, EU04 is the same as DU04

E05 is the same as D05, EU05 is the same as DU05.

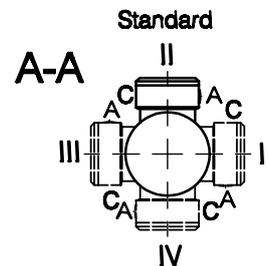
The dimensional drawings for single-phase AC motors and single-phase AC geared motors and the supplementary dimensional drawings can thus be found in this section.

Flansch mit Durchgangslöchern vorne  
 flange with through holes at front  
 bride avec trous débouchants à l'avant  
 Code -3.V  
 (Code -4.V)



Flanschmaße/Flange dimensions/cotes de la bride

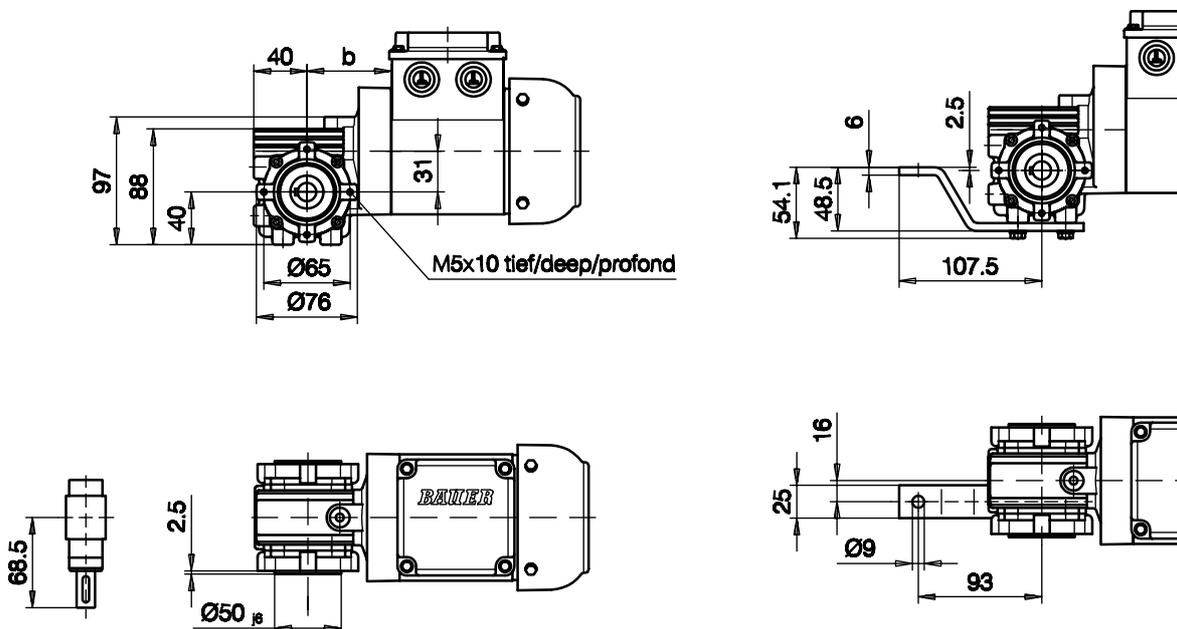
BS02	k	l	m	n	o	p	q	s	t	z
Standard -37V/	Ø80	Ø65	Ø50	7	5.5	103	62.5	2.5	28	-
Special -37V/	Ø80	Ø65	Ø50	7	5.5	103	62.5	2.5	28	4xM5
groß/big/grande -47V/	Ø110	Ø80	Ø60	8	6.6	103	62.5	2.5	28	-
Special -47V/	Ø110	Ø80	Ø60	8	6.6	103	62.5	2.5	28	4xM6



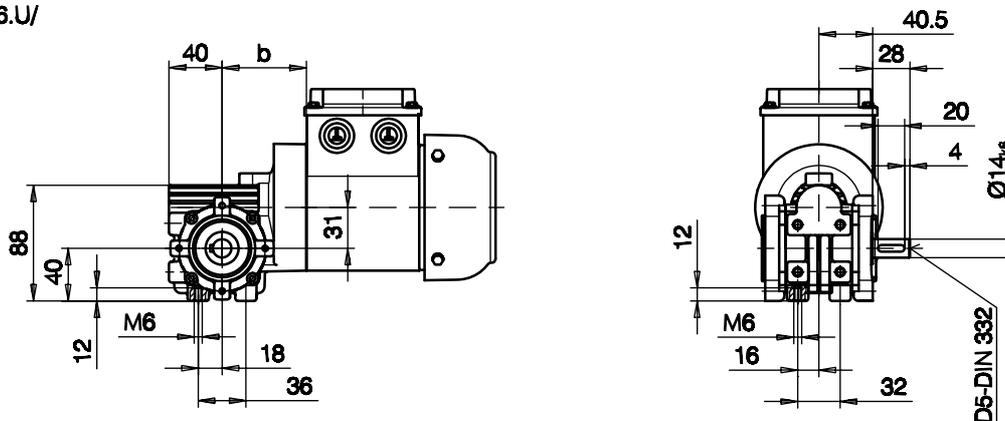
Ausführung mit Bremse/with brake/avec frein													
Typ/Type/Type	a	b	c	d	u	i	i <sub>B</sub>	E003					
								c <sub>B</sub>	d <sub>B</sub>				
BS02-../D04..	143	63.5	111	247	178	90	90	111	290				
BS02-../D05..	170	65.5	123	277	188	100	100	123	318				
BS02-../D06..	170	65.5	123	276	188	100	100	123	318				

Flansch mit Gewindelöchern vorne  
 flange with threaded holes at front  
 bride avec trous taraudés à l'avant  
 Code -7.V/

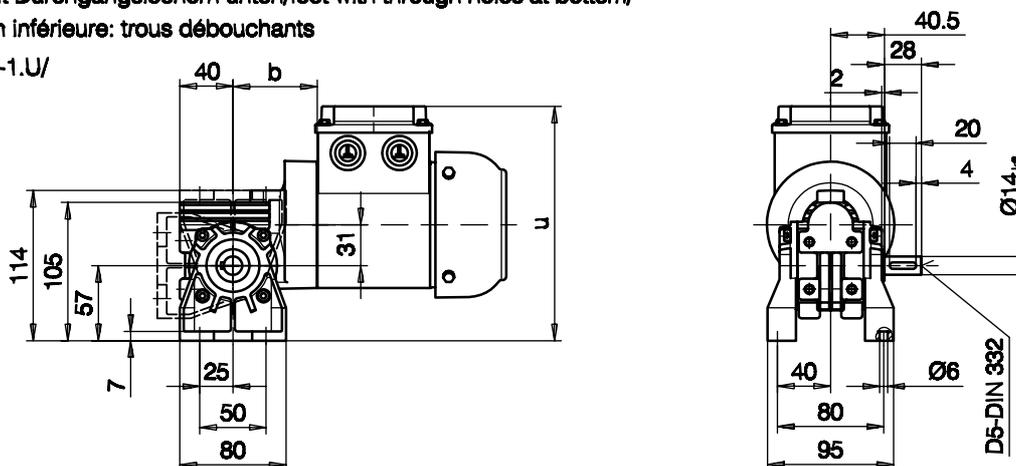
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant  
 Code -5.V/



Fuß mit Gewindelöchern unten/ foot threads at bottom/ fixation inférieure: trous taraudés  
 Code -6.U/



Fuß mit Durchgangslöchern unten/foot with through holes at bottom/  
 fixation inférieure: trous débouchants  
 Code -1.U/



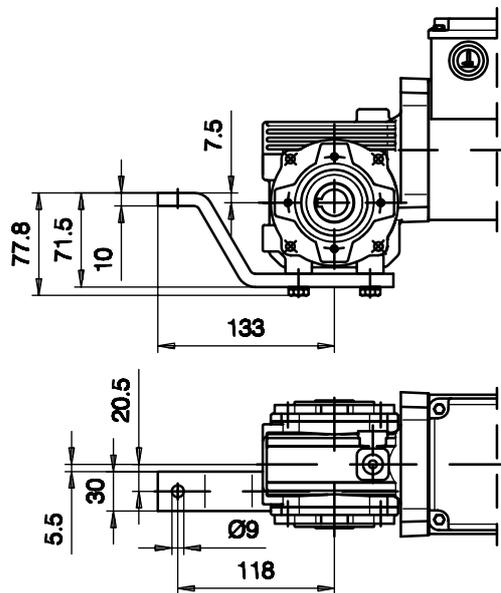
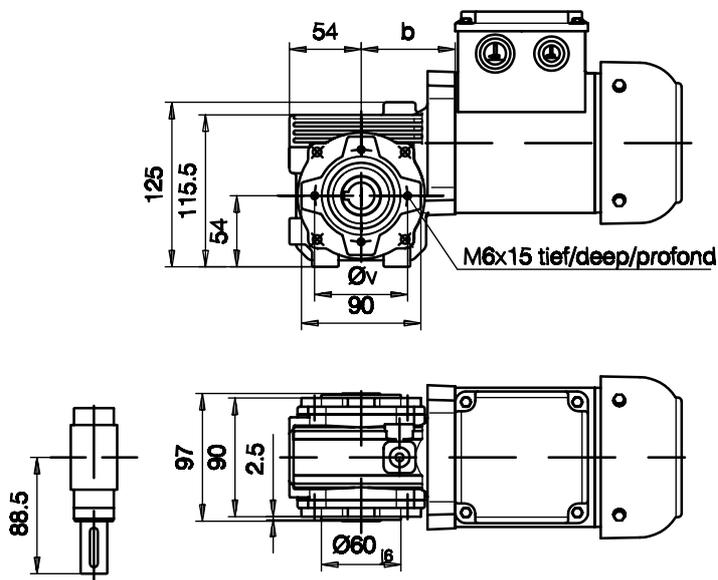


Flansch mit Gewindelöchern vorne  
 Flange with threaded holes at front  
 bride avec trous taraudés à l'avant

Code -7.V/

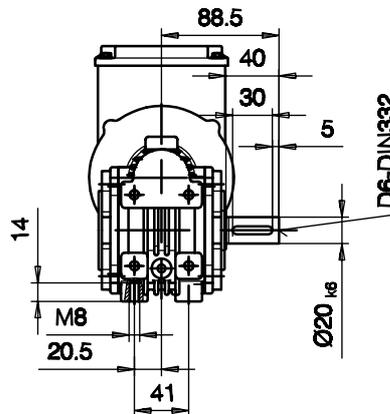
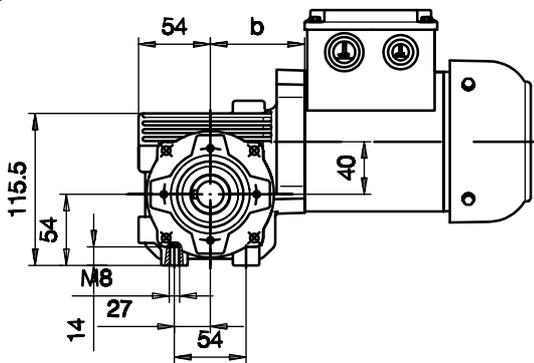
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant

Code -5.V/



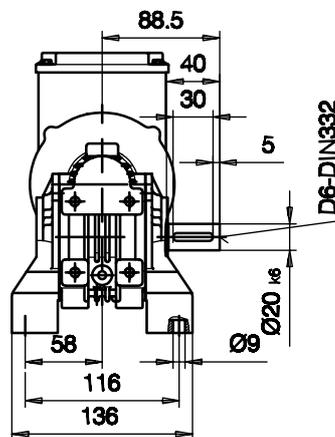
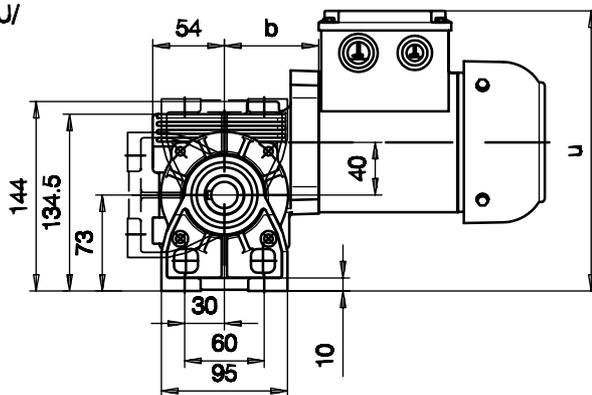
Fuß mit Gewindelöchern unten/ foot threads at bottom/ fixation inférieure: trous taraudés

Code -6.U/

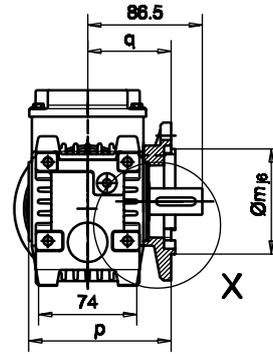
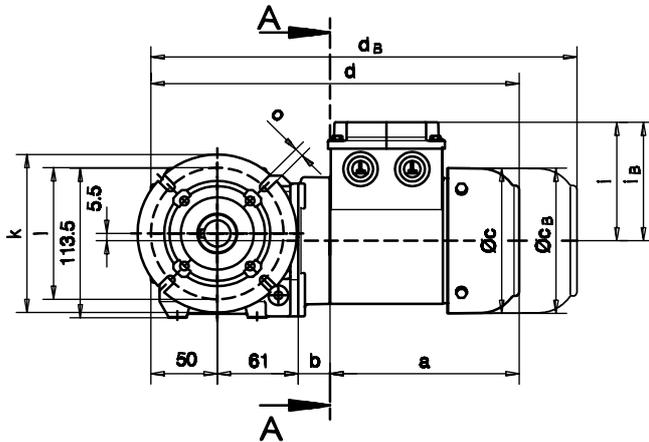


Fuß mit Durchgangslöchern unten/foot with through holes at bottom/  
 fixation inférieure: trous débouchants

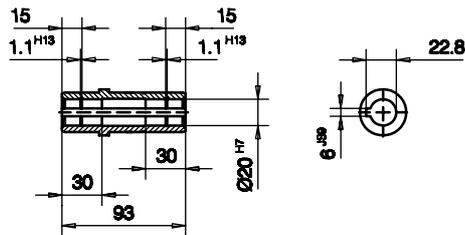
Code -1.U/



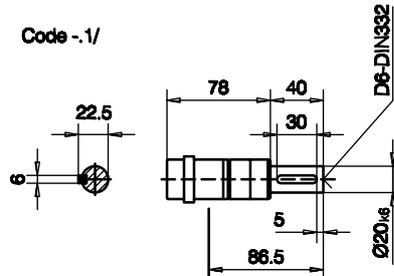
Flansch mit Durchgangslöchern vorne  
 flange with through holes at front  
 bride avec trous débouchants à l'avant  
 Code -3.V/



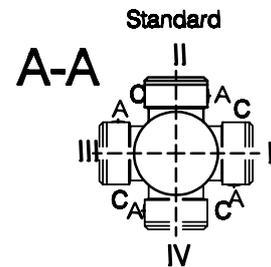
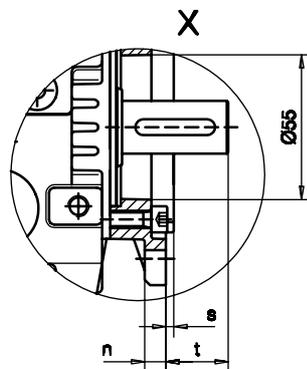
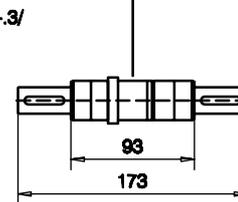
Code -4/



Code -1/



Code -3/



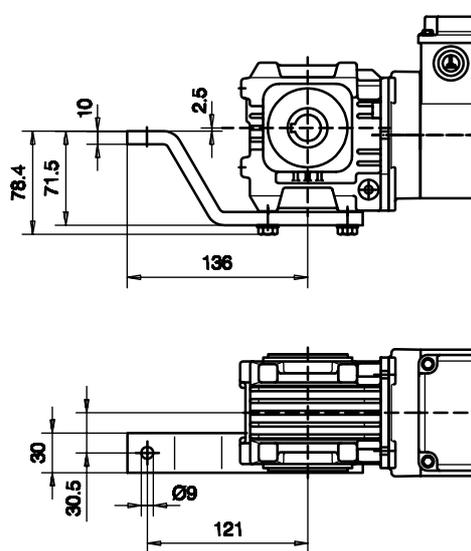
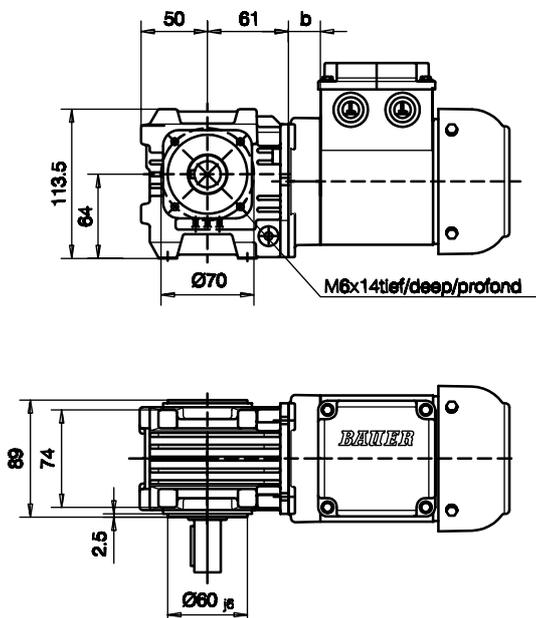
Flanschmaße/Flange dimensions/cotes de la bride

BS04	k	l	m	n	o	p	q	s	t
Standard -3.V/	Ø120	Ø100	Ø80	8	6.6	110.5	63	3	23.5

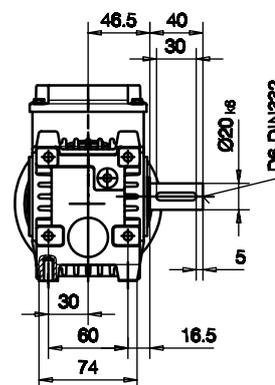
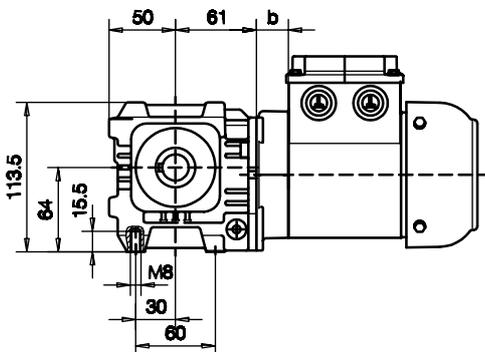
Ausführung mit Bremse / with brake / avec frein														
Typ/Type/Type	a	b	c	d	i	i <sub>B</sub>	E003		c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>
							c <sub>B</sub>	d <sub>B</sub>						
BS04-../D04..	143	24	111	278	90	90	111	321						
BS04-../D05..	170	26	123	307	100	100	123	349						
BS04-../D06..	170	26	123	307	100	100	123	349						

Flansch mit Gewindelöchern vorne  
 Flange with threaded holes at front  
 bride avec trous taraudés à l'avant  
 Code -7.V/

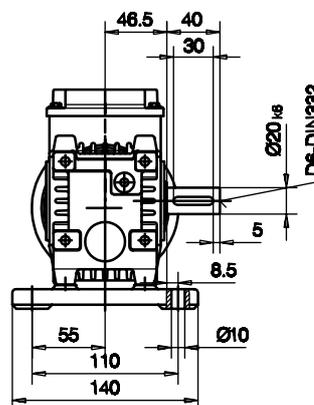
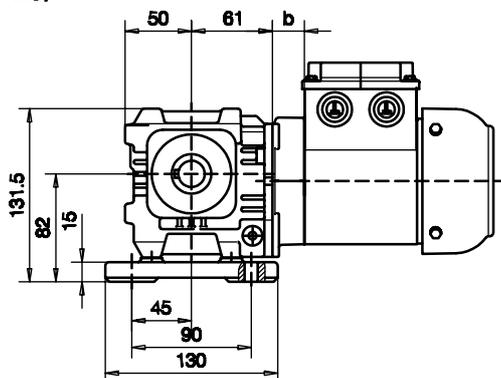
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant  
 Code -5.V/



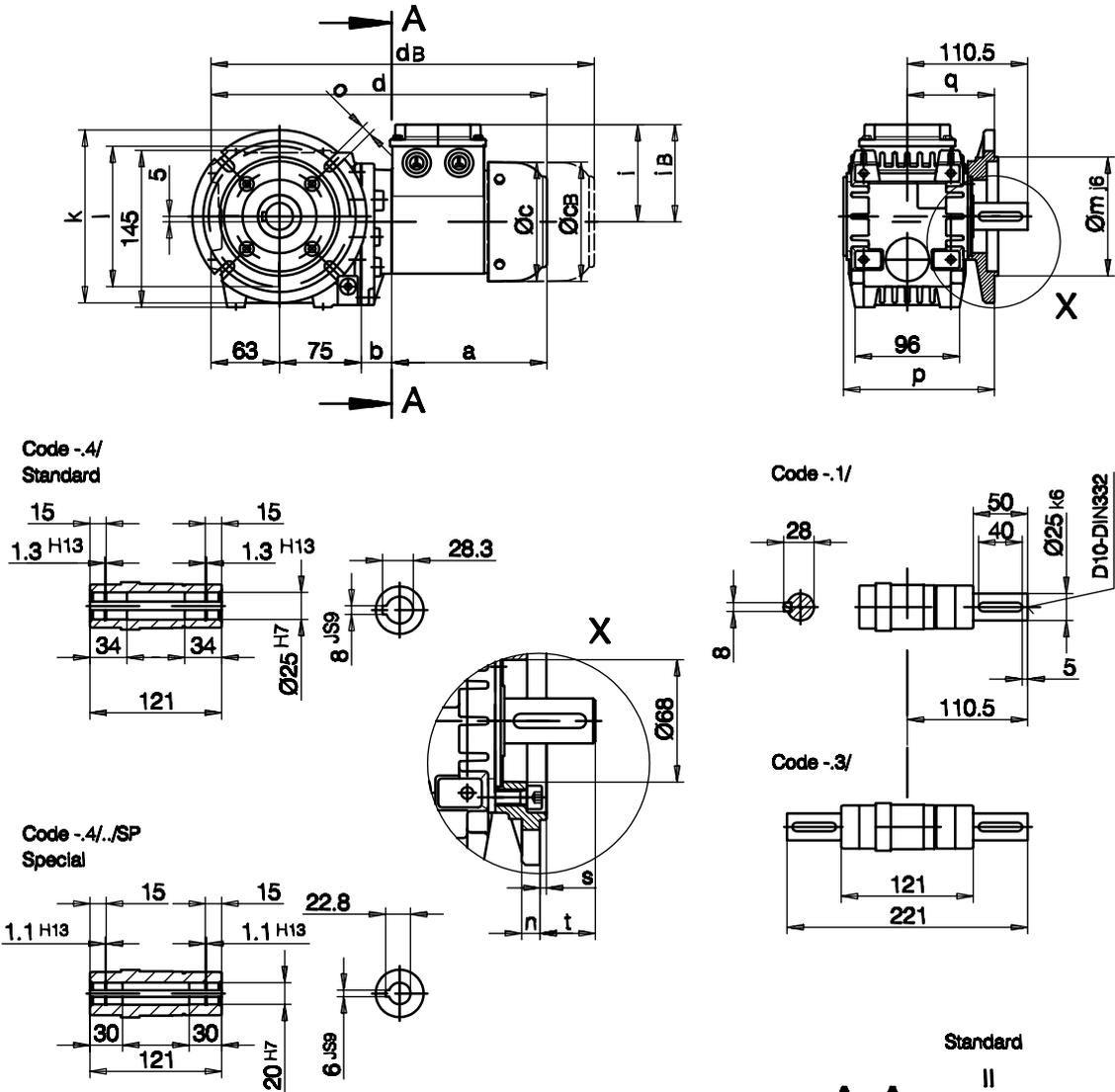
Fuß mit Gewindelöchern unten/ foot threads at bottom/ fixation inférieure: trous taraudés  
 Code -6.U/



Fuß mit Durchgangslöchern unten/foot with through holes at bottom/  
 fixation inférieure: trous débouchants  
 Code -1.U/

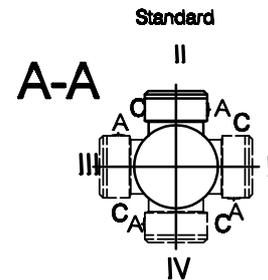


Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à lavant  
 Code -3.V/  
 (Code -4.V/)



Flanschmaße/Flange dimensions/cotes de la bride

BS06	k	l	m	n	o	p	q	s	t
Standard -3./	Ø140	Ø115	Ø95	10	9	138.5	80	3	30.5
groß/big/grande -4./	Ø160	Ø130	Ø110	10	9	138.5	80	3.5	30.5



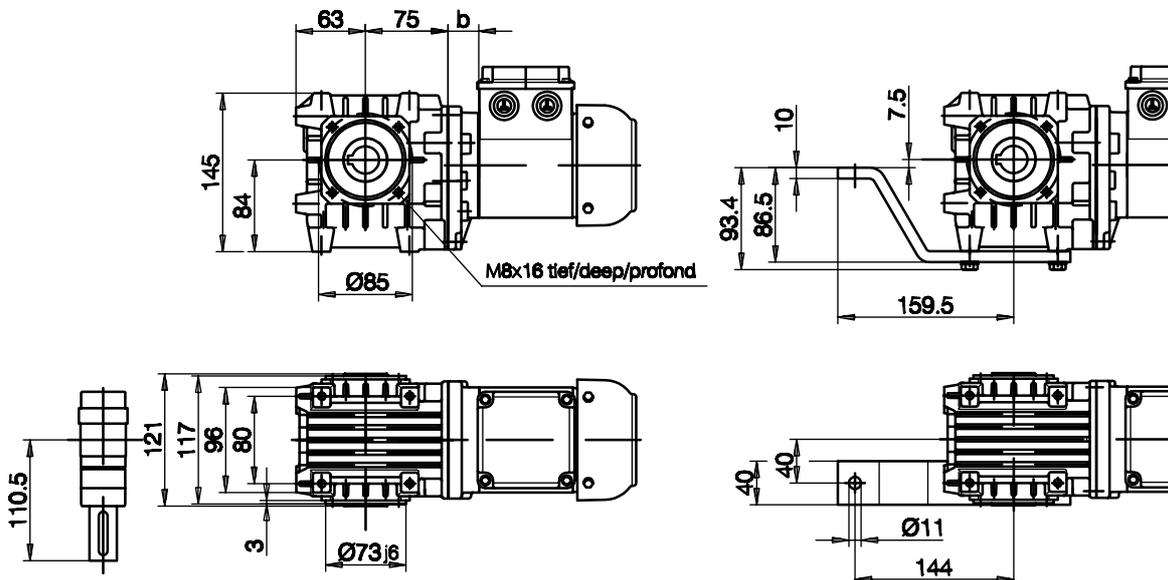
Typ/Type/Type	a	b	c	d	i	i <sub>B</sub>	Ausführung mit Bremse / with brake / avec frein								
							E003		E005-E008		Z005-Z008				
							c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>			
BS06-../D04..	143	28	111	309	90	90	111	352							
BS06-../D05..	170	30	123	338	100	100	123	380							
BS06-../D06..	170	30	123	338	100	100	123	380							
BS06-../D08..	200	74	156	412	115	115			156	499	156	499			

Flansch mit Gewindelöchern vorne  
 Flange with tapped holes at front  
 bride avec trous taraudés à lavant

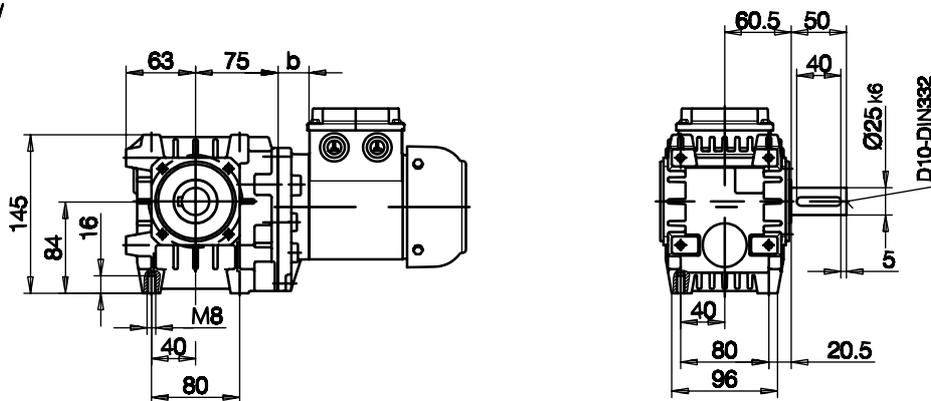
Code -7.V/

mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à lavant

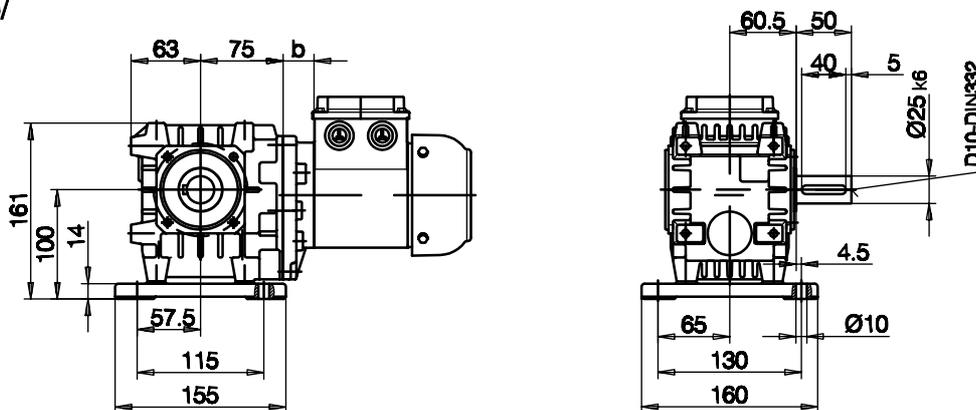
Code -5.V/



Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/ fixation inférieure: trous taraudés  
 Code -6.U/



Fuß mit Durchgangslöchern/ foot with clearance holes at bottom/ fixation inférieure: trous débouchants  
 Code -1.U/





# 8 Single-Phase AC Motors



BAUER geared motors for operation on a single-phase AC power supply are supplied with specially adapted asynchronous motors with hysteresis circuit. By the use of special design features and, in some cases, alloy rotors, a starting torque that is only marginally below the rated torque is produced without the need for additional starting aids.

Series EC.. single-phase AC motors can also be supplied with special single-phase windings (main and auxiliary windings) on request. In comparison with the models listed in this catalogue, those versions have a smaller capacitor and a slightly higher starting torque.

## 8.1 Power Supply Voltages

Bauer single-phase AC motors can be dimensioned for power supply voltages from 42 to 260 V  $\pm 5\%$ . Designs for wider voltage tolerances, voltage ranges and frequencies between 50 and 60 Hz are available on request.

The catalogue prices apply to models for 220V 50Hz, 230V 50Hz and 260V 60Hz.

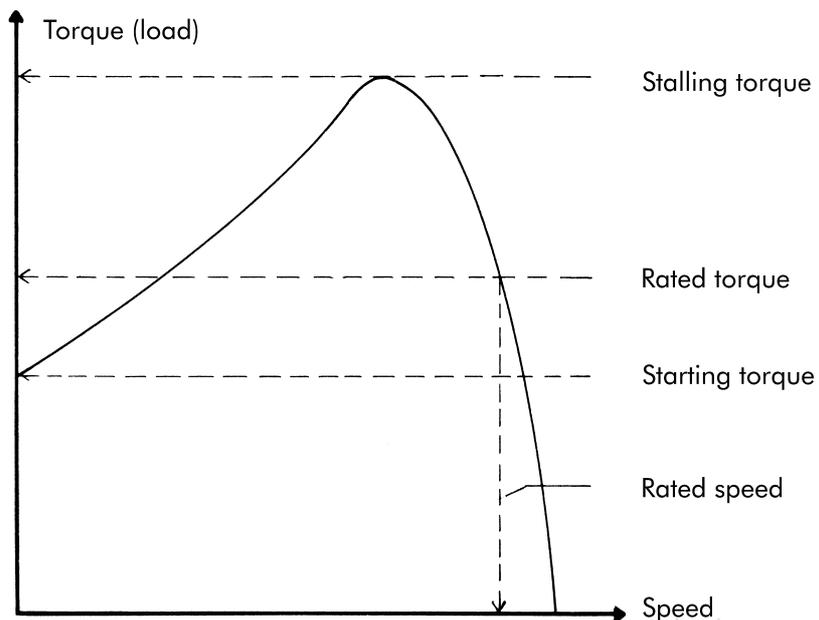
## 8.2 Running Capacitor

The capacitance of the running capacitor required depends on the power supply voltage and frequency. For the models listed, the details are given in Sections 8.5 and 8.6.

The capacitors are supplied at extra charge if ordered and are enclosed in a separate pack.

## 8.3 Speed Characteristics, Changing Direction of Rotation

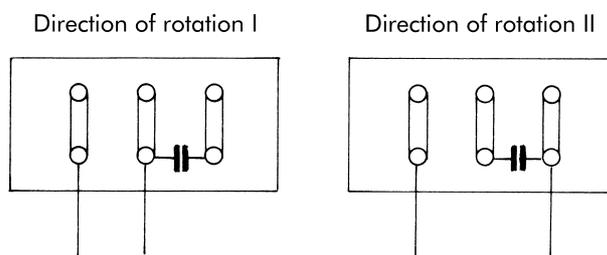
Speed versus load curve:



The rated speed of the four-pole motors is 1350 rpm at 50 Hz. The running speed may differ from those figures within a band of -5% to +10%. Under overload, the drive unit may come to a standstill or not start up. For relative starting torque figures (starting torque/rated torque) see "Technical Data of Motors".

The stalling torque is at least 60% greater than the rated torque. For details of motors with different numbers of poles, two-speed pole-changing motors see "Technical Data of Motors" or contact our staff.

The direction of rotation can be changed by altering the power supply connections on the terminal board as shown below.



The direction of rotation can generally only be changed while the motor is at a standstill.

For more technical explanations, refer to Section 3.

#### 8.4 Motor Attachments and Motors without Gearboxes

For details of motor attachments such as brakes, pulse generators, secondary output shaft, etc., see Section 4.

For supplementary dimensional drawings for motor attachments and dimensional drawings for motors without gearboxes, refer to Section 5.

## 8.5 Technical Data of 50-Hz Single-Phase AC Motors

50 Hz

### 8.5.1 2-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (230 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	C	Standard Brake
kW		rpm	Nm	A						kgm <sup>2</sup>	μF	
0,055	<b>E04LA2</b>	2700	0,200	0,480	Δ	0,90	3,0	0,6	1,6	0,000110	5,0	E003B9
0,075	<b>E04LA2</b>	2700	0,260	0,90	Δ	0,90	2,5	0,6	1,6	0,000110	10,0	E003B9
0,11	<b>E04LA2</b>	2700	0,400	1,05	Δ	0,90	2,5	0,6	1,6	0,000110	12,0	E003B9
0,18	<b>E05LA2</b>	2700	0,63	1,25	Δ	0,95	2,6	0,6	1,6	0,000200	16,0	E003B9
0,25	<b>E05LA2</b>	2700	1,90	1,90	Δ	0,95	2,6	0,7	1,6	0,000200	30,0	E003B9

### 8.5.2 4-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 50 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (230 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	C	Standard Brake
kW		rpm	Nm	A						kgm <sup>2</sup>	μF	
0,030	<b>E04LA4</b>	1350	0,210	0,320	Δ	0,85	2,0	0,7	1,6	0,000175	4,0	E003B9
0,040	<b>E04LA4</b>	1350	0,280	0,400	Δ	0,85	2,0	0,7	1,6	0,000175	5,0	E003B9
0,055	<b>E04LA4</b>	1350	0,400	0,56	Δ	0,90	2,0	0,7	1,6	0,000175	8,0	E003B9
0,075	<b>E04LA4</b>	1350	0,53	0,75	Δ	0,90	1,7	0,8	1,6	0,000175	10,0	E003B9
0,075	<b>E05LA4</b>	1350	0,53	0,71	Δ	0,90	2,6	0,7	1,6	0,000295	10,0	E003B9
0,11	<b>E05LA4</b>	1350	0,80	1,10	Δ	0,90	2,2	0,7	1,6	0,000295	16,0	E003B9
0,18	<b>E05LA4</b>	1350	1,25	1,40	Δ	0,90	2,0	0,7	1,6	0,000295	20,0	E003B9

P	Rated output at 50 Hz supply frequency
n	Guide figure for rated speed at rotor shaft at 50 Hz supply frequency
M <sub>N</sub>	Rated torque at rotor shaft
I <sub>N</sub>	Rated current at 230 V
cos φ	Power factor
I <sub>A</sub> /I <sub>N</sub>	Relative starting current
M <sub>A</sub> /M <sub>N</sub>	Relative starting torque
M <sub>K</sub> /M <sub>N</sub>	Relative stalling torque
J <sub>rot</sub>	Mass inertia of rotor
C	Required capacitance of running capacitor
Brake	Recommended standard brake for normal applications

## 8.6 Technical Data of 60-Hz Single-Phase AC Motors

60 Hz

### 8.6.1 2-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz

P	Type	n	M <sub>N</sub>	I <sub>N</sub> (230 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	C	Standard Brake
kW		rpm	Nm	A						kgm <sup>2</sup>	μF	
0,055	<b>E04LA2</b>	3240	0,160	0,57	Δ	0,90	3,0	0,6	1,6	0,000110	5,0	E003B9
0,075	<b>E04LA2</b>	3240	0,220	1,05	Δ	0,90	2,5	0,6	1,6	0,000110	10,0	E003B9
0,11	<b>E04LA2</b>	3240	0,320	1,20	Δ	0,90	2,5	0,6	1,6	0,000110	12,0	E003B9
0,18	<b>E05LA2</b>	3240	0,53	1,50	Δ	0,95	2,6	0,6	1,6	0,000200	16,0	E003B9
0,25	<b>E05LA2</b>	3240	0,73	2,2	Δ	0,95	2,6	0,7	1,6	0,000200	30,0	E003B9

### 8.6.2 4-Pole Motors, Series E, Surface Cooled, Continuous Duty Mode S1, Supply Frequency 60 Hz

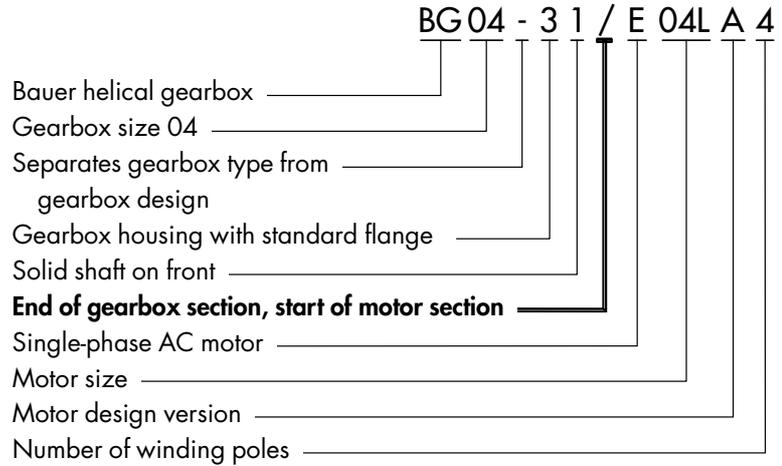
P	Type	n	M <sub>N</sub>	I <sub>N</sub> (230 V)	Y/Δ	cos φ	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	J <sub>rot</sub>	C	Standard Brake
kW		rpm	Nm	A						kgm <sup>2</sup>	μF	
0,030	<b>E04LA4</b>	1620	0,170	0,380	Δ	0,85	2,0	0,7	1,6	0,000175	4,0	E003B9
0,040	<b>E04LA4</b>	1620	0,230	0,480	Δ	0,85	2,0	0,7	1,6	0,000175	5,0	E003B9
0,055	<b>E04LA4</b>	1620	0,320	0,67	Δ	0,90	2,0	0,7	1,6	0,000175	8,0	E003B9
0,075	<b>E04LA4</b>	1620	0,440	0,90	Δ	0,90	1,7	0,8	1,6	0,000175	10,0	E003B9
0,075	<b>E05LA4</b>	1620	0,440	0,85	Δ	0,90	2,6	0,7	1,6	0,000295	10,0	E003B9
0,11	<b>E05LA4</b>	1620	0,64	1,30	Δ	0,90	2,2	0,7	1,6	0,000295	16,0	E003B9
0,18	<b>E05LA4</b>	1620	1,06	1,70	Δ	0,90	2,0	0,7	1,6	0,000295	20,0	E003B9

P	Rated output at 60 Hz supply frequency
n	Guide figure for rated speed at rotor shaft at 60 Hz supply frequency
M <sub>N</sub>	Rated torque at rotor shaft
I <sub>N</sub>	Rated current at 230 V
cos φ	Power factor
I <sub>A</sub> /I <sub>N</sub>	Relative starting current
M <sub>A</sub> /M <sub>N</sub>	Relative starting torque
M <sub>K</sub> /M <sub>N</sub>	Relative stalling torque
J <sub>rot</sub>	Mass inertia of rotor
C	Required capacitance of running capacitor
Brake	Recommended standard brake for normal applications

**8.7 Type Codes for Helical Geared Motors**

For further specifications and details of helical gearboxes, refer to Section 6.

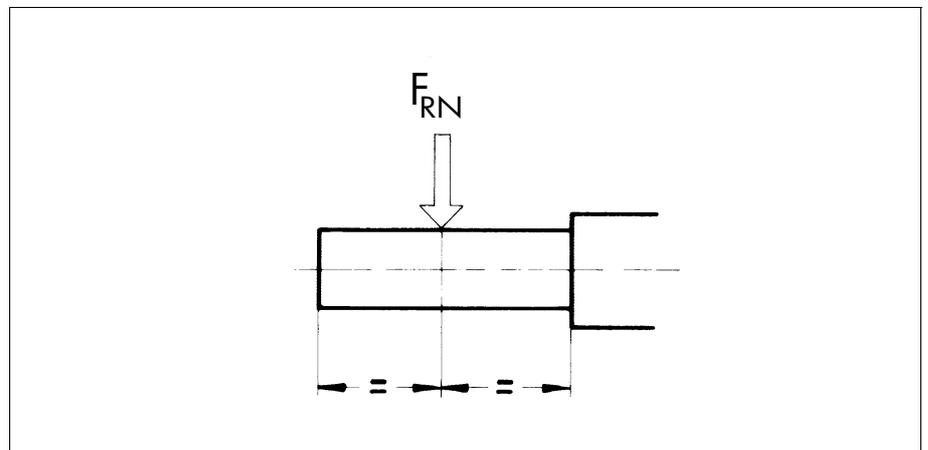
**8.7.1 Typical Designation of a Single-Phase AC Helical Geared Motor**



**8.8 Selection Tables for Single-Phase AC Helical Geared Motors**

**Explanation of Abbreviations**

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

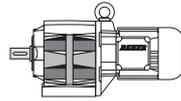


The selection tables can be used to determine the size of the geared motor. The gearbox design can be unambiguously defined by means of code numbers (see dimensional drawing 6.3).

The torque figures marked (\*) are maximum permissible levels for a load factor of  $f_B=1.0$ .

**Protection Against Overload by Motor Output**

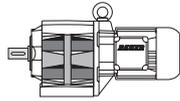
The rated outputs of the motors, particularly in conjunction with gearboxes with four or more speeds, are very generously dimensioned in some cases. For that reason, as with low motor outputs, the rated current is not a measure of gearbox load capacity utilisation and can not be taken as an indication of overload protection for the gearbox. If there is a risk of excessive load or jamming, it is advisable to protect the gearbox by mechanical means (e.g. one-way clutch, free hub, shear pin, etc.).


