

# External gear motor High Performance AZMB

**RE 14027**

Edition: 03.2016



- ▶ Platform B
- ▶ Fixed displacement
- ▶ Sizes 2.5 to 7.1
- ▶ Continuous pressure up to 220 bar
- ▶ Intermittent pressure up to 250 bar

## Features

- ▶ Consistently high quality due to high-volume series production
- ▶ Long service life
- ▶ Large speed range
- ▶ Slide bearings for high loads
- ▶ Optional reversible version for 2-quadrant and 4-quadrant operation
- ▶ Variety of versions available
- ▶ Output shafts conform to ISO or SAE and customer-specific solutions
- ▶ Line connections: Connection flange or screw thread
- ▶ High pressures with small installation space and low weight
- ▶ Large viscosity and temperature range

## Contents

|                                      |    |
|--------------------------------------|----|
| Functional description               | 2  |
| Type code                            | 3  |
| Technical data                       | 4  |
| Flow and power characteristic curves | 6  |
| Output drives                        | 8  |
| Gear motors with integrated valves   | 8  |
| Dimensions – drive shafts            | 9  |
| Dimensions – front cover             | 9  |
| Dimensions – line connections        | 10 |
| Dimensions – preferred series        | 11 |
| Accessories                          | 13 |
| Spare parts                          | 14 |
| Notes on commissioning               | 15 |
| Order number overview                | 16 |
| AZ configurator                      | 17 |
| Fit4SILENCE app                      | 17 |

## Functional description

### General

If pressurized oil is fed into the motor, a torque can be obtained from the shaft leading out of the housing. Motors can be either for one direction of rotation or reversible.

### Gear motor for one direction of rotation

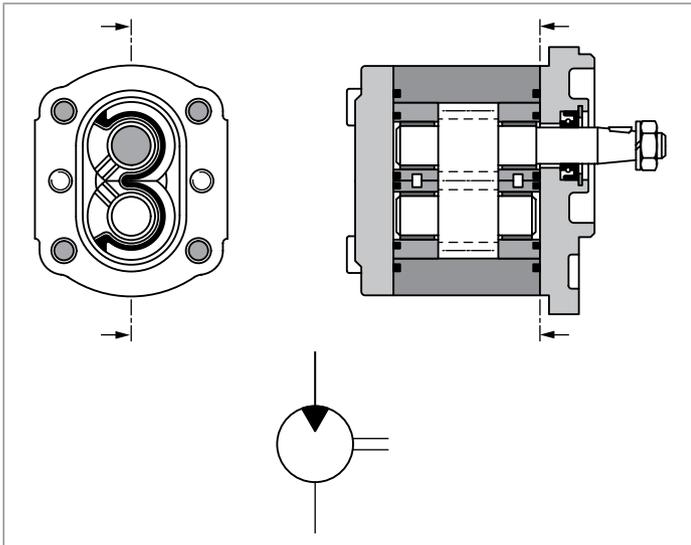
These gear motors are designed asymmetrically, i.e., fixed high-pressure and low-pressure ends. This means they cannot be reversed. Motors require a special start-up sequence to ensure good efficiency. Any leakage oil is drained internally. The shaft seal limits drainage pressure.

### Reversible gear motor

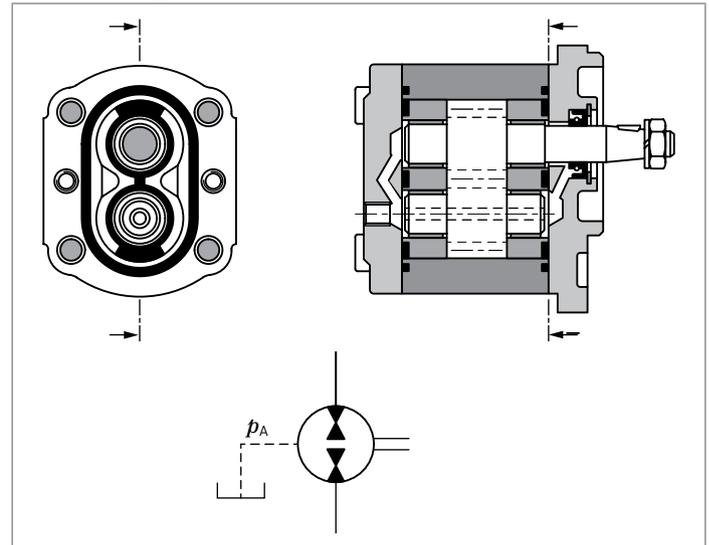
The displacement principle of external gear motors is the opposite of that of pumps. Reversible motors are an exception to this concept. Due to their symmetrical layout, the high-pressure and low-pressure chambers are separate from the bearing and shaft seal chambers. Any leakage oil is drained through a separate drain port in the housing cover. This drainage allows the motor to run in reverse, making series connections possible. Standard motors and pumps can only withstand up to approx. 3 bar due to the connection between the shaft seal and the low-pressure end.

The figure shows a reversible motor for four-quadrant operation, i.e., output torque and drive torque in both directions (hydraulic motor functions as a pump when the load is reversed).

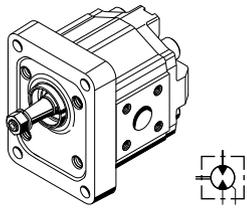
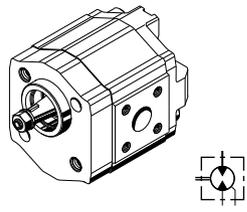
#### ▼ Gear motor for one direction of rotation



#### ▼ Reversible gear motor



#### ▼ Product overview AZMB preferred types

| Version   |   |
|---|---|
|  |  |
| AZMB-32...UHO20PL, page 11  | AZMB-32...UCP20PL, page 12  |

## Type code

|            |          |    |    |    |    |    |    |    |    |    |    |  |
|------------|----------|----|----|----|----|----|----|----|----|----|----|--|
| 01         | 02       | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |  |
| <b>AZM</b> | <b>B</b> | -  |    |    | -  |    |    |    |    |    | -  |  |

### External gear unit

|    |                     |            |
|----|---------------------|------------|
| 01 | External gear motor | <b>AZM</b> |
|----|---------------------|------------|

### Series

|    |                              |          |
|----|------------------------------|----------|
| 02 | High Performance, Platform B | <b>B</b> |
|----|------------------------------|----------|

### Series

|    |                                 |          |
|----|---------------------------------|----------|
| 03 | Bearing pin $\varnothing 12$ mm | <b>3</b> |
|----|---------------------------------|----------|

### Version

|    |                             |          |
|----|-----------------------------|----------|
| 04 | Corrosion-resistant, pinned | <b>2</b> |
|----|-----------------------------|----------|

### Size (NG)

|    |   |            |            |            |            |            |            |            |
|----|---|------------|------------|------------|------------|------------|------------|------------|
| 05 | Geometric displacement $V_g$ [cm <sup>3</sup> ], see "Technical data" on page 5 | <b>2.5</b> | <b>3.1</b> | <b>4.0</b> | <b>4.5</b> | <b>5.0</b> | <b>6.3</b> | <b>7.1</b> |
|----|---|------------|------------|------------|------------|------------|------------|------------|

### Direction of rotation

|    |                       |                   |          |
|----|-----------------------|-------------------|----------|
| 06 | Viewed on drive shaft | Clockwise         | <b>R</b> |
|    |                       | Counter-clockwise | <b>L</b> |
|    |                       | Universal         | <b>U</b> |

### Drive shaft

### Suitable front cover

|    |                |       |          |          |
|----|----------------|-------|----------|----------|
| 07 | Tapered shaft  | 1 : 5 | <b>P</b> | <b>C</b> |
|    |                | 1 : 8 | <b>O</b> | <b>H</b> |
|    | Dihedral, claw |       | <b>M</b> | <b>N</b> |

### Front cover

|    |                    |                        |             |          |
|----|--------------------|------------------------|-------------|----------|
| 08 | Rectangular flange | $\varnothing 25.38$ mm | <b>O</b>    |          |
|    | 2-bolt mounting    | $\varnothing 32$ mm    | with O-ring | <b>M</b> |
|    |                    | $\varnothing 32$ mm    |             | <b>P</b> |

### Line connection

|    |                                      |           |
|----|--------------------------------------|-----------|
| 09 | DIN EN ISO 228-1 pipe thread         | <b>01</b> |
|    | DIN 3852-1 metric thread             | <b>02</b> |
|    | Square flange for ISO 8434-1 fitting | <b>20</b> |

### Sealing material

|    |  |          |
|----|--|----------|
| 10 | NBR (nitrile rubber)   | <b>M</b> |
|    | FKM (fluoroelastomer)  | <b>P</b> |
|    | NBR (nitrile rubber), shaft seal made of FKM (fluoroelastomer) | <b>K</b> |

### Rear cover

|    |  |             |
|----|--|-------------|
| 11 | Standard (for non-reversible motors)   | <b>B</b>    |
|    | With drain port (for reversible motors)  | <b>L</b>    |
|    | With axial pressure/suction port   | <b>A</b>    |
|    | With pressure relief valve, internal residual current, 3-digit cracking pressure in bar, e.g., 180 bar | <b>D180</b> |

### Special version

|    |                            |              |
|----|----------------------------|--------------|
| 12 | Serial number, e.g., S0001 | <b>SXXXX</b> |
|----|----------------------------|--------------|

### Notice

- ▶ Not all of the variants according to the type code are possible.
- ▶ Special options are available on request.

- ▶ Please select the desired motor with the help of the selection table (preferred types) or after consulting with Bosch Rexroth.

## Technical data

| General  |   |             |  |   |
|--|---|-------------|--|---|
| Weight   |   | kg          | See dimensions starting on page 11   |   |
| Installation position  | No restrictions   |             |  |   |
| Mounting type  | Flange or through-bolting with spigot   |             |  |   |
| Line connections   | Flange, thread  |             |  |   |
| Direction of rotation (viewed on drive shaft)  | Non-reversible or reversible  |             |  |   |
| Drive shaft load   | Radial and axial forces only after consultation   |             |  |   |
| Ambient temperature range $\theta$   |   | °C          | -30 to +80 with NBR seals (NBR = nitrile rubber)<br>-20 to +110 with FKM seals (FKM = fluoroelastomer) |   |
| Hydraulic  |   |             |  |   |
| Hydraulic fluid  | Mineral oil according to DIN 51524 1–3, with higher load however at least HLP-compliant according to DIN 51524 Part 2 recommended. HEES according to DIN ISO 15380, FKM seals recommended. Observe data sheets 90220 and 90221. Other hydraulic fluids on request |             |  |   |
| Hydraulic fluid temperature range  | $\theta$  | °C          | -30 to +80 with NBR seals (NBR = nitrile rubber)<br>-20 to +110 with FKM seals (FKM = fluoroelastomer) |   |
| Viscosity range  | Minimum for continuous operation  | $\nu$       | mm <sup>2</sup> /sec   | 12 to 800   |
|  | Recommended for continuous operation  | $\nu_{opt}$ | mm <sup>2</sup> /sec   | 20 to 100   |
|  | Minimum for cold start  | $\nu_{max}$ | mm <sup>2</sup> /sec   | ≤ 2000  |
| Maximum admissible degree of contamination of the hydraulic fluid<br>Cleanliness level according to ISO 4406 (c) |   |             |  | Class 20/18/15 <sup>1</sup> , filter with min. retention rate of $\beta_{20} \geq 75$ recommended |

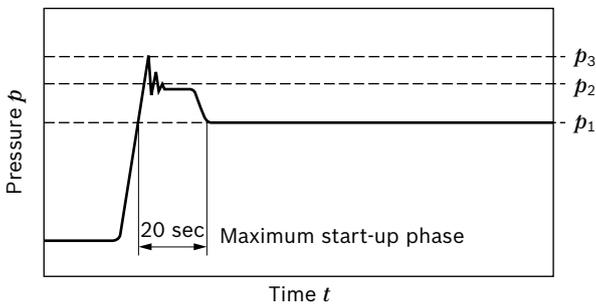
### Notice

- ▶ Observe applicable safety requirements for the entire system.
- ▶ Please contact us for applications with frequent load changes.

1) For hydraulic systems or devices with function-related critical failure effects, such as steering and brake valves, the type of filtration selected must be adapted to the sensitivity of these devices.

| AZMB-3x                                    |             | NG              | 2.5 | 3.1   | 4.0  | 4.5  | 5.0  | 6.3  | 7.1  |
|--|-------------|-----------------|-----|---|------|------|------|------|------|
| Geometric displacement per revolution      | $V_g$       | cm <sup>3</sup> | 2.5 | 3.15  | 4.0  | 4.5  | 5.0  | 6.3  | 7.1  |
| Maximum drain port pressure <sup>1)</sup>  | abs.        | $p_L$           | bar | 3   | 3    | 3    | 3    | 3    | 3    |
|  | On start-up | $p_L$           | bar | 10  | 10   | 10   | 10   | 10   | 10   |
| Minimum motor input pressure <sup>2)</sup> | abs.        | $p_{min}$       | bar | 0.7   | 0.7  | 0.7  | 0.7  | 0.7  | 0.7  |
| Maximum continuous pressure                |             | $p_1$           | bar | 220   | 220  | 220  | 220  | 220  | 200  |
| Maximum intermittent pressure              |             | $p_2$           | bar | 250   | 250  | 250  | 250  | 250  | 230  |
| Motor output pressure                      |             | $p_A$           | bar | For reversible motors: ≤ working pressure<br>For non-reversible motors: max. 3 bar absolute, 10 bar on start-up |      |      |      |      |      |
| Minimum speed                              |             | $n_{min}$       | rpm | 750   | 750  | 750  | 750  | 750  | 750  |
| Maximum speed                              | At $p_1$    | $n_{max}$       | rpm | 5000  | 4000 | 4000 | 4000 | 3500 | 3500 |

▼ **Pressure definition**

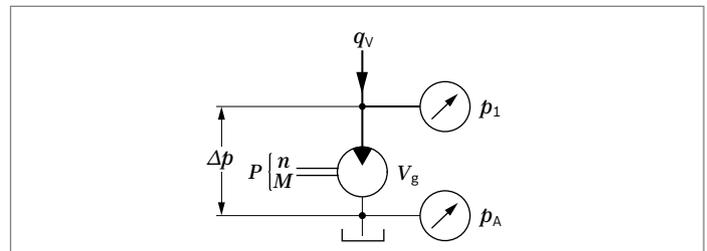


- $p_1$  Maximum continuous pressure
- $p_2$  Maximum intermittent pressure
- $p_3$  Maximum pressure peak

| Design calculations for motors |   |                    |
|--------------------------------|---|--------------------|
| Inlet flow                     | $q_v = \frac{V_g \times n}{1000 \times \eta_v}$   | [l/min]            |
| Rotational speed               | $n = \frac{q_v \times 1000 \times \eta_v}{V_g}$   | [rpm]              |
| Torque                         | $M = \frac{V_g \times \Delta p \times \eta_{hm}}{20 \times \pi}$                            | [Nm]               |
| Power                          | $P = \frac{2 \pi \times M \times n}{60000} = \frac{q_v \times \Delta p \times \eta_t}{600}$ | [kW]               |
| Pressure                       | $\Delta p = \frac{M \times 20 \times \pi}{V_g \times \eta_{hm}}$                            | [bar]              |
|                                | $\Delta p = \frac{P \times 600}{q_v \times \eta_t}$   | [bar]              |
| Displacement                   | $V_g = \frac{q_v \times 1000 \times \eta_v}{n}$   | [cm <sup>3</sup> ] |
|                                | $V_g = \frac{M \times 20 \times \pi}{\Delta p \times \eta_{hm}}$                            | [cm <sup>3</sup> ] |

**Key**

- $V_g$  Displacement per revolution [cm<sup>3</sup>]
- $\Delta p$  Differential pressure [bar] ( $\Delta p = p_1 - p_A$ )
- $n$  Rotational speed [rpm]
- $q_v$  Inlet flow [l/min]
- $M$  Torque [Nm]
- $P$  Power [kW]
- $\eta_v$  Volumetric efficiency<sup>2)</sup>
- $\eta_{hm}$  Hydraulic-mechanical efficiency<sup>2)</sup>
- $\eta_t$  Total efficiency ( $\eta_t = \eta_v \times \eta_{hm}$ )<sup>2)</sup>