**P = 0.03 kW**

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
370	0.77	6.5	3.65	BG04-../E04LA4	4.4	390	-	445	0.64	7.8
310	0.92	7.6	4.39	"	"	380	-	370	0.77	9.1
255	1.12	8.0	5.36	"	"	380	-	305	0.93	9.7
205	1.39	7.2	6.67	"	"	410	-	245	1.16	8.6
158	1.81	6.1	8.58	"	"	410	-	189	1.51	7.3
150	1.91	6.3	9.00	"	"	470	-	180	1.59	7.5
137	2.05	6.3	9.90	"	"	480	-	164	1.74	7.5
125	2.25	6.2	10.82	"	"	480	-	150	1.91	7.3
114	2.5	6.0	11.90	"	"	490	-	137	2.05	7.3
108	2.65	5.7	12.55	"	"	490	-	130	2.2	6.8
103	2.75	5.8	13.20	"	"	500	-	123	2.3	7.0
93	3.05	5.6	14.52	"	"	510	-	112	2.55	6.7
83	3.45	5.2	16.44	"	"	530	-	99	2.85	6.3
75	3.8	4.7	18.08	"	"	540	-	90	3.15	5.7
64	4.45	4.3	21.12	"	"	560	-	77	3.7	5.1
59	4.85	4.1	23.23	"	"	600	-	70	4.05	4.9
56	5.1	3.9	24.45	"	"	610	-	67	4.25	4.7
51	5.6	3.6	26.89	"	"	650	-	61	4.65	4.3
44	6.5	3.1	30.91	"	"	690	-	53	5.4	3.7
40	7.1	2.8	34.00	"	"	720	-	48	5.9	3.4
38.5	7.4	2.7	35.35	"	"	730	-	46	6.2	3.2
35	8.1	2.5	38.89	"	"	750	-	42	6.8	2.9
32	8.9	2.2	42.24	"	"	750	-	38.5	7.4	2.7
29.5	9.7	2.1	46.47	"	"	750	-	35	8.1	2.5
28.5	10	2.0	47.52	"	"	750	-	34.5	8.3	2.4
26	11	1.8	52.28	"	"	750	-	31	9.2	2.2
25	11.4	1.75	54.97	"	"	750	-	29.5	9.7	2.1
22.5	12.7	1.55	60.47	"	"	750	-	27	10.6	1.9
31	9.2	3.3	43.57	BG05-../E04LA4	5.1	900	-	37.5	7.6	3.9
29	9.8	3.1	47.00	"	"	930	-	34.5	8.3	3.6
26.5	10.8	2.8	51.27	"	"	970	-	32	8.9	3.4
25.5	11.2	2.7	53.44	"	"	980	-	30.5	9.3	3.2
23.5	12.1	2.5	58.30	"	"	1000	-	28	10.2	2.9
20.5	13.9	3.2	66.79	BG06-../E04LA4	6.1	1070	-	24.5	11.6	3.9

**P = 0.04 kW**

370	1.03	4.9	3.65	BG04-../E04LA4	4.4	390	-	445	0.85	5.9
310	1.23	5.7	4.39	"	"	380	-	370	1.03	6.8
255	1.49	6.0	5.36	"	"	380	-	305	1.25	7.2
205	1.86	5.4	6.67	"	"	410	-	245	1.55	6.5
158	2.4	4.6	8.58	"	"	410	-	189	2.0	5.5
150	2.5	4.8	9.00	"	"	470	-	180	2.1	5.7
137	2.75	4.7	9.90	"	"	480	-	164	2.3	5.7
125	3.05	4.6	10.82	"	"	480	-	150	2.5	5.6
114	3.35	4.5	11.90	"	"	490	-	137	2.75	5.5
108	3.5	4.3	12.55	"	"	490	-	130	2.9	5.2
103	3.7	4.3	13.20	"	"	500	-	123	3.1	5.2
93	4.1	4.1	14.52	"	"	510	-	112	3.4	5.0
83	4.6	3.9	16.44	"	"	530	-	99	3.85	4.7
75	5.0	3.6	18.08	"	"	540	-	90	4.2	4.3
64	5.9	3.2	21.12	"	"	560	-	77	4.95	3.8
59	6.4	3.1	23.23	"	"	600	-	70	5.4	3.7
56	6.8	2.9	24.45	"	"	610	-	67	5.7	3.5
51	7.4	2.7	26.89	"	"	650	-	61	6.2	3.2
44	8.6	2.3	30.91	"	"	690	-	53	7.2	2.8
40	9.5	2.1	34.00	"	"	720	-	48	7.9	2.5
38.5	9.9	2.0	35.35	"	"	730	-	46	8.3	2.4



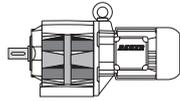
*Danfoss*

**P = 0.04 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
35	10.9	1.85	38.89	BG04-../E04LA4	4.4	750	-	42	9.0	2.2
32	11.9	1.7	42.24	"	"	750	-	38.5	9.9	2.0
29.5	12.9	1.55	46.47	"	"	750	-	35	10.9	1.85
28.5	13.4	1.5	47.52	"	"	750	-	34.5	11	1.8
26	14.6	1.35	52.28	"	"	750	-	31	12.3	1.65
25	15.2	1.3	54.97	"	"	750	-	29.5	12.9	1.55
22.5	16.9	1.2	60.47	"	"	750	-	27	14.1	1.4
39	9.7	3.1	35.00	BG05-../E04LA4	5.1	810	-	46.5	8.2	3.7
35.5	10.7	2.8	38.18	"	"	850	-	42.5	8.9	3.4
34	11.2	2.7	39.94	"	"	860	-	41	9.3	3.2
31	12.3	2.4	43.57	"	"	900	-	37.5	10.1	3.0
29	13.1	2.3	47.00	"	"	930	-	34.5	11	2.7
26.5	14.4	2.1	51.27	"	"	970	-	32	11.9	2.5
25.5	14.9	2.0	53.44	"	"	980	-	30.5	12.5	2.4
23.5	16.2	1.85	58.30	"	"	1000	-	28	13.6	2.2
27	14.1	3.2	50.38	BG06-../E04LA4	6.1	940	-	32.5	11.7	3.8
26	14.6	3.1	52.56	"	"	950	-	31	12.3	3.7
24	15.9	2.8	57.34	"	"	1000	-	28.5	13.4	3.4
22.5	16.9	2.7	61.22	"	"	1020	-	26.5	14.4	3.1
20.5	18.6	2.4	66.79	"	"	1070	-	24.5	15.5	2.9
18	19.1	2.1	75.99	BG06G04-../E04LA4	8.4	1070	-	21.5	15.6	2.6
15	22.5	2.0	93.00	"	"	1070	-	17.5	19.2	2.3
11.5	29	1.55	122.0	"	"	1070	-	13.5	24	1.9
9.1	36.5	1.25	149.0	"	"	1070	-	11	29.5	1.55
7.3	46.5	0.97	185.4	"	"	1070	-	8.8	37.5	1.2

**P = 0.055 kW**

370	1.41	3.5	3.65	BG04-../E04LA4	4.4	390	-	445	1.18	4.2
310	1.69	4.1	4.39	"	"	380	-	370	1.41	5.0
255	2.05	4.4	5.36	"	"	380	-	305	1.72	5.2
205	2.55	3.9	6.67	"	"	410	-	245	2.1	4.8
158	3.3	3.3	8.58	"	"	410	-	189	2.75	4.0
150	3.5	3.4	9.00	"	"	470	-	180	2.9	4.1
137	3.8	3.4	9.90	"	"	480	-	164	3.2	4.1
125	4.2	3.3	10.82	"	"	480	-	150	3.5	4.0
114	4.6	3.3	11.90	"	"	490	-	137	3.8	3.9
108	4.85	3.1	12.55	"	"	490	-	130	4.0	3.8
103	5.0	3.2	13.20	"	"	500	-	123	4.25	3.8
93	5.6	3.0	14.52	"	"	510	-	112	4.65	3.7
83	6.3	2.9	16.44	"	"	530	-	99	5.3	3.4
75	7.0	2.6	18.08	"	"	540	-	90	5.8	3.1
64	8.2	2.3	21.12	"	"	560	-	77	6.8	2.8
59	8.9	2.2	23.23	"	"	600	-	70	7.5	2.7
56	9.3	2.2	24.45	"	"	610	-	67	7.8	2.6
51	10.2	1.95	26.89	"	"	650	-	61	8.6	2.3
44	11.9	1.7	30.91	"	"	690	-	53	9.9	2.0
40	13.1	1.55	34.00	"	"	720	-	48	10.9	1.85
38.5	13.6	1.45	35.35	"	"	730	-	46	11.4	1.75
35	15	1.35	38.89	"	"	750	-	42	12.5	1.6
32	16.4	1.2	42.24	"	"	750	-	38.5	13.6	1.45
29.5	17.8	1.1	46.47	"	"	750	-	35	15	1.35
28.5	18.4	1.1	47.52	"	"	750	-	34.5	15.2	1.3
26	20	1.0	52.28	"	"	750	-	31	16.9	1.2
25	21	0.95	54.97	"	"	750	-	29.5	17.8	1.1
22.5	23	0.87	60.47	"	"	750	-	27	19.4	1.05



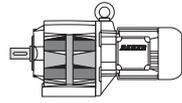
### P = 0.055 kW

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
57	9.2	3.0	24.00	BG05-../E04LA4	5.1	740	-	68	7.7	3.6
52	10.1	2.9	26.18	"	"	760	-	62	8.4	3.5
49	10.7	2.8	27.82	"	"	770	-	59	8.9	3.4
44.5	11.8	2.5	30.35	"	"	760	-	54	9.7	3.1
39	13.4	2.2	35.00	"	"	810	-	46.5	11.2	2.7
35.5	14.7	2.0	38.18	"	"	850	-	42.5	12.3	2.4
34	15.4	1.95	39.94	"	"	860	-	41	12.8	2.3
31	16.9	1.8	43.57	"	"	900	-	37.5	14	2.1
29	18.1	1.65	47.00	"	"	930	-	34.5	15.2	1.95
26.5	19.8	1.5	51.27	"	"	970	-	32	16.4	1.85
25.5	20.5	1.45	53.44	"	"	980	-	30.5	17.2	1.75
23.5	22	1.35	58.30	"	"	1000	-	28	18.7	1.6
38.5	13.6	3.3	35.15	BG06-../E04LA4	6.1	880	-	46.5	11.2	4.0
37	14.1	3.2	36.91	"	"	890	-	44	11.9	3.8
34	15.4	2.9	40.26	"	"	890	-	40.5	12.9	3.5
29.5	17.8	2.5	46.19	"	"	890	-	35.5	14.7	3.1
27	19.4	2.3	50.38	"	"	940	-	32.5	16.1	2.8
26	20	2.3	52.56	"	"	950	-	31	16.9	2.7
24	21.5	2.1	57.34	"	"	1000	-	28.5	18.4	2.4
22.5	23	1.95	61.22	"	"	1020	-	26.5	19.8	2.3
20.5	25.5	1.75	66.79	"	"	1070	-	24.5	21	2.1
18	27	1.5	75.99	BG06G04-../E04LA4	8.4	1070	-	21.5	22	1.8
15	32	1.4	93.00	"	"	1070	-	17.5	27	1.65
11.5	41.5	1.1	122.0	"	"	1070	-	13.5	35	1.3
9.1	52	0.87	149.0	"	"	1070	-	11	42.5	1.05
20	26	3.3	67.54	BG10Z-../E04LA4	11	2000	2800	24	21.5	4.0
17.5	30	3.3	77.40	"	"	2000	2800	21	25	4.0
16	32.5	3.1	85.76	"	"	2000	2800	19	27.5	3.6
15	35	2.9	92.19	"	"	2000	2800	18	29	3.4
13.5	38.5	2.6	102.1	"	"	2000	2800	16	32.5	3.1
12.5	42	2.4	109.8	"	"	2000	2800	15	35	2.9
11.5	45.5	2.2	121.7	"	"	2000	2800	13.5	38.5	2.6
10.5	50	2.0	131.8	"	"	2000	2800	12.5	42	2.4
9.3	56	1.8	146.0	"	"	2000	2800	11.5	45.5	2.2
8.2	64	1.55	166.0	"	"	2000	2800	9.8	53	1.9
7.4	70	1.45	184.0	"	"	2000	2800	8.9	59	1.7
7.0	75	1.35	194.6	"	"	2000	2800	8.4	62	1.6
6.3	83	1.2	215.7	"	"	2000	2800	7.6	69	1.45
5.7	92	1.1	240.4	"	"	2000	2800	6.8	77	1.3
5.1	102	0.98	266.3	"	"	2000	2800	6.1	86	1.15
4.9	107	0.93	276.0	"	"	2000	2800	5.9	89	1.1
4.5	116	0.86	305.8	"	"	2000	2800	5.3	99	1.0

### P = 0.075 kW

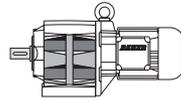
370	1.93	2.6	3.65	BG04-../E04LA4	4.4	390	-	445	1.6	3.1
310	2.3	3.0	4.39	"	"	380	-	370	1.93	3.6
255	2.8	3.2	5.36	"	"	380	-	305	2.3	3.9
205	3.45	2.9	6.67	"	"	410	-	245	2.9	3.4
158	4.5	2.4	8.58	"	"	410	-	189	3.75	2.9
150	4.75	2.5	9.00	"	"	470	-	180	3.95	3.0
137	5.2	2.5	9.90	"	"	480	-	164	4.35	3.0
125	5.7	2.5	10.82	"	"	480	-	150	4.75	2.9
114	6.2	2.4	11.90	"	"	490	-	137	5.2	2.9
108	6.6	2.3	12.55	"	"	490	-	130	5.5	2.7
103	6.9	2.3	13.20	"	"	500	-	123	5.8	2.8
93	7.7	2.2	14.52	"	"	510	-	112	6.3	2.7
83	8.6	2.1	16.44	"	"	530	-	99	7.2	2.5

P = 0.075 kW



*Danfoss*

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
75	9.5	1.9	18.08	BG04-../E04LA4	4.4	540	-	90	7.9	2.3
64	11.1	1.7	21.12	"	"	560	-	77	9.3	2.0
59	12.1	1.65	23.23	"	"	600	-	70	10.2	1.95
56	12.7	1.55	24.45	"	"	610	-	67	10.6	1.9
51	14	1.45	26.89	"	"	650	-	61	11.7	1.7
44	16.2	1.25	30.91	"	"	690	-	53	13.5	1.5
40	17.9	1.1	34.00	"	"	720	-	48	14.9	1.35
38.5	18.6	1.1	35.35	"	"	730	-	46	15.5	1.3
35	20	1.0	38.89	"	"	750	-	42	17	1.2
32	22	0.91	42.24	"	"	750	-	38.5	18.6	1.1
29.5	24	0.83	46.47	"	"	750	-	35	20	1.0
28.5	25	0.8	47.52	"	"	750	-	34.5	20.5	0.98
113	6.3	3.3	12.05	BG05-../E04LA4	5.1	510	-	135	5.3	4.0
108	6.6	3.3	12.60	"	"	610	-	129	5.5	4.0
99	7.2	3.2	13.75	"	"	630	-	118	6.0	3.8
89	8.0	3.0	15.23	"	"	640	-	107	6.6	3.6
82	8.7	2.9	16.62	"	"	660	-	98	7.3	3.4
72	9.9	2.6	18.82	"	"	680	-	87	8.2	3.2
66	10.8	2.5	20.53	"	"	700	-	79	9.0	3.0
57	12.5	2.2	24.00	"	"	740	-	68	10.5	2.7
52	13.7	2.1	26.18	"	"	760	-	62	11.5	2.5
49	14.6	2.1	27.82	"	"	770	-	59	12.1	2.5
44.5	16	1.9	30.35	"	"	760	-	54	13.2	2.3
39	18.3	1.65	35.00	"	"	810	-	46.5	15.4	1.95
35.5	20	1.5	38.18	"	"	850	-	42.5	16.8	1.8
34	21	1.45	39.94	"	"	860	-	41	17.4	1.7
31	23	1.3	43.57	"	"	900	-	37.5	19.1	1.55
29	24.5	1.2	47.00	"	"	930	-	34.5	20.5	1.45
26.5	27	1.1	51.27	"	"	970	-	32	22	1.35
25.5	28	1.05	53.44	"	"	980	-	30.5	23	1.3
23.5	30	1.0	58.30	"	"	1000	-	28	25.5	1.2
53	13.5	3.3	25.48	BG06-../E04LA4	6.1	850	-	64	11.1	4.1
49	14.6	3.1	27.80	"	"	840	-	59	12.1	3.7
42	17	2.6	32.22	"	"	890	-	51	14	3.2
38.5	18.6	2.4	35.15	"	"	880	-	46.5	15.4	2.9
37	19.3	2.3	36.91	"	"	890	-	44	16.2	2.8
34	21	2.1	40.26	"	"	890	-	40.5	17.6	2.6
29.5	24	1.9	46.19	"	"	890	-	35.5	20	2.3
27	26.5	1.7	50.38	"	"	940	-	32.5	22	2.0
26	27.5	1.65	52.56	"	"	950	-	31	23	1.95
24	29.5	1.55	57.34	"	"	1000	-	28.5	25	1.8
22.5	31.5	1.45	61.22	"	"	1020	-	26.5	27	1.65
20.5	34.5	1.3	66.79	"	"	1070	-	24.5	29	1.55
18	37.5	1.05	75.99	BG06G04-../E04LA4	8.4	1070	-	21.5	31	1.3
15	45	1.0	93.00	"	"	1070	-	17.5	38	1.2
13.5	50	0.9	101.5	"	"	1070	-	16	41.5	1.1
23.5	30	3.3	57.48	BG10-../E05LA4	11	2000	2800	28.5	25	4.0
21.5	33	3.0	63.69	"	"	2000	2800	25.5	28	3.6
20.5	34.5	2.9	66.00	"	"	2000	2800	25	28.5	3.5
18.5	38.5	2.6	73.13	"	"	2000	2800	22.5	31.5	3.2
17.5	40.5	2.5	77.40	BG10Z-../E05LA4	13	2000	2800	21	34	2.9
16	44.5	2.2	85.76	"	"	2000	2800	19	37.5	2.7
15	47.5	2.1	92.19	"	"	2000	2800	18	39.5	2.5
13.5	53	1.9	102.1	"	"	2000	2800	16	44.5	2.2
12.5	57	1.75	109.8	"	"	2000	2800	15	47.5	2.1
11.5	62	1.6	121.7	"	"	2000	2800	13.5	53	1.9
10.5	68	1.45	131.8	"	"	2000	2800	12.5	57	1.75
9.3	77	1.3	146.0	"	"	2000	2800	11.5	62	1.6



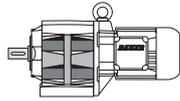
### P = 0.075 kW

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
8.2	87	1.15	166.0	BG10Z-../E05LA4	13	2000	2800	9.8	73	1.35
7.4	96	1.05	184.0	"	"	2000	2800	8.9	80	1.25
7.0	102	0.98	194.6	"	"	2000	2800	8.4	85	1.2
6.3	113	0.88	215.7	"	"	2000	2800	7.6	94	1.05
5.7	125	0.8	240.4	"	"	2000	2800	6.8	105	0.95

### P = 0.18 kW

400	4.25	2.4	3.38	BG05-../E05LA4	7.0	460	-	480	3.55	2.8
295	5.8	2.1	4.59	"	"	490	-	355	4.8	2.5
250	6.8	2.1	5.46	"	"	490	-	300	5.7	2.5
205	8.3	1.95	6.60	"	"	510	-	250	6.8	2.4
174	9.8	1.85	7.80	"	"	530	-	210	8.1	2.2
166	10.3	1.75	8.15	"	"	510	-	199	8.6	2.1
159	10.8	1.75	8.51	"	"	550	-	191	9.0	2.1
130	13.2	1.45	10.40	"	"	510	-	156	11	1.75
128	13.4	1.5	10.59	"	"	590	-	153	11.2	1.8
117	14.6	1.45	11.55	"	"	600	-	141	12.1	1.75
113	15.2	1.4	12.05	"	"	510	-	135	12.7	1.65
108	15.9	1.4	12.60	"	"	610	-	129	13.3	1.65
99	17.3	1.35	13.75	"	"	630	-	118	14.5	1.6
89	19.3	1.25	15.23	"	"	640	-	107	16	1.5
82	20.5	1.2	16.62	"	"	660	-	98	17.5	1.45
72	23.5	1.1	18.82	"	"	680	-	87	19.7	1.3
66	26	1.05	20.53	"	"	700	-	79	21.5	1.25
57	30	0.93	24.00	"	"	740	-	68	25	1.1
52	33	0.88	26.18	"	"	760	-	62	27.5	1.05
49	35	0.86	27.82	"	"	770	-	59	29	1.05
230	7.4	3.2	5.96	BG06-../E05LA4	8.0	570	-	275	6.2	3.9
193	8.9	2.9	7.01	"	"	580	-	235	7.3	3.6
161	10.6	2.6	8.39	"	"	600	-	194	8.8	3.2
144	11.9	2.5	9.38	"	"	640	-	173	9.9	3.0
132	13	2.4	10.24	"	"	640	-	159	10.8	2.9
120	14.3	2.2	11.28	"	"	670	-	144	11.9	2.7
110	15.6	2.1	12.30	"	"	670	-	132	13	2.5
105	16.3	2.0	12.98	"	"	600	-	125	13.7	2.4
92	18.6	1.85	14.78	"	"	730	-	110	15.6	2.2
84	20	1.75	16.13	"	"	740	-	101	17	2.1
78	22	1.75	17.40	"	"	760	-	94	18.2	2.1
72	23.5	1.7	18.98	"	"	770	-	86	19.9	2.0
65	26	1.55	20.82	"	"	800	-	78	22	1.8
60	28.5	1.5	22.71	"	"	810	-	72	23.5	1.85
53	32	1.4	25.48	"	"	850	-	64	26.5	1.7
49	35	1.3	27.80	"	"	840	-	59	29	1.55
42	40.5	1.1	32.22	"	"	890	-	51	33.5	1.35
38.5	44.5	1.0	35.15	"	"	880	-	46.5	36.5	1.25
37	46	0.98	36.91	"	"	890	-	44	39	1.15
34	50	0.9	40.26	"	"	890	-	40.5	42	1.05
56	30.5	3.3	24.42	BG10-../E05LA4	11	1410	1970	67	25.5	3.9
52	33	3.0	26.26	"	"	1460	2000	62	27.5	3.6
46.5	36.5	2.7	29.09	"	"	1540	2150	56	30.5	3.3
43	39.5	2.5	31.52	"	"	1600	2200	52	33	3.0
39	44	2.3	34.92	"	"	1690	2350	46.5	36.5	2.7
34.5	49.5	2.0	39.70	"	"	1780	2450	41	41.5	2.4
31	55	1.8	43.99	"	"	1880	2600	37	46	2.2
29.5	58	1.7	46.55	"	"	1920	2650	35	49	2.0
26.5	64	1.55	51.57	"	"	2000	2800	31.5	54	1.85
23.5	73	1.35	57.48	"	"	2000	2800	28.5	60	1.65

**P = 0.18 kW**



*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
21.5	79	1.25	63.69	BG10-../E05LA4	11	2000	2800	25.5	67	1.5
20.5	83	1.2	66.00	"	"	2000	2800	25	68	1.45
18.5	92	1.1	73.13	"	"	2000	2800	22.5	76	1.3
17.5	98	1.0	77.40	BG10Z-../E05LA4	13	2000	2800	21	81	1.25
16	107	0.93	85.76	"	"	2000	2800	19	90	1.1
15	114	0.88	92.19	"	"	2000	2800	18	95	1.05

## 8.9 Dimensional Drawings for Single-Phase Helical Geared Motors

The external dimensions of the single-phase AC motors are the same as those of the comparable 3-phase AC motors, i.e.

E04 is the same as D04, EU04 is the same as DU04

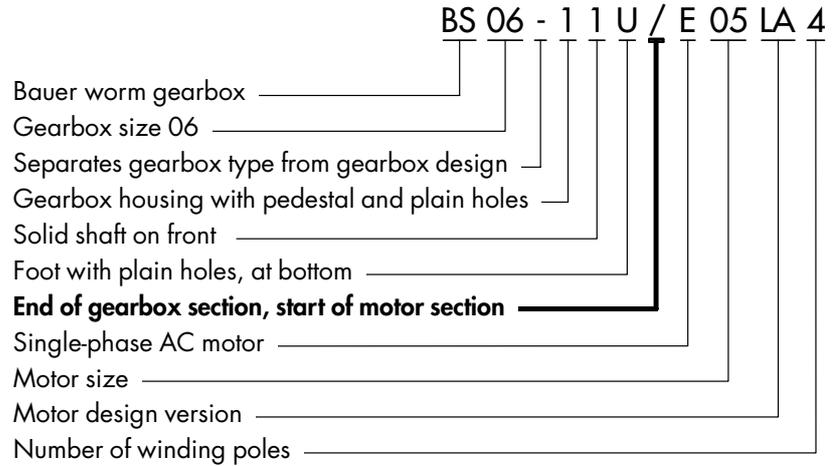
E05 is the same as D05, EU05 is the same as DU05.

The dimensional drawings for single-phase AC motors and single-phase AC geared motors and the supplementary dimensional drawings can thus be found in the section on 3-phase AC motors.

**8.10 Type Codes for Worm Geared Motors**

For further specifications and details of worm gearboxes, refer to Section 6.

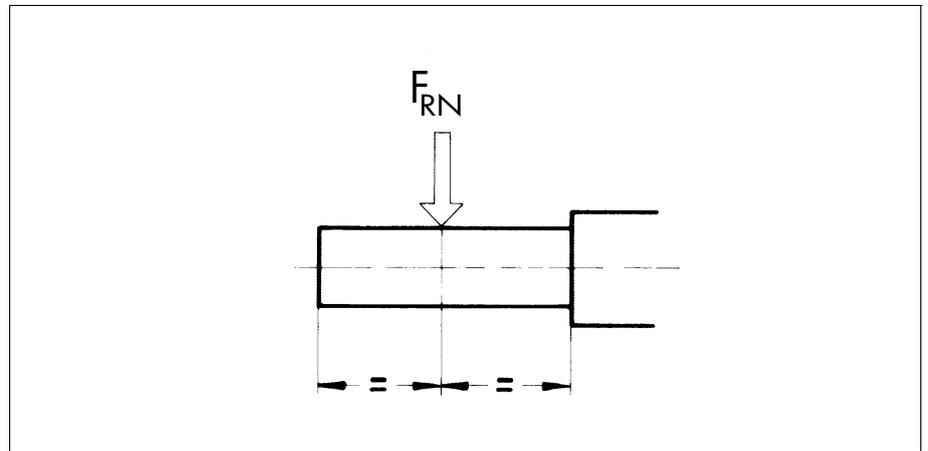
**8.10.1 Typical Designation of a Single-Phase AC Worm Geared Motor**



**8.11 Selection Tables for Single-Phase AC Worm Geared Motors**

**Explanation of Abbreviations**

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

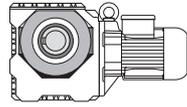


The selection tables can be used to determine the size of the geared motor. The gearbox design can be unambiguously defined by means of code numbers (see dimensional drawing 7.3).

The torque figures marked (\*) are maximum permissible levels for a load factor of  $f_B=1.0$ .

**Protection Against Overload by Motor Output**

The rated outputs of the motors, particularly in conjunction with gearboxes with four or more speeds, are very generously dimensioned in some cases. For that reason, as with low motor outputs, the rated current is not a measure of gearbox load capacity utilisation and can not be taken as an indication of overload protection for the gearbox. If there is a risk of excessive load or jamming, it is advisable to protect the gearbox by mechanical means (e.g. one-way clutch, free hub, shear pin, etc.).



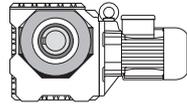
*Danfoss*

**P = 0.03 kW**

50 Hz			i	Type	m kg	F <sub>RN</sub> N	F <sub>RV</sub> N	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
295	0.85	18	4.60	BS02-../E04LA4	3.5	450	-	355	0.71	21
250	1.0	20	5.40	"	"	510	-	300	0.84	24
200	1.23	20	6.75	"	"	590	-	240	1.02	25
164	1.46	17	8.25	"	"	600	-	197	1.22	20
127	1.84	14	10.67	"	"	600	-	152	1.54	16
100	2.2	11	13.50	"	"	600	-	120	1.86	13
75	2.8	8.9	18.00	"	"	600	-	90	2.35	11
62	3.2	7.8	22.00	"	"	600	-	74	2.7	9.3
50	3.6	6.9	27.00	"	"	600	-	60	3.0	8.3
41	4.15	6.0	33.00	"	"	600	-	49.5	3.45	7.2
31.5	5.6	4.3	43.00	"	"	600	-	38	4.65	5.2
25	6.5	3.4	54.00	"	"	600	-	30	5.4	4.1
19.5	7.4	2.7	70.00	"	"	600	-	23.5	6.2	3.2
15	12.4	3.1	90.00	BS04-../E04LA4	3.9	1000	-	18	10.3	3.7
14.5	11.6	3.3	93.92	"	"	1000	-	17.5	9.6	4.0
13.5	13.5	2.8	102.9	"	"	1000	-	16	11.4	3.3
12	13.6	2.8	117.0	"	"	1000	-	14	11.6	3.3
11	16.4	2.5	123.0	"	"	1000	-	13.5	13.3	3.1
9.8	18.1	2.3	138.4	"	"	1000	-	12	14.8	2.8
9.0	17.5	2.2	150.3	"	"	1000	-	11	14.3	2.7
8.5	20.5	1.8	160.1	"	"	1000	-	10.5	16.6	2.2
7.8	19.8	2.0	174.0	"	"	1000	-	9.4	16.4	2.4
6.2	24	1.65	220.0	"	"	1000	-	7.4	20.5	1.95
5.4	27.5	1.5	251.6	"	"	1000	-	6.5	22.5	1.8
4.5	32	1.35	300.7	"	"	1000	-	5.4	27	1.6
4.0	35.5	1.25	338.3	"	"	1000	-	4.8	29.5	1.5
3.5	40	1.15	391.3	"	"	1000	-	4.2	33	1.35
5.4	30.5	3.2	252.0	BS06-../E04LA4	8.4	2000	-	6.5	25.5	3.9
4.3	37.5	2.8	315.3	"	"	2000	-	5.2	31	3.4
3.8	42	2.6	358.9	"	"	2000	-	4.6	34.5	3.2
3.3	47.5	2.3	418.0	"	"	2000	-	3.9	40	2.8

**P = 0.04 kW**

295	1.13	13	4.60	BS02-../E04LA4	3.5	450	-	355	0.94	16
250	1.34	15	5.40	"	"	510	-	300	1.12	18
200	1.64	15	6.75	"	"	590	-	240	1.36	18
164	1.95	13	8.25	"	"	600	-	197	1.62	15
127	2.45	10	10.67	"	"	600	-	152	2.05	12
100	2.95	8.5	13.50	"	"	600	-	120	2.45	10
75	3.75	6.7	18.00	"	"	600	-	90	3.1	8.1
62	4.3	5.8	22.00	"	"	600	-	74	3.6	6.9
50	4.8	5.2	27.00	"	"	600	-	60	4.0	6.3
41	5.5	4.5	33.00	"	"	600	-	49.5	4.6	5.4
31.5	7.5	3.2	43.00	"	"	600	-	38	6.2	3.9
25	8.7	2.5	54.00	"	"	600	-	30	7.2	3.1
19.5	9.9	2.0	70.00	"	"	600	-	23.5	8.2	2.4
22	11.6	3.3	61.50	BS04-../E04LA4	3.9	1000	-	26.5	9.6	4.0
21.5	11.1	3.2	64.06	"	"	1000	-	25.5	9.4	3.8
19	13.2	2.9	71.18	"	"	1000	-	23	10.9	3.5
18	12.9	2.9	77.00	"	"	1000	-	21.5	10.8	3.5
15	16.5	2.3	90.00	"	"	1000	-	18	13.7	2.8
14.5	15.5	2.5	93.92	"	"	1000	-	17.5	12.8	3.0
13.5	18.1	2.1	102.9	"	"	1000	-	16	15.2	2.5
12	18.1	2.1	117.0	"	"	1000	-	14	15.5	2.5
11	21.5	1.9	123.0	"	"	1000	-	13.5	17.8	2.3
9.8	24	1.75	138.4	"	"	1000	-	12	19.7	2.1



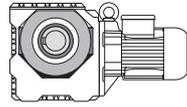
*Danfoss*

**P = 0.04 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
9.0	23	1.7	150.3	<b>BS04-../E04LA4</b>	3.9	1000	-	11	19.1	2.0
8.5	27	1.35	160.1	"	"	1000	-	10.5	22	1.7
7.8	26	1.55	174.0	"	"	1000	-	9.4	21.5	1.85
6.2	32.5	1.25	220.0	"	"	1000	-	7.4	27	1.5
5.4	36.5	1.1	251.6	"	"	1000	-	6.5	30.5	1.35
4.5	43	1.0	300.7	"	"	1000	-	5.4	36	1.2
4.0	47.5	0.93	338.3	"	"	1000	-	4.8	39.5	1.1
3.5	53	0.85	391.3	"	"	1000	-	4.2	44.5	1.0
7.9	30.5	2.9	171.0	<b>BS06-../E04LA4</b>	8.4	2000	-	9.5	25.5	3.5
7.8	29	3.4	174.0	"	"	2000	-	9.4	24	4.1
6.2	36	2.7	220.0	"	"	2000	-	7.4	30	3.3
5.4	41	2.4	252.0	"	"	2000	-	6.5	34	2.9
4.3	50	2.1	315.3	"	"	2000	-	5.2	41.5	2.6
3.8	56	1.95	358.9	"	"	2000	-	4.6	46.5	2.4
3.3	63	1.75	418.0	"	"	2000	-	3.9	53	2.1

**P = 0.055 kW**

295	1.56	9.6	4.60	<b>BS02-../E04LA4</b>	3.5	450	-	355	1.3	12
250	1.84	11	5.40	"	"	510	-	300	1.54	13
200	2.25	11	6.75	"	"	590	-	240	1.88	13
164	2.65	9.4	8.25	"	"	600	-	197	2.2	11
127	3.35	7.5	10.67	"	"	600	-	152	2.8	8.9
100	4.05	6.2	13.50	"	"	600	-	120	3.4	7.4
75	5.1	4.9	18.00	"	"	600	-	90	4.3	5.8
62	5.9	4.2	22.00	"	"	600	-	74	4.95	5.1
50	6.6	3.8	27.00	"	"	600	-	60	5.5	4.5
41	7.6	3.3	33.00	"	"	600	-	49.5	6.3	4.0
31.5	10.3	2.3	43.00	"	"	600	-	38	8.5	2.8
25	11.9	1.85	54.00	"	"	600	-	30	9.9	2.2
19.5	13.7	1.45	70.00	"	"	600	-	23.5	11.3	1.75
28.5	12.5	3.0	47.86	<b>BS04-../E04LA4</b>	3.9	1000	-	34	10.5	3.6
22	15.9	2.4	61.50	"	"	1000	-	26.5	13.2	2.9
21.5	15.3	2.4	64.06	"	"	1000	-	25.5	12.9	2.8
19	18.2	2.1	71.18	"	"	1000	-	23	15	2.5
18	17.8	2.1	77.00	"	"	1000	-	21.5	14.9	2.6
15	22.5	1.7	90.00	"	"	1000	-	18	18.9	2.0
14.5	21	1.8	93.92	"	"	1000	-	17.5	17.7	2.1
13.5	24.5	1.55	102.9	"	"	1000	-	16	21	1.8
12	24.5	1.55	117.0	"	"	1000	-	14	21	1.8
11	30	1.35	123.0	"	"	1000	-	13.5	24.5	1.65
9.8	33	1.25	138.4	"	"	1000	-	12	27	1.55
9.0	32	1.2	150.3	"	"	1000	-	11	26	1.5
8.5	37.5	0.99	160.1	"	"	1000	-	10.5	30.5	1.2
7.8	36	1.1	174.0	"	"	1000	-	9.4	30	1.35
6.2	44.5	0.9	220.0	"	"	1000	-	7.4	37.5	1.05
5.4	50	0.82	251.6	"	"	1000	-	6.5	42	0.98
11.5	29.5	3.2	118.8	<b>BS06-../E04LA4</b>	8.4	2000	-	14	24	3.9
10.5	33.5	3.1	129.0	"	"	2000	-	13	27	3.9
9.5	35	2.8	142.2	"	"	2000	-	11.5	29	3.4
9.2	37	2.9	146.8	"	"	2000	-	11.5	29.5	3.6
7.9	42.5	2.1	171.0	"	"	2000	-	9.5	35	2.5
7.8	40	2.5	174.0	"	"	2000	-	9.4	33.5	2.9
6.2	49.5	2.0	220.0	"	"	2000	-	7.4	41.5	2.4
5.4	56	1.75	252.0	"	"	2000	-	6.5	46.5	2.1
4.3	69	1.55	315.3	"	"	2000	-	5.2	57	1.85
3.8	77	1.45	358.9	"	"	2000	-	4.6	63	1.75



*Danfoss*

**P = 0.055 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
3.3	87	1.25	418.0	<b>BS06-../E04LA4</b>	8.4	2000	-	3.9	74	1.5

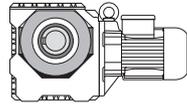
**P = 0.075 kW**

295	2.1	7.1	4.60	<b>BS02-../E04LA4</b>	3.5	450	-	355	1.77	8.5
250	2.5	8.0	5.40	"	"	510	-	300	2.1	9.5
200	3.05	8.2	6.75	"	"	590	-	240	2.55	9.8
164	3.65	6.8	8.25	"	"	600	-	197	3.05	8.2
127	4.6	5.4	10.67	"	"	600	-	152	3.85	6.5
100	5.5	4.5	13.50	"	"	600	-	120	4.65	5.4
75	7.0	3.6	18.00	"	"	600	-	90	5.8	4.3
62	8.0	3.1	22.00	"	"	600	-	74	6.7	3.7
50	9.0	2.8	27.00	"	"	600	-	60	7.5	3.3
41	10.4	2.4	33.00	"	"	600	-	49.5	8.6	2.9
31.5	14	1.7	43.00	"	"	600	-	38	11.6	2.1
25	16.3	1.35	54.00	"	"	600	-	30	13.6	1.6
19.5	18.7	1.05	70.00	"	"	600	-	23.5	15.5	1.3
43	11.6	3.3	31.50	<b>BS04-../E04LA4</b>	3.9	1000	-	52	9.6	4.0
35.5	13.9	2.7	38.42	"	"	1000	-	42.5	11.6	3.2
28.5	17	2.2	47.86	"	"	1000	-	34	14.3	2.7
22	21.5	1.75	61.50	"	"	1000	-	26.5	18.1	2.1
21.5	20.5	1.75	64.06	"	"	1000	-	25.5	17.6	2.0
19	24.5	1.55	71.18	"	"	1000	-	23	20.5	1.85
18	24	1.6	77.00	"	"	1000	-	21.5	20	1.9
15	31	1.25	90.00	"	"	1000	-	18	25.5	1.5
14.5	29	1.3	93.92	"	"	1000	-	17.5	24	1.6
13.5	33.5	1.15	102.9	"	"	1000	-	16	28.5	1.35
12	34	1.1	117.0	"	"	1000	-	14	29	1.3
11	41	1.0	123.0	"	"	1000	-	13.5	33	1.25
9.8	45	0.93	138.4	"	"	1000	-	12	37	1.15
9.0	43.5	0.9	150.3	"	"	1000	-	11	35.5	1.1
7.8	49.5	0.81	174.0	"	"	1000	-	9.4	41	0.98
18	26.5	3.2	77.00	<b>BS06-../E04LA4</b>	8.4	2000	-	21.5	22	3.9
15	33	3.0	90.00	"	"	2000	-	18	27.5	3.6
13.5	36.5	2.7	103.1	"	"	2000	-	16	30.5	3.3
11.5	40	2.4	118.8	"	"	2000	-	14	33	2.8
10.5	45.5	2.3	129.0	"	"	2000	-	13	36.5	2.8
9.5	48	2.0	142.2	"	"	2000	-	11.5	39.5	2.5
9.2	50	2.1	146.8	"	"	2000	-	11.5	40	2.7
7.9	58	1.5	171.0	"	"	2000	-	9.5	48	1.85
7.8	55	1.8	174.0	"	"	2000	-	9.4	45.5	2.2
6.2	68	1.45	220.0	"	"	2000	-	7.4	57	1.7
5.4	76	1.3	252.0	"	"	2000	-	6.5	63	1.55
4.3	94	1.15	315.3	"	"	2000	-	5.2	78	1.35
3.8	105	1.05	358.9	"	"	2000	-	4.6	87	1.25
3.3	119	0.92	418.0	"	"	2000	-	3.9	101	1.1

**P = 0.11 kW**

295	3.1	4.8	4.60	<b>BS02-../E05LA4</b>	5.3	450	-	355	2.6	5.8
250	3.65	5.5	5.40	"	"	510	-	300	3.05	6.6
200	4.5	5.6	6.75	"	"	590	-	240	3.75	6.7
164	5.3	4.7	8.25	"	"	600	-	197	4.45	5.6
127	6.7	3.7	10.67	"	"	600	-	152	5.6	4.5
100	8.1	3.1	13.50	"	"	600	-	120	6.8	3.7
75	10.3	2.4	18.00	"	"	600	-	90	8.6	2.9
62	11.8	2.1	22.00	"	"	600	-	74	9.9	2.5

**P = 0.11 kW**



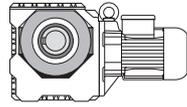
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>						n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>
rpm	Nm				kg	N	N	rpm	Nm	
50	13.2	1.9	27.00	BS02-../E05LA4	5.3	600	-	60	11	2.3
41	15.3	1.65	33.00	"	"	600	-	49.5	12.7	1.95
31.5	20.5	1.15	43.00	"	"	600	-	38	17.1	1.4
25	23.5	0.94	54.00	"	"	600	-	30	19.9	1.1
35	19.2	2.9	39.00	BS03-../E05LA4	5.4	800	-	42	16	3.4
27	22.5	2.4	50.00	"	"	800	-	32.5	18.7	2.9
22	25	1.9	62.00	"	"	800	-	26.5	21	2.3
18	29.5	1.35	75.00	"	"	800	-	22	24	1.65
65	12.2	3.0	20.96	BS04-../E05LA4	5.8	1000	-	78	10.2	3.6
56	14.2	2.4	24.25	"	"	1000	-	67	11.9	2.9
52	14.3	2.7	26.21	"	"	1000	-	62	12	3.2
43	17.1	2.2	31.50	"	"	1000	-	52	14.1	2.7
35.5	20	1.85	38.42	"	"	1000	-	42.5	17	2.2
28.5	25	1.5	47.86	"	"	1000	-	34	21	1.8
22	31.5	1.2	61.50	"	"	1000	-	26.5	26.5	1.45
21.5	30.5	1.2	64.06	"	"	1000	-	25.5	25.5	1.4
19	36	1.05	71.18	"	"	1000	-	23	30	1.25
18	35.5	1.05	77.00	"	"	1000	-	21.5	29.5	1.3
15	45.5	0.84	90.00	"	"	1000	-	18	37.5	1.0
14.5	42.5	0.89	93.92	"	"	1000	-	17.5	35	1.1
28	27	3.3	48.60	BS06-../E05LA4	10	2000	-	33.5	22.5	3.9
23.5	31.5	2.9	58.15	"	"	2000	-	28	26.5	3.4
21.5	33	2.4	64.06	"	"	2000	-	25.5	28	2.9
19	39	2.4	71.18	"	"	2000	-	23	32	2.9
18	39	2.2	77.00	"	"	2000	-	21.5	32.5	2.6
15	49	2.0	90.00	"	"	2000	-	18	40.5	2.4
13.5	53	1.9	103.1	"	"	2000	-	16	45	2.2
11.5	59	1.6	118.8	"	"	2000	-	14	48.5	1.95
10.5	67	1.55	129.0	"	"	2000	-	13	54	1.95
9.5	70	1.4	142.2	"	"	2000	-	11.5	58	1.7
9.2	74	1.45	146.8	"	"	2000	-	11.5	59	1.8
7.9	85	1.05	171.0	"	"	2000	-	9.5	70	1.25
7.8	80	1.25	174.0	"	"	2000	-	9.4	67	1.45
6.2	99	0.99	220.0	"	"	2000	-	7.4	83	1.2
5.4	112	0.88	252.0	"	"	2000	-	6.5	93	1.05

**P = 0.18 kW**

295	5.1	2.9	4.60	BS02-../E05LA4	5.3	450	-	355	4.25	3.5
250	6.0	3.3	5.40	"	"	510	-	300	5.0	4.0
200	7.3	3.4	6.75	"	"	590	-	240	6.1	4.1
164	8.8	2.8	8.25	"	"	600	-	197	7.3	3.4
127	11	2.3	10.67	"	"	600	-	152	9.2	2.7
100	13.4	1.85	13.50	"	"	600	-	120	11.1	2.3
75	16.9	1.5	18.00	"	"	600	-	90	14.1	1.75
62	19.4	1.3	22.00	"	"	600	-	74	16.2	1.55
50	21.5	1.15	27.00	"	"	600	-	60	18	1.4
41	25	1.0	33.00	"	"	600	-	49.5	20.5	1.2
72	18.1	3.0	19.00	BS03-../E05LA4	5.4	800	-	86	15.1	3.6
54	21.5	2.6	25.00	"	"	800	-	65	18.2	3.0
41	25.5	2.2	33.00	"	"	800	-	49.5	21	2.6
35	31	1.75	39.00	"	"	800	-	42	26	2.1
27	36.5	1.5	50.00	"	"	800	-	32.5	30.5	1.8
22	41	1.15	62.00	"	"	800	-	26.5	34	1.4
18	48.5	0.82	75.00	"	"	800	-	22	39.5	1.0

**P = 0.18 kW**



*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>	60 Hz		
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>						n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>
126	10.6	3.0	10.73	BS04-../E05LA4	5.8	1000	-	151	8.8	3.6
104	12.7	2.6	13.09	"	"	1000	-	124	10.6	3.1
83	15.9	2.2	16.31	"	"	1000	-	100	13.2	2.7
65	20	1.85	20.96	"	"	1000	-	78	16.7	2.2
56	23	1.5	24.25	"	"	1000	-	67	19.4	1.75
52	23	1.65	26.21	"	"	1000	-	62	19.6	1.95
43	27.5	1.4	31.50	"	"	1000	-	52	23	1.65
35.5	33	1.1	38.42	"	"	1000	-	42.5	27.5	1.35
28.5	41	0.93	47.86	"	"	1000	-	34	34	1.1
56	24.5	3.1	24.25	BS06-../E05LA4	10	2000	-	67	20.5	3.8
52	24	3.2	26.21	"	"	2000	-	62	20	3.9
43	29	2.8	31.50	"	"	2000	-	52	24	3.3
33	37.5	2.3	41.29	"	"	2000	-	39.5	31	2.8
28	44	2.0	48.60	"	"	2000	-	33.5	36.5	2.4
23.5	51	1.8	58.15	"	"	2000	-	28	43.5	2.1
21.5	54	1.5	64.06	"	"	2000	-	25.5	45.5	1.75
19	64	1.45	71.18	"	"	2000	-	23	53	1.75
18	63	1.35	77.00	"	"	2000	-	21.5	53	1.6
15	80	1.25	90.00	"	"	2000	-	18	66	1.5
13.5	87	1.15	103.1	"	"	2000	-	16	74	1.35
11.5	97	0.97	118.8	"	"	2000	-	14	79	1.2
10.5	109	0.95	129.0	"	"	2000	-	13	88	1.2
9.5	115	0.85	142.2	"	"	2000	-	11.5	95	1.05
9.2	121	0.88	146.8	"	"	2000	-	11.5	97	1.1

## 8.12 Dimensional Drawings

The external dimensions of the single-phase AC motors are the same as those of the comparable 3-phase AC motors, i.e.