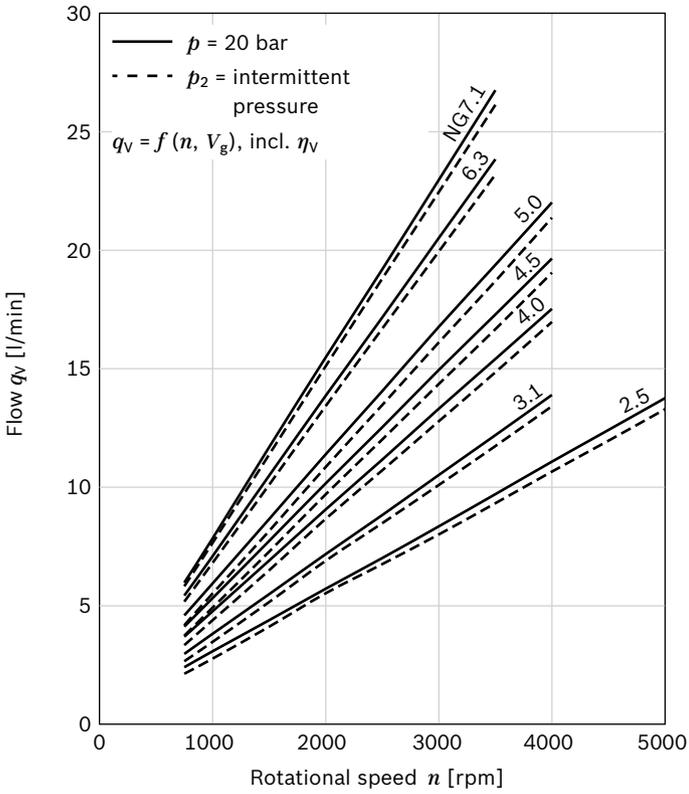
**Notice**

On the following pages you can find diagrams for a rough calculation.

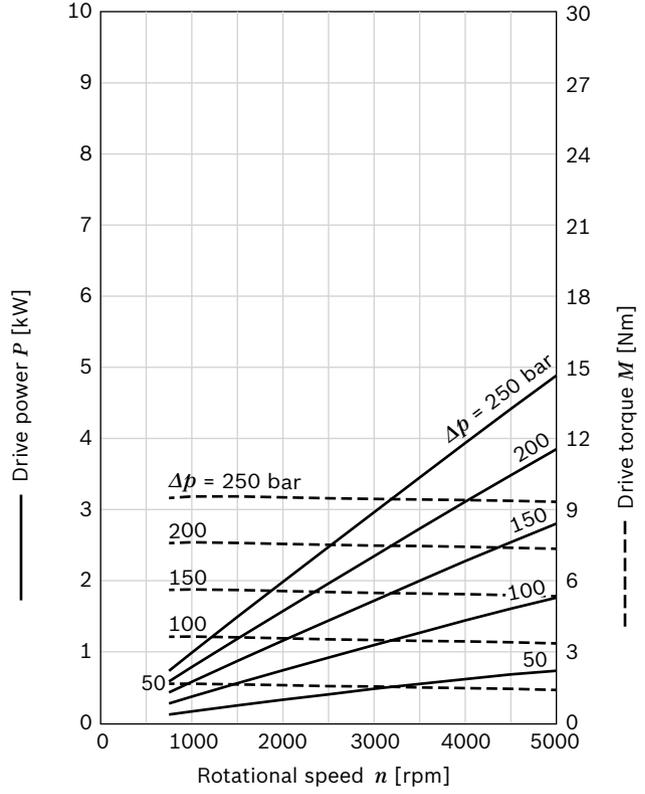
1) For reversible motors  
 2) Parameter as a decimal, e.g., 0.9