E04 is the same as D04, EU04 is the same as DU04

E05 is the same as D05, EU05 is the same as DU05.

The dimensional drawings for single-phase AC motors and single-phase AC geared motors and the supplementary dimensional drawings can thus be found in the section on 3-phase AC motors.



## 9 DC Permanent Magnet Motors



BAUER geared motors with DC permanent-magnet motor components can be connected directly to a DC power supply or to an AC supply via a power converter unit.

### 9.1 EC Directives

There are two specifications available.

#### 9.1.1 Specification I

The motor has radio interference suppression to DIN EN 55011 (Class A). This version is recognisable by the letters "EMV" in the type designation.

Example: BG04-31/P04LA32/EMV

In conjunction with a Danfoss Bauer power converter or a BAUER speed control unit, these drive units conform to the requirements of EC Directives 89/392/EEC (Machines Directive), 89/336/EEC (EMC Directive) and 73/23/EEC (Low Voltage Directive).

These motors carry the CE Mark.

If the motor draws its supply from other power converters, compliance with the EMC Directive is the responsibility of the operator.

Caution: The motor is equipped with radio interference suppression capacitors. Transistor positioners with high pulse frequencies may therefore not be used without a filter or only after consultation with our advisors.

#### 9.1.2 Specification II

The motor has no factory-fitted interference suppression. The type designation does not include the letters "EMV".

Example: BG04-31/P04LA432

The motor conforms to the requirements of EC Directives 89/392/EEC (Machines Directive) and 73/23/EEC (Low Voltage Directive) and carries the CE Mark only on the basis of its compliance with the Low Voltage Directive.

Compliance with the EMC Directive 89/336/EEC is the responsibility of the operator.

### 9.2 Safety Note

When installing the motor, please observe the Safety Instructions in Instructions Sheet 122.. and the Operating Instructions BA 148..

### 9.3 Enclosure Rating

Permanent-magnet motors are supplied with enclosure rating IP 54 to EN 60034. They are proof against dust and occasional splash-water and generally not designed for use outdoors or in wet areas without special protection. Higher enclosure ratings available on request.

### 9.4 Insulation

The motor insulation conforms to temperature class B. The motors are therefore adequately protected against normal levels of humidity and heat.

### 9.5 External Finish, Corrosion Resistance

The listed motors/geared motors are finished as standard in the colour RAL 7031 (blue-grey) to din 1843. Other RAL colours are available on request at extra charge.

If a greater level of corrosion resistance is required, please contact us for advice.

### 9.6 Motor Protection

The motor armature windings can be protected by current and temperature-dependent cut-outs.

For continuous operation, built-in thermostats in the stator housing have also proved to be effective.

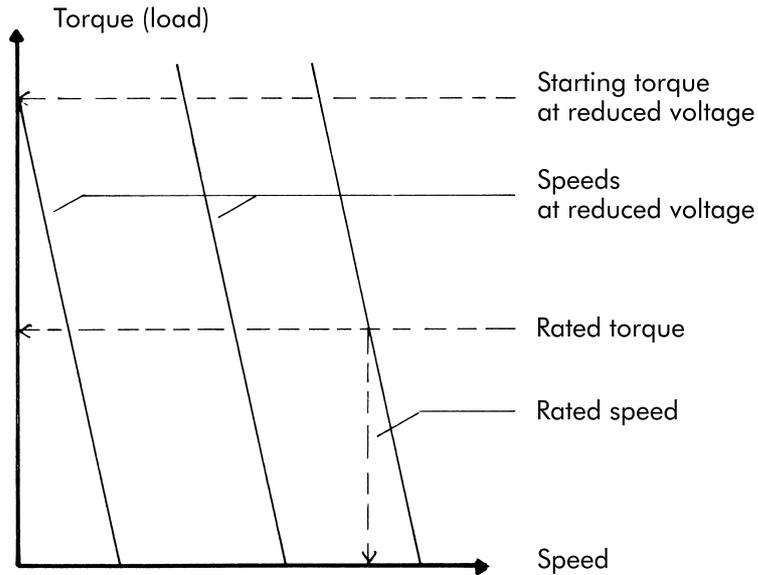
### 9.7 Rated Speed

The standard rated speed is 3200 rpm. Motors can be supplied with other rated speeds on request at extra charge.

The actual running speeds of permanent-magnet motors are dependent on many factors and can differ by up to  $\pm 10\%$  from the rated speeds.

### 9.7.1 Speed Curves

The speed curve is dependent on the load and the motor voltage.



### 9.7.2 Changing Speed

By connecting the motor to a Danfoss Bauer power converter unit, the motor speed and thereby the speed of the output shaft can be reduced smoothly by a ratio of approximately 20:1 in the case of open-loop control or approximately 100:1 in the case of closed-loop control (based on  $n_1 = 3200$  rpm). The rated torque remains virtually constant over the complete speed range.

### 9.7.3 Changing Direction of Rotation

The direction of rotation of the motor can be changed by reversing the + and - power connections. This must only be done when the motor is at a standstill.

### 9.7.4 Starting Method

The motors P04LA.. and P05LA.. can be started directly at motor temperatures above 0° C. The P08LA.. must not be started directly without a starting current limiter.

Caution: risk of permanent demagnetisation.

### 9.8 Rated Output

The rated output figures quoted in the tables in Sections 9.15.1 und 9.15.2 apply to continuous operation, conformity with the specified form factors, an ambient temperature of 0 ... 40° C and installation at an altitude of up to 1000 m above sea level. In cases where operating conditions differ and especially in the case of intermittent operation, please contact us for advice.

### 9.9 Power Supply Voltage

The list prices apply to motors for a 180V DC power supply. At extra charge, motors can be dimensioned for voltages of between 24 and 220 V DC.

### 9.10 Filter

The form factor of the current which results from the method of rectification can be improved by a filter. The motor P08LA.. must not be operated without a filter due to the risk of permanent demagnetisation.

### 9.11 Brakes

To reduce the overrun travel or to hold a load, etc. the motors can be fitted with a brake. The brake E003B is intended for use with the motors P04LA.. and P05LA.. while brake types E005A. and Z005A. are designed for use with the motor P08LA.. The details and specifications of the brakes are described in the Section 4.1. For dimensions, refer to supplementary dimensional drawing 9.17.2 or 9.17.3.

## 9.12 Secondary Output Shaft

On request, the motors can be supplied with a secondary output shaft with the dimensions listed below.

Motor Type	Extension (mm)	Fit Length (mm)	Diameter (mm)	ISO Fit
P04LA..	20	15	8	g6
P05LA..	25	20	10	g6
P08LA..	45,5	40	16	k6

The secondary output shaft on the P08LA.. is fitted as standard with a keyway to DIN 6885, the other models are not supplied with a key as standard.

For dimensions, refer to supplementary dimensional drawing 9.17.6.

## 9.13 Pulse Generator

Motor types P04LA.. and P05LA.. can be fitted with the magnetic pulse generators BDME-30 and BDMD-30.

The signals are suitable for speed detection or as actual speed signals for use with the SR-A.-230-004 series speed regulators.

Technical data:

Type	BDME-30	BDMD-30
Pulse frequency (pulses/rev):	30	30+30 (90° offset)
Supply voltage (V):	4,5...18	4,5...18
Power consumption (mA):	max. 10	max. 10
Output level (V):	Open collector max. 18	Open collector max. 18
Current load capacity (mA):	max. 15	max. 15
Temperature range (° C):	-20...85	-20...85
Enclosure rating to EN60529:	IP54	IP54
Dimensions diagram:	N-PTA	N-PTA

Dimensions are given in supplementary dimensional drawing 9.17.7.

Pulse generators for P08LA.. and other pulse generator systems available on request.

## 9.14 Power Converter Units for Open/Closed-Loop Speed Control

DC permanent-magnet motors are generally run off power converter units. The SR-A.-230-004 series models are available as plug-in card, terminal-block and housing-fitted versions. Further documentation is available on request.

For the motors P04LA.. and P05LA.., there is also a compact rectifier unit for speed control purposes available for fitting in a larger motor terminal box.

Type:	DSG 3.230KA
Power supply voltage (V):	230 ±10%
Power supply frequency (Hz):	50
Motor voltage (V DC):	180
Adjustment range:	Approx. 20:1 downwards (based on n1 = 3200 rpm)
Smooth start tA (s):	1
Design:	Speed potentiometer with control knob and scale fitted in terminal box cover

EC Directives: Specification I as described in Section 9.1.1 (without code "EMC")

For dimensions, refer to supplementary dimensional drawing 9.17.5.

Example of designation of a drive unit with speed control DSG3.230KA fitted in larger terminal box:

BS02-37V/P04LA32/**DSG**

## 9.15 Technical Data of Motors

### 9.15.1 Specifications for Form Factor F = 1.0

Type	P kW	n rpm	M <sub>n</sub> Nm	I (180V) A	U V	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	L mH	J <sub>rot</sub> kgm <sup>2</sup>	m kg
P04LA32	0,140	3200	0,42	1,0	24-220	12	12	50	0,00067	3,6
P04LA32	0,090	3200	0,26	0,63	24-220	20	18	50	0,00067	3,6
P04LA25	0,125	2500	0,48	0,90	24-220	9,5	8,4	80	0,00067	3,6
P04LA25	0,080	2500	0,30	0,60	24-220	14	14	80	0,00067	3,6
P04LA20	0,110	2000	0,53	0,85	24-220	6,7	6,7	106	0,00067	3,6
P04LA20	0,070	2000	0,34	0,53	24-220	10,5	10,5	106	0,00067	3,6
P04LA16	0,095	1600	0,56	0,75	12-220	4,7	4,7	180	0,00067	3,6
P04LA16	0,060	1600	0,36	0,48	12-220	7,4	7,4	180	0,00067	3,6
P04LA10	0,063	1000	0,60	0,56	12-220	3,2	3,2	355	0,00067	3,6
P04LA10	0,040	1000	0,38	0,35	12-220	5,0	5,0	355	0,00067	3,6
P04LA06	0,040	600	0,63	0,42	12-220	2,2	2,1	750	0,00067	3,6
P05LA32	0,210	3200	0,63	1,5	24-220	20	14	26	0,00132	5,7
P05LA25	0,190	2500	0,71	1,3	24-220	18	10	36	0,00132	5,7
P05LA20	0,170	2000	0,80	1,25	24-220	13	7,5	53	0,00132	5,7
P05LA16	0,140	1600	0,85	1,05	12-220	9	6	85	0,00132	5,7
P05LA10	0,095	1000	0,90	0,80	12-220	5,6	3,7	170	0,00132	5,7
P05LA06	0,060	600	0,95	0,60	12-220	3,0	2,5	425	0,00132	5,7
P08LA32	0,700	3200	2,1	4,8	42-220	62	18	3	0,0053	17
P08LA32	0,500	3200	1,5	3,4	42-220	85	24	3	0,0053	17
P08LA25	0,630	2500	2,4	4,2	42-220	45	13,5	4	0,0053	17
P08LA25	0,450	2500	1,7	3,0	42-220	66	19	4	0,0053	17
P08LA20	0,500	2000	2,4	3,4	42-220	34	10,5	6	0,0053	17
P08LA20	0,360	2000	1,7	2,5	42-220	46	15	6	0,0053	17
P08LA16	0,400	1600	2,4	2,8	24-220	27	8	10	0,0053	17
P08LA16	0,280	1600	1,7	2,0	24-220	37	12,5	10	0,0053	17
P08LA10	0,250	1000	2,4	2,0	24-220	18	6	24	0,0053	17
P08LA10	0,180	1000	1,7	1,5	24-220	24	8,8	24	0,0053	17
P08LA06	0,140	600	2,4	1,3	24-220	12	3,8	56	0,0053	17

P	Rated output
n	Guide figure for rated speed at rotor shaft
M <sub>N</sub>	Rated torque at rotor shaft
I <sub>N</sub>	Rated current at allocated rated voltage (the rated current for special voltages can be calculated on the basis of the current at 180 V DC as it alters in inverse proportion to voltage)
I <sub>A</sub> /I <sub>N</sub>	Relative starting current
M <sub>A</sub> /M <sub>N</sub>	Relative starting torque
J <sub>rot</sub>	Mass inertia of rotor
L	Inductance of armature

The motors P04LA.. and P05LA.. have a smooth motor housing while the model P08LA.. has a finned housing.

## 9.15.2 Specifications for Form Factor F = 1.2

Type	P kW	n 1/min	M <sub>N</sub> Nm	I(180V) A	U V	I <sub>A</sub> /I <sub>N</sub>	M <sub>A</sub> /M <sub>N</sub>	L mH	J <sub>rot</sub> kgm <sup>2</sup>	m kg
P04LA32	0,120	3200	0,36	0,85	24-220	14	14	50	0,00067	3,6
P04LA32	0,075	3200	0,22	0,53	24-220	22	22	50	0,00067	3,6
P04LA32	0,040	3200	0,12	0,28	24-220	42	42	50	0,00067	3,6
P04LA25	0,100	2500	0,38	0,71	24-220	12	10,6	80	0,00067	3,6
P04LA25	0,063	2500	0,24	0,45	24-220	19	17	80	0,00067	3,6
P04LA20	0,085	2000	0,40	0,63	24-220	9	9	106	0,00067	3,6
P04LA20	0,053	2000	0,25	0,40	24-220	14	14	106	0,00067	3,6
P04LA16	0,070	1600	0,42	0,56	12-220	6,3	6,3	180	0,00067	3,6
P04LA16	0,045	1600	0,26	0,36	12-220	9,8	9,8	180	0,00067	3,6
P04LA10	0,048	1000	0,45	0,42	12-220	4,2	4,2	355	0,00067	3,6
P04LA10	0,030	1000	0,28	0,26	12-220	6,8	6,8	355	0,00067	3,6
P04LA06	0,030	600	0,50	0,32	12-220	2,8	2,6	750	0,00067	3,6
P05LA32	0,180	3200	0,53	1,3	24-220	24	17	26	0,00132	5,7
P05LA25	0,150	2500	0,56	1,1	24-220	21	13	36	0,00132	5,7
P05LA20	0,125	2000	0,60	1,0	24-220	16	10	53	0,00132	5,7
P05LA16	0,105	1600	0,63	0,85	12-220	11	8	85	0,00132	5,7
P05LA10	0,070	1000	0,67	0,60	12-220	7,5	5	170	0,00132	5,7
P05LA06	0,048	600	0,75	0,48	12-220	3,8	3,2	425	0,00132	5,7
P08LA32	0,530	3200	1,6	3,6	42-220	83	23	3	0,0053	17
P08LA32	0,380	3200	1,1	2,6	42-220	115	33	3	0,0053	17
P08LA25	0,480	2500	1,8	3,2	42-220	60	18	4	0,0053	17
P08LA25	0,340	2500	1,25	2,3	42-220	83	26	4	0,0053	17
P08LA25	0,260	2500	1,0	1,7	42-220	113	32	4	0,0053	17
P08LA20	0,380	2000	1,8	2,6	42-220	45	14	6	0,0053	17
P08LA20	0,260	2000	1,25	1,8	42-220	65	20	6	0,0053	17
P08LA16	0,300	1600	1,8	2,1	24-220	36	12	10	0,0053	17
P08LA16	0,210	1600	1,25	1,5	24-220	50	17	10	0,0053	17
P08LA10	0,190	1000	1,8	1,5	24-220	24	8	24	0,0053	17
P08LA10	0,130	1000	1,25	1,05	24-220	34	12	24	0,0053	17
P08LA06	0,105	600	1,8	1,0	24-220	16	5	56	0,0053	17
P08LA06	0,075	600	1,25	0,71	24-220	22	7,2	56	0,0053	17

P	Rated output
n	Guide figure for rated speed at rotor shaft
M <sub>N</sub>	Rated torque at rotor shaft
I <sub>N</sub>	Rated current at allocated rated voltage (the rated current for special voltages can be calculated on the basis of the current at 180 V DC as it alters in inverse proportion to voltage)
I <sub>A</sub> /I <sub>N</sub>	Relative starting current
M <sub>A</sub> /M <sub>N</sub>	Relative starting torque
J <sub>rot</sub>	Mass inertia of rotor
L	Inductance of armature

The motors P04LA.. and P05LA.. have a smooth motor housing while the model P08LA.. has a finned housing.

## 9.16 Fitting BAUER Gearboxes

In addition to the gearboxes listed in the selection tables, the following can also be fitted:

### 9.16.1 Helical Gearbox

Possible combinations for Series BG helical gearboxes:

Motor	Gearbox						
	BG04	BG05	BG06	BG10	BG10Z	BG20	BG20Z
P04LA..	x	x	x	-	x	-	-
P05LA..	-	x	x	x	x	-	x
P08LA..	-	-	-	x	x	x	x

Motor	Gearbox			
	BG30	BG30Z	BG40	BG40Z
P05LA..	x	x	-	-
P08LA..	x	x	x	x

### 9.16.2 Shaft Mounted Gearbox

Possible combinations for Series BF shaft mounted gearboxes:

Motor	Gearbox							
	BF10	BF10Z	BF20	BF20Z	BF30	BF30Z	BF40	BF40 Z
P04LA..	-	-	-	-	-	-	-	-
P05LA..	x	x	-	-	-	-	-	-
P08LA..	x	x	x	x	-	-	-	-

### 9.16.3 Bevel Gearbox

Possible combinations for Series BK bevel gearboxes:

Motor	Gearbox							
	BK10	BK10Z	BK20	BK20Z	BK30	BK30Z	BK40	BK40 Z
P04LA..	-	-	-	-	-	-	-	-
P05LA..	x	x	-	-	-	-	-	-
P08LA..	x	x	x	x	x	x	-	-

### 9.16.4 Worm Gearbox

Possible combinations for Series BS worm gearboxes:

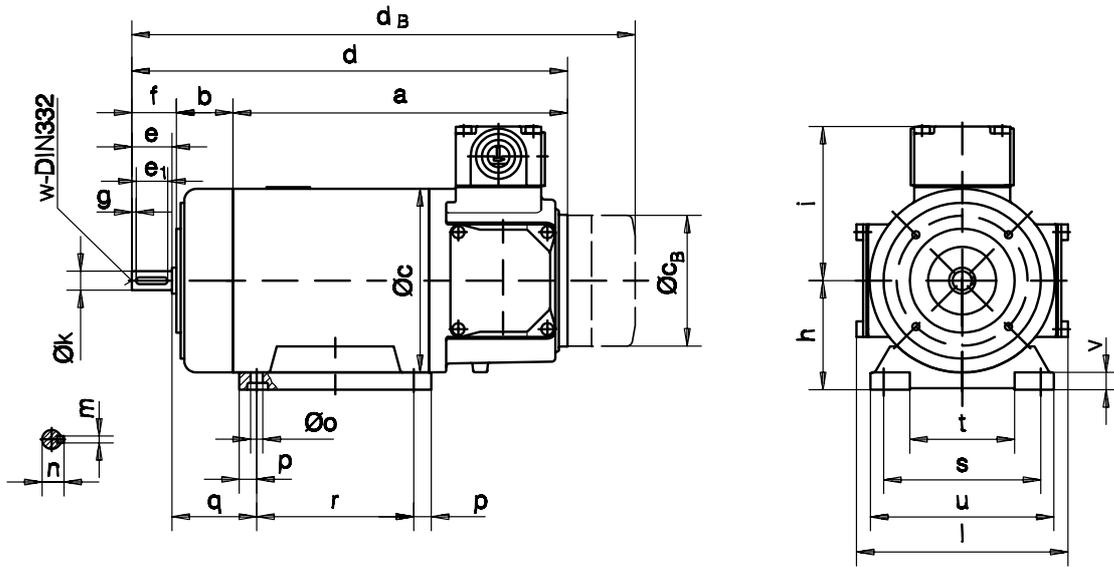
Motor	Gearbox							
	BS02	BS03	BS04	BS06	BS10	BS10Z	BS20	BS20 Z
P04LA..	x	-	x	x	-	-	-	-
P05LA..	x	x	x	x	x	x	-	-
P08LA..	-	x	-	x	x	x	x	x

The overall dimensions of the motor-and-gearbox combinations can be calculated by combining the dimensions of the gearbox unit (dimensional drawings in catalogue DG..) and those of the motor unit (supplementary dimensional drawing 9.17.2) and any additional motor attachments.

- 9.17 **Supplementary Dimensional Drawings for Motors and Motor Attachments**
- 9.17.1 **Motor Dimensional Drawing P-PN-PNF**
- 9.17.2 **Supplementary Dimensional Drawing for Motor Attachment N-PG**
- 9.17.3 **Supplementary Dimensional Drawing for Attached Brake N-PBR**
- 9.17.4 **Supplementary Dimensional Drawing for Fitted Pulse Generator N-PTA**
- 9.17.5 **Supplementary Dimensional Drawing for Power Converter in Motor Terminal Box N-PDS**
- 9.17.6 **Supplementary Dimensional Drawing for Secondary Output Shaft N-PZW**

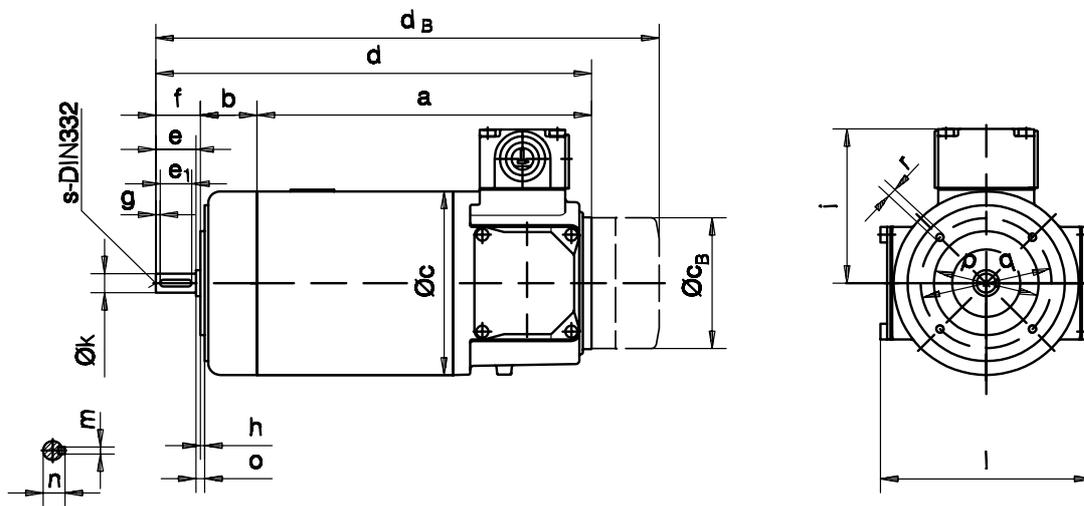
9.17.1 Motor Dimensional Drawings P-PN-PNF

Fußausführung Code PN



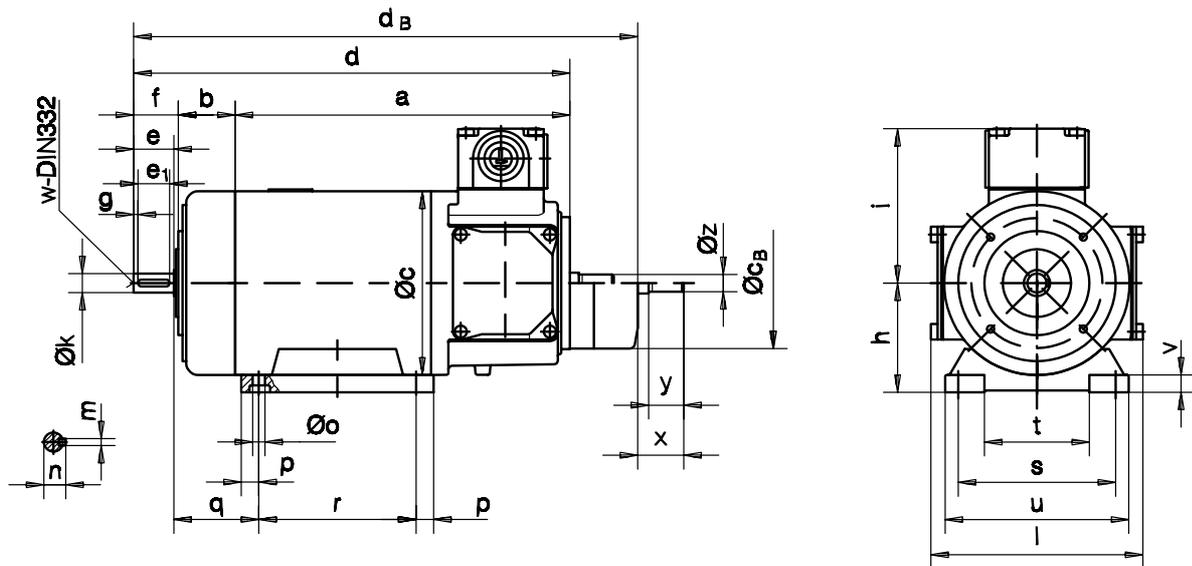
																							E003		
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	C <sub>B</sub>	d <sub>B</sub>
P04	156.5	27.5	96	206.5	20	15	22.5	2.5	56	84	9 <sub>k6</sub>	112	3	10.2	7	10	29	90	80	50	95	9	D3	75.5	245.2
P05	191.5	32.5	106	249.5	23	18	25.5	2.5	63	89	11 <sub>k6</sub>	120	4	12.5	7	10	48.5	90	90	60	105	10	D4	75.5	288.2

Flanschausführung Code PNF



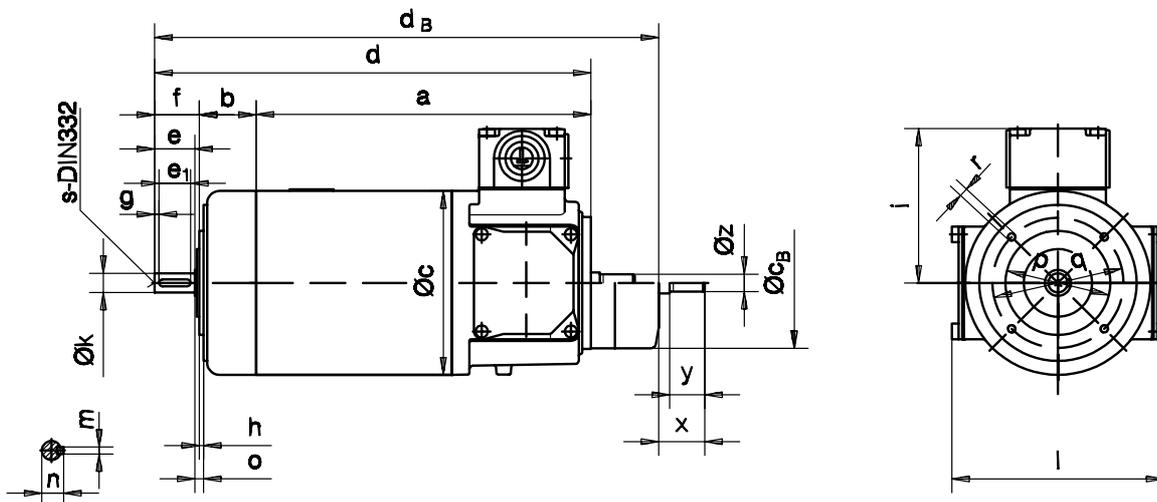
																							E003	
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	C <sub>B</sub>	d <sub>B</sub>			
P04	156.5	27.5	96	206.5	20	15	22.5	2.5	2.5	84	9 <sub>k6</sub>	112	3	10.2	5	50 <sub>j6</sub>	65	M5	D3	75.5	245.2			
P05	191.5	32.5	106	249.5	23	18	25.5	2.5	2.5	89	11 <sub>k6</sub>	120	4	12.5	5	60 <sub>h8</sub>	75	M5	D4	75.5	288.2			

### Fußausführung Code PN-ZW



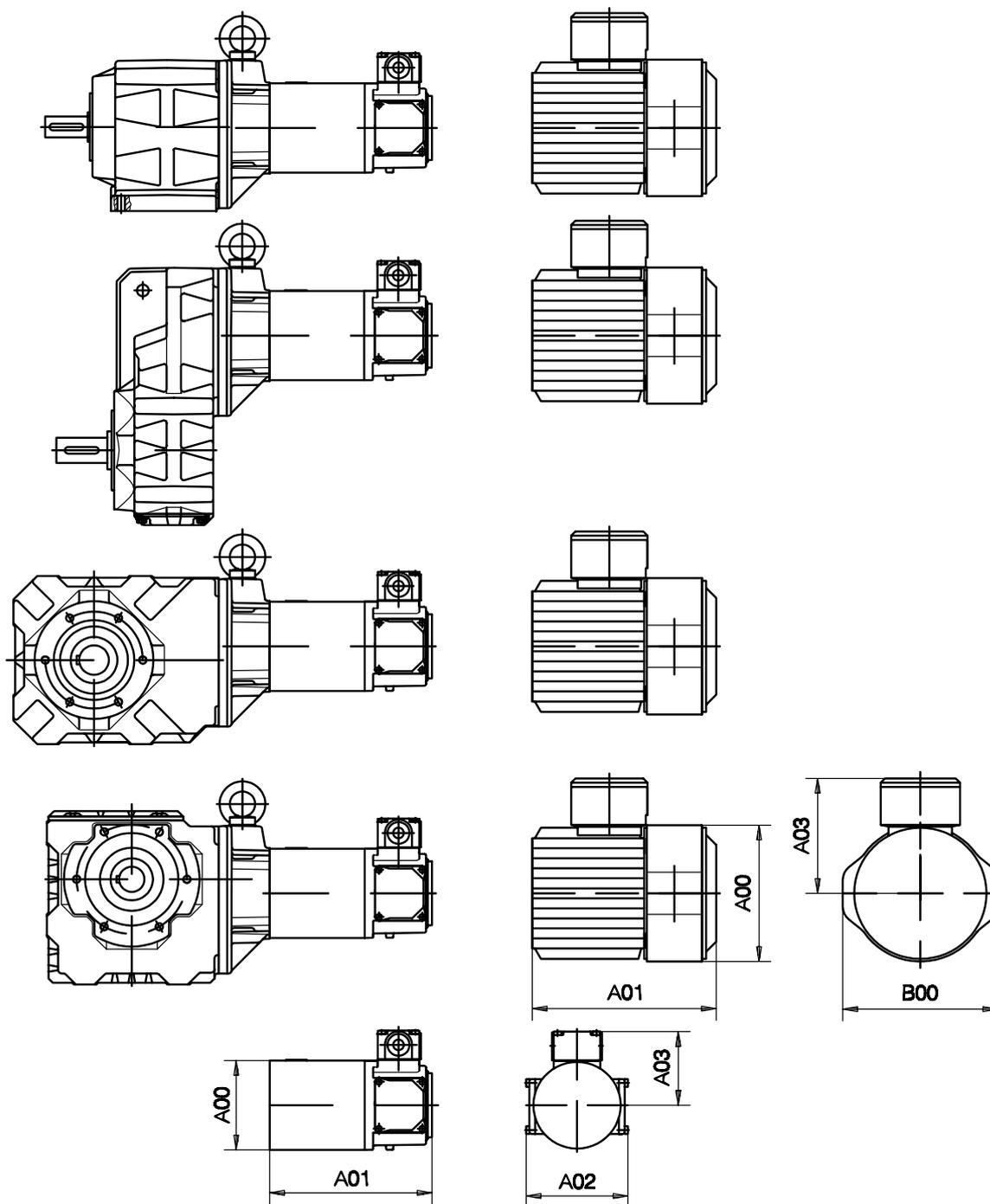
		E003																										
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	C <sub>B</sub>	d <sub>B</sub>
P04	156.5	27.5	96	206.5	20	15	22.5	2.5	56	84	9 <sub>k6</sub>	112	3	10.2	7	10	29	90	80	50	95	9	D3	21.3	15	8 <sub>g6</sub>	75.5	245.2
P05	191.5	32.5	106	249.5	23	18	25.5	2.5	63	89	11 <sub>k6</sub>	120	4	12.5	7	10	48.5	90	90	60	105	10	D4	26.3	20	10 <sub>k6</sub>	75.5	288.2

### Flanschausführung Code PNF-ZW



		E003																						
Typ	a	b	c	d	e	e <sub>1</sub>	f	g	h	i	k	l	m	n	o	p	q	r	s	x	y	z	C <sub>B</sub>	d <sub>B</sub>
P04	156.5	27.5	96	206.5	20	15	22.5	2.5	2.5	84.5	9 <sub>k6</sub>	112	3	10.2	5	50 <sub>g6</sub>	65	M5	D3	21.3	15	8 <sub>g6</sub>	75.5	245.2
P05	191.5	32.5	106	249.5	23	18	25.5	2.5	2.5	89	11 <sub>k6</sub>	120	4	12.5	5	60 <sub>h8</sub>	75	M5	D4	26.3	20	10 <sub>k6</sub>	75.5	288.2

9.17.2 Supplementary  
Dimensional Drawings for  
Motor Attachment N-PG

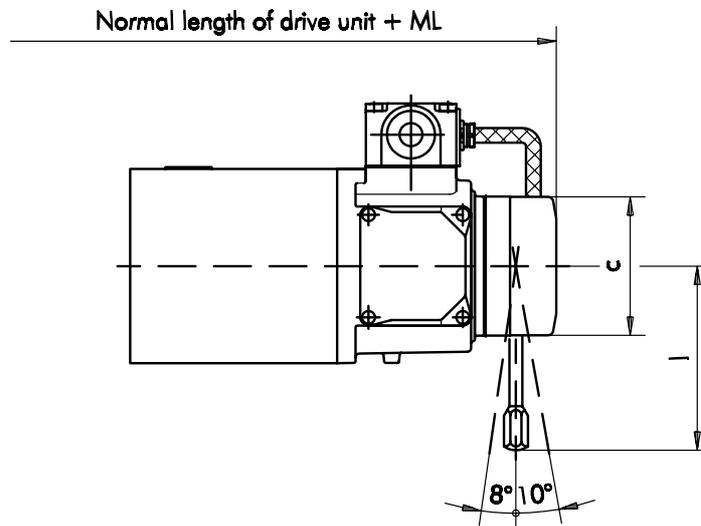
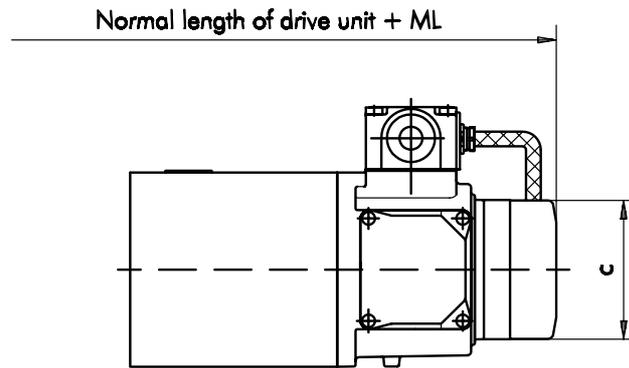


Motor-Typ	A00	B00	A01			m.Tacho	A02	A03
			Listenmaß	m.Bremse E003				
P04 LA..	96	-	156.5	201		197.5	112	84
P05 LA..	106	-	191.5	236		232.5	120	89
			Listenmaß	m.Bremse E005	m.Bremse Z005	m.Tacho		
P08 LA..	162	183	217	278	292	auf Anfrage	-	136

**Note:**

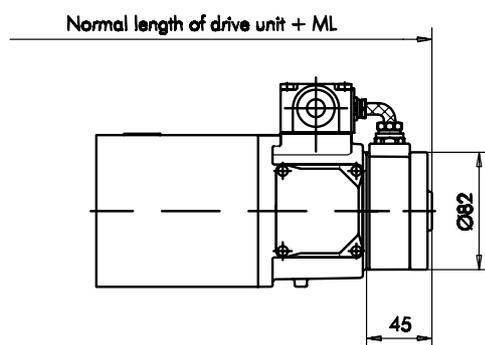
For reasons of accessibility of the carbon brushes, the standard position for the terminal box on DC permanent-magnet geared motors is Position II, as shown above.