### Flow and power characteristic curves

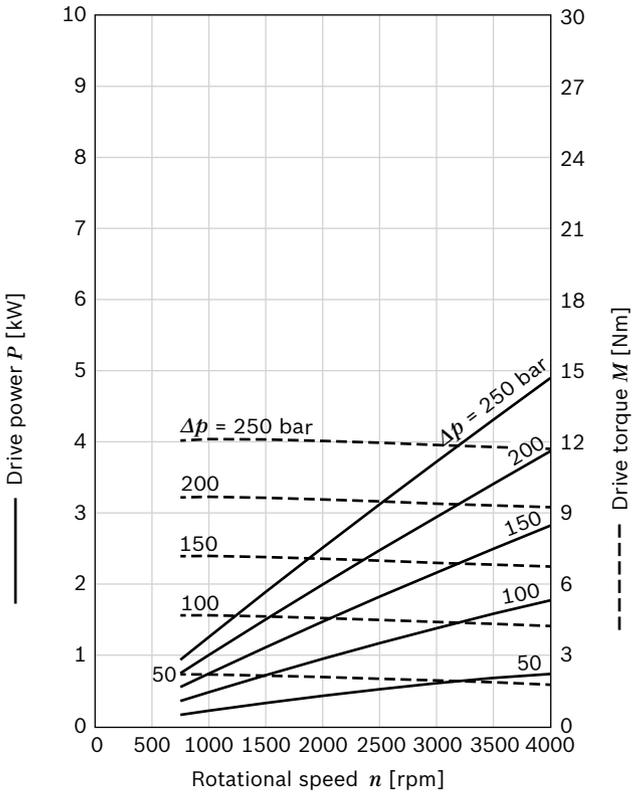
▼ **Flow**



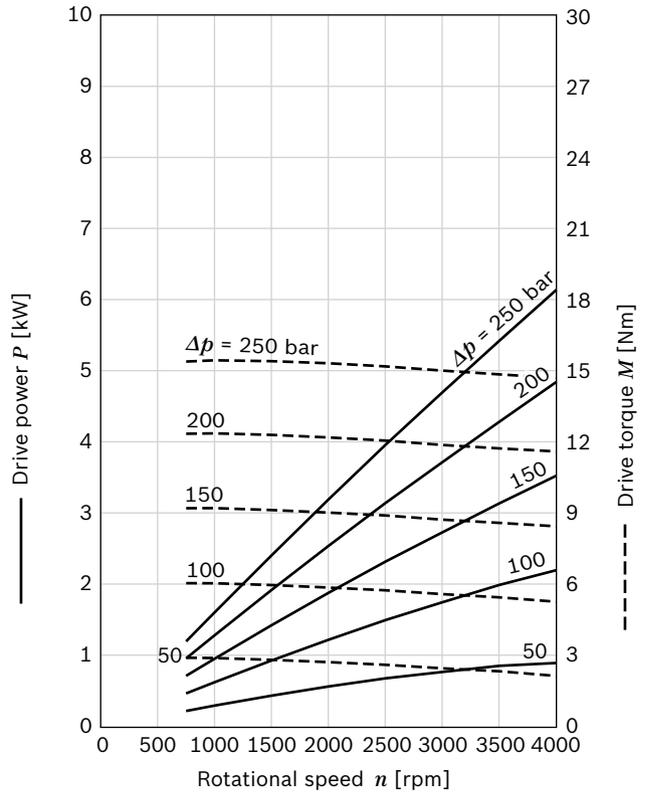
▼ **Size 2.5**



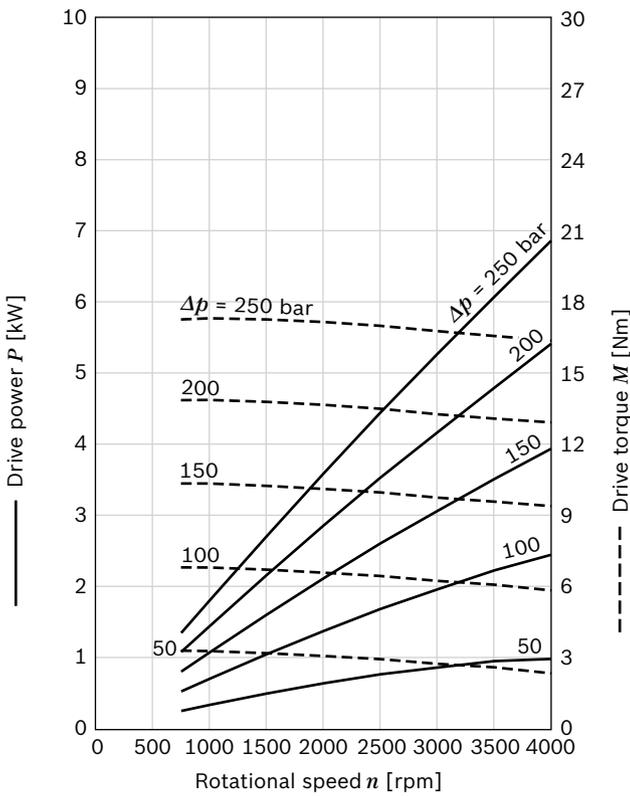
▼ **Size 3.1**



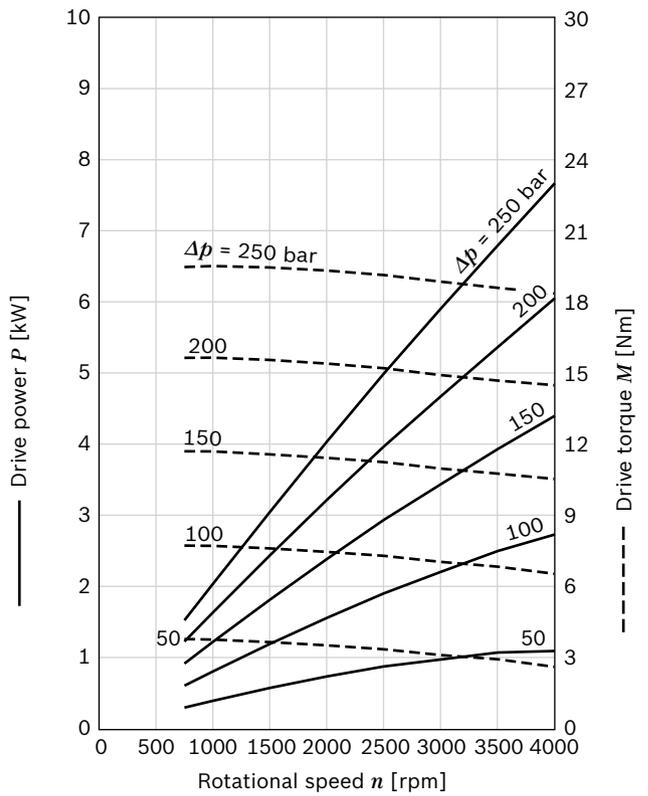
▼ **Size 4.0**



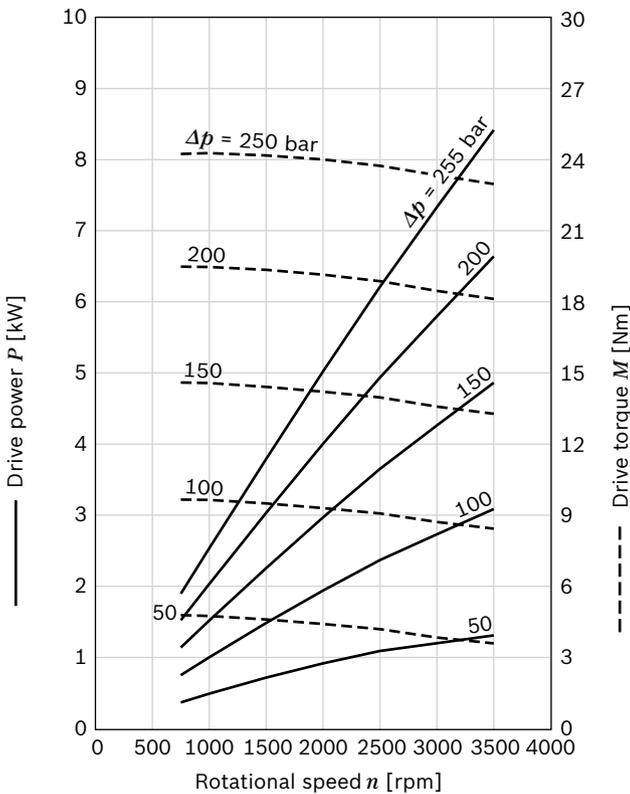
▼ Size 4.5



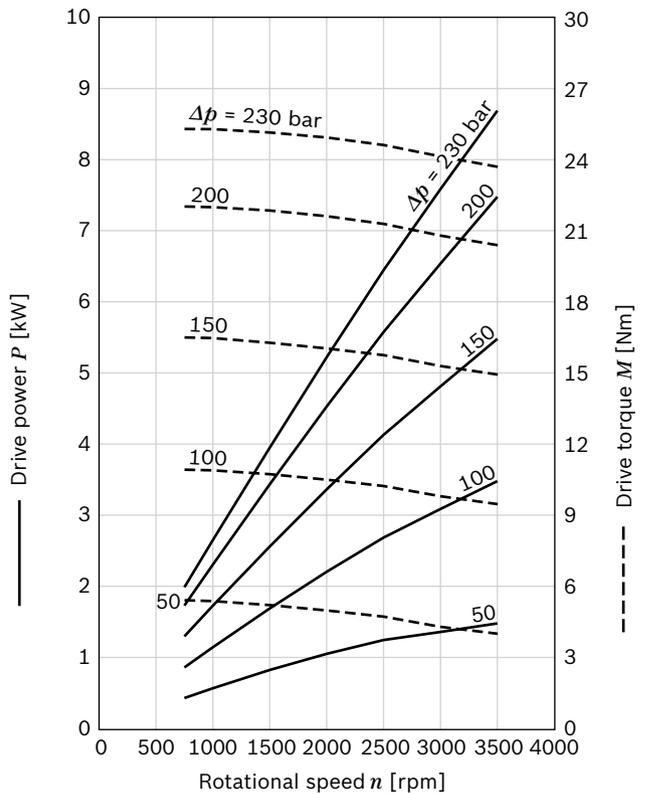
▼ Size 5.0



▼ Size 6.3



▼ Size 7.1



**Notice**

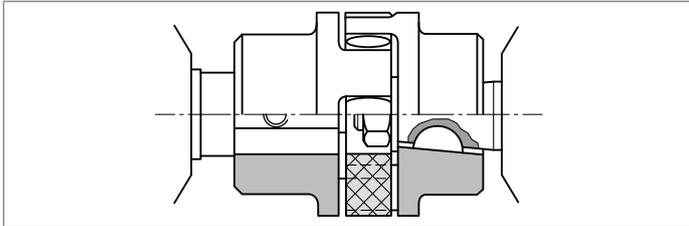
Characteristic curves measured at  $v = 32 \text{ mm}^2/\text{sec}$  and  $\theta = 50 \text{ }^\circ\text{C}$ .

$P = f(n, p)$ , incl.  $\eta_t$  ———  
 $M = f(n, p)$ , incl.  $\eta_{hm}$  - - - - -

## Output drives

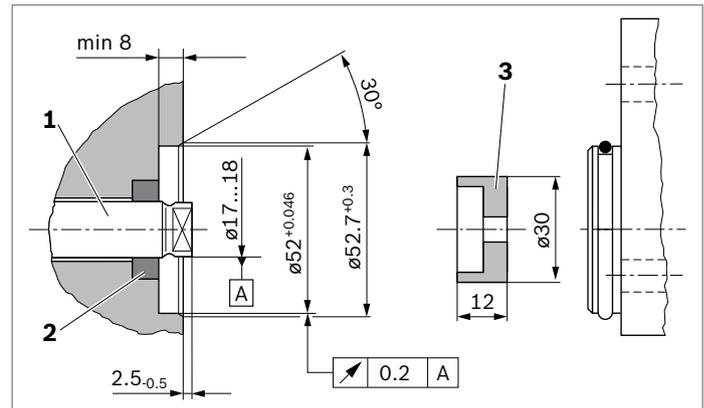
### 1. Elastic couplings

- ▶ The coupling should not transfer any radial or axial forces to the motor.
- ▶ The maximum radial run-out from the shaft to the spigot should not exceed 0.2 mm.
- ▶ See the coupling manufacturer's assembly instructions for permissible shaft misalignments.