9.17.3 Supplementary  
Dimensional Drawing for  
Attached Brake N-PBR



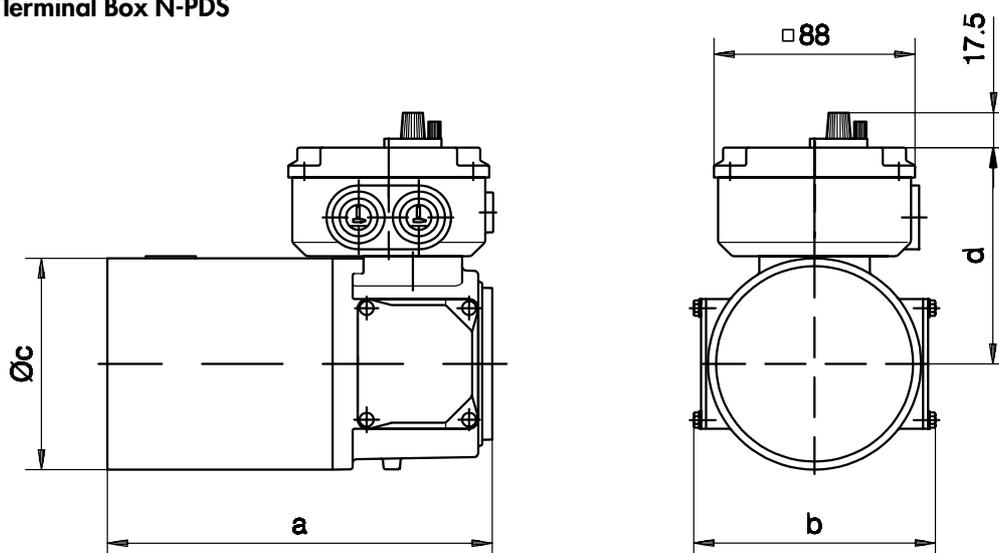
Motor Type	Brake Type	$M_{Br}$ Nm	ML Additional length (mm)	Dimensions/mm	
				c	l
P04 LA..	E003	3	38.7	75.5	103
P05 LA..	E003	3	38.7	75.5	103
P08 LA..	E005	5	61	115	129.5
	Z005	10	75	115	129.5

9.17.4 Supplementary  
Dimensional Drawing for  
Fitted Pulse Generator  
N-PTA



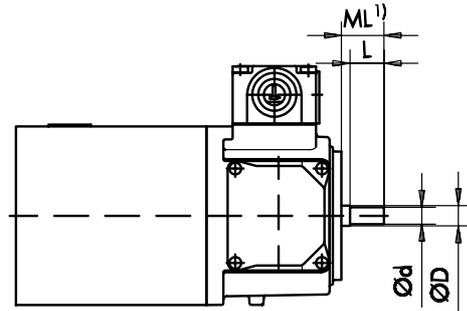
Motor Type	Tacho Type	ML Additional length (mm)
P04 LA..	BDME BDMD	41
P05 LA..	BDME BDMD	41

9.17.5 Supplementary  
Dimensional Drawing for  
Power Rectifier in  
Motor Terminal Box N-PDS

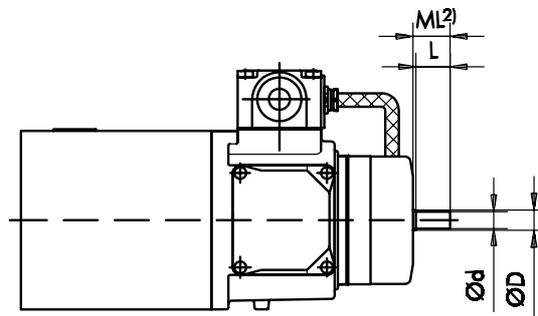


Motor Typ	Maße			
	a	b	c	d
P04 LA..	156.5	112	96	104
P05 LA..	191.5	120	106	109

9.17.6 Supplementary  
Dimensional Drawing for  
Secondary Output Shaft  
N-PZW

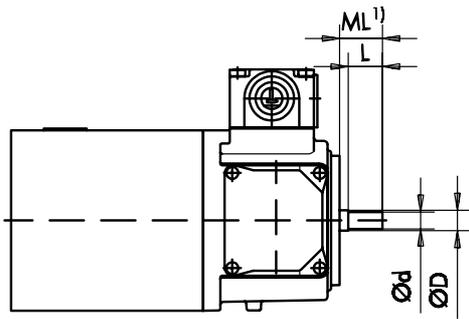


<sup>1)</sup> ML = Additional length with second shaft extension

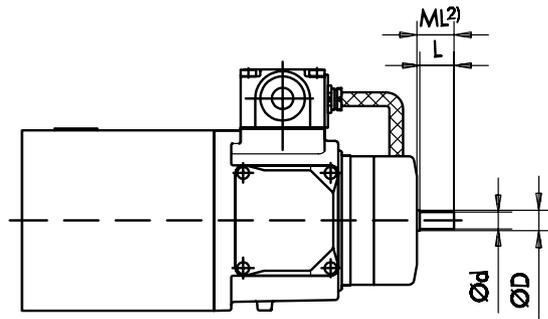


<sup>2)</sup> ML = Additional length with second shaft extension

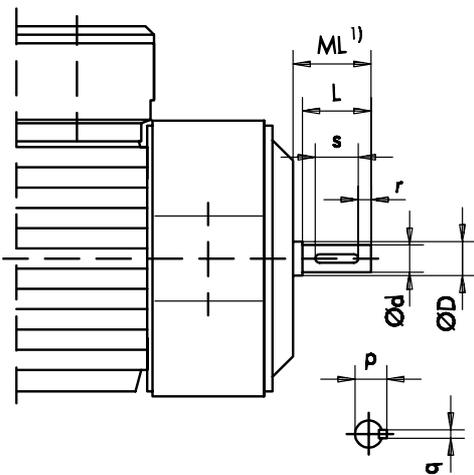
Motor Type	Brake Type	ML (mm)	Dimensions/mm		
			d	D	L
P04 LA..	-	20 <sup>1)</sup>	8 g6	12	15
P05 LA..	-	25 <sup>1)</sup>	10 g6	12	20
P04 LA..	E003	25 <sup>2)</sup>	10 g6	12	20
P05 LA..	E003	26 <sup>2)</sup>	10 g6	12	20



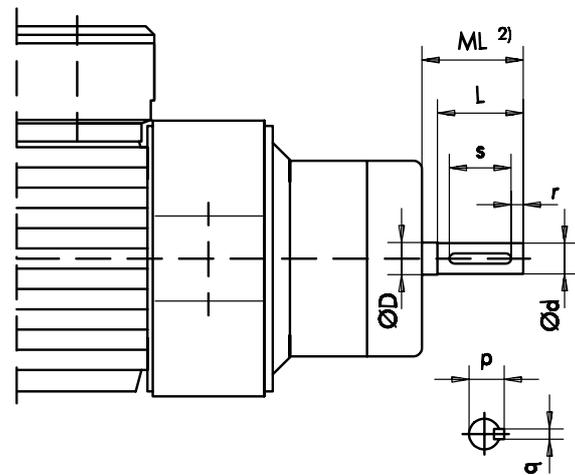
<sup>1)</sup> ML = Additional length with second shaft extension



<sup>2)</sup> ML = Additional length with second shaft extension



<sup>1)</sup> ML = Additional length with second shaft extension



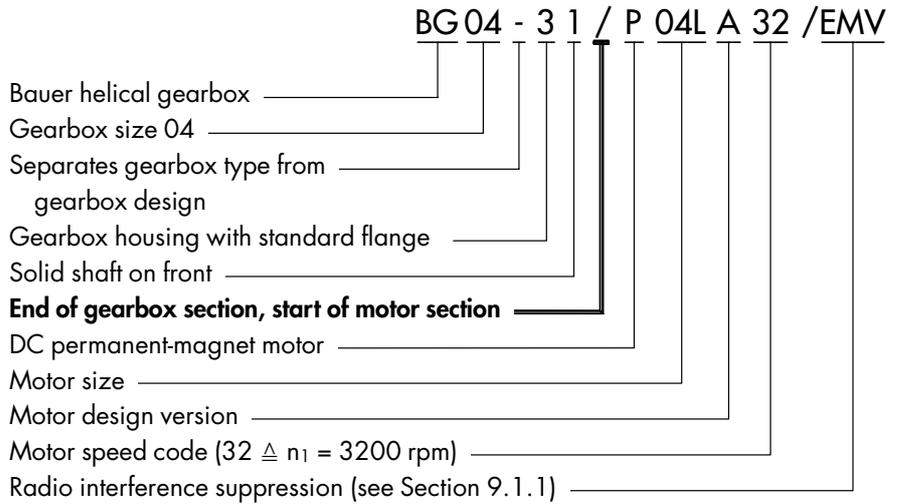
<sup>2)</sup> ML = Additional length with second shaft extension

Motor Type	Brake Type	ML (mm)	Dimensions/mm						
			d	D	L	p	q	r	s
P04 LA..	-	20 <sup>1)</sup>	8 <sub>g6</sub>	12	15	-	-	-	-
P05 LA..	-	25 <sup>1)</sup>	10 <sub>g6</sub>	12	20	-	-	-	-
P08 LA..	-	45.5 <sup>1)</sup>	16 <sub>k6</sub>	20	40	18	5	5	30
P04 LA..	E003	21.3 <sup>2)</sup>	8 <sub>g6</sub>	12	15	-	-	-	-
P05 LA..	E003	26.3 <sup>2)</sup>	10 <sub>g6</sub>	12	20	-	-	-	-
P08 LA..	E005/Z005	59 <sup>2)</sup>	18 <sub>k6</sub>	19	50	20.5	6	5	40

**9.18 Type Codes for Helical Geared Motors**

For further specifications and details of helical gearboxes, refer to Section 6.

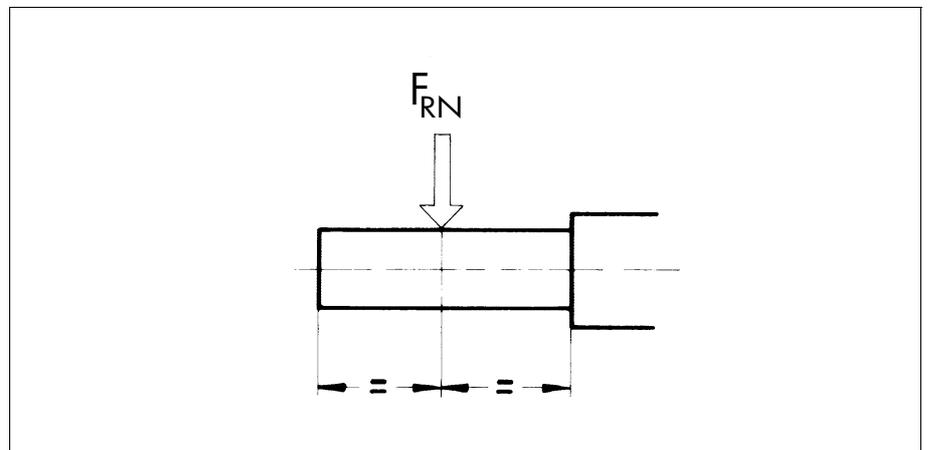
**9.18.1 Typical Designation of a DC Permanent-Magnet Helical Geared Motor**



**9.19 Selection Tables for DC Permanent-Magnet Helical Geared Motors**

**Explanation of Abbreviations**

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



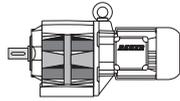
The selection tables can be used to determine the size of the geared motor. The gearbox design can be unambiguously defined by means of code numbers (see dimensional drawing 9.20).

The torque figures marked (\*) are maximum permissible levels for a load factor of  $f_B = 1.0$ .

**Protection Against Overload by Motor Output**

The rated outputs of the motors, particularly in conjunction with gearboxes with four or more speeds, are very generously dimensioned in some cases. For that reason, as with low motor outputs, the rated current is not a measure of gearbox load capacity utilisation and can not be taken as an indication of overload protection for the gearbox. If there is a risk of excessive load or jamming, it is advisable to protect the gearbox by mechanical means (e.g. one-way clutch, free hub, shear pin, etc.).

**P = 0.04 kW**



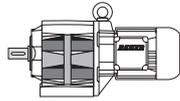
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
880	0.43	12	3.65	BG04-../P04LA32	5.5	390	-
730	0.52	13	4.39	"	"	380	-
600	0.63	14	5.36	"	"	380	-
480	0.79	13	6.67	"	"	410	-
375	1.01	11	8.58	"	"	410	-
360	1.06	11	9.00	"	"	470	-
325	1.17	11	9.90	"	"	480	-
300	1.27	11	10.82	"	"	480	-
270	1.41	11	11.90	"	"	490	-
255	1.49	10	12.55	"	"	490	-
245	1.55	10	13.20	"	"	500	-
225	1.69	10	14.52	"	"	510	-
195	1.95	9.2	16.44	"	"	530	-
177	2.15	8.4	18.08	"	"	540	-
152	2.5	7.6	21.12	"	"	560	-
138	2.75	7.3	23.23	"	"	600	-
131	2.9	6.9	24.45	"	"	610	-
120	3.15	6.3	26.89	"	"	650	-
104	3.65	5.5	30.91	"	"	690	-
95	4.0	5.0	34.00	"	"	720	-
91	4.15	4.8	35.35	"	"	730	-
83	4.6	4.3	38.89	"	"	750	-
76	5.0	4.0	42.24	"	"	750	-
69	5.5	3.6	46.47	"	"	750	-
68	5.6	3.6	47.52	"	"	750	-
62	6.1	3.3	52.28	"	"	750	-
59	6.4	3.1	54.97	"	"	750	-
53	7.2	2.8	60.47	"	"	750	-
48	7.9	5.7	66.79	BG06-../P04LA32	7.2	1070	-
42.5	6.9	5.8	75.99	BG06G04-../P04LA32	9.5	1070	-
34.5	8.5	5.3	93.00	"	"	1070	-
26.5	10.5	4.3	122.0	"	"	1070	-
21.5	12.7	3.5	149.0	"	"	1070	-
17.5	16.2	2.8	185.4	"	"	1070	-
13	22.5	2.0	250.2	"	"	1070	-
9.7	31	1.45	330.8	"	"	1070	-
7.1	43.5	1.05	457.0	"	"	1070	-
5.5	45	1.0	587.1	"	"	1070	-
4.3	45	1.0	747.5	"	"	1070	-
3.8	45	1.0	859.3	"	"	1070	-
3.4	45	1.0	945.2	"	"	1070	-
3.0	45	1.0	1081	"	"	1070	-
2.5	45	1.0	1321	"	"	1070	-
2.1	45	1.0	1528	"	"	1070	-
1.7	45	1.0	1948	"	"	1070	-
1.4	45	1.0	2435	"	"	1070	-

**P = 0.075 kW**

880	0.81	6.2	3.65	BG04-../P04LA32	5.5	390	-
730	0.98	7.1	4.39	"	"	380	-
600	1.19	7.6	5.36	"	"	380	-
480	1.49	6.7	6.67	"	"	410	-
375	1.91	5.8	8.58	"	"	410	-
360	1.98	6.1	9.00	"	"	470	-
325	2.2	5.9	9.90	"	"	480	-
300	2.35	6.0	10.82	"	"	480	-
270	2.65	5.7	11.90	"	"	490	-
255	2.8	5.4	12.55	"	"	490	-

**P = 0.075 kW**



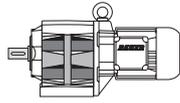
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
245	2.9	5.5	13.20	BG04-../P04LA32	5.5	500	-
225	3.15	5.4	14.52	"	"	510	-
195	3.65	4.9	16.44	"	"	530	-
177	4.0	4.5	18.08	"	"	540	-
152	4.7	4.0	21.12	"	"	560	-
138	5.1	3.9	23.23	"	"	600	-
131	5.4	3.7	24.45	"	"	610	-
120	5.9	3.4	26.89	"	"	650	-
104	6.8	2.9	30.91	"	"	690	-
95	7.5	2.7	34.00	"	"	720	-
91	7.8	2.6	35.35	"	"	730	-
83	8.6	2.3	38.89	"	"	750	-
76	9.4	2.1	42.24	"	"	750	-
69	10.3	1.95	46.47	"	"	750	-
68	10.5	1.9	47.52	"	"	750	-
62	11.5	1.75	52.28	"	"	750	-
59	12.1	1.65	54.97	"	"	750	-
53	13.5	1.5	60.47	"	"	750	-
81	8.8	3.4	39.94	BG05-../P04LA32	6.2	860	-
74	9.6	3.1	43.57	"	"	900	-
69	10.3	2.9	47.00	"	"	930	-
63	11.3	2.7	51.27	"	"	970	-
60	11.9	2.5	53.44	"	"	980	-
55	13	2.3	58.30	"	"	1000	-
61	11.7	3.8	52.56	BG06-../P04LA32	7.2	950	-
56	12.7	3.5	57.34	"	"	1000	-
53	13.5	3.3	61.22	"	"	1020	-
48	14.9	3.0	66.79	"	"	1070	-
42.5	14.7	2.7	75.99	BG06G04-../P04LA32	9.5	1070	-
34.5	18.2	2.5	93.00	"	"	1070	-
26.5	23	1.95	122.0	"	"	1070	-
21.5	28	1.6	149.0	"	"	1070	-
17.5	35	1.3	185.4	"	"	1070	-
13	48	0.94	250.2	"	"	1070	-
12	52	0.87	275.2	"	"	1070	-

**P = 0.12 kW**

880	1.3	3.8	3.65	BG04-../P04LA32	5.5	390	-
730	1.56	4.5	4.39	"	"	380	-
600	1.91	4.7	5.36	"	"	380	-
480	2.35	4.3	6.67	"	"	410	-
375	3.05	3.6	8.58	"	"	410	-
360	3.15	3.8	9.00	"	"	470	-
325	3.5	3.7	9.90	"	"	480	-
300	3.8	3.7	10.82	"	"	480	-
270	4.2	3.6	11.90	"	"	490	-
255	4.45	3.4	12.55	"	"	490	-
245	4.65	3.4	13.20	"	"	500	-
225	5.0	3.4	14.52	"	"	510	-
195	5.8	3.1	16.44	"	"	530	-
177	6.4	2.8	18.08	"	"	540	-
152	7.5	2.5	21.12	"	"	560	-
138	8.3	2.4	23.23	"	"	600	-
131	8.7	2.3	24.45	"	"	610	-
120	9.5	2.1	26.89	"	"	650	-
104	11	1.8	30.91	"	"	690	-
95	12	1.65	34.00	"	"	720	-

**P = 0.12 kW**



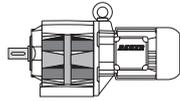
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
91	12.5	1.6	35.35	BG04-../P04LA32	5.5	730	-
83	13.8	1.45	38.89	"	"	750	-
76	15	1.35	42.24	"	"	750	-
69	16.6	1.2	46.47	"	"	750	-
68	16.8	1.2	47.52	"	"	750	-
62	18.4	1.1	52.28	"	"	750	-
59	19.4	1.05	54.97	"	"	750	-
53	21.5	0.93	60.47	"	"	750	-
116	9.8	3.1	27.82	BG05-../P04LA32	6.2	770	-
106	10.8	2.8	30.35	"	"	760	-
92	12.4	2.4	35.00	"	"	810	-
84	13.6	2.2	38.18	"	"	850	-
81	14.1	2.1	39.94	"	"	860	-
74	15.4	1.95	43.57	"	"	900	-
69	16.6	1.8	47.00	"	"	930	-
63	18.1	1.65	51.27	"	"	970	-
60	19.1	1.55	53.44	"	"	980	-
55	20.5	1.45	58.30	"	"	1000	-
92	12.4	3.6	35.15	BG06-../P04LA32	7.2	880	-
87	13.1	3.4	36.91	"	"	890	-
80	14.3	3.1	40.26	"	"	890	-
70	16.3	2.8	46.19	"	"	890	-
64	17.9	2.5	50.38	"	"	940	-
61	18.7	2.4	52.56	"	"	950	-
56	20	2.3	57.34	"	"	1000	-
53	21.5	2.1	61.22	"	"	1020	-
48	23.5	1.9	66.79	"	"	1070	-
42.5	24.5	1.65	75.99	BG06G04-../P04LA32	9.5	1070	-
34.5	30.5	1.5	93.00	"	"	1070	-
26.5	39	1.15	122.0	"	"	1070	-
21.5	48	0.94	149.0	"	"	1070	-

**P = 0.18 kW**

950	1.8	5.6	3.38	BG05-../P05LA32	8.0	460	-
700	2.45	4.9	4.59	"	"	490	-
590	2.9	4.8	5.46	"	"	490	-
485	3.5	4.6	6.60	"	"	510	-
415	4.1	4.4	7.80	"	"	530	-
395	4.35	4.1	8.15	"	"	510	-
380	4.5	4.2	8.51	"	"	550	-
310	5.5	3.5	10.40	"	"	510	-
305	5.6	3.6	10.59	"	"	590	-
280	6.1	3.4	11.55	"	"	600	-
270	6.3	3.3	12.05	"	"	510	-
255	6.7	3.3	12.60	"	"	610	-
235	7.3	3.2	13.75	"	"	630	-
215	7.9	3.0	15.23	"	"	640	-
193	8.9	2.8	16.62	"	"	660	-
171	10	2.6	18.82	"	"	680	-
156	11	2.5	20.53	"	"	700	-
134	12.8	2.2	24.00	"	"	740	-
123	13.9	2.1	26.18	"	"	760	-
116	14.8	2.0	27.82	"	"	770	-
106	16.2	1.85	30.35	"	"	760	-
92	18.6	1.6	35.00	"	"	810	-
84	20	1.5	38.18	"	"	850	-
81	21	1.45	39.94	"	"	860	-

**P = 0.18 kW**



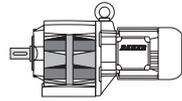
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>					
rpm	Nm				kg	N	N
74	23	1.3	43.57	BG05-../P05LA32	8.0	900	-
69	24.5	1.2	47.00	"	"	930	-
63	27	1.1	51.27	"	"	970	-
60	28.5	1.05	53.44	"	"	980	-
55	31	0.97	58.30	"	"	1000	-
126	13.6	3.3	25.48	BG06-../P05LA32	9.0	850	-
116	14.8	3.0	27.80	"	"	840	-
100	17.1	2.6	32.22	"	"	890	-
92	18.6	2.4	35.15	"	"	880	-
87	19.7	2.3	36.91	"	"	890	-
80	21	2.1	40.26	"	"	890	-
70	24.5	1.85	46.19	"	"	890	-
64	26.5	1.7	50.38	"	"	940	-
61	28	1.6	52.56	"	"	950	-
56	30.5	1.5	57.34	"	"	1000	-
53	32	1.4	61.22	"	"	1020	-
48	35.5	1.25	66.79	"	"	1070	-
73	23.5	4.3	43.99	BG10-../P05LA32	12	1880	2600
69	24.5	4.1	46.55	"	"	1920	2650
63	27	3.7	51.57	"	"	2000	2800
56	30.5	3.3	57.48	"	"	2000	2800
51	33.5	3.0	63.69	"	"	2000	2800
48.5	35	2.9	66.00	"	"	2000	2800
44	39	2.6	73.13	"	"	2000	2800

**P = 0.26 kW**

850	2.9	6.9	3.78	BG06-../P08LA32	20	520	-
710	3.45	6.4	4.54	"	"	530	-
540	4.55	5.3	5.96	"	"	570	-
460	5.3	4.9	7.01	"	"	580	-
385	6.4	4.4	8.39	"	"	600	-
345	7.1	4.2	9.38	"	"	640	-
315	7.8	4.0	10.24	"	"	640	-
285	8.7	3.7	11.28	"	"	670	-
265	9.3	3.5	12.30	"	"	670	-
250	9.9	3.3	12.98	"	"	600	-
220	11.2	3.0	14.78	"	"	730	-
199	12.4	2.8	16.13	"	"	740	-
184	13.4	2.8	17.40	"	"	760	-
169	14.6	2.7	18.98	"	"	770	-
154	16.1	2.5	20.82	"	"	800	-
141	17.6	2.4	22.71	"	"	810	-
126	19.7	2.3	25.48	"	"	850	-
116	21	2.1	27.80	"	"	840	-
100	24.5	1.85	32.22	"	"	890	-
92	26.5	1.7	35.15	"	"	880	-
87	28.5	1.6	36.91	"	"	890	-
80	31	1.45	40.26	"	"	890	-
70	35	1.3	46.19	"	"	890	-
64	38.5	1.15	50.38	"	"	940	-
122	20	5.0	26.26	BG10-../P08LA32	20	1460	2000
111	22	4.5	29.09	"	"	1540	2150
102	24	4.2	31.52	"	"	1600	2200
92	26.5	3.8	34.92	"	"	1690	2350
81	30.5	3.3	39.70	"	"	1780	2450
73	34	2.9	43.99	"	"	1880	2600

**P = 0.26 kW**



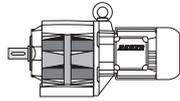
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
69	35.5	2.8	46.55	BG10-../P08LA32	20	1920	2650
63	39	2.6	51.57	"	"	2000	2800
56	44	2.3	57.48	"	"	2000	2800
51	48.5	2.1	63.69	"	"	2000	2800
47.5	52	1.65	67.54	BG10Z-../P08LA32	22	2000	2800
41.5	59	1.7	77.40	"	"	2000	2800
37.5	66	1.5	85.76	"	"	2000	2800
35	70	1.45	92.19	"	"	2000	2800
31.5	78	1.3	102.1	"	"	2000	2800
29.5	84	1.2	109.8	"	"	2000	2800
26.5	93	1.1	121.7	"	"	2000	2800
24.5	101	0.99	131.8	"	"	2000	2800
22	112	0.89	146.0	"	"	2000	2800
55	45	3.8	59.07	BG20-../P08LA32	23	5000	-
49	50	3.4	65.62	"	"	5000	-
47.5	52	3.3	67.53	BG20Z-../P08LA32	24	5000	-
43	57	3.0	75.00	"	"	5000	-
41	60	2.8	78.60	"	"	5000	-
37	67	2.5	87.30	"	"	5000	-
34	73	2.3	94.27	"	"	5000	-
31	80	2.1	104.7	"	"	5000	-
28.5	87	1.95	112.8	"	"	5000	-
26	95	1.8	125.3	"	"	5000	-
23	107	1.6	141.3	"	"	5000	-
20.5	121	1.4	157.0	"	"	5000	-
20	124	1.35	162.2	"	"	5000	-
18	137	1.25	180.1	"	"	5000	-
16.5	150	1.15	199.9	"	"	5000	-
14.5	171	0.99	222.1	"	"	5000	-

**P = 0.38 kW**

850	4.25	4.7	3.78	BG06-../P08LA32	20	520	-
710	5.1	4.3	4.54	"	"	530	-
540	6.7	3.6	5.96	"	"	570	-
460	7.8	3.3	7.01	"	"	580	-
385	9.4	3.0	8.39	"	"	600	-
345	10.5	2.9	9.38	"	"	640	-
315	11.5	2.7	10.24	"	"	640	-
285	12.7	2.5	11.28	"	"	670	-
265	13.6	2.4	12.30	"	"	670	-
250	14.5	2.3	12.98	"	"	600	-
220	16.4	2.1	14.78	"	"	730	-
199	18.2	1.9	16.13	"	"	740	-
184	19.7	1.95	17.40	"	"	760	-
169	21	1.9	18.98	"	"	770	-
154	23.5	1.7	20.82	"	"	800	-
141	25.5	1.7	22.71	"	"	810	-
126	28.5	1.6	25.48	"	"	850	-
116	31	1.45	27.80	"	"	840	-
100	36	1.25	32.22	"	"	890	-
92	39	1.15	35.15	"	"	880	-
87	41.5	1.1	36.91	"	"	890	-
80	45	1.0	40.26	"	"	890	-
70	51	0.88	46.19	"	"	890	-
64	56	0.8	50.38	"	"	940	-
199	18.2	5.4	16.15	BG10-../P08LA32	20	1140	1590
173	20.5	4.9	18.51	"	"	1210	1690

**P = 0.38 kW**



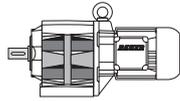
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
157	23	4.3	20.51	BG10-../P08LA32	20	1290	1800
146	24.5	4.1	22.04	"	"	1330	1860
132	27	3.7	24.42	"	"	1410	1970
122	29.5	3.4	26.26	"	"	1460	2000
111	32.5	3.1	29.09	"	"	1540	2150
102	35.5	2.8	31.52	"	"	1600	2200
92	39	2.6	34.92	"	"	1690	2350
81	44.5	2.2	39.70	"	"	1780	2450
73	49.5	2.0	43.99	"	"	1880	2600
69	52	1.9	46.55	"	"	1920	2650
63	57	1.75	51.57	"	"	2000	2800
56	64	1.55	57.48	"	"	2000	2800
51	71	1.4	63.69	"	"	2000	2800
47.5	76	1.15	67.54	BG10Z-../P08LA32	22	2000	2800
41.5	87	1.15	77.40	"	"	2000	2800
37.5	96	1.05	85.76	"	"	2000	2800
35	103	0.97	92.19	"	"	2000	2800
31.5	115	0.87	102.1	"	"	2000	2800
29.5	123	0.81	109.8	"	"	2000	2800
77	47	3.6	41.76	BG20-../P08LA32	23	4500	-
69	52	3.3	46.38	"	"	4700	-
67	54	3.1	47.92	"	"	4750	-
61	59	2.9	53.22	"	"	4950	-
55	65	2.6	59.07	"	"	5000	-
49	74	2.3	65.62	"	"	5000	-
47.5	76	2.2	67.53	BG20Z-../P08LA32	24	5000	-
43	84	2.0	75.00	"	"	5000	-
41	88	1.95	78.60	"	"	5000	-
37	98	1.75	87.30	"	"	5000	-
34	106	1.6	94.27	"	"	5000	-
31	117	1.45	104.7	"	"	5000	-
28.5	127	1.35	112.8	"	"	5000	-
26	139	1.2	125.3	"	"	5000	-
23	157	1.1	141.3	"	"	5000	-
20.5	177	0.96	157.0	"	"	5000	-
20	181	0.94	162.2	"	"	5000	-
18	200	0.85	180.1	"	"	5000	-

**P = 0.53 kW**

850	5.9	3.4	3.78	BG06-../P08LA32	20	520	-
710	7.1	3.1	4.54	"	"	530	-
540	9.3	2.6	5.96	"	"	570	-
460	11	2.4	7.01	"	"	580	-
385	13.1	2.1	8.39	"	"	600	-
345	14.6	2.1	9.38	"	"	640	-
315	16	1.95	10.24	"	"	640	-
285	17.7	1.8	11.28	"	"	670	-
265	19.1	1.75	12.30	"	"	670	-
250	20	1.65	12.98	"	"	600	-
220	23	1.5	14.78	"	"	730	-
199	25	1.4	16.13	"	"	740	-
184	27.5	1.4	17.40	"	"	760	-
169	29.5	1.35	18.98	"	"	770	-
154	32.5	1.25	20.82	"	"	800	-
141	35.5	1.2	22.71	"	"	810	-
126	40	1.15	25.48	"	"	850	-
116	43.5	1.05	27.80	"	"	840	-
100	50	0.9	32.22	"	"	890	-

**P = 0.53 kW**

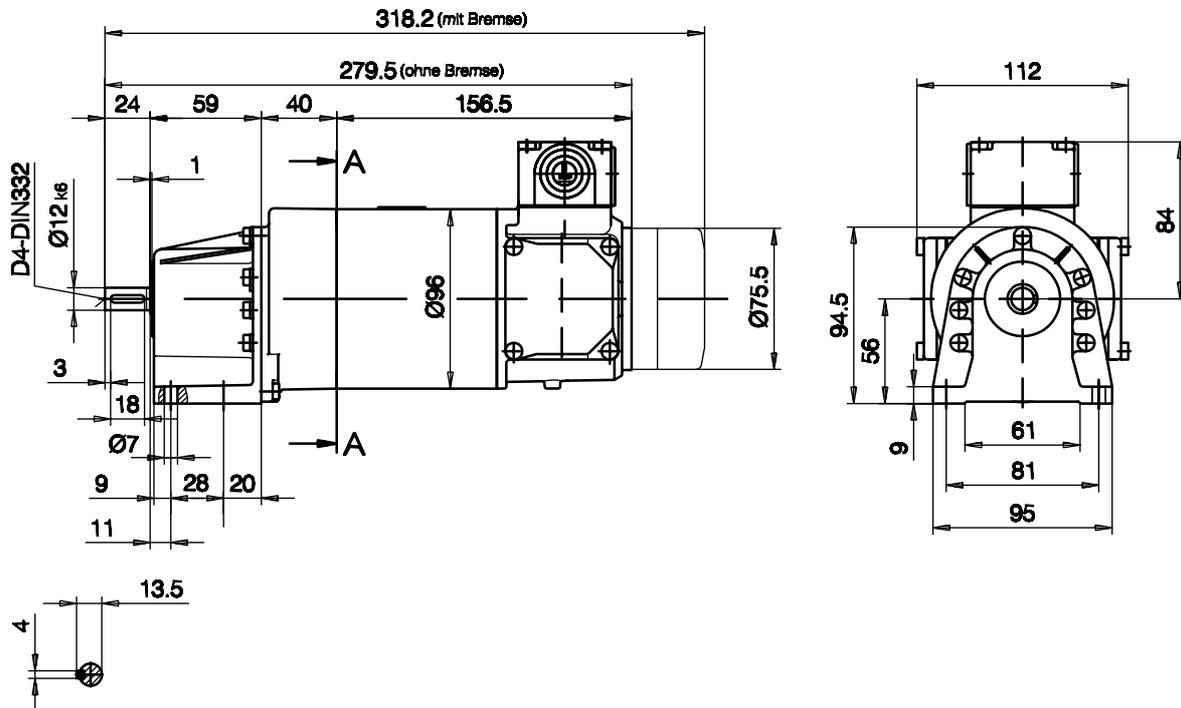


*Danfoss*

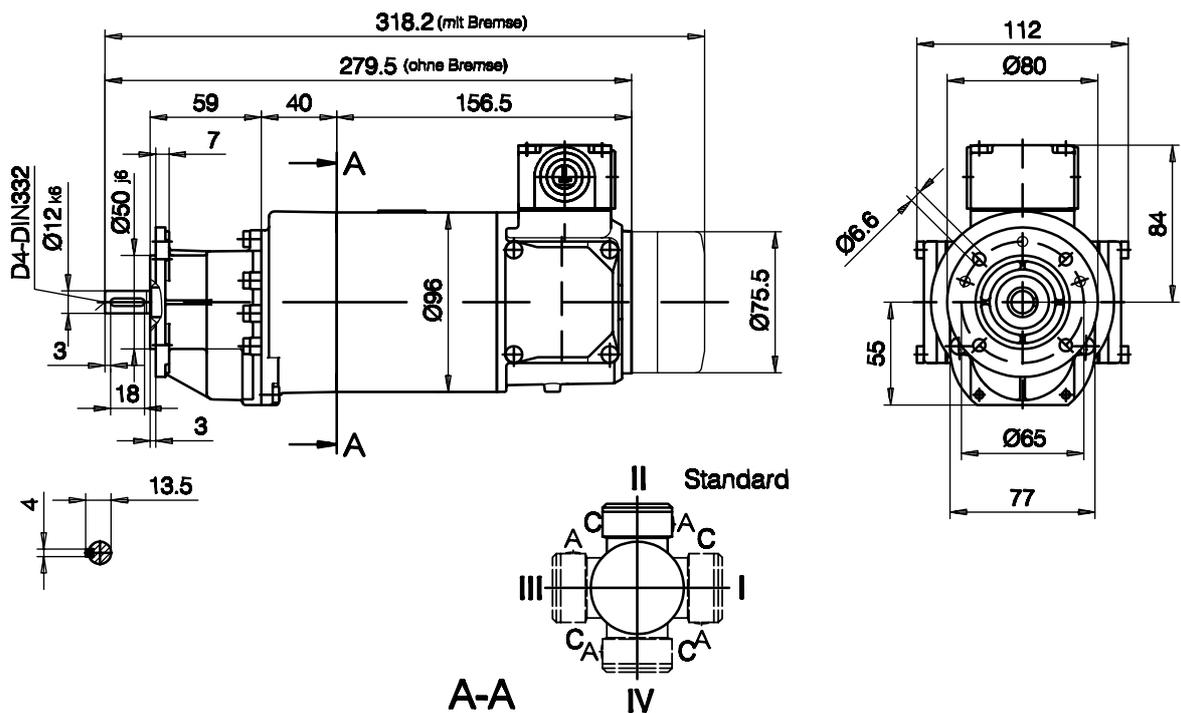
50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
92	55	0.82	35.15	BG06-../P08LA32	20	880	-
310	16.3	5.1	10.34	BG10-../P08LA32	20	1000	1400
270	18.7	4.7	11.92	"	"	1030	1440
245	20.5	4.5	13.21	"	"	1070	1490
220	23	4.1	14.58	"	"	1100	1540
199	25	3.9	16.15	"	"	1140	1590
173	29	3.4	18.51	"	"	1210	1690
157	32	3.1	20.51	"	"	1290	1800
146	34.5	2.9	22.04	"	"	1330	1860
132	38	2.6	24.42	"	"	1410	1970
122	41	2.4	26.26	"	"	1460	2000
111	45.5	2.2	29.09	"	"	1540	2150
102	49.5	2.0	31.52	"	"	1600	2200
92	55	1.8	34.92	"	"	1690	2350
81	62	1.6	39.70	"	"	1780	2450
73	69	1.45	43.99	"	"	1880	2600
69	73	1.35	46.55	"	"	1920	2650
63	80	1.25	51.57	"	"	2000	2800
56	90	1.1	57.48	"	"	2000	2800
51	99	1.0	63.69	"	"	2000	2800
47.5	106	0.81	67.54	BG10Z-../P08LA32	22	2000	2800
41.5	121	0.83	77.40	"	"	2000	2800
104	48.5	3.5	30.94	BG20-../P08LA32	23	4000	-
97	52	3.3	33.33	"	"	4100	-
87	58	2.9	37.02	"	"	4300	-
77	65	2.6	41.76	"	"	4500	-
69	73	2.3	46.38	"	"	4700	-
67	75	2.3	47.92	"	"	4750	-
61	82	2.1	53.22	"	"	4950	-
55	92	1.85	59.07	"	"	5000	-
49	103	1.65	65.62	"	"	5000	-
47.5	106	1.6	67.53	BG20Z-../P08LA32	24	5000	-
43	117	1.45	75.00	"	"	5000	-
41	123	1.4	78.60	"	"	5000	-
37	136	1.25	87.30	"	"	5000	-
34	148	1.15	94.27	"	"	5000	-
31	163	1.05	104.7	"	"	5000	-
28.5	177	0.96	112.8	"	"	5000	-
26	194	0.88	125.3	"	"	5000	-

9.20 Dimensional Drawings for  
DC Permanent-Magnet  
Helical Geared Motors

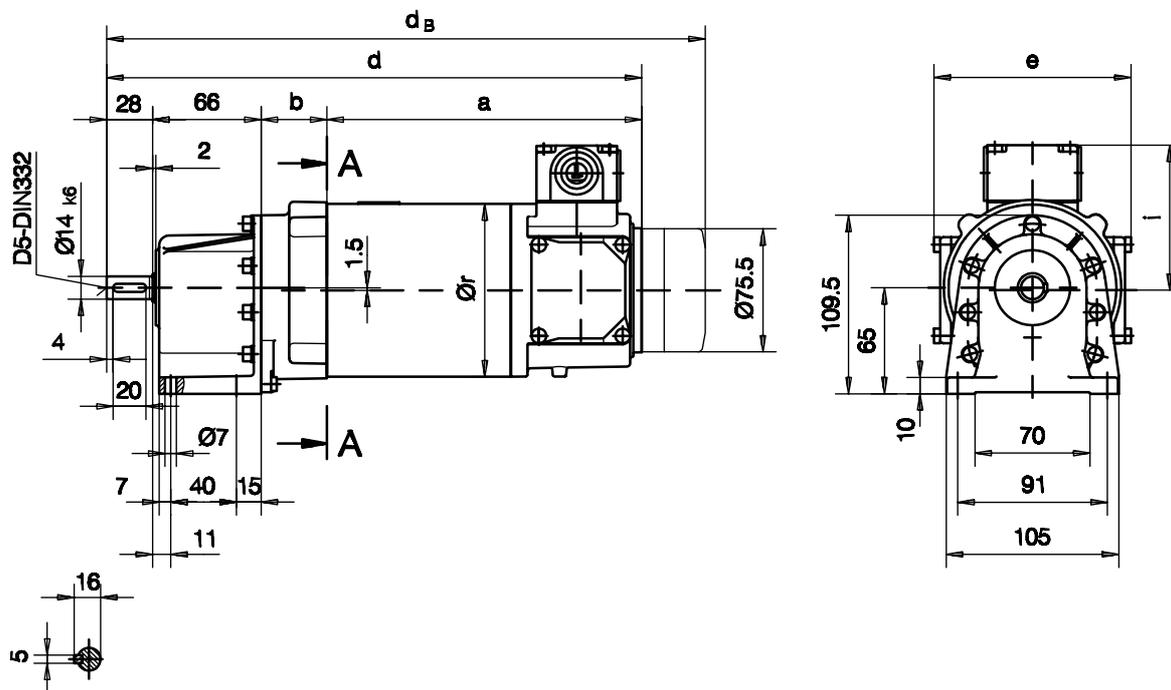
Fußausführung/Foot mounting/fixation à pied  
 Code -11/



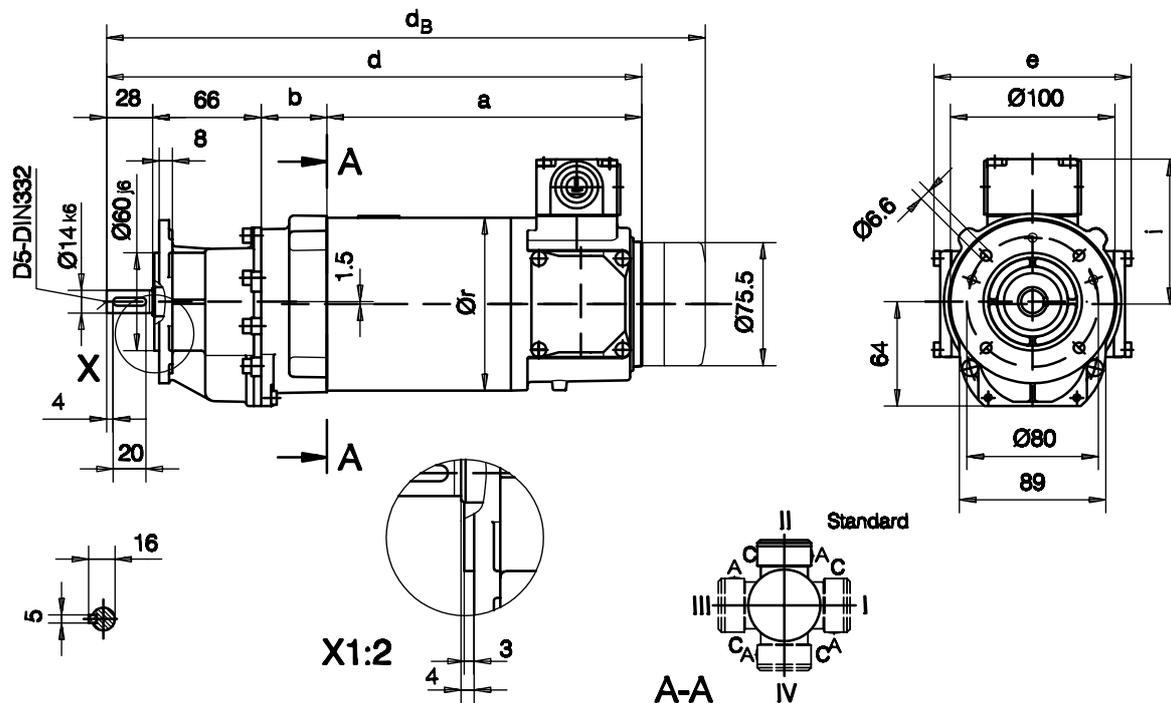
Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/



Fußausführung/Foot mounting/fixation à pied  
 Code -11/

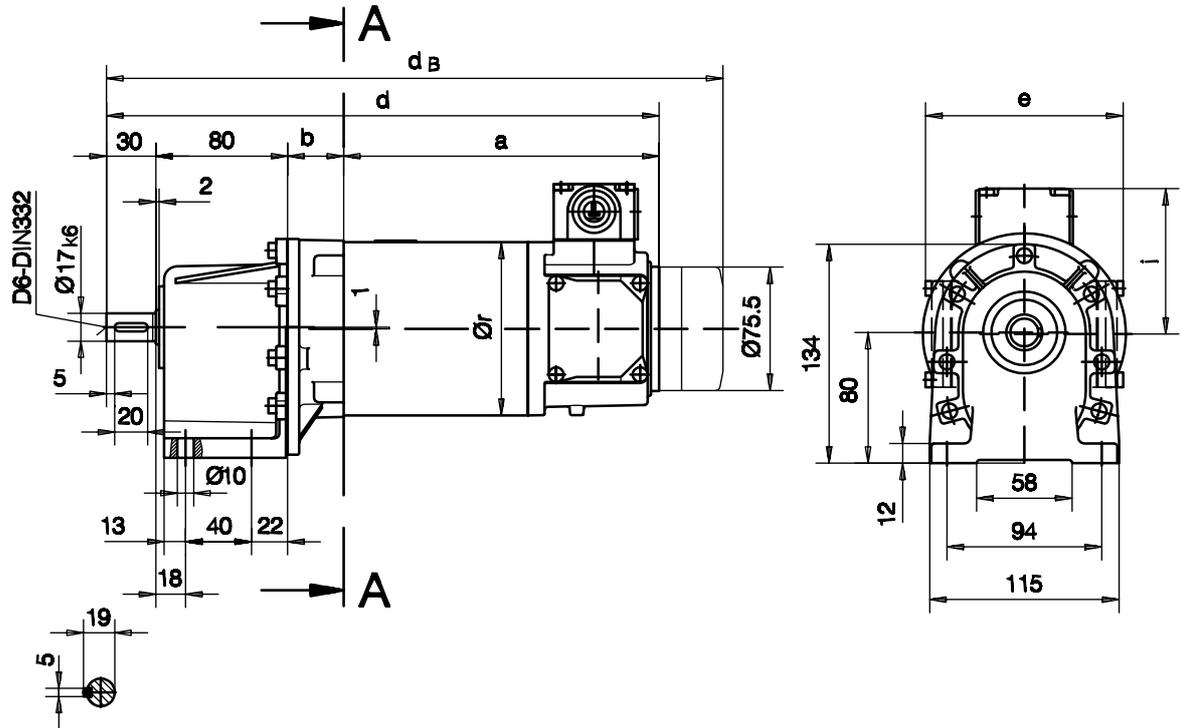


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/

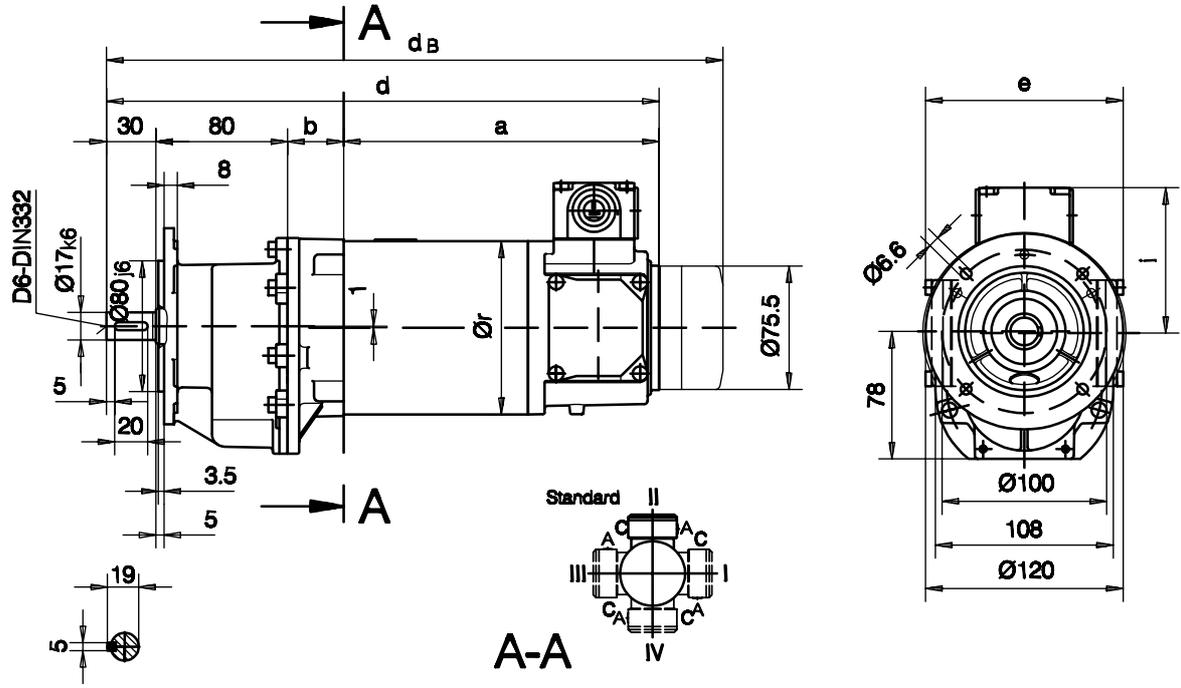


Typ/Type/Type	a	b	d	i	e	r	Ausführung mit Bremse / with brake / avec frein		
							E003		
BG05-../P04..	156.5	38	288.5	84	112	96	327.2		
BG05-../P05..	191.5	40	325.5	89	120	106	364.2		

Fußausführung/Foot mounting/fixation à pied  
 Code -11/

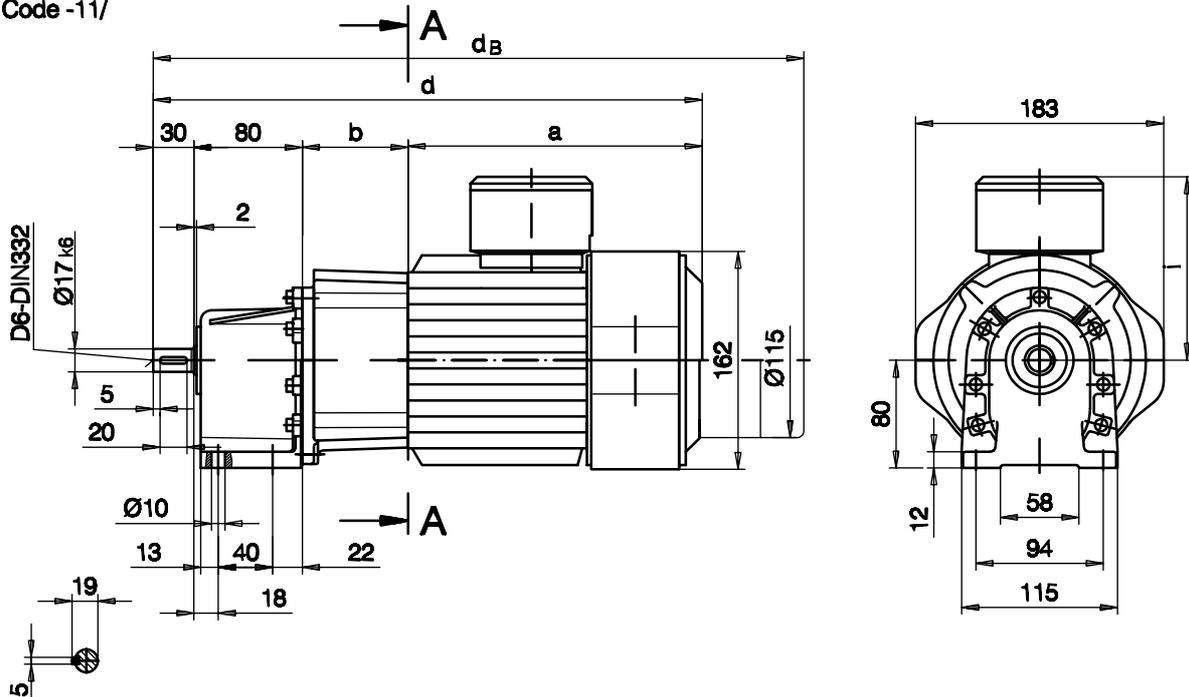


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/

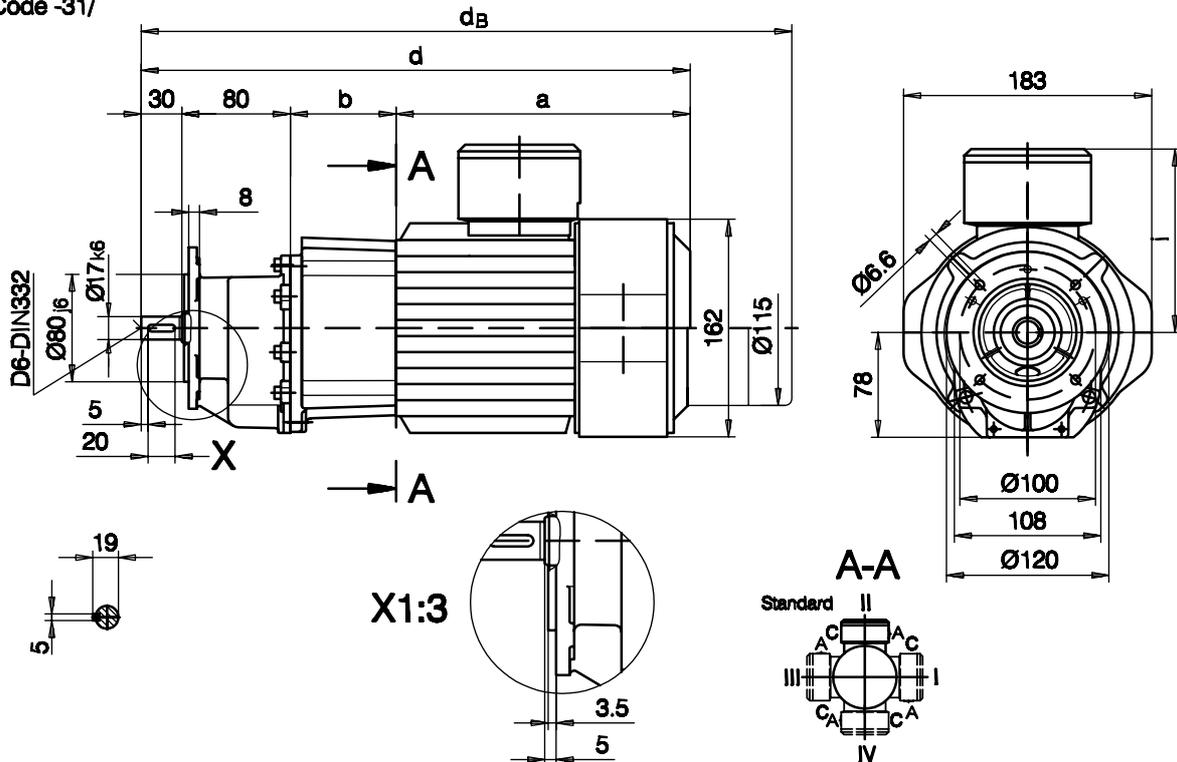


Typ/Type/Type	a	b	d	i	e	r	Ausführung mit Bremse / with brake / avec frein				
							E003				
BG06-../P04..	156.5	32	299	84	112	96	337.7				
BG06-../P05..	191.5	34	336	89	120	106	374.7				

Fußausführung/Foot mounting/fixation à pied  
 Code -11/

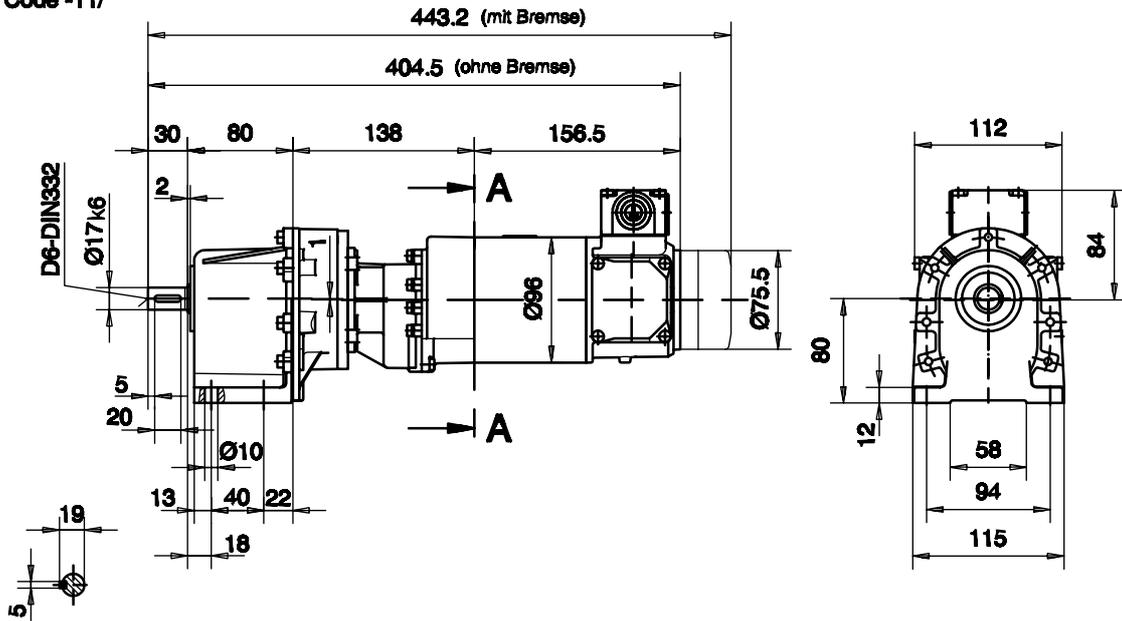


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/

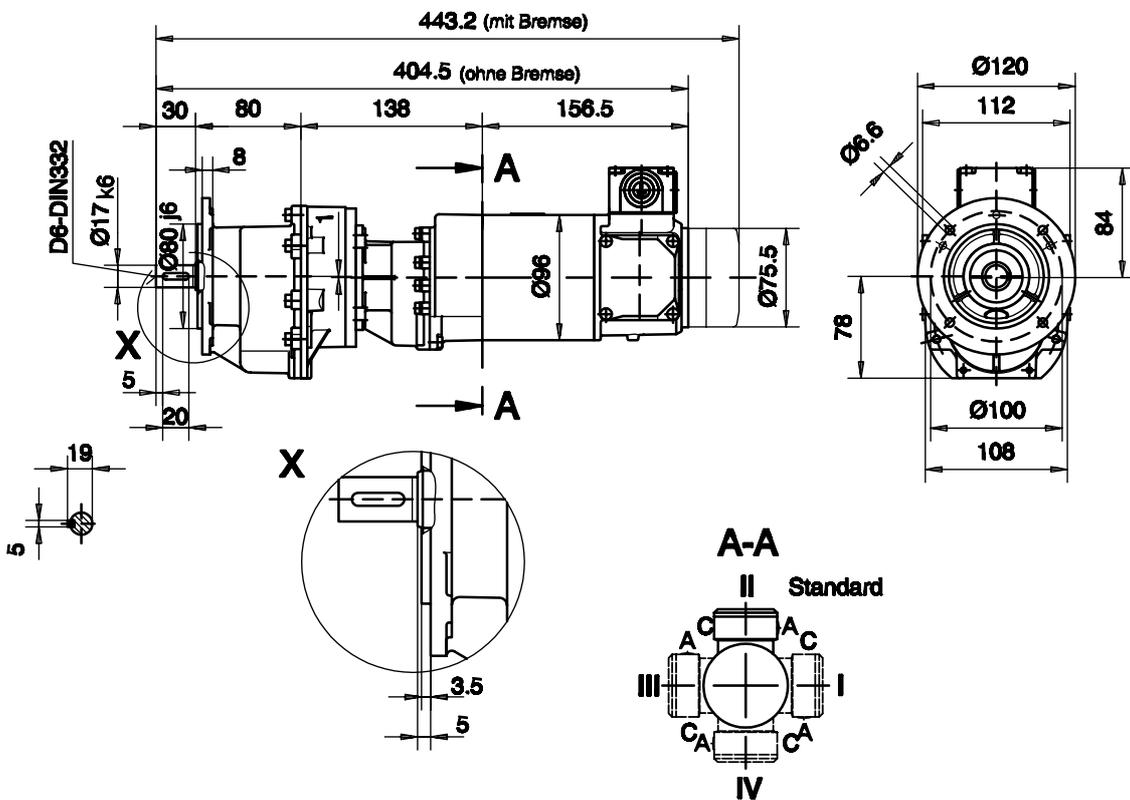


					Ausführung mit Bremse / with brake / avec frein		
Typ/Type/Type	a	b	d	i	E005-E008	Z005-Z008	
					d <sub>B</sub>	d <sub>B</sub>	
BG06-../P08..	217	78	405	136	466	480	

Fußausführung/Foot mounting/fixation à pied  
 Code -11/



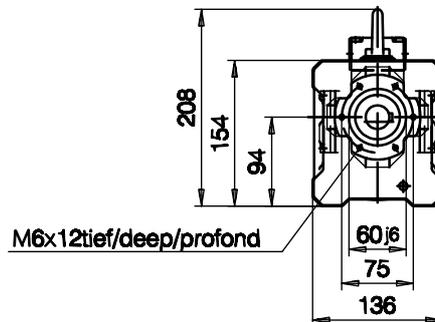
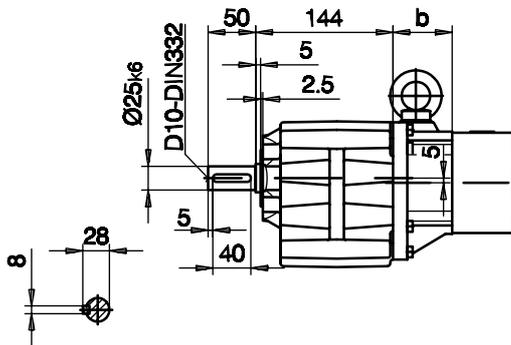
Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -31/





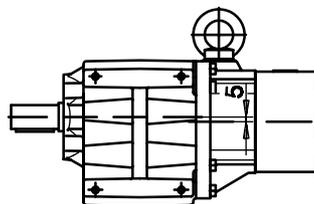
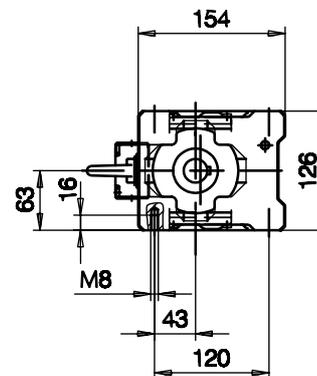
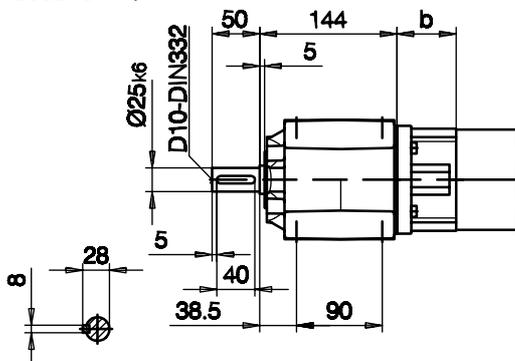
Flansch mit Gewindelöchern/flange with tapped holes/bride avec trous taraudés

Code -71/



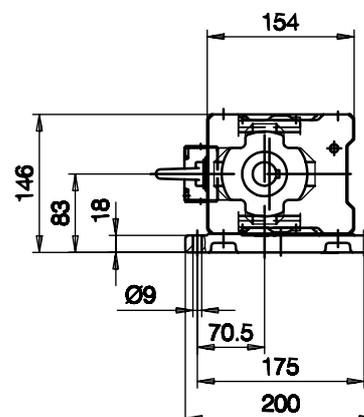
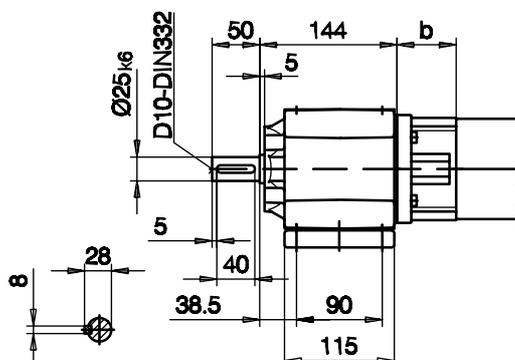
Fuß mit Gewindelöchern links und rechts/foot with tapped holes left and right/  
 fixation: trous taraudés à gauche et à droite

Code -61LR/

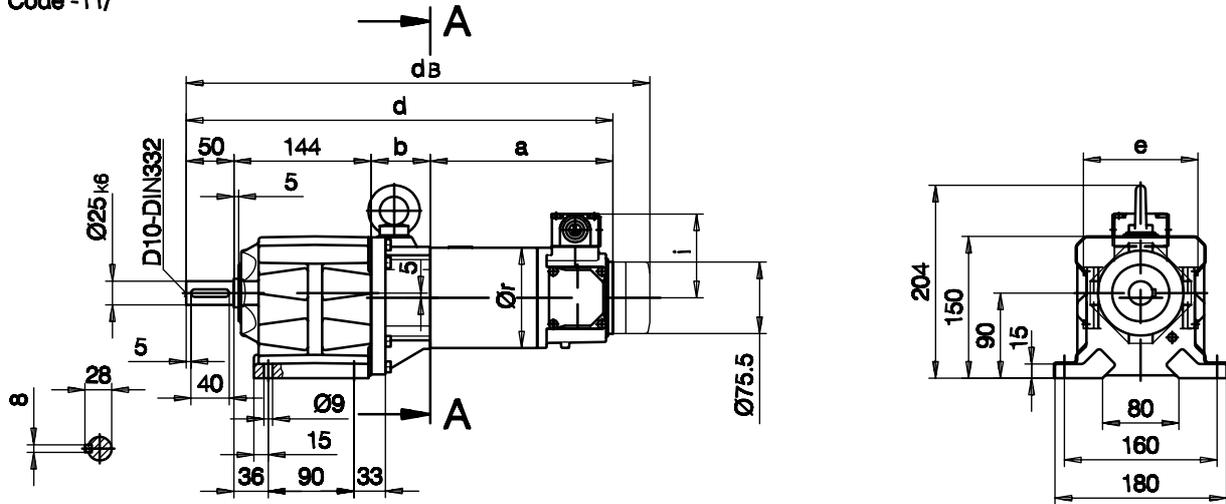


Fußplatte links/foot plate left/fixation du pied à gauche

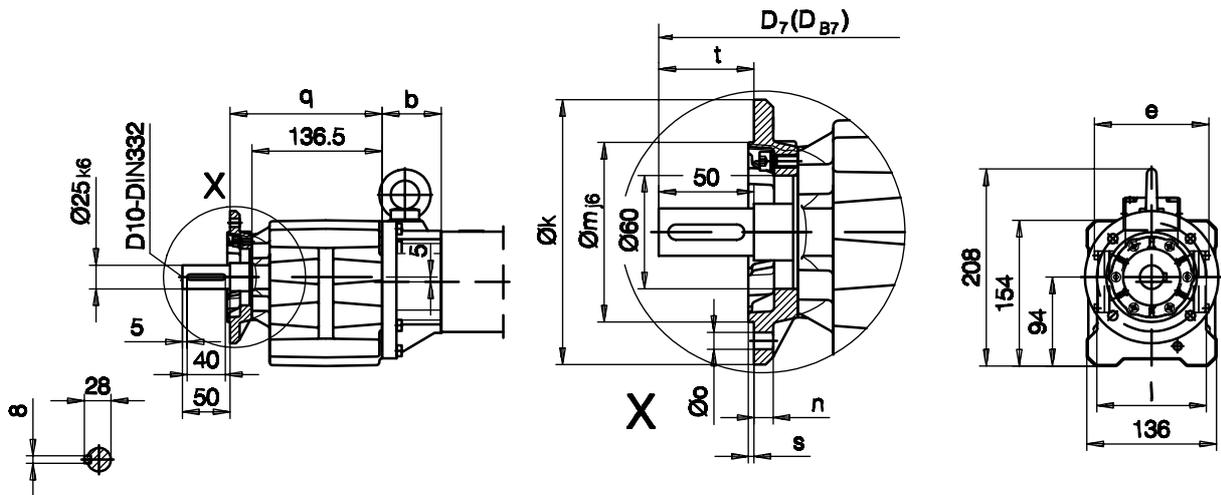
Code -91L/



Fußausführung mit Durchgangslöchern/Foot mounting with through holes/  
 fixation à pied avec trous débouchants  
 Code -11/

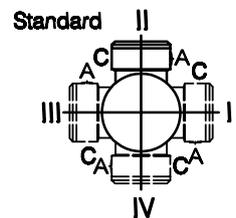


Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -37/  
 (Code -27/)



Flanschmaße/Flange dimensions/cotes de la bride

BG10X(Z)	k	l	m	n	o	q	s	t	D <sub>7</sub>	D <sub>B7</sub>
Standard -37/	Ø140	Ø115	Ø95	10	Ø9	159.5	3	50	d+15.5	d <sub>B</sub> +15.5
klein/small/petit -27/	Ø120	Ø100	Ø80	8	Ø6.6	154.5	3	55	d+15.5	d <sub>B</sub> +15.5

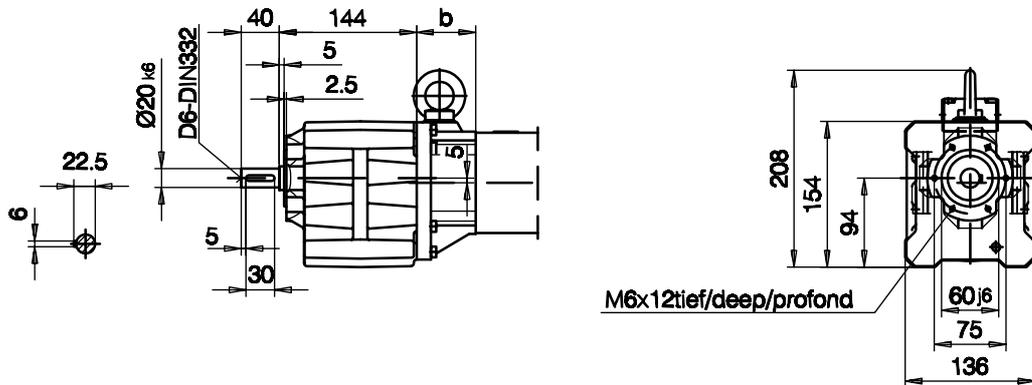


A-A

Typ/Type/Type	a	b	d	i	e	r	Ausführung mit Bremse / with brake / avec frein			
							E003			
BG10XZ-.1/P04..	156.5	86	436.5	84	112	96	d <sub>B</sub>			
BG10X-.1/P05..	191.5	62	447.5	89	120	106	486.2			
BG10XZ-.1/P05..	191.5	88	473.5	89	120	106	512.2			

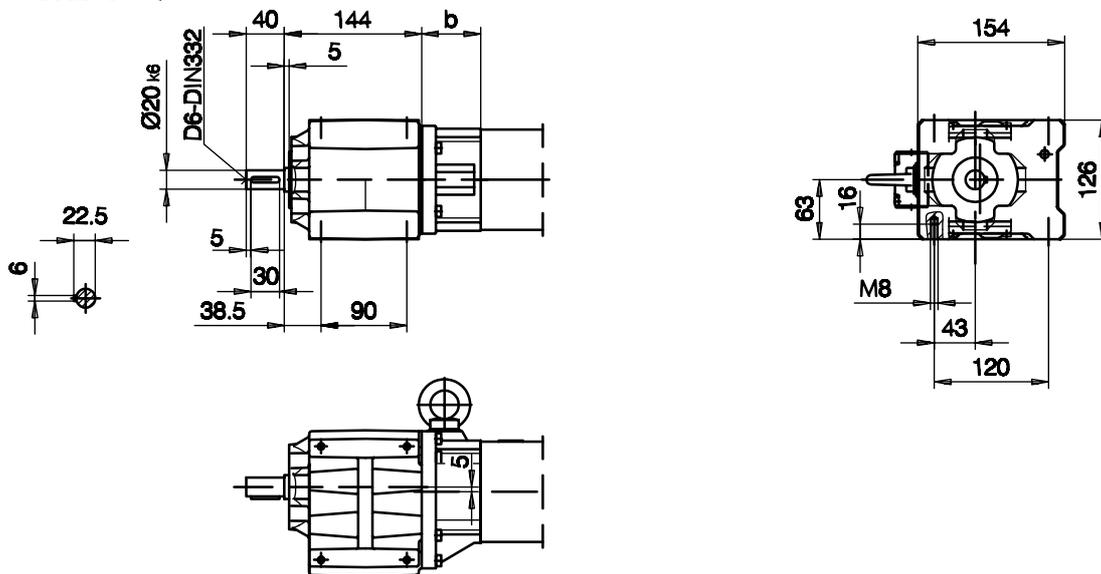
Flansch mit Gewindelöchern/flange with tapped holes/bride avec trous taraudés

Code -71/



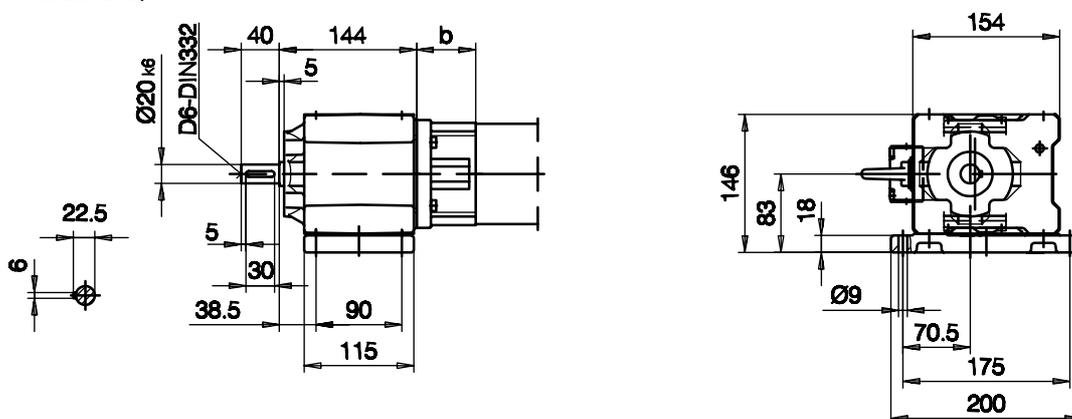
Fuß mit Gewindelöchern links und rechts/foot with tapped holes left and right/  
fixation: trous taraudés à gauche et à droite

Code -61LR/

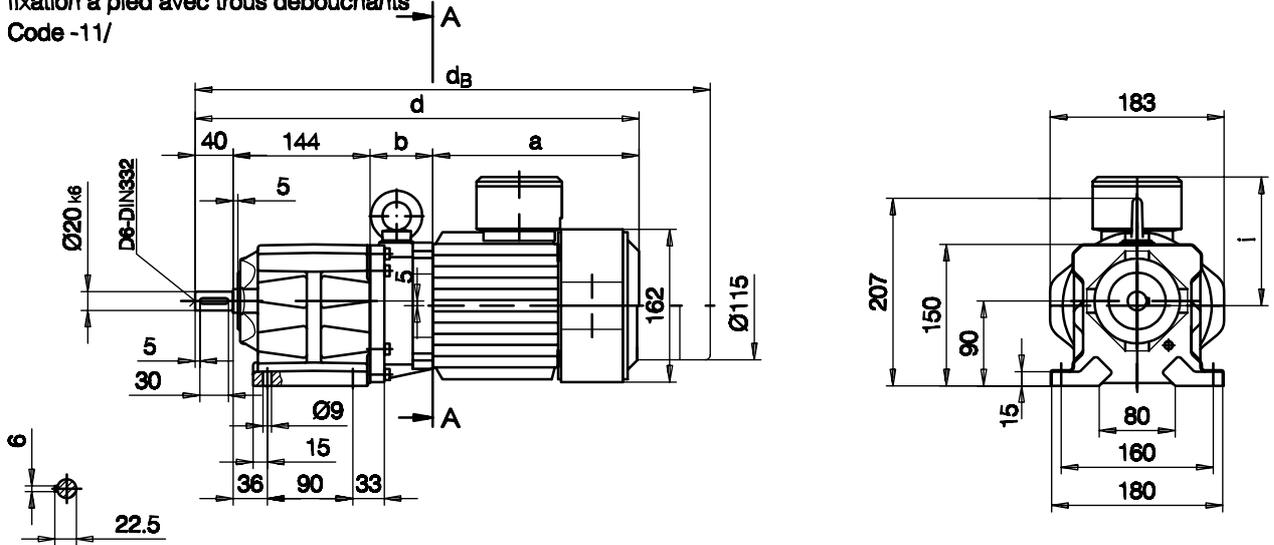


Fußplatte links/foot plate left/fixation du pied à gauche

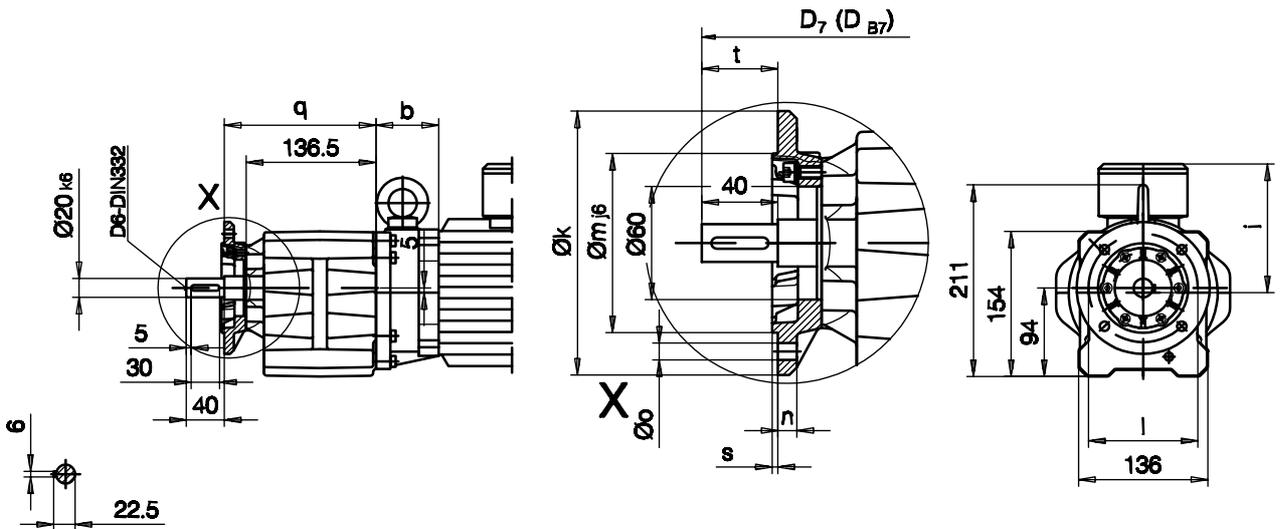
Code -91L/



Fußausführung mit Durchgangslöchern/Foot mounting with clearance holes/  
 fixation à pied avec trous débouchants  
 Code -11/



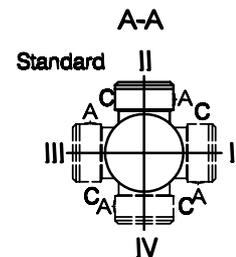
Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -37/  
 (Code -27/)



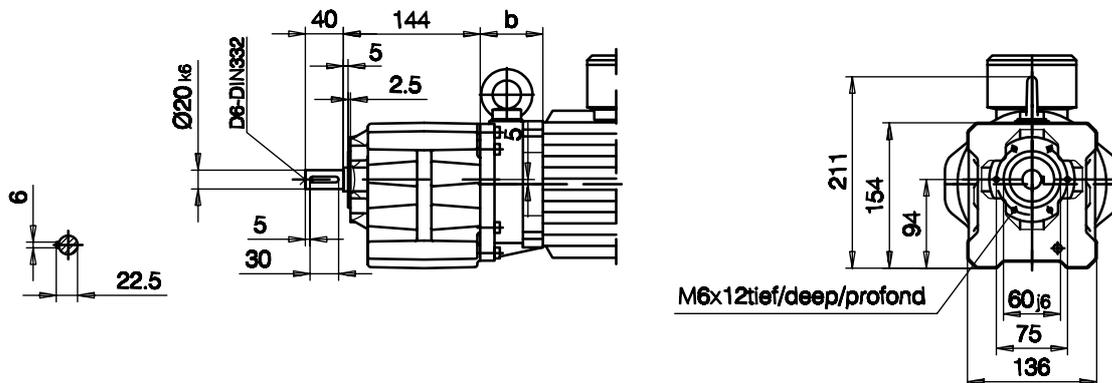
Flanschmaße/Flange dimensions/cotes de la bride

BG10(Z)		k	l	m	n	o	q	s	t	D <sub>7</sub>	D <sub>B7</sub>
Standard	-37/	Ø140	Ø115	Ø95	10	Ø9	159.5	3	40	d+15.5	d <sub>B</sub> +15.5
klein/small/petit	-27/	Ø120	Ø100	Ø80	8	Ø6.6	154.5	3	45	d+15.5	d <sub>B</sub> +15.5

Typ/Type/Type	a	b	d	i	Ausführung mit Bremse / with brake / avec frein			
					E005-E008	Z005-Z008		
					d <sub>B</sub>	d <sub>B</sub>		
BG10-.1/P08..	217	66	467	136	528	542		
BG10Z-.1/P08..	217	132	533	136	594	608		

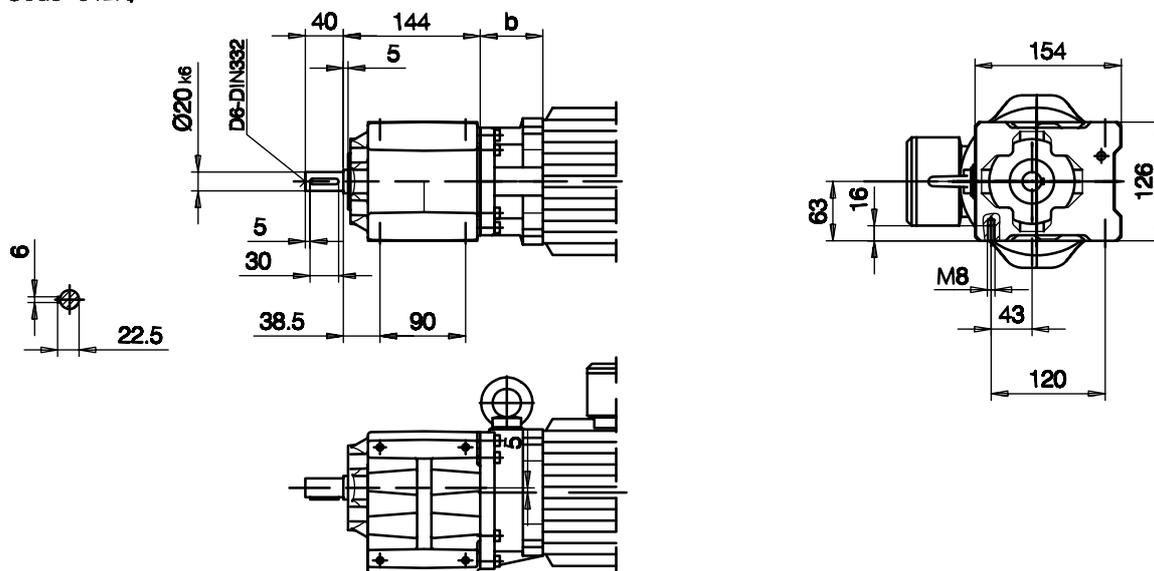


Flansch mit Gewindelöchern/flange with tapped holes/bride avec trous taraudés  
 Code -71/



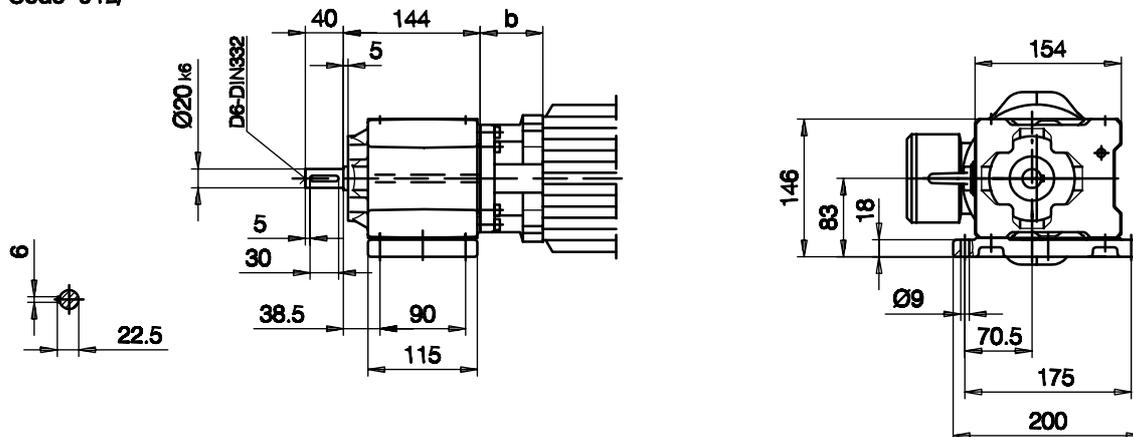
Fuß mit Gewindelöchern links und rechts/foot with tapped holes left and right/  
 fixation à pied avec trous taraudés à gauche et à droite

Code -61LR/

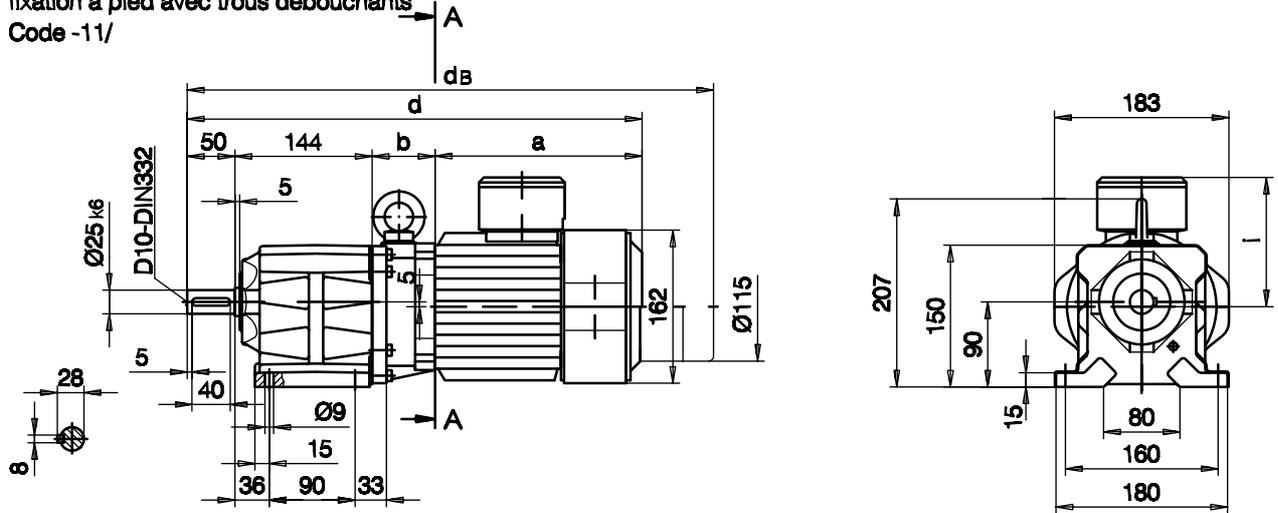


Fußplatte links/foot plate left/fixation du pied à gauche

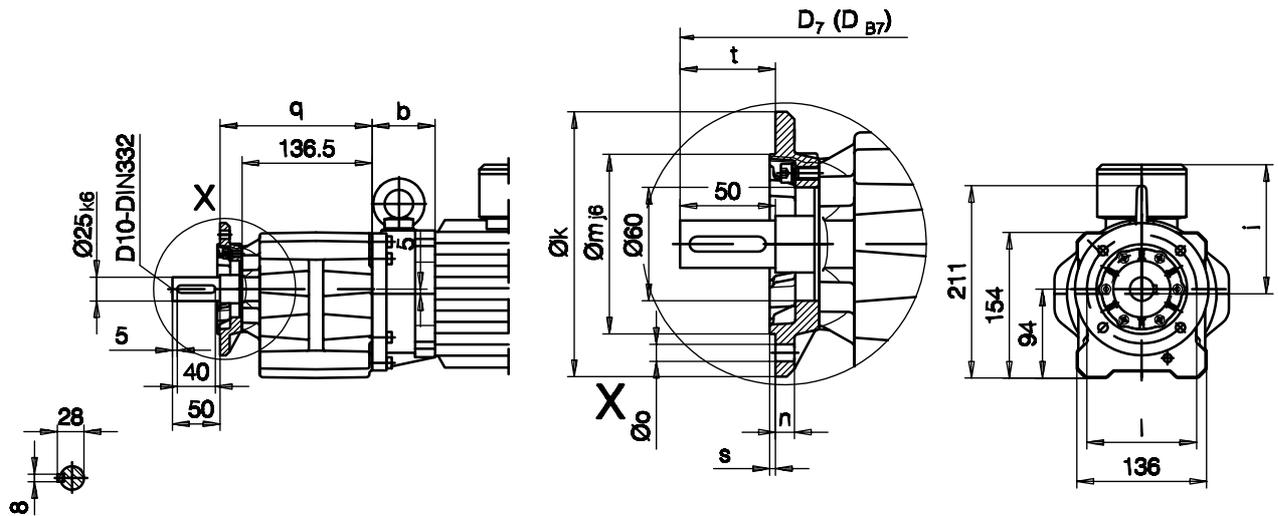
Code -91L/



Fußausführung mit Durchgangslöchern/Foot mounting with clearance holes/  
 fixation à pied avec trous débouchants  
 Code -11/



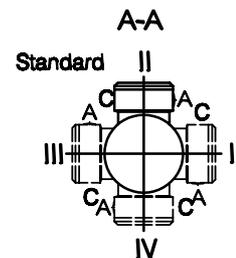
Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -37/  
 (Code -27/)