### 2. Coupling dog

- ▶ For attaching the motor directly to a gear, etc.
- ▶ Motor drive shaft with special coupling dog and driver (3)
- ▶ No shaft seal
- ▶ Output side installation and sealing according to following recommendations and dimensions



| Drive shaft | $M_{\max}$ [Nm] | Size       | $p_{\max}$ [bar] |
|-------------|-----------------|------------|------------------|
| <b>C</b>    | 26              | 2.5 to 5.0 | 270              |
|             |                 | 6.3        | 230              |
|             |                 | 7.1        | 205              |
| <b>H</b>    | 30              | 2.5 to 6.3 | 270              |
|             |                 | 7.1        | 235              |
| <b>N</b>    | 25              | 2.5 to 5.0 | 270              |
|             |                 | 6.3        | 225              |
|             |                 | 7.1        | 200              |

#### ▶ Output shaft on the customer side (1)

- Case-hardening steel as per DIN 17210 e.g., 20 MnCrS 5 case-hardened 0.6 deep; HRC 60<sup>±3</sup>
- Seal ring running surface ground without rifling  
 $R_{\max} \leq 4 \mu\text{m}$

#### ▶ Radial shaft seal on the customer side (2)

- Provide with rubber cover (see DIN 3760, type AS, or double-lipped ring)
- When designing the installation space, note the seal manufacturer's design guidelines.

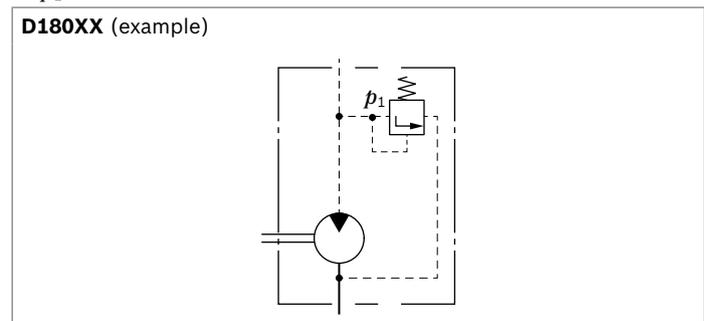
## Gear motors with integrated valves

In order to reduce pipework, a pressure relief valve can be integrated into the cover of the gear motor.

#### ▼ Pressure relief valve, pressure guide in suction line

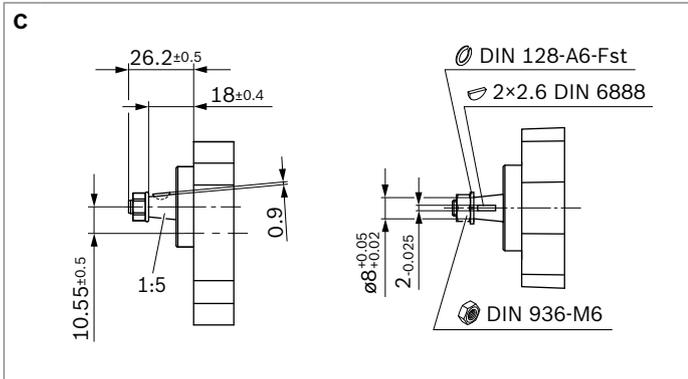
$p_1 = 5$  to 250 bar

D180XX (example)

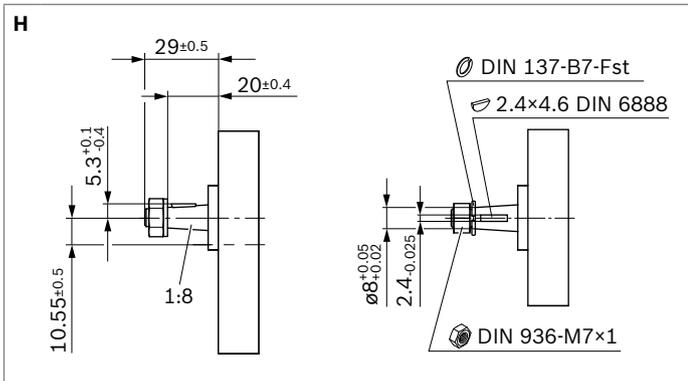


### Dimensions – drive shafts

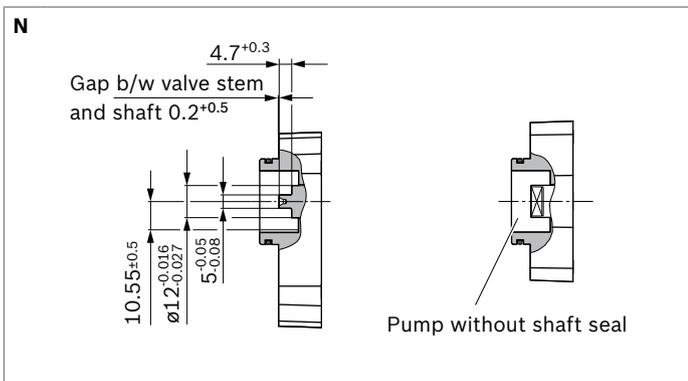
#### ▼ Tapered shaft 1 : 5



#### ▼ Tapered shaft 1 : 8

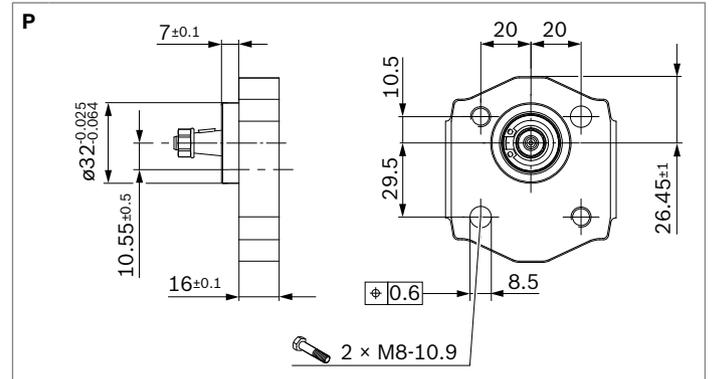


#### ▼ Dihedral claw

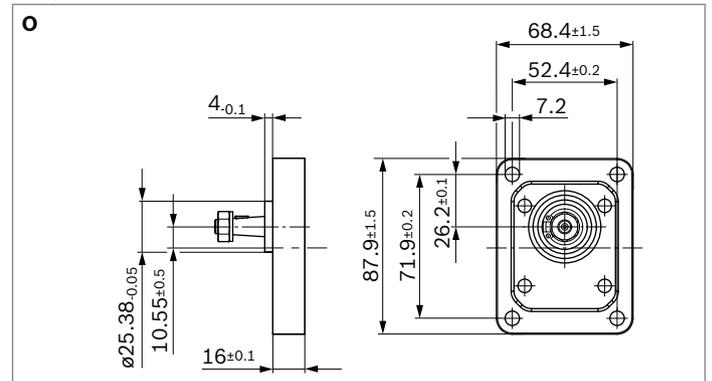


### Dimensions – front cover

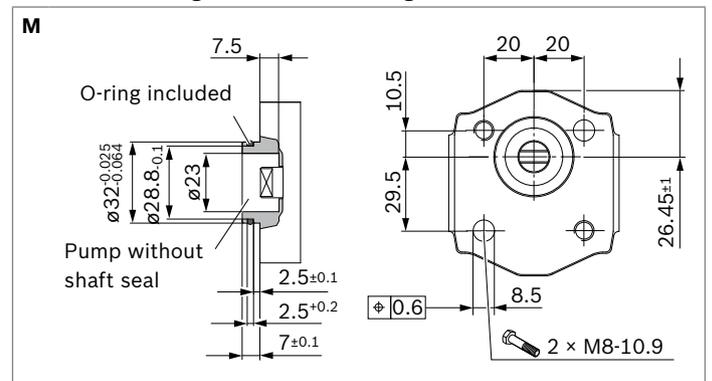
#### ▼ 2-bolt mounting $\phi 32$ mm



#### ▼ Rectangular flange $\phi 25.28$ mm

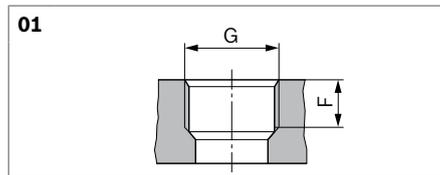


#### ▼ 2-bolt mounting $\phi 32$ mm with O-ring



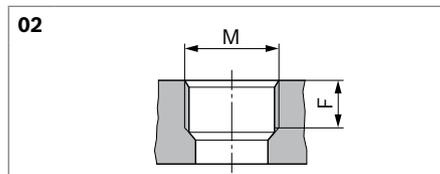
## Dimensions – line connections

### ▼ ISO 228/1 pipe thread (limited service life compared to line connection 20)



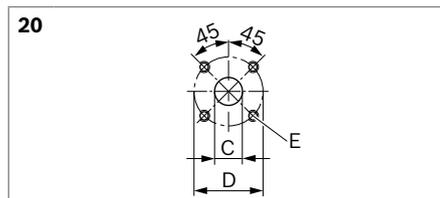
| Size       | Upstream side |    | Downstream side |    |
|------------|---------------|----|-----------------|----|
|            | G             | F  | G               | F  |
| 2.5 to 3.1 | G 3/8         | 13 | G 3/8           | 13 |
| 4.0 to 7.1 | G 3/8         | 13 | G 1/2           | 13 |