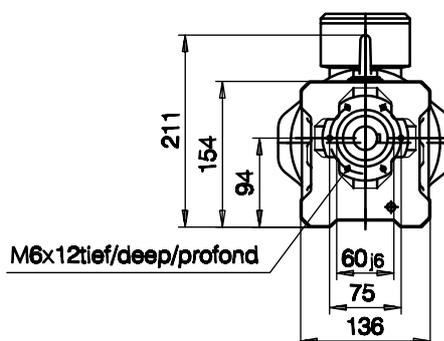
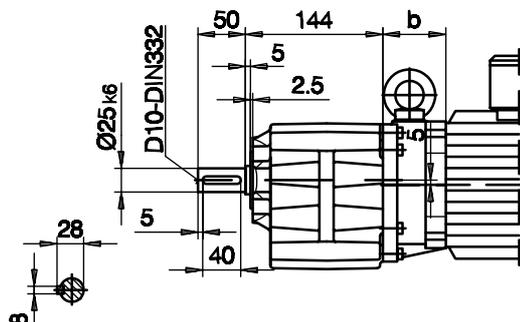
Flanschmaße/Flange dimensions/cotes de la bride

BG10(Z)		k	l	m	n	o	q	s	t	D <sub>7</sub>	D <sub>B7</sub>
Standard	-37/	Ø140	Ø115	Ø95	10	Ø9	159.5	3	50	d+15.5	d <sub>B</sub> +15.5
klein/small/petit	-27/	Ø120	Ø100	Ø80	8	Ø6.6	154.5	3	55	d+15.5	d <sub>B</sub> +15.5

Typ/Type/Type	a	b	d	i	Ausführung mit Bremse / with brake / avec frein			
					E005-E008	Z005-Z008		
					d <sub>B</sub>	d <sub>B</sub>		
BG10X-.1/P08..	217	66	477	136	538	552		
BG10XZ-.1/P08..	217	132	543	136	604	618		

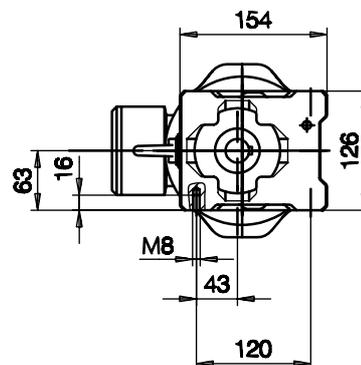
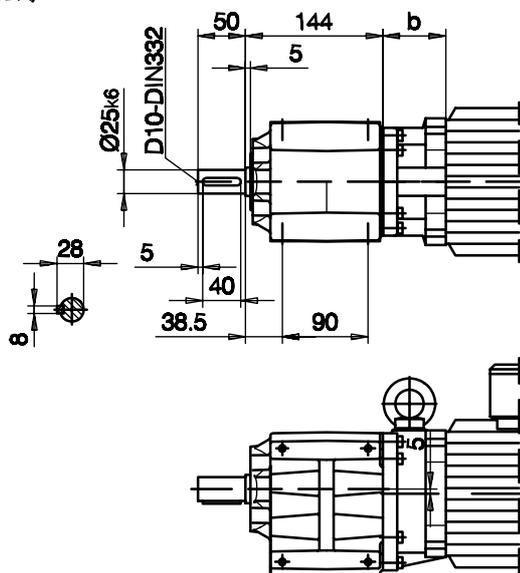


Flansch mit Gewindelöchern/flange with tapped holes/bride avec trous taraudés  
 Code -71/



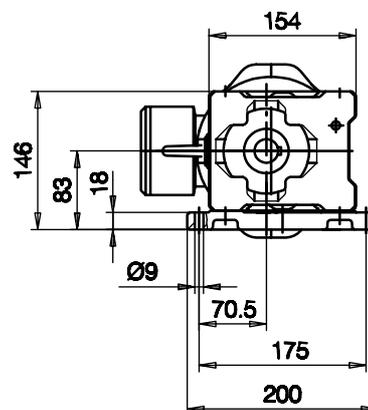
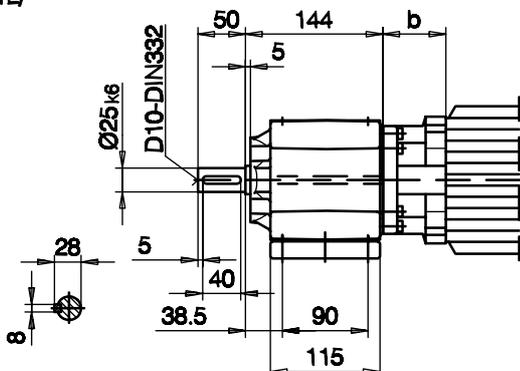
Fuß mit Gewindelöchern links und rechts/foot with tapped holes left and right/  
 fixation à pied avec trous taraudés à gauche et à droite

Code -61LR/

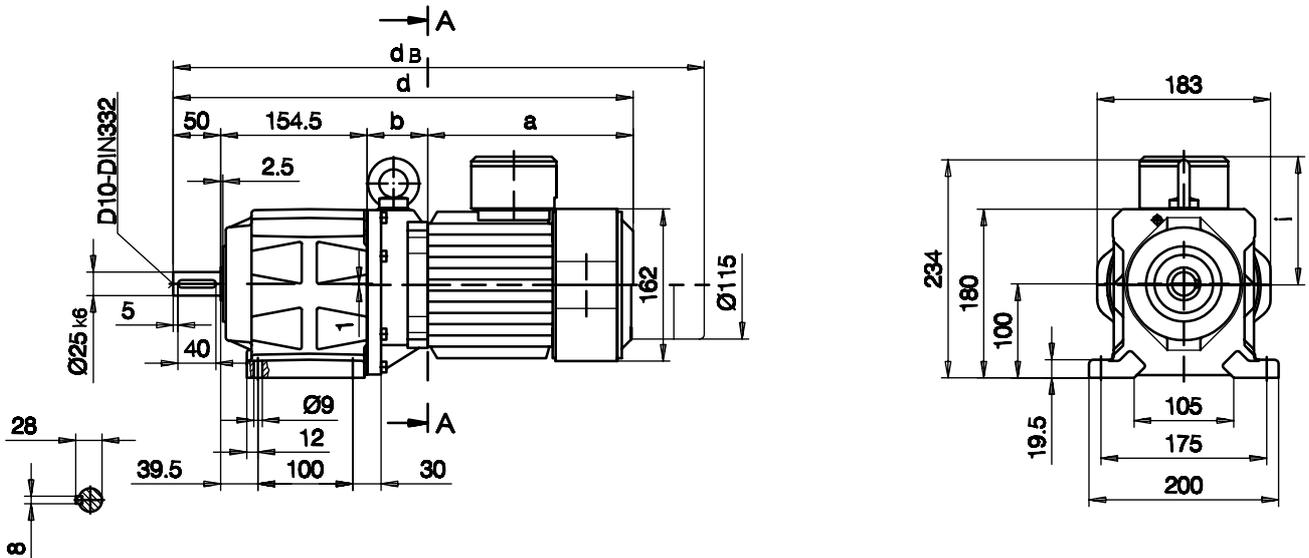


Fußplatte links/foot plate left/fixation du pied à gauche

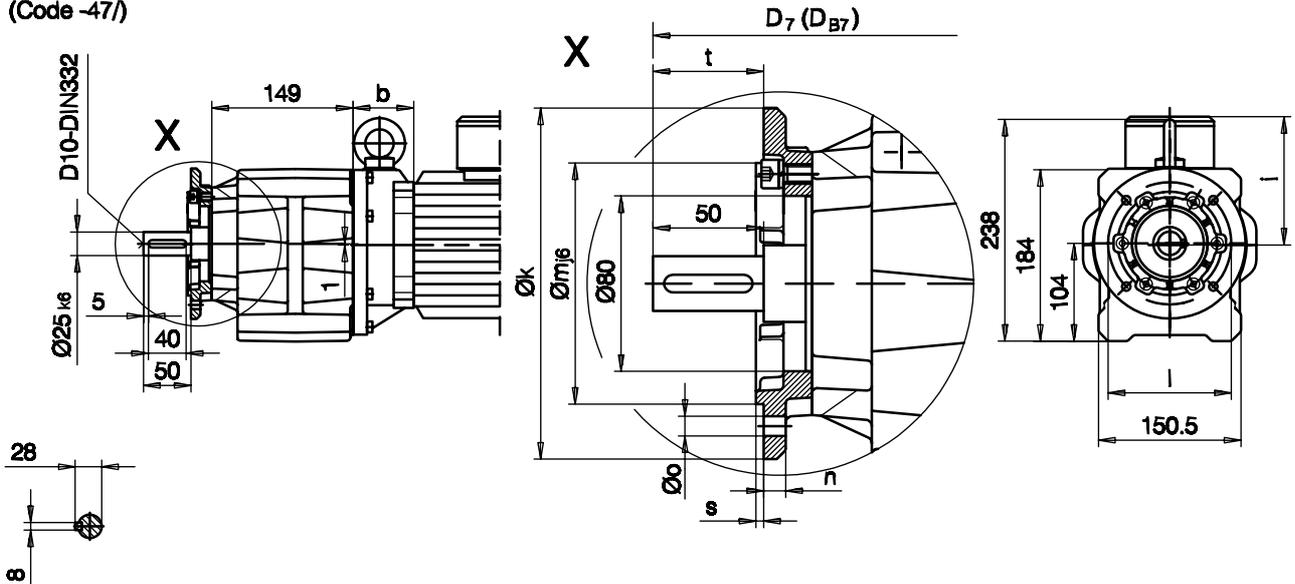
Code -91L/



Fußausführung mit Durchgangslöchern/Foot mounting with clearance holes/  
 fixation à pied avec trous débouchants  
 Code -11/



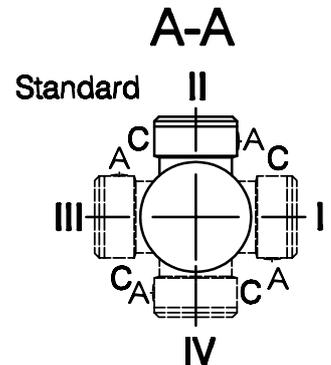
Flansch mit Durchgangslöchern/Flange with clearance holes/bride avec trous débouchants  
 Code -37/  
 (Code -47/)



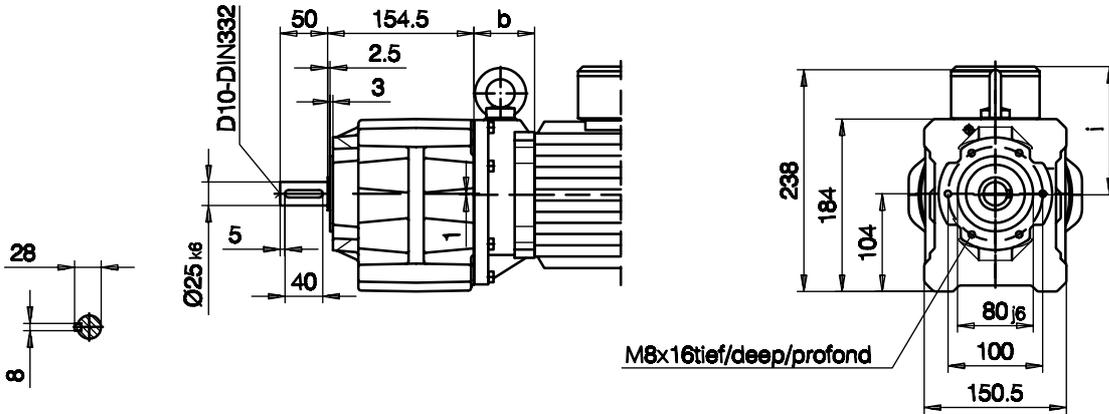
Flanschmaße/Flange dimensions/cotes de la bride

BG20(Z)	k	l	m	n	o	q	s	t	D <sub>7</sub>	D <sub>B7</sub>
Standard -37/	Ø160	Ø130	Ø110	10	Ø9	171	3.5	50	d+16.5	d <sub>B</sub> +16.5
groß/big/grande -47/	Ø200	Ø165	Ø130	12	Ø11	178	3.5	43	d+16.5	d <sub>B</sub> +16.5

Typ/Type/Type	a	b	d	i	Ausführung mit Bremse / with brake / avec frein	
					E005-E008	Z005-Z008
					d <sub>B</sub>	d <sub>B</sub>
BG20-.1/P08..	217	64	485.5	136	546.5	560.5
BG20Z-.1/P08..	217	146	567.5	136	628.5	642.5

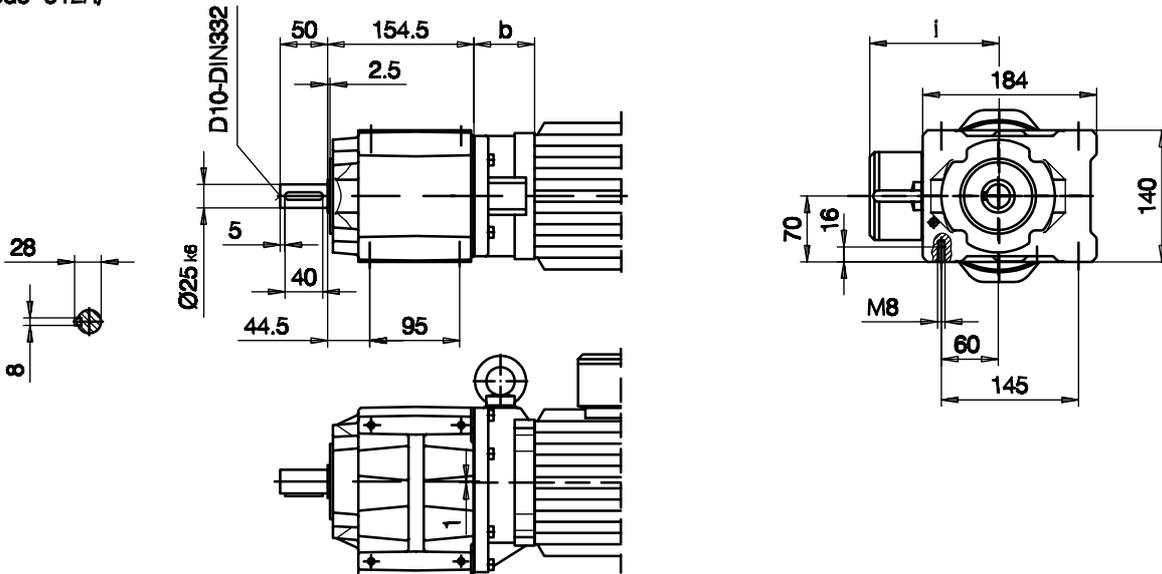


Flansch mit Gewindelöchern/flange with tapped holes/bride avec trous taraudés  
 Code -71/



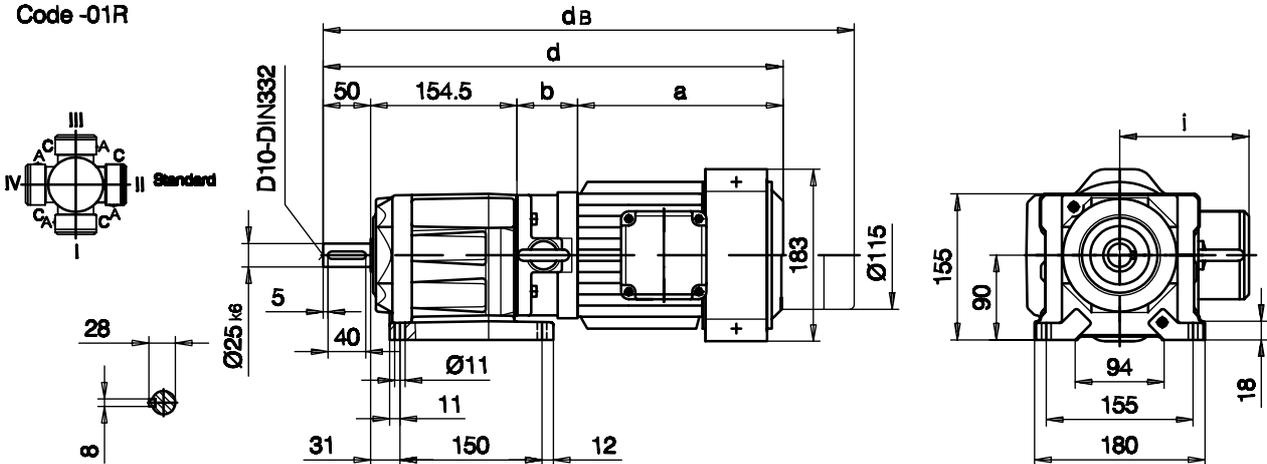
Fuß mit Gewindelöchern links und rechts/foot with tapped holes left and right/  
 fixation à pied avec trous taraudés à gauche et à droite

Code -61LR/



Fußausführung rechts mit Durchgangslöchern/foot mounting right with clearance holes/  
 fixation à pied à droite avec trous débouchants

Code -01R

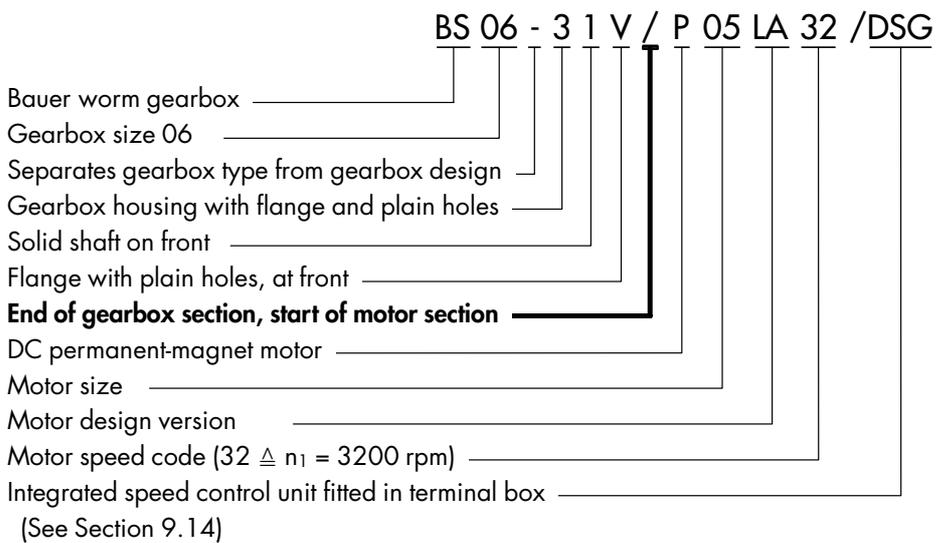




## 9.21 Type Codes for Worm Geared Motors

For further specifications and details of worm gearboxes, refer to Section 7.

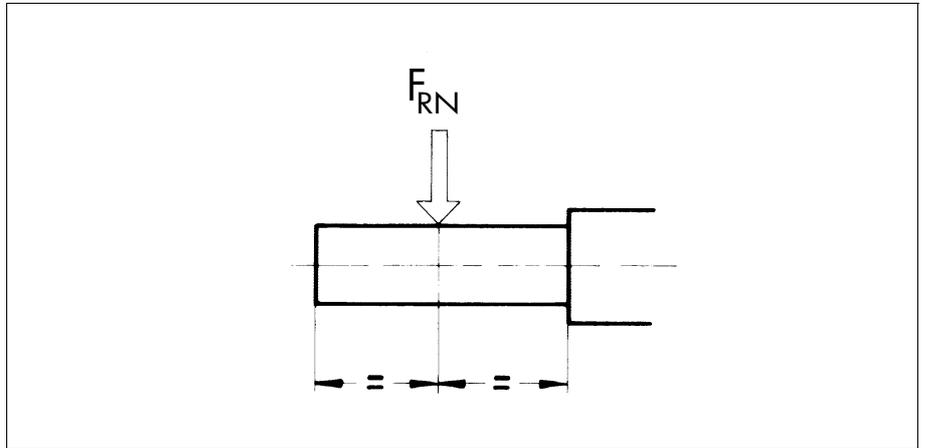
### 9.21.1 Typical Designation of a DC Permanent-Magnet Worm Geared Motor



## 9.22 Selection Tables for DC Permanent-Magnet Worm Geared Motors

### Explanation of Abbreviations

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



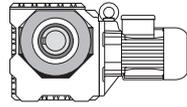
The selection tables can be used to determine the size of the geared motor. The gearbox design can be unambiguously defined by means of code numbers (see dimensional drawing 9.23).

The torque figures marked (\*) are maximum permissible levels for a load factor of  $f_B=1.0$ .

### Protection Against Overload by Motor Output

The rated outputs of the motors, particularly in conjunction with gearboxes with four or more speeds, are very generously dimensioned in some cases. For that reason, as with low motor outputs, the rated current is not a measure of gearbox load capacity utilisation and can not be taken as an indication of overload protection for the gearbox. If there is a risk of excessive load or jamming, it is advisable to protect the gearbox by mechanical means (e.g. one-way clutch, free hub, shear pin, etc.).

**P = 0.04 kW**



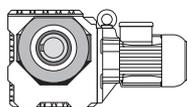
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
700	0.48	31	4.60	BS02-../P04LA32	4.6	450	-
600	0.56	36	5.40	"	"	510	-
475	0.69	36	6.75	"	"	590	-
390	0.82	30	8.25	"	"	600	-
300	1.04	24	10.67	"	"	600	-
240	1.24	20	13.50	"	"	600	-
178	1.58	16	18.00	"	"	600	-
146	1.83	14	22.00	"	"	600	-
119	2.0	13	27.00	"	"	600	-
97	2.35	11	33.00	"	"	600	-
75	3.15	7.6	43.00	"	"	600	-
60	3.6	6.1	54.00	"	"	600	-
46	4.2	4.8	70.00	"	"	600	-
67	3.85	9.9	47.86	BS04-../P04LA32	5.0	1000	-
53	4.8	7.9	61.50	"	"	1000	-
50	4.8	7.5	64.06	"	"	1000	-
45	5.6	6.8	71.18	"	"	1000	-
42	5.5	6.9	77.00	"	"	1000	-
36	6.8	5.6	90.00	"	"	1000	-
34.5	6.5	5.8	93.92	"	"	1000	-
31.5	7.7	4.9	102.9	"	"	1000	-
27.5	7.9	4.8	117.0	"	"	1000	-
26.5	9.0	4.6	123.0	"	"	1000	-
23.5	10	4.2	138.4	"	"	1000	-
21.5	9.7	4.0	150.3	"	"	1000	-
20	11.6	3.2	160.1	"	"	1000	-
18.5	11.1	3.6	174.0	"	"	1000	-
15	13.4	3.0	220.0	"	"	1000	-
13	15.2	2.7	251.6	"	"	1000	-
11	17.7	2.4	300.7	"	"	1000	-
9.5	20	2.2	338.3	"	"	1000	-
8.2	22.5	2.0	391.3	"	"	1000	-
9.0	23.5	4.7	358.9	BS06-../P04LA32	9.5	2000	-
7.7	27	4.1	418.0	"	"	2000	-

**P = 0.075 kW**

700	0.9	17	4.60	BS02-../P04LA32	4.6	450	-
600	1.05	19	5.40	"	"	510	-
475	1.29	19	6.75	"	"	590	-
390	1.54	16	8.25	"	"	600	-
300	1.95	13	10.67	"	"	600	-
240	2.3	11	13.50	"	"	600	-
178	2.95	8.5	18.00	"	"	600	-
146	3.4	7.4	22.00	"	"	600	-
119	3.75	6.7	27.00	"	"	600	-
97	4.4	5.7	33.00	"	"	600	-
75	5.9	4.1	43.00	"	"	600	-
60	6.8	3.2	54.00	"	"	600	-
46	7.9	2.5	70.00	"	"	600	-
50	9.0	4.0	64.06	BS04-../P04LA32	5.0	1000	-
45	10.5	3.6	71.18	"	"	1000	-
42	10.4	3.7	77.00	"	"	1000	-
36	12.9	2.9	90.00	"	"	1000	-
34.5	12.2	3.1	93.92	"	"	1000	-
31.5	14.5	2.6	102.9	"	"	1000	-
27.5	14.8	2.6	117.0	"	"	1000	-

**P = 0.075 kW**

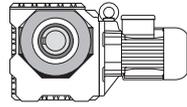


*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>			kg	N	N
rpm	Nm						
26.5	17	2.4	123.0	BS04-../P04LA32	5.0	1000	-
23.5	18.8	2.2	138.4	"	"	1000	-
21.5	18.3	2.1	150.3	"	"	1000	-
20	21.5	1.7	160.1	"	"	1000	-
18.5	20.5	1.95	174.0	"	"	1000	-
15	25	1.6	220.0	"	"	1000	-
13	28.5	1.45	251.6	"	"	1000	-
11	33	1.3	300.7	"	"	1000	-
9.5	37.5	1.15	338.3	"	"	1000	-
8.2	42.5	1.05	391.3	"	"	1000	-
22	21	5.0	146.8	BS06-../P04LA32	9.5	2000	-
19	24	3.7	171.0	"	"	2000	-
18.5	23	4.3	174.0	"	"	2000	-
15	28	3.5	220.0	"	"	2000	-
13	31.5	3.1	252.0	"	"	2000	-
10.5	38.5	2.8	315.3	"	"	2000	-
9.0	44.5	2.5	358.9	"	"	2000	-
7.7	51	2.2	418.0	"	"	2000	-

**P = 0.12 kW**

700	1.44	10	4.60	BS02-../P04LA32	4.6	450	-
600	1.68	12	5.40	"	"	510	-
475	2.05	12	6.75	"	"	590	-
390	2.45	10	8.25	"	"	600	-
300	3.1	8.1	10.67	"	"	600	-
240	3.7	6.8	13.50	"	"	600	-
178	4.75	5.3	18.00	"	"	600	-
146	5.4	4.6	22.00	"	"	600	-
119	6.0	4.2	27.00	"	"	600	-
97	7.0	3.6	33.00	"	"	600	-
75	9.4	2.6	43.00	"	"	600	-
60	10.8	2.0	54.00	"	"	600	-
46	12.7	1.55	70.00	"	"	600	-
84	9.4	3.9	38.42	BS04-../P04LA32	5.0	1000	-
67	11.6	3.3	47.86	"	"	1000	-
53	14.4	2.6	61.50	"	"	1000	-
50	14.4	2.5	64.06	"	"	1000	-
45	16.8	2.3	71.18	"	"	1000	-
42	16.6	2.3	77.00	"	"	1000	-
36	20.5	1.85	90.00	"	"	1000	-
34.5	19.5	1.95	93.92	"	"	1000	-
31.5	23	1.65	102.9	"	"	1000	-
27.5	23.5	1.6	117.0	"	"	1000	-
26.5	27	1.5	123.0	"	"	1000	-
23.5	30	1.4	138.4	"	"	1000	-
21.5	29	1.35	150.3	"	"	1000	-
20	34.5	1.05	160.1	"	"	1000	-
18.5	33	1.2	174.0	"	"	1000	-
15	40	1.0	220.0	"	"	1000	-
13	45.5	0.9	251.6	"	"	1000	-
11	53	0.81	300.7	"	"	1000	-
45	18	5.2	71.18	BS06-../P04LA32	9.5	2000	-
42	18.2	4.7	77.00	"	"	2000	-
36	22	4.5	90.00	"	"	2000	-
31.5	25	4.0	103.1	"	"	2000	-
27	27.5	3.4	118.8	"	"	2000	-



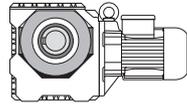
### P = 0.12 kW

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>					
rpm	Nm				kg	N	N
25	30.5	3.4	129.0	BS06-../P04LA32	9.5	2000	-
23	31.5	3.1	142.2	"	"	2000	-
22	33.5	3.2	146.8	"	"	2000	-
19	38.5	2.3	171.0	"	"	2000	-
18.5	37	2.6	174.0	"	"	2000	-
15	45	2.2	220.0	"	"	2000	-
13	51	1.95	252.0	"	"	2000	-
10.5	62	1.7	315.3	"	"	2000	-
9.0	71	1.55	358.9	"	"	2000	-
7.7	81	1.35	418.0	"	"	2000	-

### P = 0.18 kW

700	2.15	7.0	4.60	BS02-../P05LA32	6.3	450	-
600	2.5	8.0	5.40	"	"	510	-
475	3.1	8.1	6.75	"	"	590	-
390	3.7	6.8	8.25	"	"	600	-
300	4.65	5.4	10.67	"	"	600	-
240	5.5	4.5	13.50	"	"	600	-
178	7.1	3.5	18.00	"	"	600	-
146	8.2	3.0	22.00	"	"	600	-
119	9.1	2.7	27.00	"	"	600	-
97	10.6	2.4	33.00	"	"	600	-
75	14.2	1.7	43.00	"	"	600	-
60	16.3	1.35	54.00	"	"	600	-
46	19	1.05	70.00	"	"	600	-
240	5.5	10	13.50	BS03-../P05LA32	6.4	800	-
169	7.7	7.1	19.00	"	"	800	-
128	9.2	6.0	25.00	"	"	800	-
97	10.8	5.1	33.00	"	"	800	-
83	13.2	4.2	39.00	"	"	800	-
64	15.5	3.5	50.00	"	"	800	-
52	17.5	2.7	62.00	"	"	800	-
43	20	2.0	75.00	"	"	800	-
360	3.7	8.1	8.93	BS04-../P05LA32	6.8	1000	-
300	4.45	7.2	10.73	"	"	1000	-
245	5.4	6.1	13.09	"	"	1000	-
197	6.7	5.2	16.31	"	"	1000	-
153	8.5	4.4	20.96	"	"	1000	-
132	9.8	3.5	24.25	"	"	1000	-
123	9.9	3.8	26.21	"	"	1000	-
102	11.7	3.2	31.50	"	"	1000	-
84	14.1	2.6	38.42	"	"	1000	-
67	17.4	2.2	47.86	"	"	1000	-
53	21.5	1.75	61.50	"	"	1000	-
50	21.5	1.65	64.06	"	"	1000	-
45	25	1.5	71.18	"	"	1000	-
42	24.5	1.55	77.00	"	"	1000	-
36	31	1.25	90.00	"	"	1000	-
34.5	29	1.3	93.92	"	"	1000	-
31.5	34.5	1.1	102.9	"	"	1000	-
27.5	35.5	1.05	117.0	"	"	1000	-
26.5	40.5	1.0	123.0	"	"	1000	-
23.5	45	0.93	138.4	"	"	1000	-
21.5	43.5	0.9	150.3	"	"	1000	-
18.5	50	0.8	174.0	"	"	1000	-
66	18.7	4.7	48.60	BS06-../P05LA32	11	2000	-

**P = 0.18 kW**

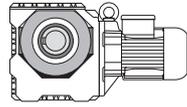


*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>					
rpm	Nm				kg	N	N
56	21.5	4.2	58.15	BS06-../P05LA32	11	2000	-
50	23	3.5	64.06	"	"	2000	-
45	27	3.5	71.18	"	"	2000	-
42	27	3.1	77.00	"	"	2000	-
36	33	3.0	90.00	"	"	2000	-
31.5	37.5	2.7	103.1	"	"	2000	-
27	41	2.3	118.8	"	"	2000	-
25	46	2.3	129.0	"	"	2000	-
23	47.5	2.1	142.2	"	"	2000	-
22	50	2.1	146.8	"	"	2000	-
19	57	1.55	171.0	"	"	2000	-
18.5	55	1.8	174.0	"	"	2000	-
15	67	1.45	220.0	"	"	2000	-
13	76	1.3	252.0	"	"	2000	-
10.5	93	1.15	315.3	"	"	2000	-
9.0	106	1.05	358.9	"	"	2000	-
7.7	122	0.9	418.0	"	"	2000	-
25	44	3.7	130.3	BS10-../P05LA32	23	6000	-
21	52	3.2	152.7	"	"	6000	-
17	64	2.7	188.6	"	"	6000	-
15	73	2.5	216.6	"	"	6000	-

**P = 0.26 kW**

700	3.1	13	4.60	BS03-../P08LA32	14	600	-
540	4.0	11	6.00	"	"	730	-
400	5.3	9.1	8.00	"	"	800	-
320	6.5	8.0	10.00	"	"	800	-
240	8.0	6.9	13.50	"	"	800	-
169	11.1	5.0	19.00	"	"	800	-
128	13.3	4.1	25.00	"	"	800	-
97	15.6	3.5	33.00	"	"	800	-
83	19.1	2.9	39.00	"	"	800	-
64	22.5	2.4	50.00	"	"	800	-
66	27	3.3	48.60	BS06-../P08LA32	19	2000	-
56	31	2.9	58.15	"	"	2000	-
50	33.5	2.4	64.06	"	"	2000	-
45	39	2.4	71.18	"	"	2000	-
42	39.5	2.2	77.00	"	"	2000	-
36	48	2.0	90.00	"	"	2000	-
31.5	54	1.85	103.1	"	"	2000	-
27	59	1.6	118.8	"	"	2000	-
25	66	1.6	129.0	"	"	2000	-
23	69	1.4	142.2	"	"	2000	-
18.5	80	1.25	174.0	"	"	2000	-
15	97	1.0	220.0	"	"	2000	-
13	110	0.9	252.0	"	"	2000	-
38	48	3.1	84.36	BS10-../P08LA32	31	5300	-
31	51	3.1	103.4	"	"	5600	-
25	63	2.6	130.3	"	"	6000	-
21	75	2.2	152.7	"	"	6000	-
17	93	1.85	188.6	"	"	6000	-
16	99	1.5	200.0	BS10Z-../P08LA32	32	6000	-
13	122	1.5	254.0	"	"	6000	-
11	139	1.35	302.5	"	"	6000	-
8.9	172	1.1	360.3	"	"	6000	-



*Danfoss*

**P = 0.26 kW**

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub>	M <sub>2</sub>	f <sub>B</sub>					
rpm	Nm				kg	N	N
7.5	200	0.95	432.4	BS10Z-../P08LA32	32	6000	-

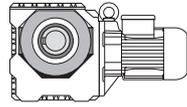
**P = 0.38 kW**

700	4.55	8.8	4.60	BS03-../P08LA32	14	600	-
540	5.9	7.5	6.00	"	"	730	-
400	7.8	6.2	8.00	"	"	800	-
320	9.5	5.5	10.00	"	"	800	-
240	11.7	4.7	13.50	"	"	800	-
169	16.3	3.4	19.00	"	"	800	-
128	19.5	2.8	25.00	"	"	800	-
97	22.5	2.4	33.00	"	"	800	-
83	27.5	2.0	39.00	"	"	800	-
64	32.5	1.7	50.00	"	"	800	-
102	25.5	3.1	31.50	BS06-../P08LA32	19	2000	-
78	33	2.6	41.29	"	"	2000	-
66	39.5	2.2	48.60	"	"	2000	-
56	46	2.0	58.15	"	"	2000	-
50	49	1.65	64.06	"	"	2000	-
45	57	1.65	71.18	"	"	2000	-
42	57	1.5	77.00	"	"	2000	-
36	70	1.4	90.00	"	"	2000	-
31.5	79	1.25	103.1	"	"	2000	-
27	87	1.1	118.8	"	"	2000	-
25	97	1.05	129.0	"	"	2000	-
23	100	0.98	142.2	"	"	2000	-
18.5	117	0.84	174.0	"	"	2000	-
57	47	3.2	57.12	BS10-../P08LA32	31	4350	-
53	45.5	3.3	60.74	"	"	4550	-
44.5	60	2.7	71.96	"	"	5000	-
38	70	2.1	84.36	"	"	5300	-
31	74	2.2	103.4	"	"	5600	-
25	92	1.8	130.3	"	"	6000	-
21	110	1.5	152.7	"	"	6000	-
17	136	1.25	188.6	"	"	6000	-
16	145	1.0	200.0	BS10Z-../P08LA32	32	6000	-
13	178	1.0	254.0	"	"	6000	-
11	200	0.95	302.5	"	"	6000	-

**P = 0.53 kW**

700	6.3	6.3	4.60	BS03-../P08LA32	14	600	-
540	8.2	5.4	6.00	"	"	730	-
400	10.8	4.4	8.00	"	"	800	-
320	13.2	3.9	10.00	"	"	800	-
240	16.4	3.4	13.50	"	"	800	-
169	22.5	2.4	19.00	"	"	800	-
128	27	2.0	25.00	"	"	800	-
97	31.5	1.75	33.00	"	"	800	-
83	39	1.4	39.00	"	"	800	-
64	45.5	1.2	50.00	"	"	800	-
132	30.5	2.5	24.25	BS06-../P08LA32	19	2000	-
123	30	2.6	26.21	"	"	2000	-
102	36	2.2	31.50	"	"	2000	-
78	46.5	1.85	41.29	"	"	2000	-
66	55	1.6	48.60	"	"	2000	-

P = 0.53 kW



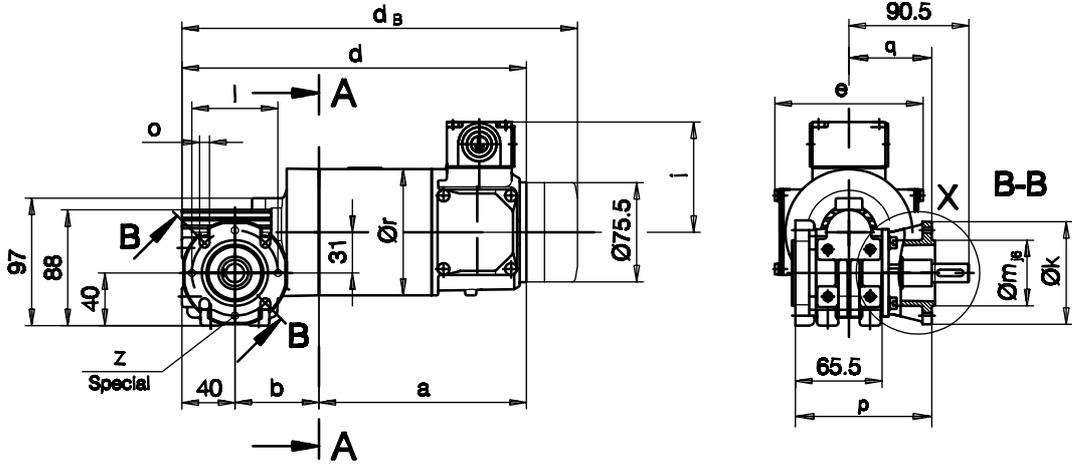
*Danfoss*

50 Hz			i	Type	m	F <sub>RN</sub>	F <sub>RV</sub>
n <sub>2</sub> rpm	M <sub>2</sub> Nm	f <sub>B</sub>					
56	64	1.4	58.15	BS06-../P08LA32	19	2000	-
50	68	1.2	64.06	"	"	2000	-
45	79	1.2	71.18	"	"	2000	-
42	80	1.05	77.00	"	"	2000	-
36	98	1.0	90.00	"	"	2000	-
31.5	110	0.91	103.1	"	"	2000	-
96	40	3.4	33.55	BS10-../P08LA32	31	3550	-
81	46.5	3.0	39.96	"	"	3800	-
68	55	2.6	47.59	"	"	4050	-
57	65	2.3	57.12	"	"	4350	-
53	63	2.4	60.74	"	"	4550	-
44.5	84	1.9	71.96	"	"	5000	-
38	98	1.55	84.36	"	"	5300	-
31	104	1.55	103.4	"	"	5600	-
25	129	1.25	130.3	"	"	6000	-
21	154	1.05	152.7	"	"	6000	-
17	190	0.89	188.6	"	"	6000	-

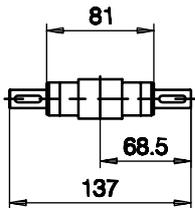
**9.23 Dimensional Drawings for  
DC Permanent-Magnet  
Worm Geared Motors**

Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à l'avant

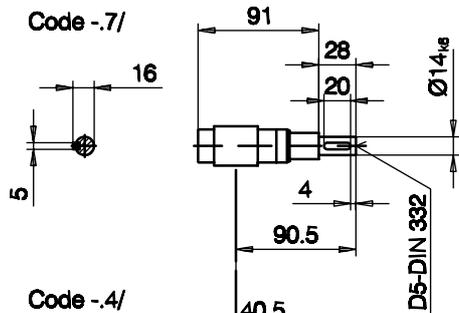
Code -3.V  
 (Code -4.V)



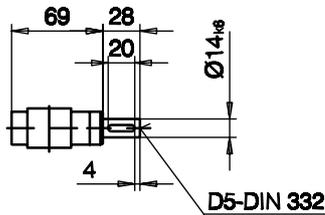
Code -3/



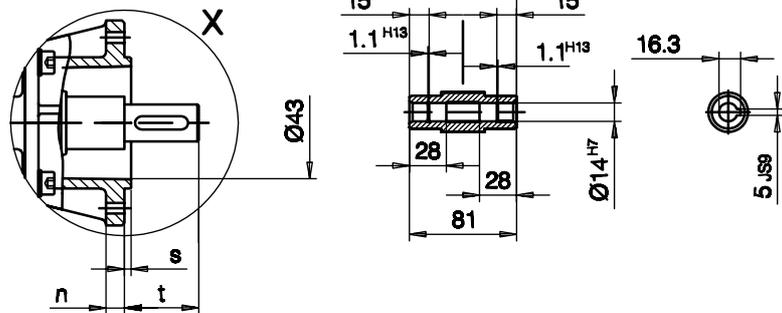
Code -7/



Code -1/



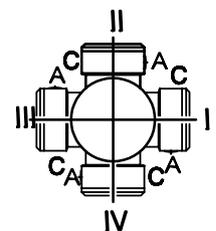
Code -4/



Flanschmaße/Flange dimensions/cotes de la bride

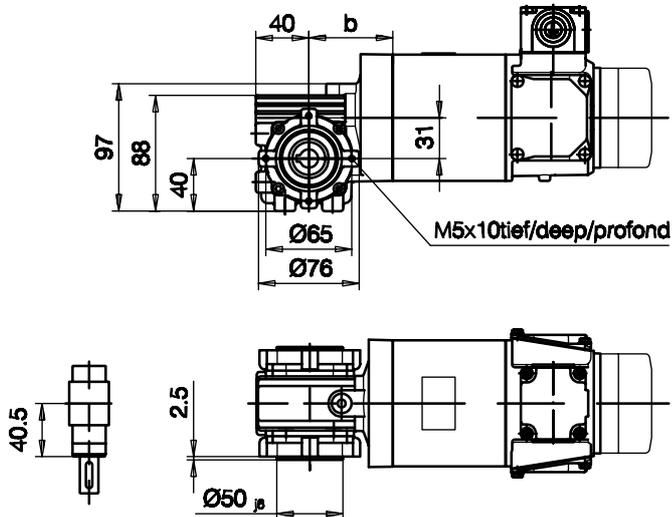
BS02	k	l	m	n	o	p	q	s	t	z
Standard -37V/	Ø80	Ø65	Ø50	7	5.5	103	62.5	2.5	28	-
Special -37V/	Ø80	Ø65	Ø50	7	5.5	103	62.5	2.5	28	4xM5
groß/big/grande -47V/	Ø110	Ø80	Ø60	8	6.6	103	62.5	2.5	28	-
Special -47V/	Ø110	Ø80	Ø60	8	6.6	103	62.5	2.5	28	4xM6

A-A  
 Standard

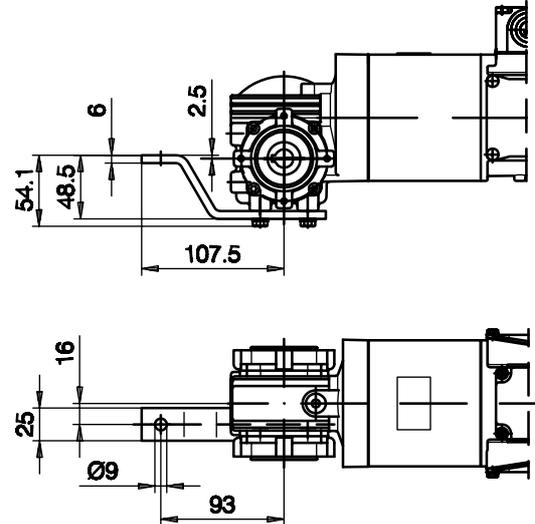


								Ausführung mit Bremse/with brake/avec frein				
Typ/Type/Type	a	b	d	e	i	r	u	E003				
								d <sub>B</sub>				
BS02-../P04..	156.5	63.5	260	112	84	96	172	298.7				
BS02-../P05..	191.5	65.5	297	120	89	106	177	335.7				