### ▼ ISO 9974-1 pipe thread (limited service life compared to line connection 20)



| Size       | Upstream side |    | Downstream side |    |
|------------|---------------|----|-----------------|----|
|            | M             | F  | M               | F  |
| 2.5 to 3.1 | 14 × 1.5      | 13 | M18 × 1.5       | 13 |
| 4.0 to 7.1 | 14 × 1.5      | 13 | M22 × 1.5       | 13 |

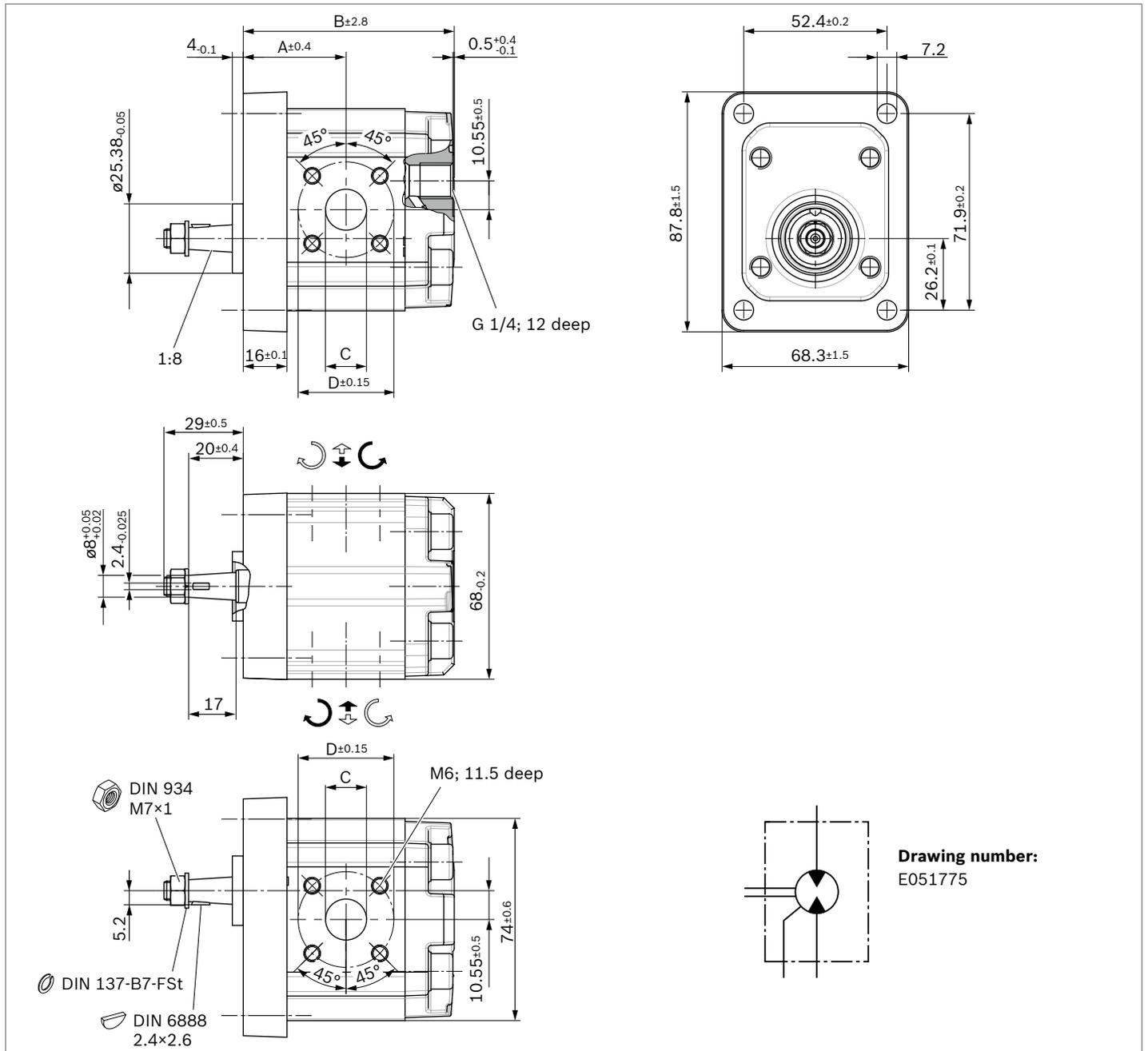
### ▼ Square flange



| Size       | Upstream side |    |             | Downstream side |    |               |
|------------|---------------|----|-------------|-----------------|----|---------------|
|            | C             | D  | E           | C               | D  | E             |
| 2.5        | 12            | 30 | M6; 13 deep | 12              | 30 | M6; 11.5 deep |
| 3.1 to 7.1 | 15            | 35 | M6; 13 deep | 15              | 35 | M6; 11.5 deep |

### Dimensions – preferred series

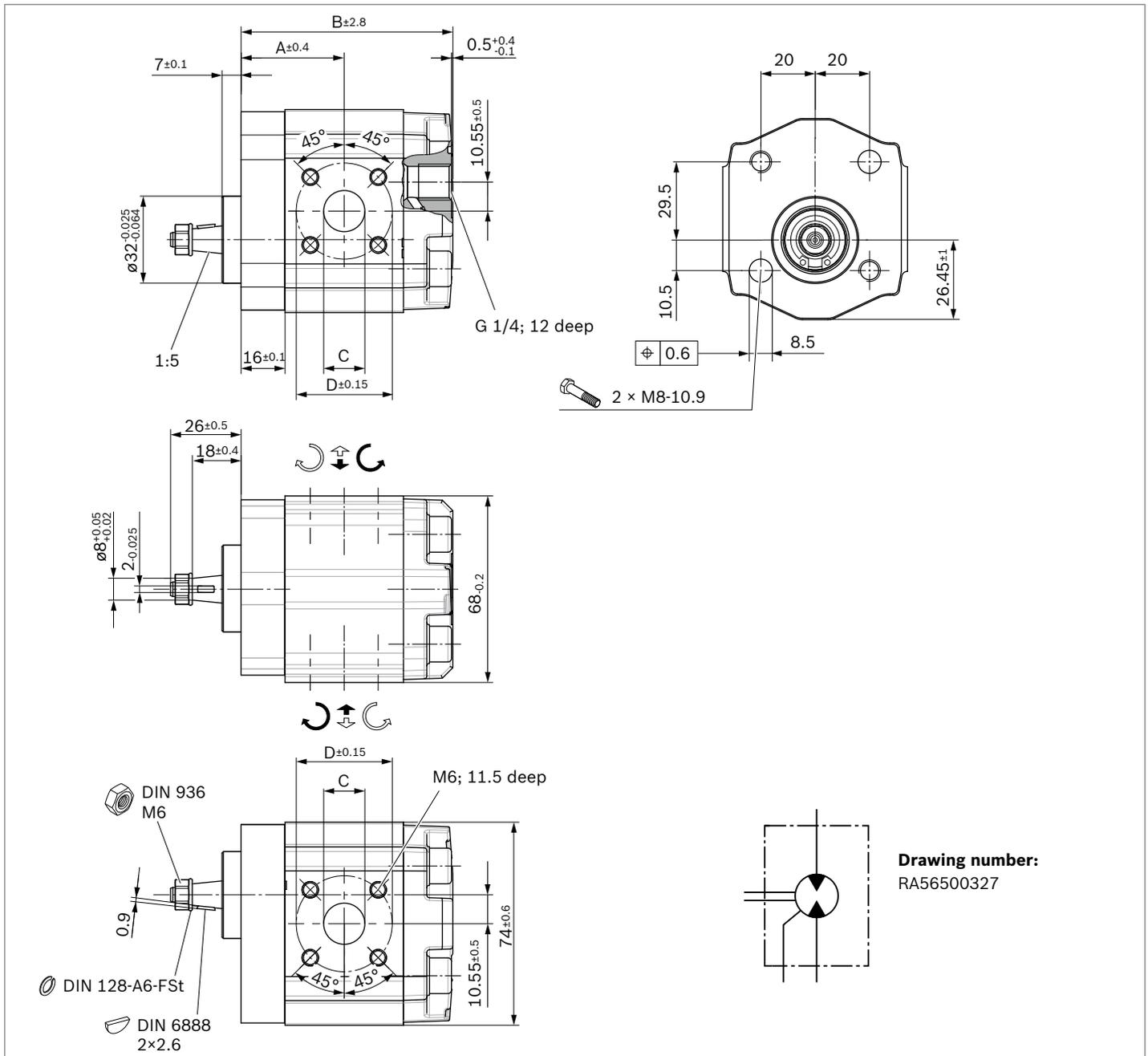
▼ Tapered shaft 1:8 with rectangular flange  $\varnothing 25.38$  mm  
AZMB-32- ... UHO20PL



Drawing number:  
E051775

| NG  | Order number | Maximum intermittent pressure $p_2$ [bar] | Maximum rotational speed [rpm] | Weight [kg] | Dimensions [mm] |      |    |    |
|-----|--------------|---|--------------------------------|-------------|-----------------|------|----|----|
|     |              |   |                                |             | A               | B    | C  | D  |
| 2.5 | R979106592   | 250                                       | 5000                           | 1.5         | 33.8            | 69.6 | 12 | 30 |
| 3.1 | R979106593   | 250                                       | 4000                           | 1.5         | 35.0            | 72.1 | 15 | 35 |
| 4.0 | R979106594   | 250                                       | 4000                           | 1.6         | 36.6            | 75.3 | 15 | 35 |
| 4.5 | R979106252   | 250                                       | 4000                           | 1.6         | 37.6            | 77.2 | 15 | 35 |
| 5.0 | R979106595   | 250                                       | 4000                           | 1.6         | 38.6            | 79.3 | 15 | 35 |
| 6.3 | R979106596   | 250                                       | 3500                           | 1.7         | 41.0            | 84.0 | 15 | 35 |
| 7.1 | R979106597   | 230                                       | 3500                           | 1.7         | 42.5            | 87.1 | 15 | 35 |

▼ **Tapered shaft 1:5 with rectangular flange  $\varnothing 32$  mm**  
AZMB-32- ... UCP20PL

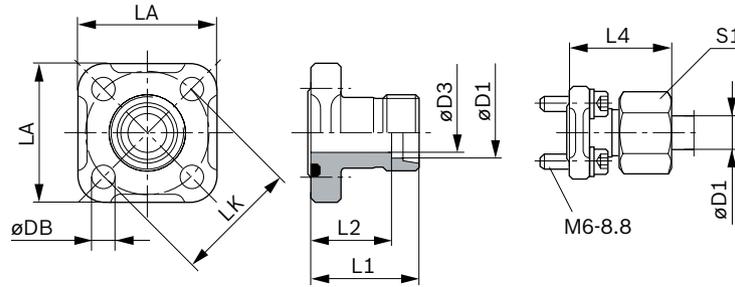


| NG  | Order number | Maximum intermittent pressure $p_2$ [bar] | Maximum rotational speed [rpm] | Weight [kg] | Dimensions [mm] |      |    |    |
|-----|--------------|---|--------------------------------|-------------|-----------------|------|----|----|
|     |              |   |                                |             | A               | B    | C  | D  |
| 2.5 | R979106804   | 250                                       | 5000                           | 1.5         | 33.8            | 69.6 | 12 | 30 |
| 3.1 | R979106805   | 250                                       | 4000                           | 1.5         | 35.0            | 72.1 | 15 | 35 |
| 4.0 | R979106806   | 250                                       | 4000                           | 1.6         | 36.6            | 75.3 | 15 | 35 |
| 4.5 | R979106807   | 250                                       | 4000                           | 1.6         | 37.6            | 77.2 | 15 | 35 |
| 5.0 | R979106808   | 250                                       | 4000                           | 1.6         | 38.6            | 79.3 | 15 | 35 |
| 6.3 | R979106809   | 250                                       | 3500                           | 1.7         | 41.0            | 84.0 | 15 | 35 |
| 7.1 | R979106810   | 230                                       | 3500                           | 1.7         | 42.5            | 87.1 | 15 | 35 |

## Accessories

### Gear motor flanges, straight, for square flange 20 (see page 10)

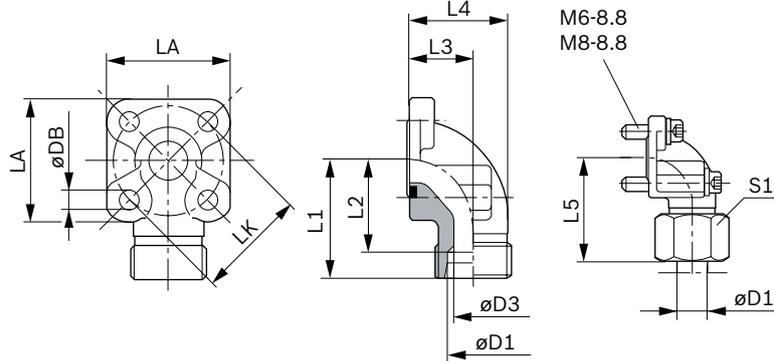
Complete fitting with O-ring, metric screw set, nuts and olive.



| LK | D1  | D3 | L1 | L2   | L4   | LA | S1 | DB  | Screws<br>4x | O-ring<br>NBR | Weight<br>[kg] | Order number  | p [bar] |
|----|-----|----|----|------|------|----|----|-----|--------------|---------------|----------------|---------------|---------|
| 35 | 10L | 8  | 30 | 23.0 | 39.0 | 40 | 19 | 6.4 | M6 × 22      | 20 × 2.5      | 0.09           | 1 515 702 064 | 315     |
| 35 | 12L | 10 | 30 | 23.0 | 39.0 | 40 | 22 | 6.4 | M6 × 22      | 20 × 2.5      | 0.10           | 1 515 702 065 | 315     |
| 35 | 15L | 12 | 30 | 23.0 | 38.0 | 40 | 27 | 6.4 | M6 × 22      | 20 × 2.5      | 0.10           | 1 515 702 066 | 250     |

### Gear pump flanges, 90° angle, for square flange 20 (see page 10)

Complete fitting with O-ring, metric screw set, nuts and olive.



| LK | D1  | D3 | L1 | L2   | L3   | L4   | L5   | LA | S1 | DB  | Screws<br>2x | Screws<br>2x | O-ring<br>NBR | Weight<br>[kg] | Order number  | p [bar] |
|----|-----|----|----|------|------|------|------|----|----|-----|--------------|--------------|---------------|----------------|---------------|---------|
| 35 | 10L | 8  | 38 | 31.0 | 16.5 | 26.5 | 47.0 | 40 | 19 | 6.4 | M6 × 22      | M6 × 35      | 20 × 2.5      | 0.16           | 1 515 702 070 | 315     |
| 35 | 12L | 10 | 38 | 31.0 | 16.5 | 26.5 | 47.0 | 40 | 22 | 6.4 | M6 × 22      | M6 × 35      | 20 × 2.5      | 0.16           | 1 515 702 071 | 315     |
| 35 | 15L | 12 | 38 | 31.0 | 16.5 | 26.5 | 46.0 | 40 | 27 | 6.4 | M6 × 22      | M6 × 35      | 20 × 2.5      | 0.15           | 1 515 702 072 | 250     |
| 35 | 16S | 12 | 38 | 29.5 | 20.0 | 31.0 | 48.0 | 40 | 30 | 6.4 | M6 × 22      | M6 × 40      | 20 × 2.5      | 0.18           | 1 515 702 002 | 315     |
| 35 | 18L | 15 | 38 | 29.5 | 20.0 | 31.0 | 47.0 | 40 | 32 | 6.4 | M6 × 22      | M6 × 40      | 20 × 2.5      | 0.18           | 1 545 702 006 | 250     |
| 35 | 20S | 16 | 45 | 34.5 | 25.0 | 38.0 | 56.0 | 40 | 36 | 6.4 | M6 × 22      | M6 × 45      | 20 × 2.5      | 0.24           | 1 515 702 017 | 315     |

#### Notice

You can find the permissible tightening torques in our publication 07012-B1 "General Instruction Manual for External Gear Units".