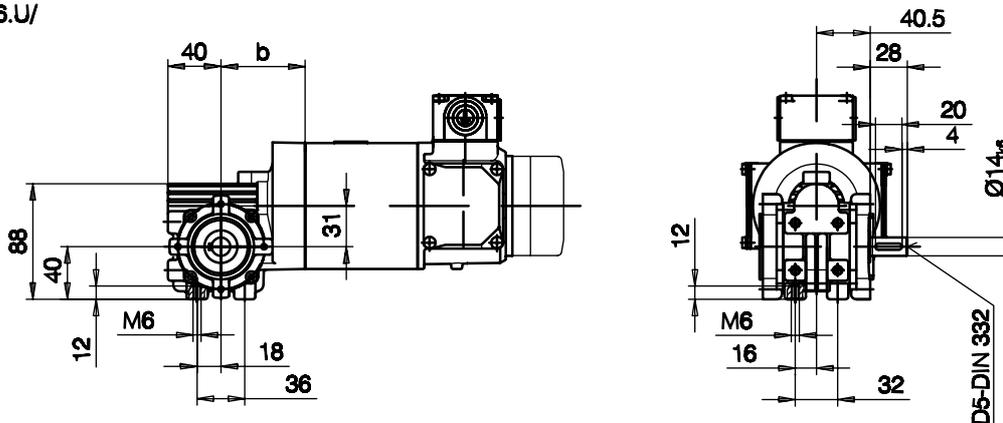
Flansch mit Gewindelöchern vorne  
 flange with tapped holes at front  
 bride avec trous taraudés à l'avant  
 Code -7.V/



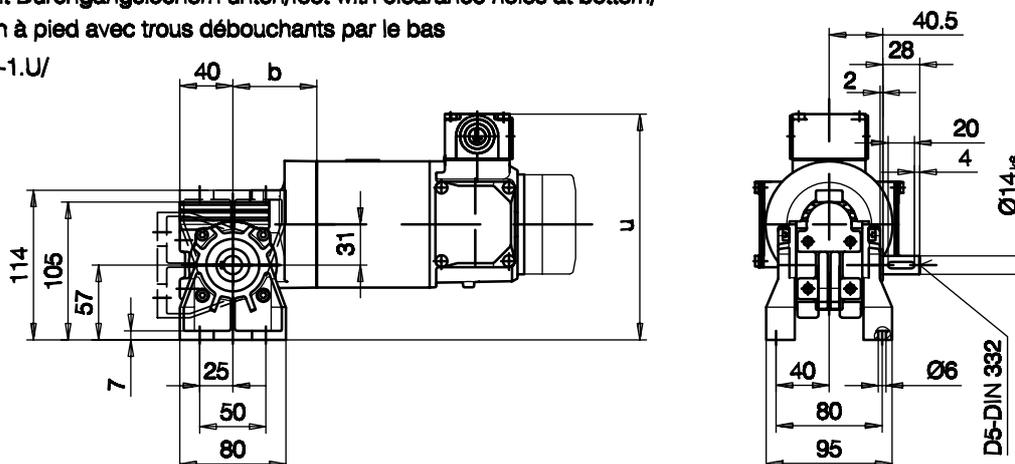
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant  
 Code -5.V/



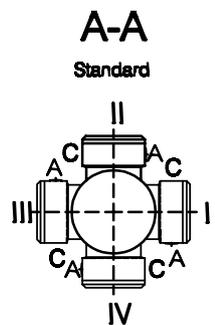
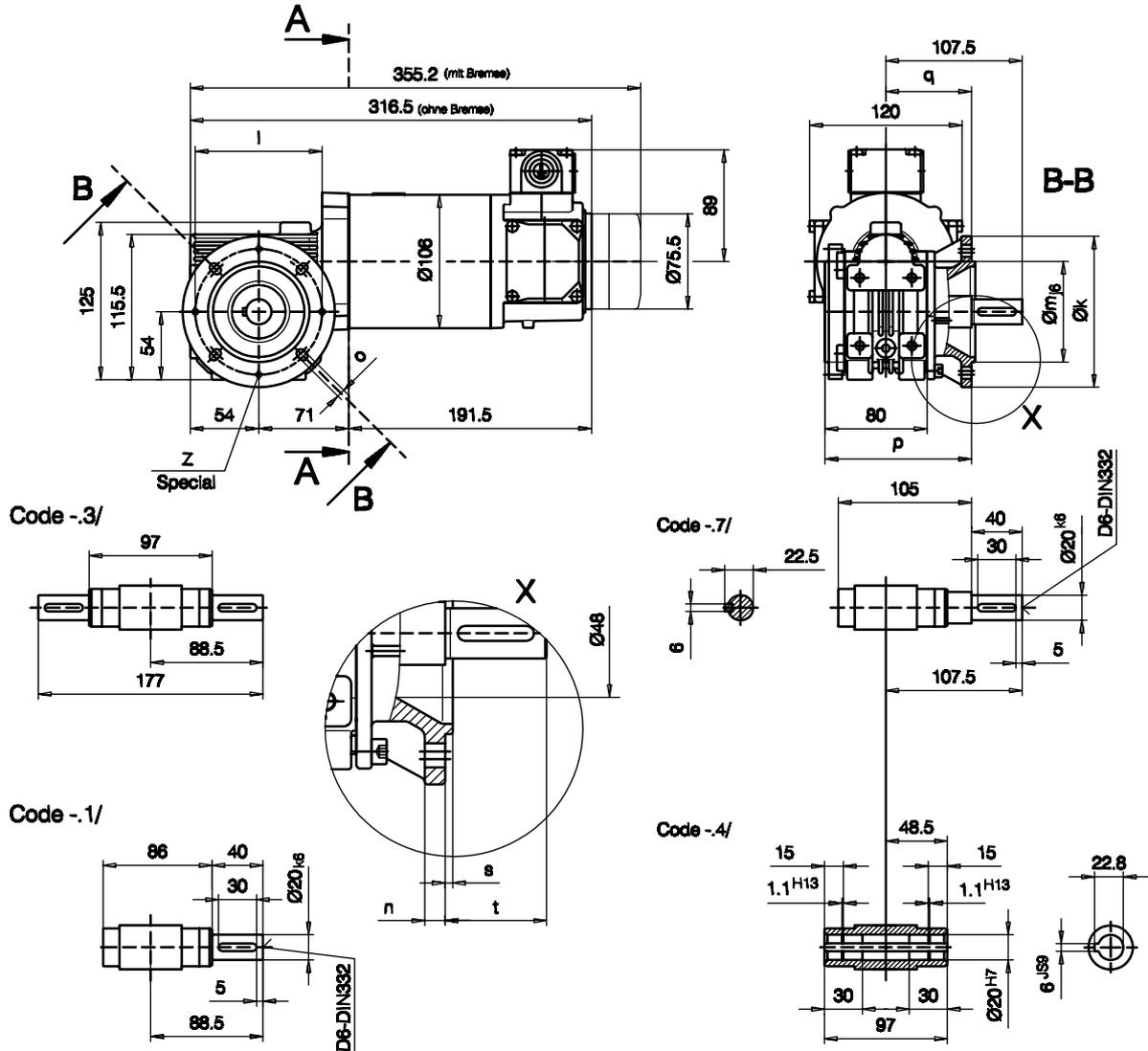
Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/ fixation à pied avec trous taraudés par le bas  
 Code -6.U/



Fuß mit Durchgangslöchern unten/foot with clearance holes at bottom/  
 fixation à pied avec trous débouchants par le bas  
 Code -1.U/



Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à l'avant  
 Code -3.V/

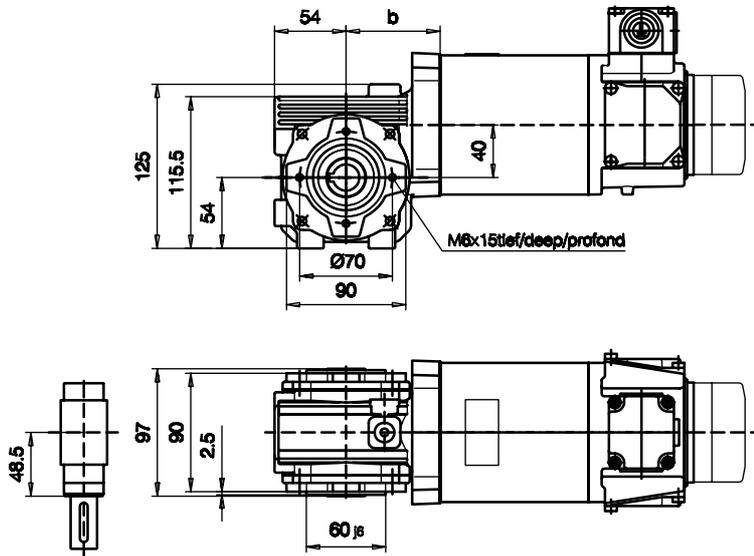


Flanschmaße/Flange dimensions/cotes de la bride

BS03	k	l	m	n	o	p	q	s	t	z
Standard -37V/	Ø120	Ø100	Ø80	8	6.6	115	67.5	3	40	-
Special -37V/	Ø120	Ø100	Ø80	8	6.6	115	67.5	3	40	4xM6

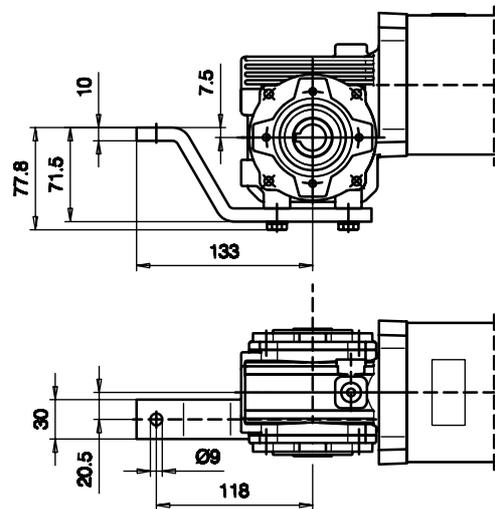
Flansch mit Gewindelöchern vorne  
 Flange with tapped holes at front  
 bride avec trous taraudés à l'avant

Code -7.V/



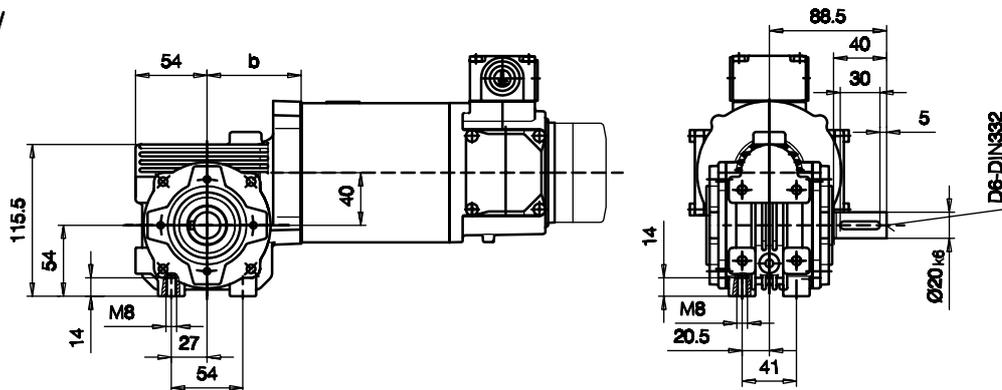
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant

Code -5.V/



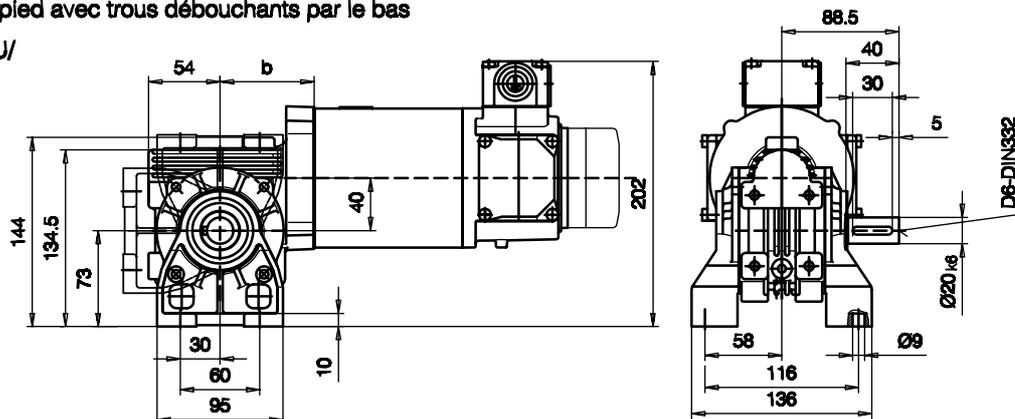
Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/ fixation à pied avec trous taraudés par le bas

Code -6.U/

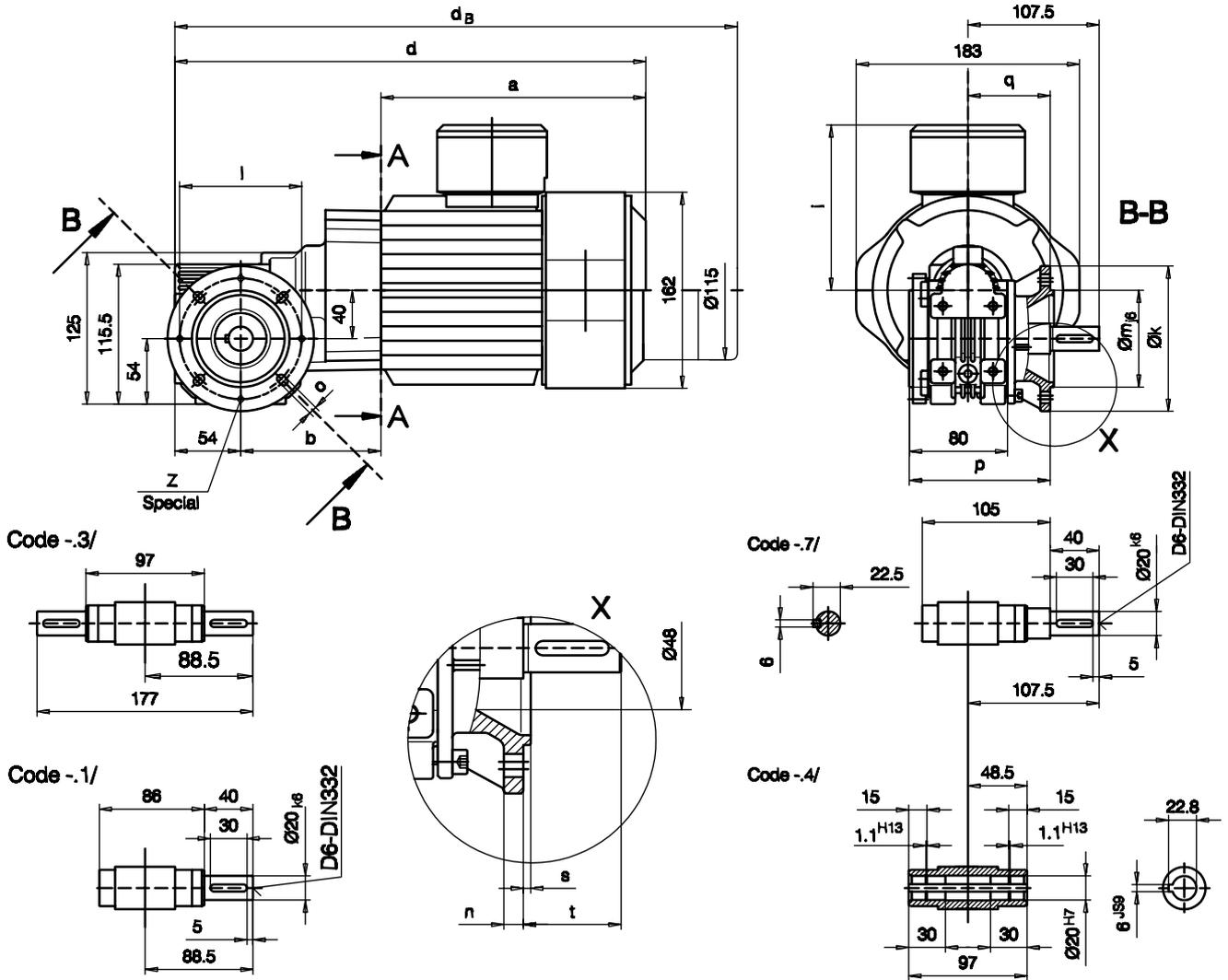


Fuß mit Durchgangslöchern unten/foot with clearance holes at bottom/  
 fixation à pied avec trous débouchants par le bas

Code -1.U/



Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à l'avant  
 Code -3.V/



Code -3/

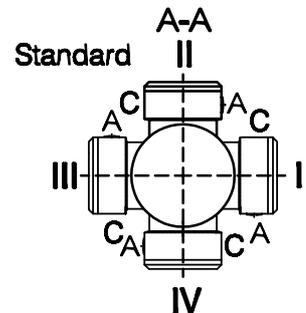
Code -7/

Code -1/

Code -4/

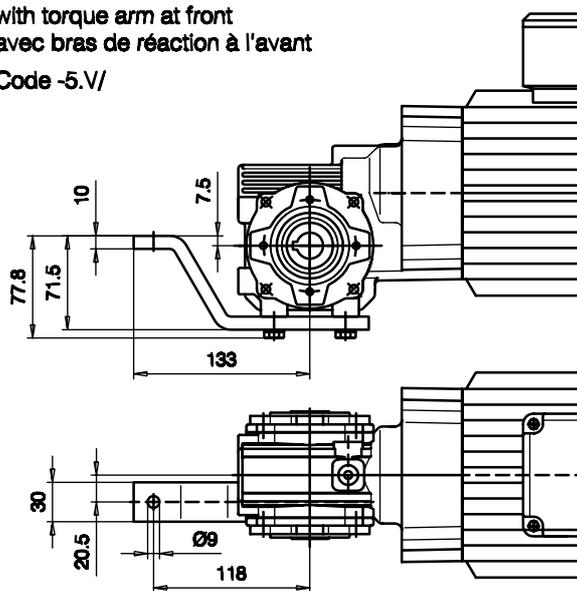
Flanschmaße/Flange dimensions/cotes de la bride

BS03	k	l	m	n	o	p	q	s	t	z
Standard -37V/	Ø120	Ø100	Ø80	8	6.6	115	67.5	3	40	-
Special -37V/	Ø120	Ø100	Ø80	8	6.6	115	67.5	3	40	4xM6

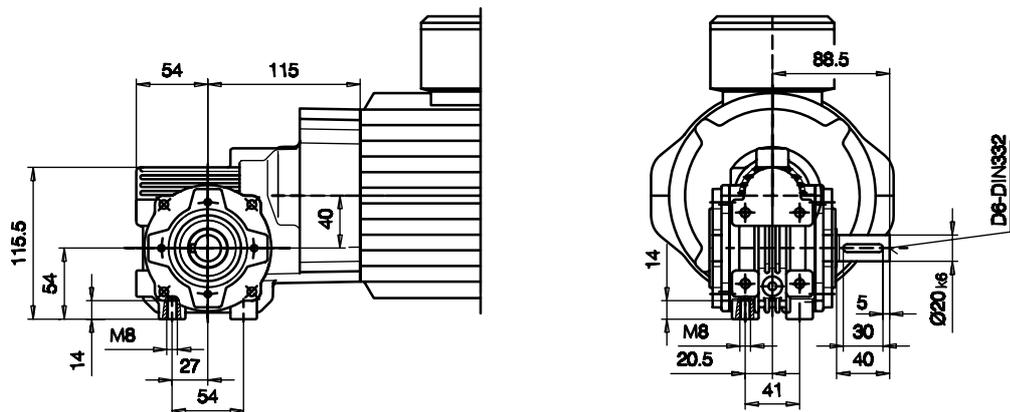


Typ/Type/Type	a	b	d	i	u	Ausführung mit Bremse/with brake/avec frein			
						E005-E008 d <sub>B</sub>	Z005-Z008 d <sub>B</sub>		
BS03-../P08..	217	115	386	136	249	447	461		

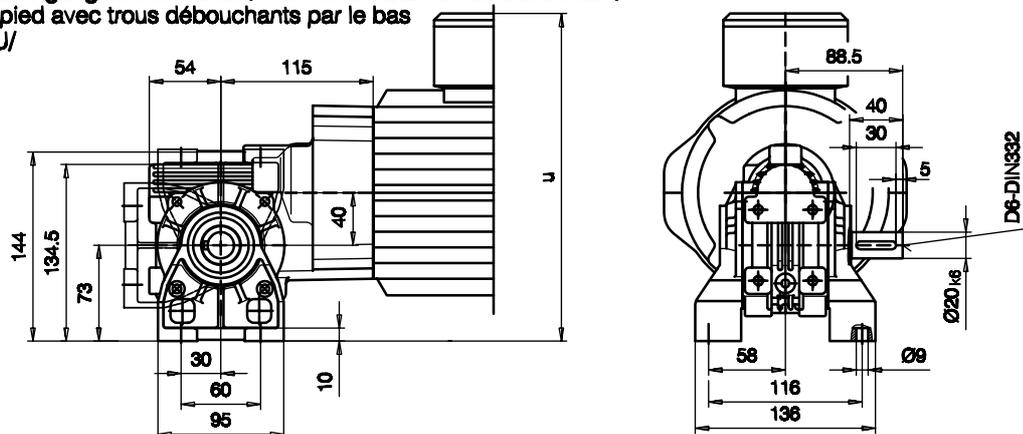
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant  
 Code -5.V/



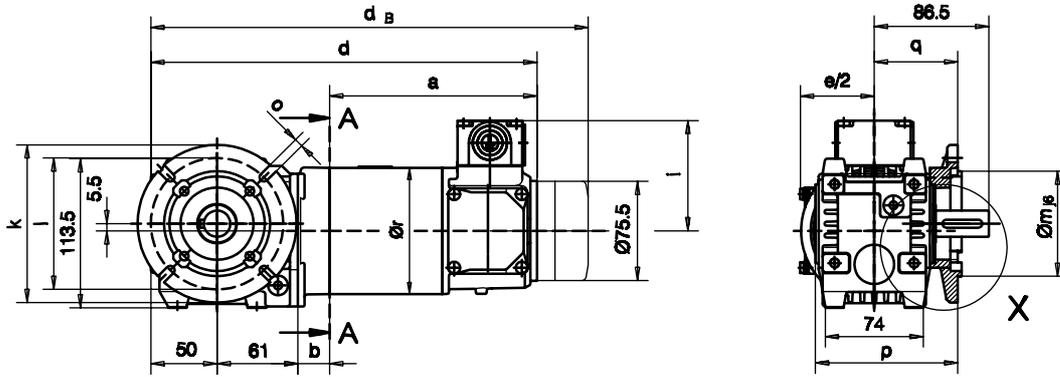
Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/ fixation à pied avec trous taraudés par le bas  
 Code -6.U/



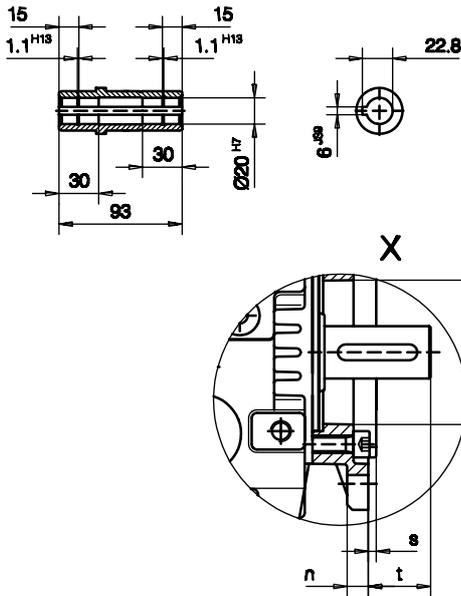
Fuß mit Durchgangslöchern unten/foot with clearance holes at bottom/  
 fixation à pied avec trous débouchants par le bas  
 Code -1.U/



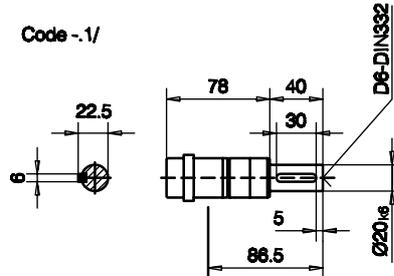
Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à l'avant  
 Code -3.V/



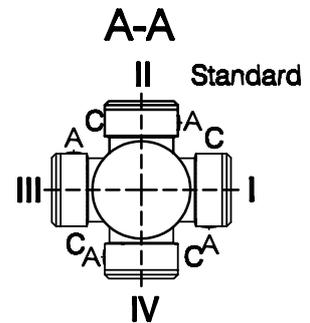
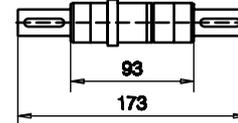
Code -4/



Code -1/



Code -3/

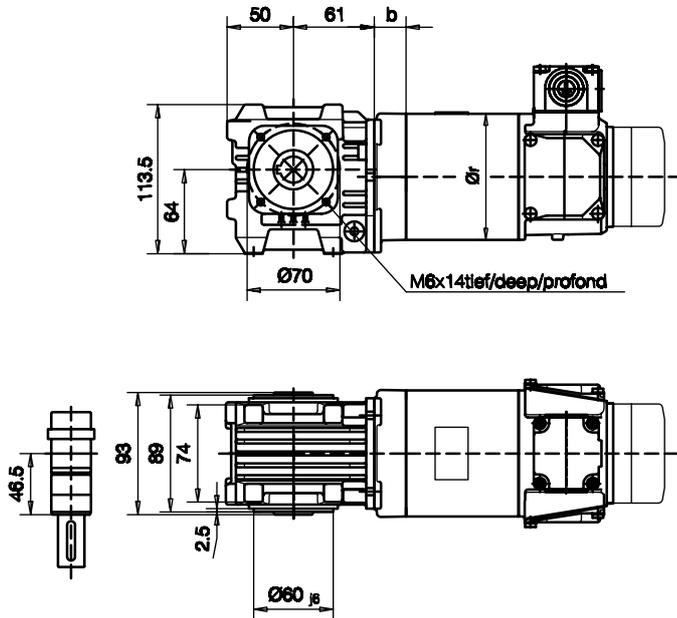


Flanschmaße/Flange dimensions/cotes de la bride

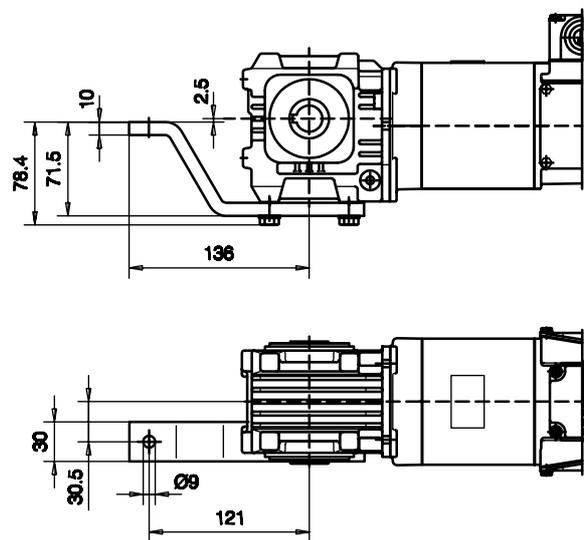
BS04	k	l	m	n	o	p	q	s	t
Standard -3.V/	Ø120	Ø100	Ø80	8	6.6	110.5	63	3	23.5

							Ausführung mit Bremse / with brake / avec frein				
Typ/Type/Type	a	b	d	e	i	r	E003				
							d <sub>B</sub>				
BS04-../P04..	156.5	24	291.5	112	84	96	330.2				
BS04-../P05..	191.5	26	328.5	120	89	106	367.2				

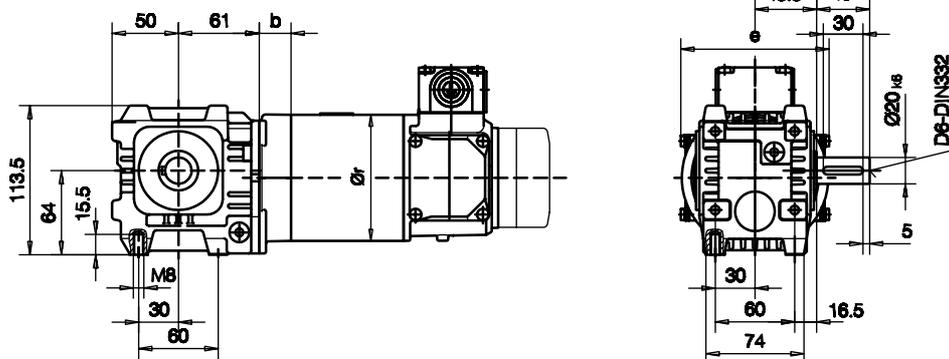
Flansch mit Gewindelöchern vorne  
 Flange with tapped holes at front  
 bride avec trous taraudés à l'avant  
 Code -7.V/



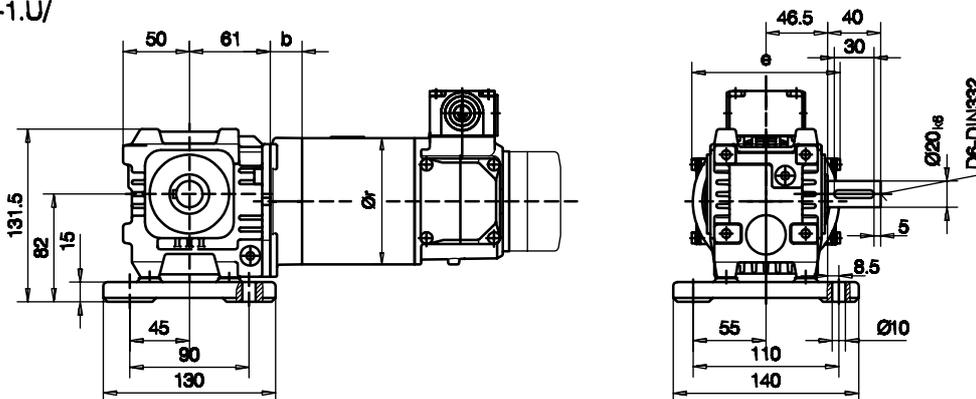
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant  
 Code -5.V/



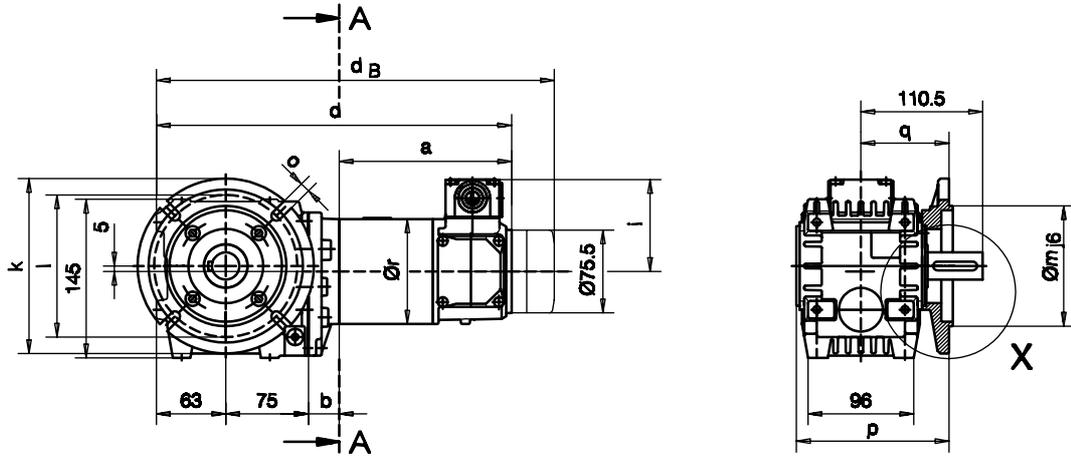
Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/ fixation à pied avec trous taraudés par le bas  
 Code -6.U/



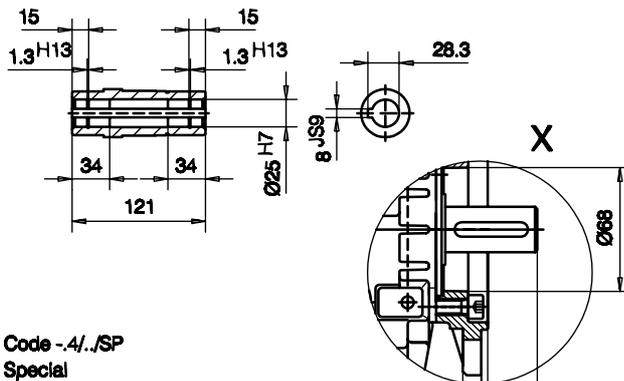
Fuß mit Durchgangslöchern unten/foot with clearance holes at bottom/  
 fixation à pied avec trous débouchants par le bas  
 Code -1.U/



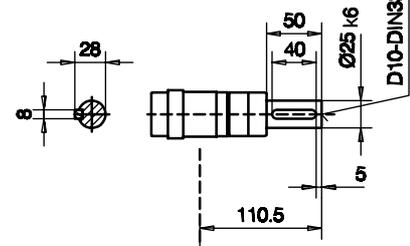
Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à lavant  
 Code -3.V/  
 (Code -4.V/)



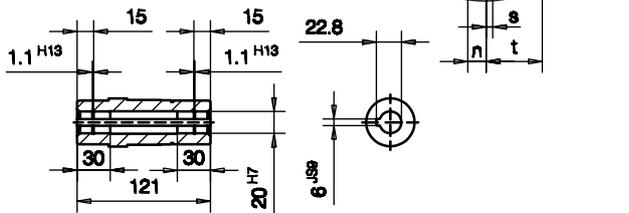
Code -4/  
 Standard



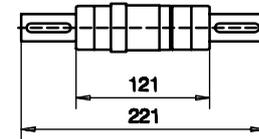
Code -1/



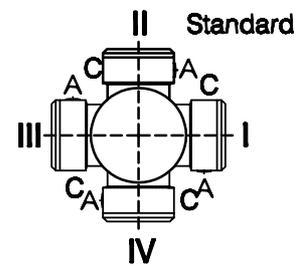
Code -4./SP  
 Special



Code -3/



A-A

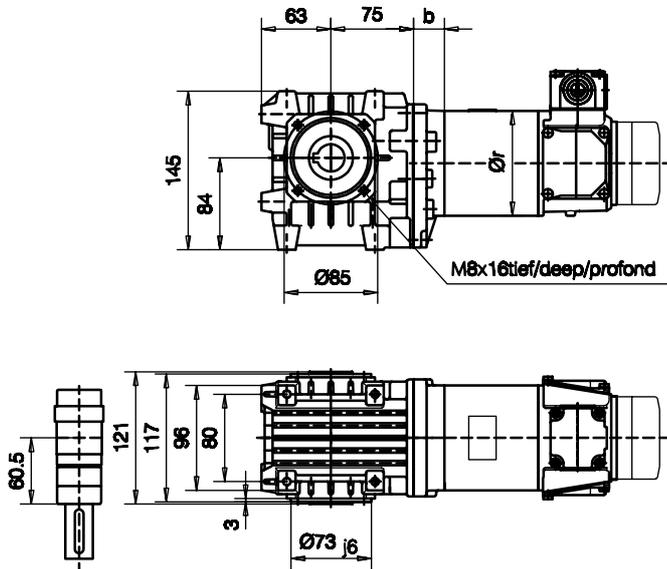


Flanschmaße/Flange dimensions/cotes de la bride

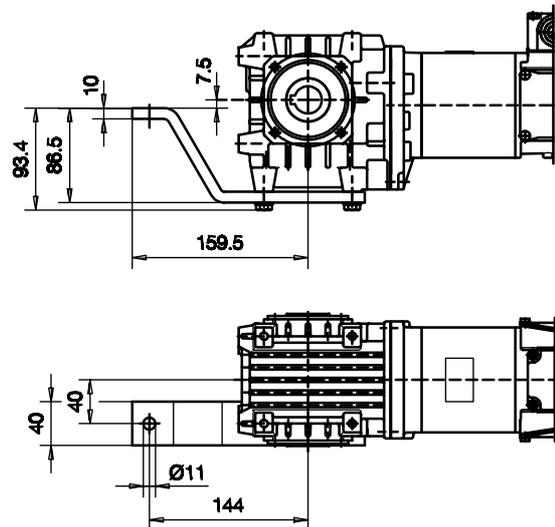
BS06	k	l	m	n	o	p	q	s	t
Standard -3./	Ø140	Ø115	Ø95	10	9	138.5	80	3	30.5
groß/big/grande -4./	Ø160	Ø130	Ø110	10	9	138.5	80	3.5	30.5

										Ausführung mit Bremse / with brake / avec frein				
Typ/Type/Type	a	b	d	i	r	E003		E005-E008		Z005-Z008				
						d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>			
BS06-../P04..	156.5	28	322.5	84	96	361.2								
BS06-../P05..	191.5	30	359.5	89	106	398.2								

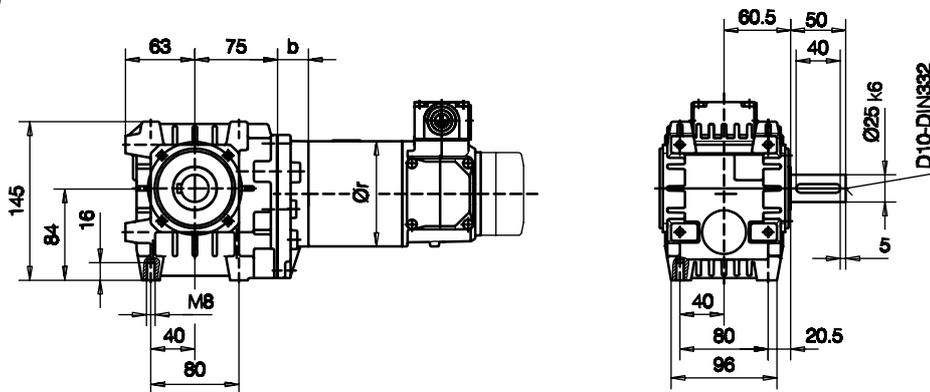
Flansch mit Gewindelöchern vorne  
 Flange with tapped holes at front  
 bride avec trous taraudés à lavant  
 Code -7.V/



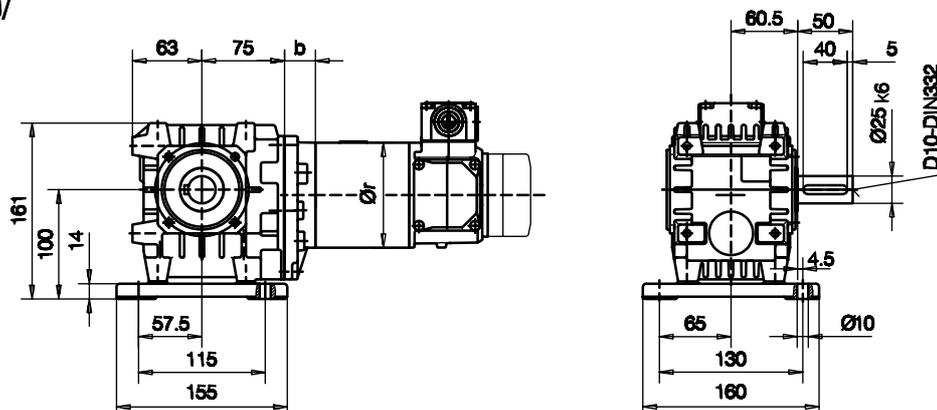
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à lavant  
 Code -5.V/



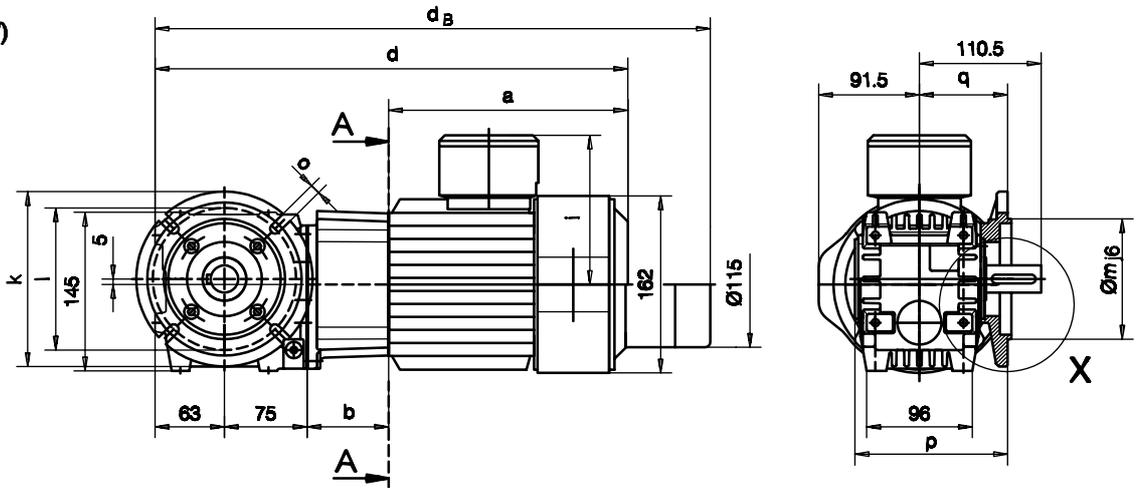
Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/ fixation à pied avec trous taraudés par le bas  
 Code -6.U/



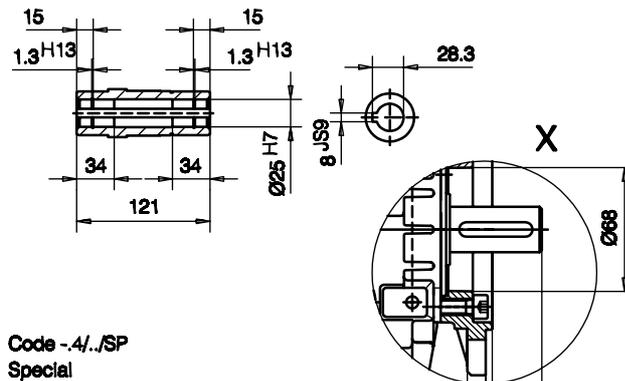
Fuß mit Durchgangslöchern/ foot with clearance holes at bottom/ fixation à pied avec trous débouchants par le bas  
 Code -1.U/



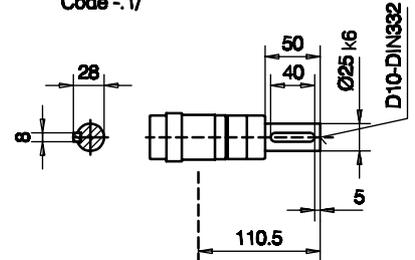
Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à lavant  
 Code -3.V/  
 (Code -4.V/)



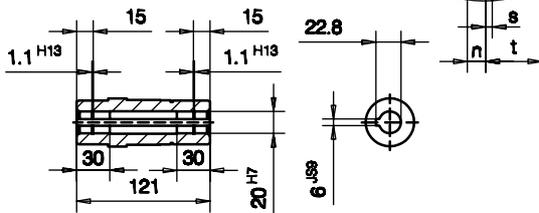
Code -A/  
 Standard



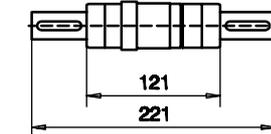
Code -1/



Code -A/..SP  
 Special

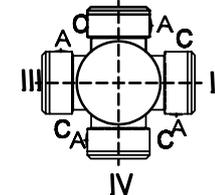


Code -3/



A-A

Standard II

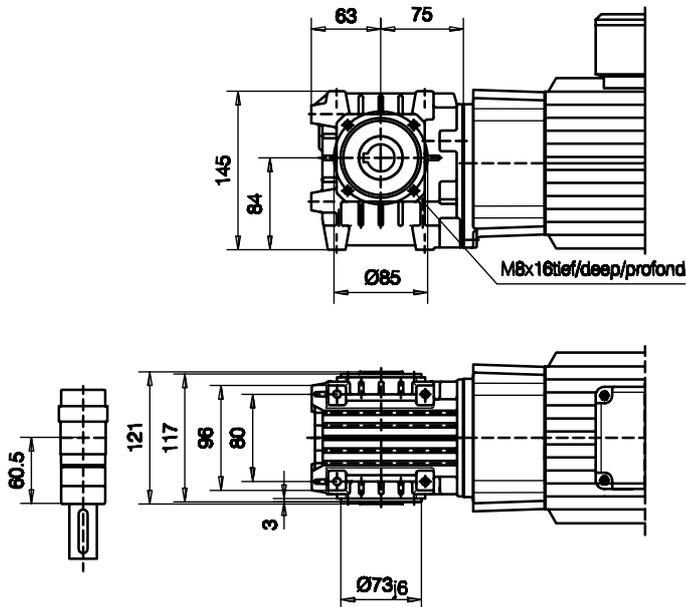


Flanschmaße/Flange dimensions/cotes de la bride

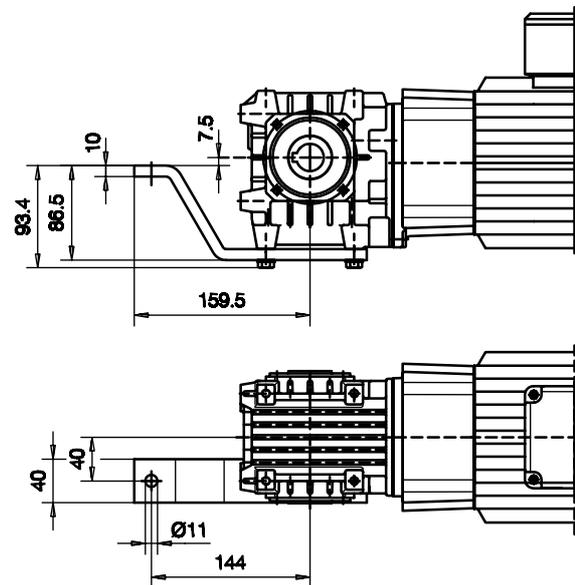
BS06	k	l	m	n	o	p	q	s	t
Standard -3./	Ø140	Ø115	Ø95	10	9	138.5	80	3	30.5
groß/big/grande -4./	Ø160	Ø130	Ø110	10	9	138.5	80	3.5	30.5

Ausführung mit Bremse / with brake / avec frein									
Typ/Type/Type	a	b	d	i	E005-E008		Z005-Z008		
					d <sub>B</sub>	d <sub>B</sub>			
BS06-../P08..	217	74	429	136	490	504			

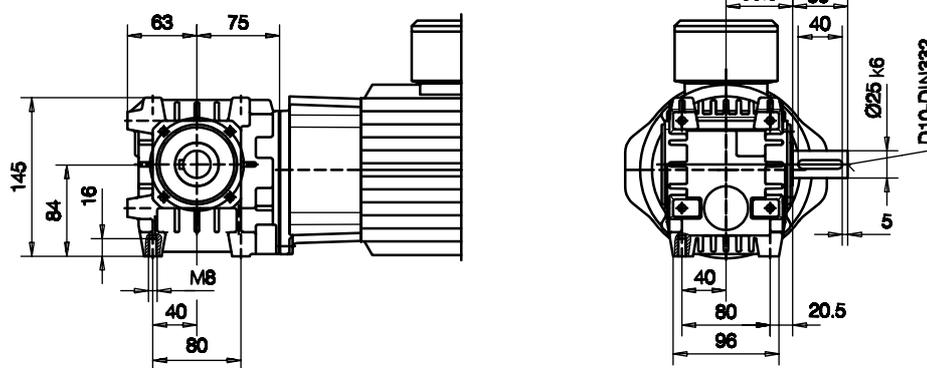
Flansch mit Gewindelöchern vorne  
 Flange with tapped holes at front  
 bride avec trous taraudés à lavant  
 Code -7.V/



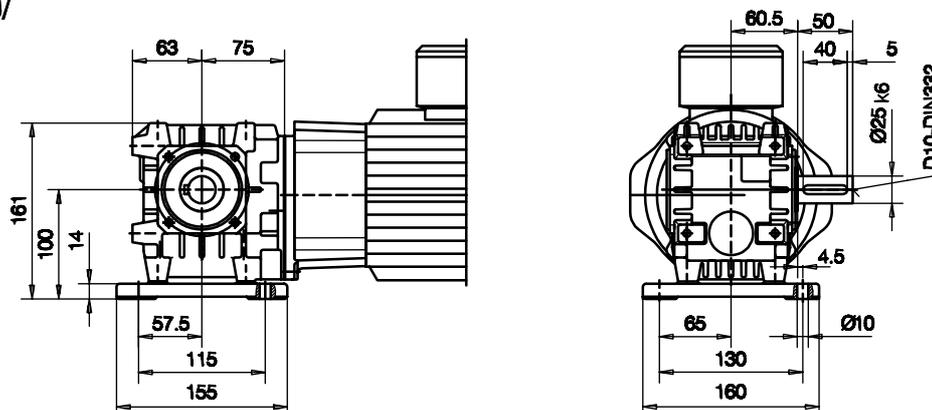
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à lavant  
 Code -5.V/



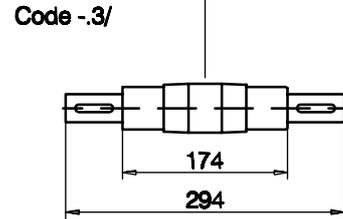
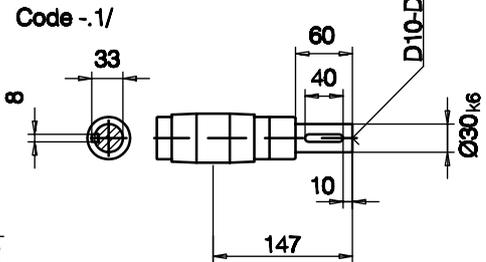
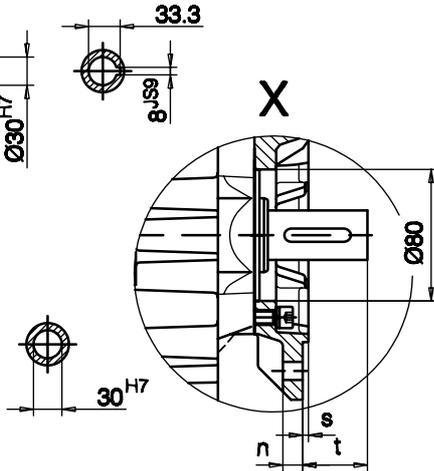
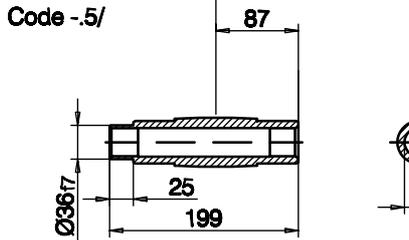
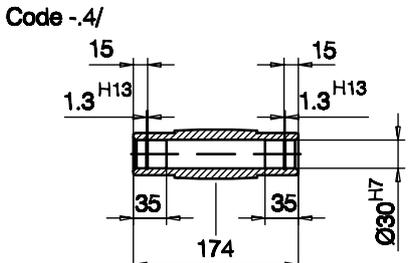
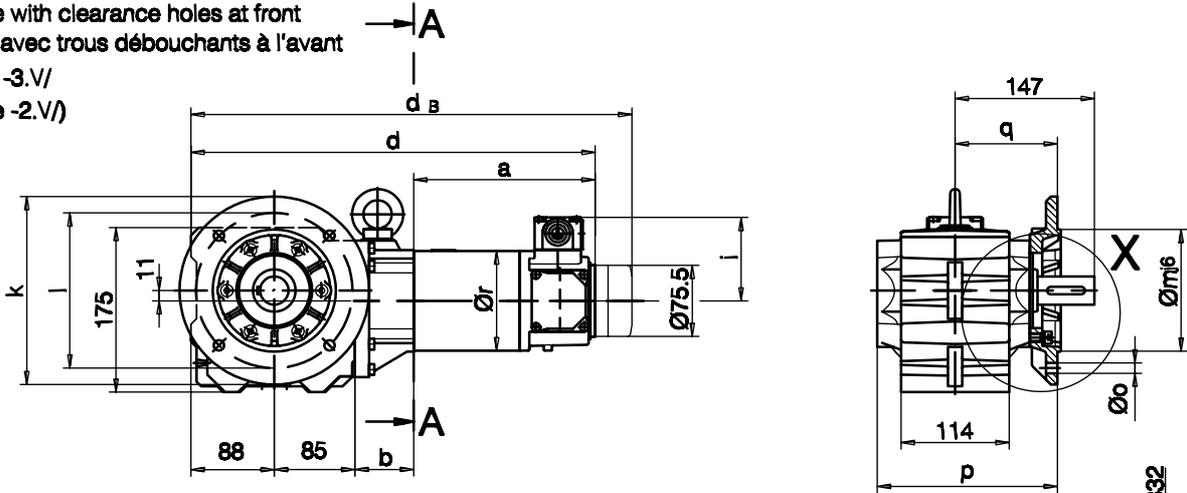
Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/ fixation à pied avec trous taraudés par le bas  
 Code -6.U/



Fuß mit Durchgangslöchern/ foot with clearance holes at bottom/ fixation à pied avec trous débouchants par le bas  
 Code -1.U/

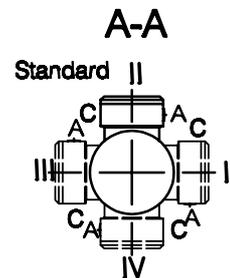


Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à l'avant  
 Code -3.V/  
 (Code -2.V/)



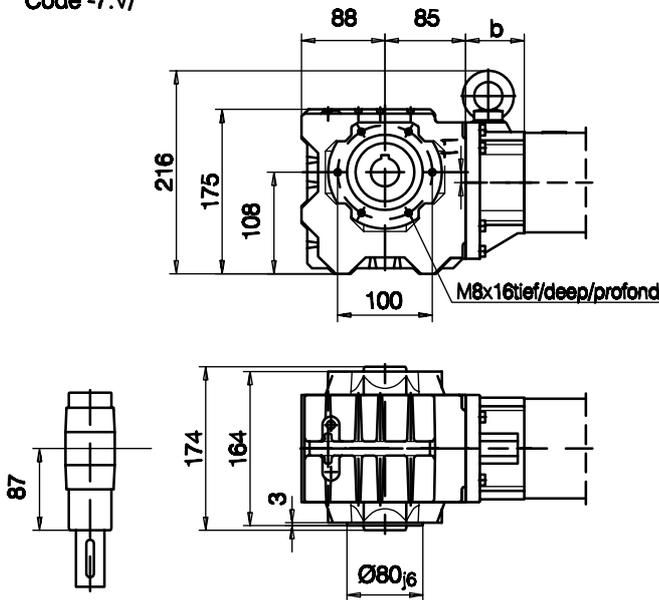
Flanschmaße/Flange dimensions/cotes de la bride

BS10(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	Ø200	Ø165	Ø130	12	Ø11	190	108	3.5	39
klein/small/petite -2.V/	Ø160	Ø130	Ø110	10	Ø9	183	101	3.5	46

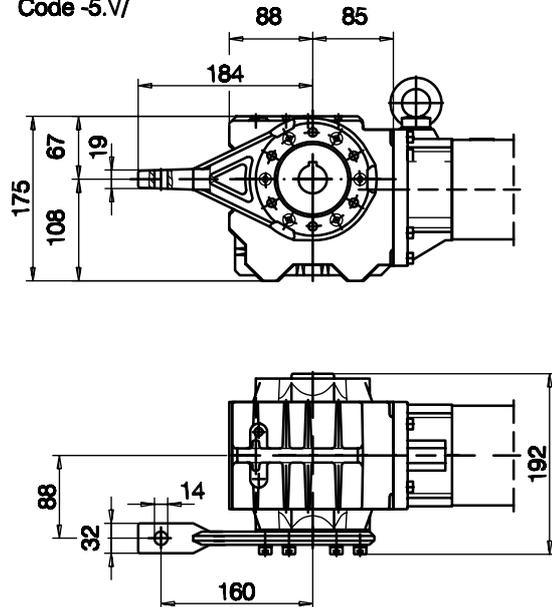


Typ/Type/Type	a	b	d	i	r	Ausführung mit Bremse / with brake / avec frein							
						E003		E005-E008		Z005-Z008			
						d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>	d <sub>B</sub>	c <sub>B</sub>		
BS10Z-../P04..	156.5	86	415.5	84	96	454.2							
BS10-../P05..	191.5	62	426.5	89	106	465.2							
BS10Z-../P05..	191.5	88	452.5	89	106	491.2							

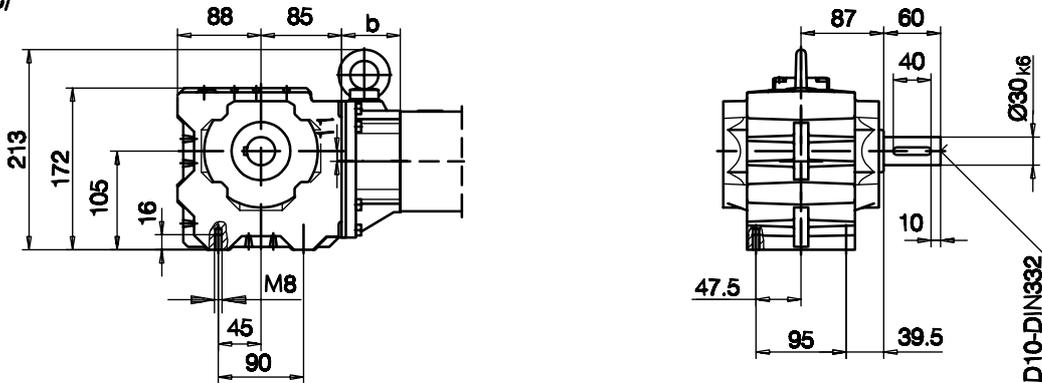
Flansch mit Gewindelöchern vorne  
 flange with tapped holes at front  
 bride avec trous taraudés à l'avant  
 Code -7.V/



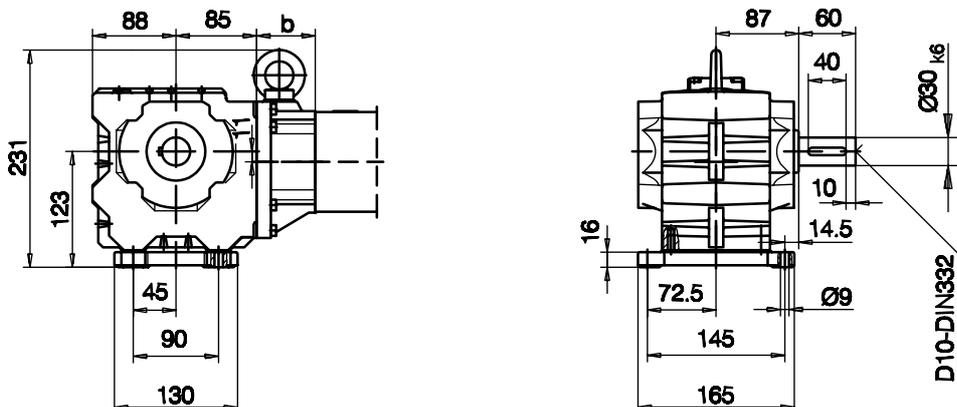
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant  
 Code -5.V/



Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/  
 fixation à pied avec trous taraudés par le bas  
 Code -6.U/

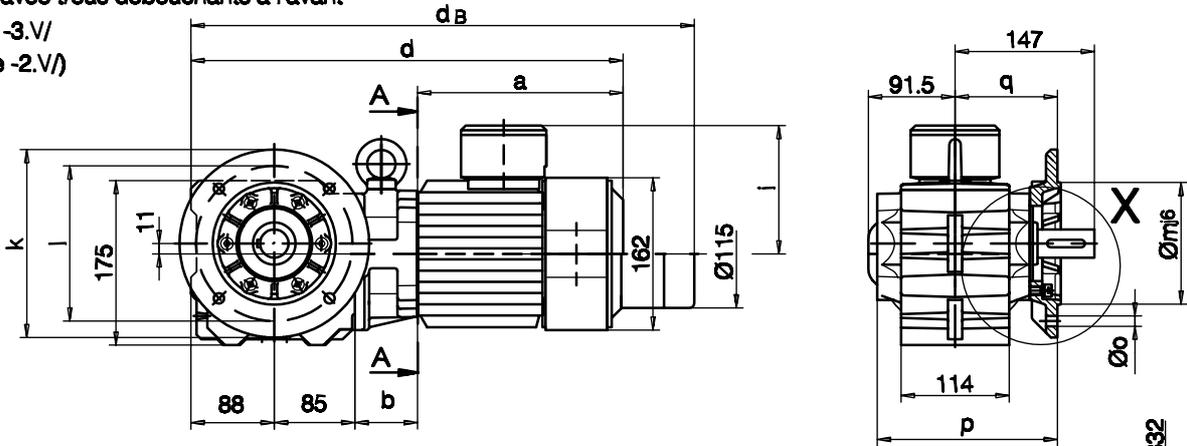


Fuß mit Durchgangslöchern unten/foot with clearance holes at bottom/  
 fixation à pied avec trous débouchants par le bas  
 Code -1.U/

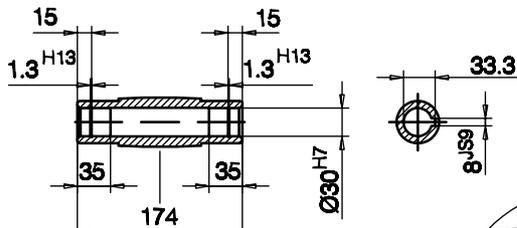


Flansch mit Durchgangslöchern vorne  
 flange with clearance holes at front  
 bride avec trous débouchants à l'avant

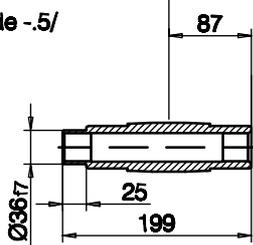
Code -3.V/  
 (Code -2.V/)



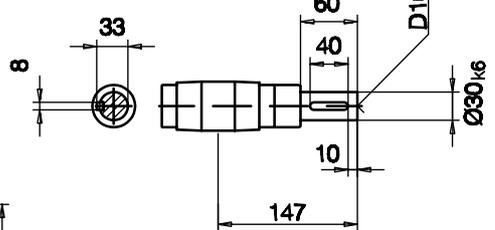
Code -4/



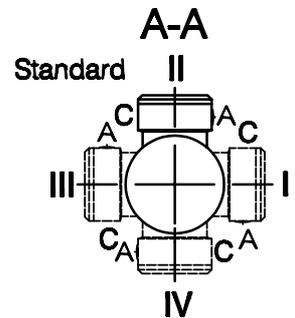
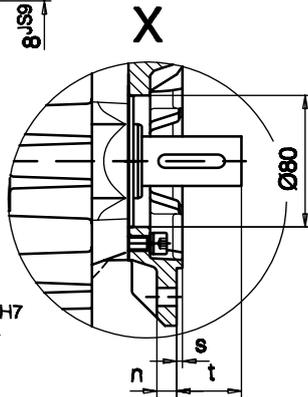
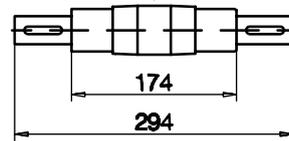
Code -5/



Code -1/



Code -3/

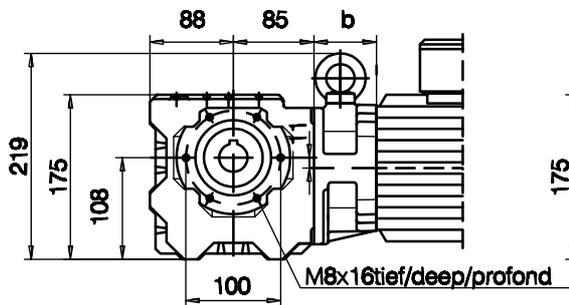


Flanschmaße/Flange dimensions/cotes de la bride

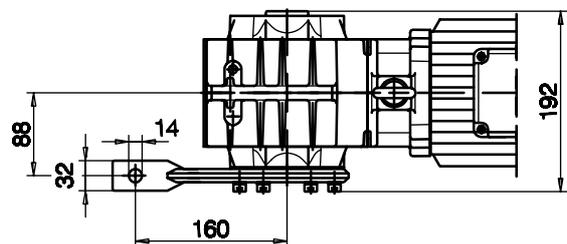
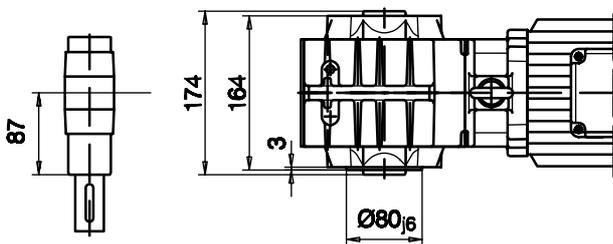
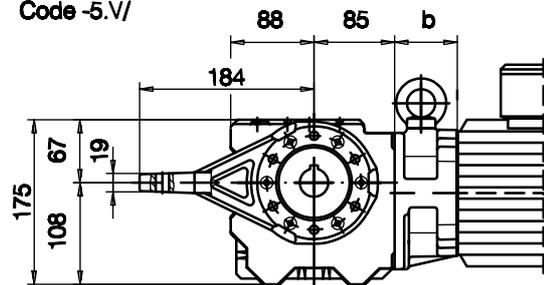
BS10(Z)	k	l	m	n	o	p	q	s	t
Standard -3.V/	Ø200	Ø165	Ø130	12	Ø11	190	108	3.5	39
klein/small/petite -2.V/	Ø160	Ø130	Ø110	10	Ø9	183	101	3.5	46

Ausführung mit Bremse / with brake / avec frein									
Typ/Type/Type	a	b	d	i	E005-E008		Z005-Z008		
					d <sub>B</sub>	d <sub>B</sub>			
BS10-../P08..	217	66	456	136		517	531		
BS10Z-../P08..	217	132	522	136		583	597		

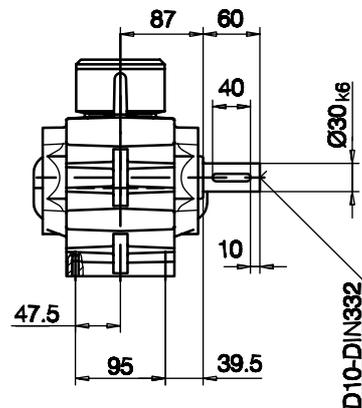
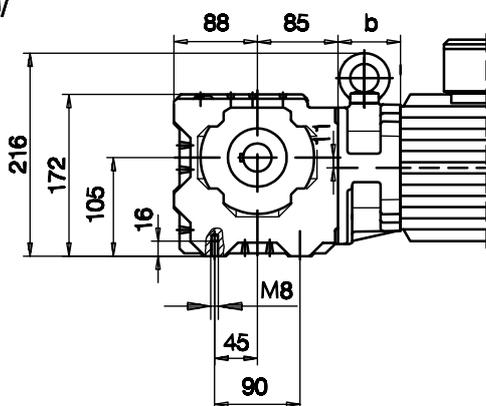
Flansch mit Gewindelöchern vorne  
 flange with tapped holes at front  
 bride avec trous taraudés à l'avant  
 Code -7.V/



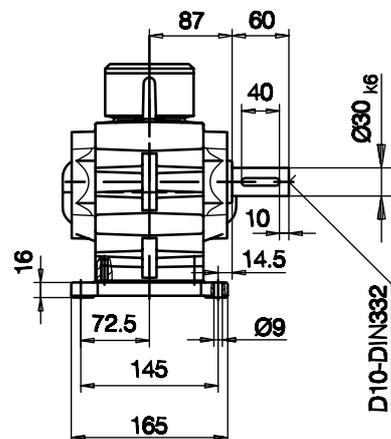
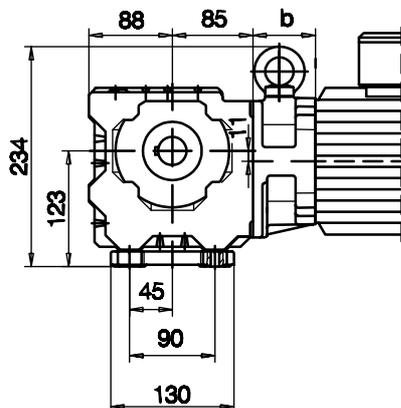
mit Drehmomentstütze vorne  
 with torque arm at front  
 avec bras de réaction à l'avant  
 Code -5.V/



Fuß mit Gewindelöchern unten/ foot with tapped holes at bottom/  
 fixation à pied avec trous taraudés par le bas  
 Code -6.U/

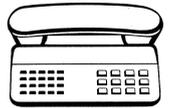


Fuß mit Durchgangslöchern unten/foot with clearance holes at bottom/  
 fixation à pied avec trous débouchants par le bas  
 Code -1.U/





# 10 International Organisation



**Ägypten, Egypt, Egypte**  
Universal Est.  
P.O. Box 101-Zamalek  
Cairo  
Tel./Fax: +20/2/576 32 64

**Argentinien, Argentina, Argentine**  
**Danfoss S.A.**  
San Lorenzo, 4310 - Munro  
1605 Buenos Aires  
Tel.: +54/11/47 56 42 00  
Fax: +54/11/47 56 41 00

**Belgien, Belgium, Belgique**  
**N.V. Danfoss S.A.**  
Erasmus Business Park  
Av. Joseph Wybran Laan 45  
B-1070 Brussels  
Tel.: +32/2/525 07 11  
Fax: +32/2/525 07 57

**Bolivien, Bolivia, Bolivie**  
**Danfoss Industrias Ltda.**  
Calle Cordillera, 331 - Modulo D14  
Santiago, Quilicura  
Tel.: +56/2/739 10 50  
Fax: +591/3/35 00 22

JUNG Y CIA. LTDA.  
Casilla 14478  
Santiago de Chile  
Tel.: +56/2/638 37 31  
Fax: +56/2/632 35 06

**Brasilien, Brazil, Brésil**  
**Danfoss do Brasil**  
**Ind. e Com. Ltda.**  
Rua Nelson Francisco, 26  
Bairro do Limão  
02712-100 São Paulo - SP  
Tel.: +55/11/39 33 54 00  
Fax: +55/11/39 33 54 55

**Bulgarien, Bulgaria, Bulgarie**  
**Danfoss EOOD**  
5, Rezbarska Street  
Sofia 1510  
Tel.: +359/2/945 43 38  
945 46 57  
945 46 54  
Fax: +359/2/44 61 78

**Chile, Chile, Chili**  
**Danfoss Industrias Ltda.**  
Calle Cordillera, 331 - Modulo D14  
Santiago, Quilicura  
Tel.: +56/2/739 10 50  
Fax: +56/2/739 10 55

JUNG Y CIA. LTDA.  
Casilla 14478  
Santiago de Chile  
Tel.: +56/2/638 37 31  
Fax: +56/2/632 35 06

**China, China, Chine**  
**Danfoss Industries**  
**Limited (HK)**  
New Caohejing Tower,  
Room 1904-06  
509 Cao Bao Road  
Shanghai 200233  
Tel.: +86/21/64 85 19 72  
Fax: +86/21/64 85 19 77

**Dänemark, Denmark, Danemark**  
**Danfoss A/S**  
Sales Denmark  
Jegstrupvej 3  
DK-8361 Hasselager  
Tel.: +45/89 48 91 11  
Fax: +45/89 48 93 11

**Deutschland, Germany, Allemagne**  
**Danfoss Antriebs- und**  
**Regeltechnik GmbH**  
Postfach 10 04 53  
63004 Offenbach  
Tel.: +49/69/890 20  
Fax: +49/69/890 23 19

**Finnland, Finland, Finlande**  
**Danfoss Bauer Oy**  
Sarkatie 5, P.O. Box 30  
FIN-01721 Vantaa  
Tel.: +358/9/47 64 70 00  
Fax: +358/9/47 64 70 44

**Frankreich, France, France**  
**Danfoss Bauer S.à.r.l.**  
309, Bd. des Technologies  
B.P. 104  
F-54715 Ludres Cedex  
Tel.: +33/383 15 16 17  
Fax: +33/383 15 16 00

Filiale, Branch office, Filiale  
Region Ile de France  
12-16 rue de Vincennes  
Tour Orion  
F-93102 Montreuil Cedex  
Tel.: +33/148 57 10 35  
Fax: +33/148 57 04 01  
Region Rhone-Alpes  
14 rue Robert  
F-69006 Lyon La Part Dieu  
Tel.: +33/478 24 16 23  
Fax: +33/478 52 43 20

Region Nord  
3 rue Archimède  
F-59650 Villeneuve D'Ascq  
Tel.: +33/320 47 41 71  
Fax: +33/320 05 91 85  
Grundregion Ouest

1 rue Julien Videment  
Immeuble "Anne de Bretagne"  
F-44200 Nantes  
Tel.: +33/240 48 68 71  
Fax: +33/240 47 73 52

**Griechenland, Greece, Grèce**  
**Danfoss E.P.E.**  
27 Possidonos Avenue & Athanassiou  
Diakou Str.  
18344 Moschato, Attica  
Tel.: +30/1/941 17 44  
Fax: +30/1/941 17 57

AEVEKO - Angelos E. Economides  
225 - 227 Syngrou Avenue  
GR-17121 Nea Smyrni - Athens  
Tel.: +30/1/933 39 28,  
931 08 38  
Fax: +30/1/935 64 21

**Großbritannien, Great Britain,**  
**Grande-Bretagne**  
**Danfoss Bauer Ltd.**  
Industrial Estate  
GB-Winsford, Cheshire CW7 3RL  
Tel.: +44/1606/55 13 34  
Fax: +44/1606/55 91 25

**Guatemala, Guatemala, Guatemala**  
J.C. NIEMANN  
Apartado Postal 290  
Guatemala Ciudad  
Tel.: +502/331 54 54  
Fax: +502/334 74 53

**Hongkong, Hongkong, Hongkong**  
**Danfoss Industries Ltd.**  
Room 1506 - 07  
Pacific Plaza 410-418  
des Voeus Road West  
Hong Kong  
Tel.: +852/25 17 38 72  
Fax: +852/25 17 39 08

**Indien, India, Inde**

**Danfoss Industries Pvt. Ltd.**

243, Old Mahabalipuram Road  
Sholinganallur  
Chennai - 600 119  
Tel.: +91 / 44 / 496 35 11,  
496 35 16  
Fax: +91 / 44 / 496 35 17

International Combustion (India) Ltd.

107/1, Park Street  
Calcutta - 700016  
Tel.: +91 / 33 / 245 75 22,  
226 17 34  
Fax: +91 / 33 / 249 37 13

**Irland, Ireland, Irlande**

**J.J. Sampson & Son Ltd.**

Unit A1  
Nangor Road Business Park  
Dublin 12  
Tel.: 353 / 1 / 626 81 11  
Fax: 353 / 1 / 626 93 34

**Island, Iceland, Islande**

**Danfoss hf.**

Skútubogur 6  
104 Reykjavik  
Tel.: +354 / 510 41 00  
Fax: +354 / 510 41 10

**Israel, Israel, Israël**

I. Ettner - Representations  
P.O. Box 568  
Tel-Aviv 61004  
Tel.: +972 / 3 / 648 51 41  
Fax: +972 / 3 / 648 69 89

**Italien, Italy, Italie**

**Danfoss S.r.l.**

Corso Tazzoli 221  
I-10137 Torino  
Tel.: +39 / 011 / 300 05 11  
Fax: +39 / 011 / 300 05 73

**Japan, Japan, Japon**

LEYBOLD Co., Ltd.  
Tokyo Tatemono Bldg.  
Yaesu 1-9-9, Chuo-Ku  
103-0028 Tokyo  
Tel.: +81 / 3 / 32 72 18 61  
Fax: +81 / 3 / 32 81 44 90

**Jugoslawien, Yugoslavia, Yougoslavie**

**Danfoss d. o. o.**

Prizrenska 6/III  
11000 Beograd  
Tel.: +381 / 11 / 361 60 77  
Fax: +381 / 11 / 68 86 21

**Kanada, Canada, Canada**

**Danfoss Inc.**

7880 Tranmere Drive  
Mississauga, Ontario L5S 1L9  
Tel.: +1 / 905 / 676 60 00  
Fax: +1 / 905 / 676 89 80

**Danfoss Inc.**

**Western Canada Sales Office**

3505-62 Ave. S. E.  
Calgary, Alberta T2C 1P5  
Tel.: +1 / 403 / 236 96 60  
Fax: +1 / 403 / 236 08 26

**Kolumbien, Colombia, Colombie**

**Danfoss S.A.**

Calle 66, No. 1N-63, Bodega 19  
Barrio Calima  
Cali  
Tel.: +57 / 2 / 449 08 23  
439 19 09  
439 19 10  
Fax: +57 / 2 / 449 08 24

**Korea, Korea, Corée**

Chemiko Trading Co. Ltd.  
Kangnam P.O. Box 1436  
Seoul  
Tel.: +82 / 2 / 567 53 36,  
562 78 61  
Fax: +82 / 2 / 554 12 84

**Kroatien, Croatia, Croatie**

**Danfoss d. o. o.**

Heinzelova 6a  
10000 Zagreb  
Tel.: +385 / 1 / 455 34 44  
Fax: +385 / 1 / 465 07 75

**Mexiko, Mexico, Mexique**

**Danfoss Compressors S.A.**

Carretera Miguel Alemán, 162  
66600 Apodaca, Monterrey - N.L.  
Tel.: +52 / 8 / 156 56 14  
156 56 15  
Fax: +52 / 8 / 156 56 25

Mechanical Automation Technology

Group, S.A. de C.V.  
Blvd. Valsequillo 1623  
Col. Universidades  
Puebla, Pue. C.P. 72589  
Tel.: +52 / 22 / 45 45 05  
Fax: +52 / 22 / 45 45 57

**Neuseeland, New Zealand, Nouvelle-Zélande**

**Danfoss (New Zealand) Limited**

8 George Bourke Drive  
P.O.Box 12-422, Penrose  
Mt Wellington, Auckland  
Tel.: +64 / 9 / 270 21 10  
Fax: +64 / 9 / 270 21 12

Paykel Engineering Supplies

P.O. Box 5046  
Wellesley St.  
Auckland  
Tel.: +64 / 9 / 268 36 00  
Fax: +64 / 9 / 268 37 20

**Niederlande, Netherlands, Pays-Bas**

**Danfoss Bauer B.V.**

Zuidermolenweg 7  
NL-1069 CE Amsterdam  
Tel.: +31 / 20 / 619 88 11  
Fax: +31 / 20 / 610 10 95

**Norwegen, Norway, Norvège**

**Danfoss Bauer AS**

Postboks 221  
N-2021 Skedsmokorset  
Vestvollveien 10  
N-2019 Skedsmokorset  
Tel.: +47 / 63 87 59 50  
Fax: +47 / 63 87 59 60

**Österreich, Austria, Autriche**

**Danfoss Ges.m.b.H.**

Danfoss-Straße 8  
A-2353 Guntramsdorf  
Tel.: +43 / 22 36 / 504 00  
Fax: +43 / 22 36 / 50 40 35

**Danfoss Bauer Ges.m.b.H.**

Gewerbehofstraße 358  
Postfach 3  
A-5071 Wals / Salzburg  
Tel.: +43 / 662 / 85 03 47  
85 03 48  
Fax: +43 / 662 / 85 03 47 20  
85 03 47 28

**Paraguay, Paraguay, Paraguay**

**Danfoss do Brasil Ind. e Com. Ltda.**

Rua Nelson Francisco, 26  
Bairro do Limão  
02712-100 São Paulo - SP  
Tel.: +55 / 11 / 39 33 54 00  
Fax: +55 / 11 / 39 33 54 55

**Peru, Peru, Pérou**

**Danfoss Industrias Ltda.**

Calle Cordillera, 331 - Modulo D14  
Santiago, Quilicura  
Tel.: +56 / 2 / 739 10 50  
Fax: +56 / 2 / 739 10 55

JUNG Y CIA. LTDA.

Casilla 14478  
Santiago de Chile  
Tel.: +56 / 2 / 638 37 31  
Fax: +56 / 2 / 632 35 06

**Polen, Poland, Pologne**

**Danfoss Sp. z o.o.**

Ul. Chrzanowska 5  
PL-05-825 Grodzisk Mazowiecki  
Tel.: +48 / 22 / 755 07 00  
Fax: +48 / 22 / 755 07 01

P.P. TOOLTEX

Radwanska 4a/1  
PL-90-453 Lodz  
Tel.: +48 / 42 / 636 17 46  
Fax: +48 / 42 / 636 11 64

**Portugal, Portugal, Portugal  
Danfoss Bauer Lda.**

Rua Tenente Gouveia, 33  
Quinta do Borel  
P-2720-525 Amadora  
Tel.: +351 / 21 / 495 09 17  
Fax: +351 / 21 / 495 03 76

**Rumänien, Romania, Roumanie  
Danfoss s.r.l.**

Str. Poterasi Nr. 10  
Sector 4  
Bucharest  
Tel.: +40 / 1 / 335 52 02  
+40 / 1 / 335 52 09  
Fax: +40 / 1 / 335 55 59

**Rußland, Russia, Russie  
ZAO Danfoss**

Polkovaja Ul. 13  
127018 Moscow  
Tel.: +7 / 095 / 792 57 57  
Fax: +7 / 095 / 792 57 58

**Schweden, Sweden, Suède  
Danfoss AB**

Industrigatan 7  
S-595 82 Mjölby  
Tel.: +46 / 142 / 885 00  
Fax: +46 / 142 / 885 09

**Schweiz, Switzerland, Suisse  
Danfoss AG**

Parkstrasse 6  
P.O. Box  
CH-4402 Frenkendorf  
Tel.: +41 / 61 / 906 11 11  
Fax: +41 / 61 / 906 11 21

**Singapur, Singapore, Singapour  
Danfoss Industries Pte. Ltd.**

6 Jalan Pesawat  
Singapore 619364  
Tel.: +65 / 261 40 80  
Fax: +65 / 261 04 88

UMW Equipment Systems Pte Ltd  
108 International Road  
Singapore 629173  
Tel.: +65 / 265 31 55  
Fax: +65 / 265 84 94, 265 94 53

**Slowakei, Slovakia, Slovaquie  
Danfoss spol. s.r.o.**

Chalúpkova 9  
P.O. Box 115  
SK-810 11 Bratislava 111  
Tel.: +420 / 7 / 55 56 46 12  
Fax: +420 / 7 / 55 56 45 69

**Slowenien, Slovenia, Slovénie  
Danfoss Trata d.d.**

Jozeta Jame 16  
P.O. Box 4820  
SI-1210 Ljubljana-Sentvid  
Tel.: +386 / 61 / 182 02 00  
Fax: +386 / 61 / 159 98 24

**Spanien, Spain, Espagne  
Danfoss S.A.**

Avda. Tenerife no. 22  
Pol. Ind. Norte  
E-28700 San Sebastián de  
los Reyes (Madrid)  
Tel.: +34 / 916 / 58 66 88  
Fax: +34 / 916 / 63 78 36

**Südafrika, South Africa,  
Afrique du Sud  
Danfoss (Pty) Ltd.**

P.O. Box 5022  
2128 Rivonia  
Tel.: +27 / 11 / 803 83 90  
Fax: +27 / 11 / 803 82 44

**EBERHARD BAUER GEARED  
MOTORS (PTY) LTD.**

P.O. Box 19007  
ZA-Fisher's Hill 1408  
Tel.: +27 / 11 / 828 97 15  
Fax: +27 / 11 / 822 41 35

**Taiwan, Taiwan, Taiwan**

Yung Cheng Industries, Ltd.  
23 Tung Feng St.  
P.O. Box 26-498  
Taipei  
Tel.: +886 / 2 / 27 09 16 50  
Fax: +886 / 2 / 27 08 08 30

**Thailand, Thailand, Thaïlande**

GLORY Engineering Co. Ltd.  
112/3 Moo 7 Soi Watsriwareenoi  
Bangna-Trad Rd.  
Tambon Bang-chaloung,  
Amphur Bangplee  
Samutprakarn 10540  
Tel.: +66 / 2 / 337 15 32,  
337 15 43  
Fax: +66 / 2 / 337 12 90

**Tschechische Republik,  
Czech Republic, République Tchèque  
Danfoss s.r.o.**

V Chotejné 7/765  
CZ-102 00 Praha 10  
Tel.: +420 / 2 / 83 01 41 11  
Fax: +420 / 2 / 70 17 53

**Türkei, Turkey, Turquie**

CEFIP-Makina & Endüstriyel Ürünler  
San. ve Dis. Tic. Ltd. Sti.  
Perpa Ticaret Merkezi A Blok  
Kat: 10 - 11-12 No.: 1474  
TR-80270 Okmeydani / Istanbul  
Tel.: +90 / 212 / 210 18 90  
Fax: +90 / 212 / 210 15 97

**SENKA-LTD.**

Kara Hasan Atli Is Merkezi-1203  
11 Sok. No. 4  
Yenisehir - Izmir  
Tel.: +90 / 232 / 469 55 55  
Fax: +90 / 232 / 433 43 71

**Ungarn, Hungary, Hongrie  
Danfoss Kft.**

Kat: 4/419  
H-1134 Budapest  
Tel.: +36 / 1 / 350 25 31  
Fax: +36 / 1 / 350 25 29

**Uruguay, Uruguay, Uruguay  
Danfoss do Brasil  
Ind. e Com. Ltda.**

Rua Nelson Francisco, 26  
Bairro do Limão  
02712-100 São Paulo - SP  
Tel.: +55 / 11 / 39 33 54 00  
Fax: +55 / 11 / 39 33 54 55

**TRADINTER S.R.L.**

Pereira de la luz 1327  
11.300 Montevideo  
Tel.: +598 / 2 / 622 11 30  
Fax: +598 / 2 / 628 46 91

**USA, USA, Etats-Unis d'Amérique  
Danfoss Bauer Inc.**

31, Schoolhouse Rd.  
Somerset, N.J. 08873-1212  
Tel.: +1 / 732 / 469 87 70  
Fax: +1 / 732 / 469 87 73

**Venezuela, Venezuela, Vénézuéla  
Danfoss S.A.**

Carretera Nacional Los Guayos  
Guacara  
Urbanización Indl. Los Guayos  
Parcela No. 8  
Valencia - Estado Carabobo  
Tel.: +58 / 45 / 71 06 48  
71 03 19  
71 45 56  
Fax: +58 / 45 / 71 00 94

**VENRIAL C.A.**

Apartado Postal 672  
8050-Puerto Ordaz/EDO-Guayana  
Estado Bolivar  
Tel.: +58 / 86 / 23 42 59  
Fax: +58 / 86 / 23 19 95

**Vietnam, Vietnam, Vietnam**

IMI Institut für Maschinen und  
industrielle Werkzeuge  
34 Lang ha - Dong da  
Hanoi  
Tel.: +84 / 4 / 835 10 06  
Fax: +84 / 4 / 834 49 75