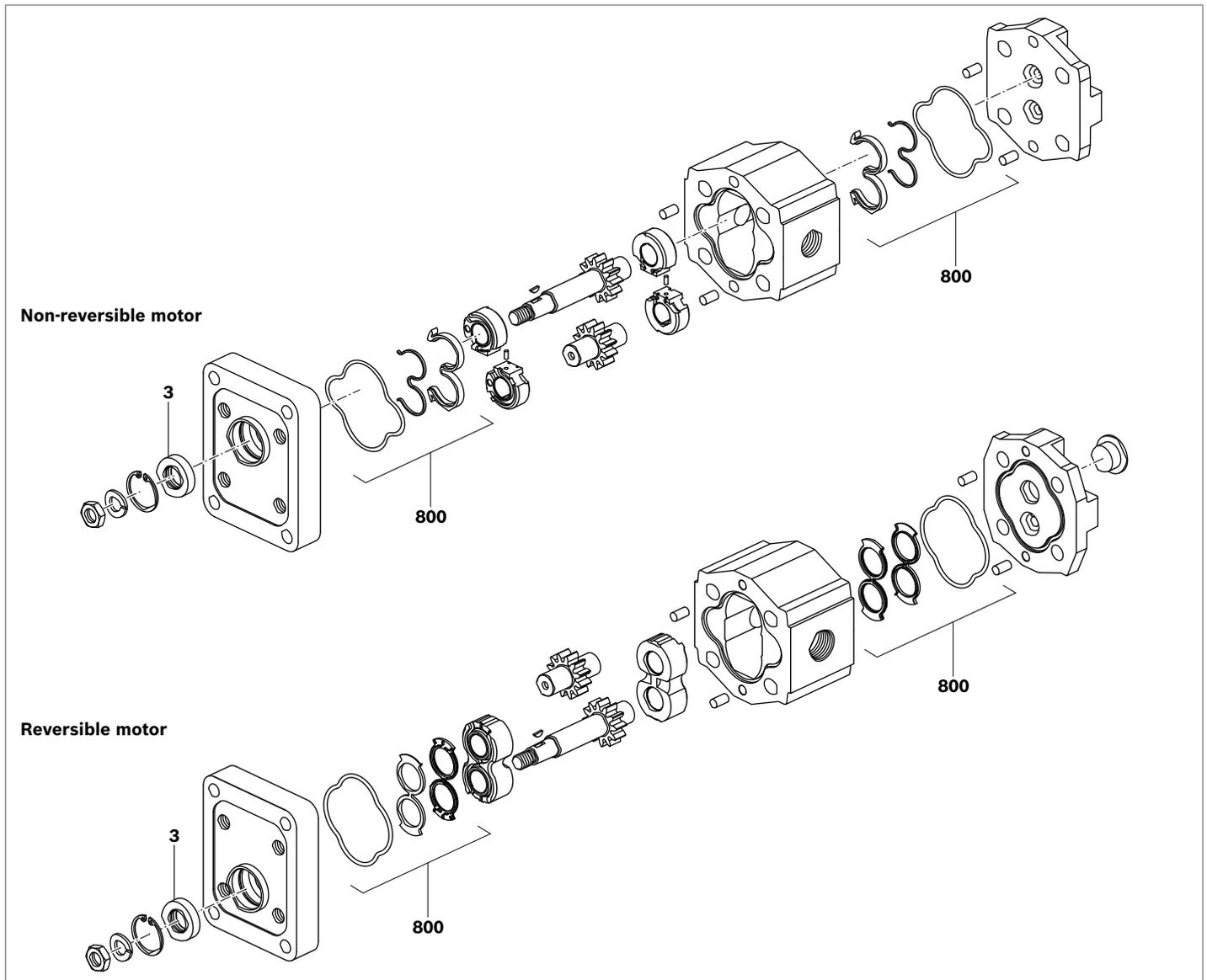
## Spare parts

### Notice

Spare parts can be found online at [www.boschrexroth.com/spc](http://www.boschrexroth.com/spc)

| Item | Designation | Order number  | Dimensions  | Material | AZMB-32 - ... R ... | AZMB-32 - ... L ... | AZMB-32 - ... U ... |
|------|-------------|---------------|-------------|----------|---------------------|---------------------|---------------------|
| 3    | Shaft seal  | 1 510 283 074 | 22 × 12 × 6 | NBR      | x                   | x                   | x                   |
|      |             | 1 510 283 071 | 22 × 12 × 6 | FKM      | x                   | x                   | x                   |
| 800  | Seal kit    | 1 517 010 248 |             | NBR      | x                   | x                   | -                   |
|      |             | 1 517 010 269 |             | FKM      | x                   | x                   | -                   |
|      |             | 1 517 010 251 |             | FKM      | -                   | -                   | x                   |

### ▼ Schematic diagram



## Notes on commissioning

### General

Motors delivered by Bosch Rexroth are tested for function and performance. Any modifications will void the warranty. The motor should only be operated with the permissible data (see page 4).

### Technical data

All specified technical data depends on manufacturing tolerances and apply under certain general conditions. Note that this can result in some variance and that technical data may also vary under certain general conditions (e.g., viscosity).

### Characteristic curves

When dimensioning the gear motor, observe the maximum possible application data based on the characteristic curves starting on page 6.

### Scope of delivery

The scope of delivery includes the components with the characteristics described under type codes and dimensions starting on page 11.

### Further information

- ▶ Further information on installation, commissioning, and operation can be found in the publication 07012-B1: "General Instruction Manual for External Gear Units".
- ▶ Extensive notes and suggestions can be found in the Hydraulic Trainer Vol. 3: "Project planning recommendations and design of hydraulic systems", order number R900018547.

### Filter recommendation

Since the majority of premature failures in gear motors occur due to contaminated hydraulic fluid, filtration should maintain a cleanliness level of 20/18/15 as defined by ISO 4406. Cleanliness level 20/18/15 can reduce contamination to an acceptable degree in terms of particle size and concentration.

Bosch Rexroth generally recommends full-flow filtration. Basic contamination of the hydraulic fluid should not exceed class 20/18/15 as defined by ISO 4406. New fluids are often above this value. In such instances, a filling device with a special filter should be used.

Bosch Rexroth is not liable for wear due to contamination.

## Order number overview

| Order number | Type               | Page |
|--------------|--------------------|------|
| R979106252   | AZMB-32-4.5UHO20PL | 11   |
| R979106592   | AZMB-32-2.5UHO20PL | 11   |
| R979106593   | AZMB-32-3.1UHO20PL | 11   |
| R979106594   | AZMB-32-4.0UHO20PL | 11   |
| R979106595   | AZMB-32-5.0UHO20PL | 11   |
| R979106596   | AZMB-32-6.3UHO20PL | 11   |
| R979106597   | AZMB-32-7.1UHO20PL | 11   |
| R979106804   | AZMB-32-2.5UCP20PL | 12   |
| R979106805   | AZMB-32-3.1UCP20PL | 12   |
| R979106806   | AZMB-32-4.0UCP20PL | 12   |
| R979106807   | AZMB-32-4.5UCP20PL | 12   |
| R979106808   | AZMB-32-5.0UCP20PL | 12   |
| R979106809   | AZMB-32-6.3UCP20PL | 12   |
| R979106810   | AZMB-32-7.1UCP20PL | 12   |

## AZ configurator

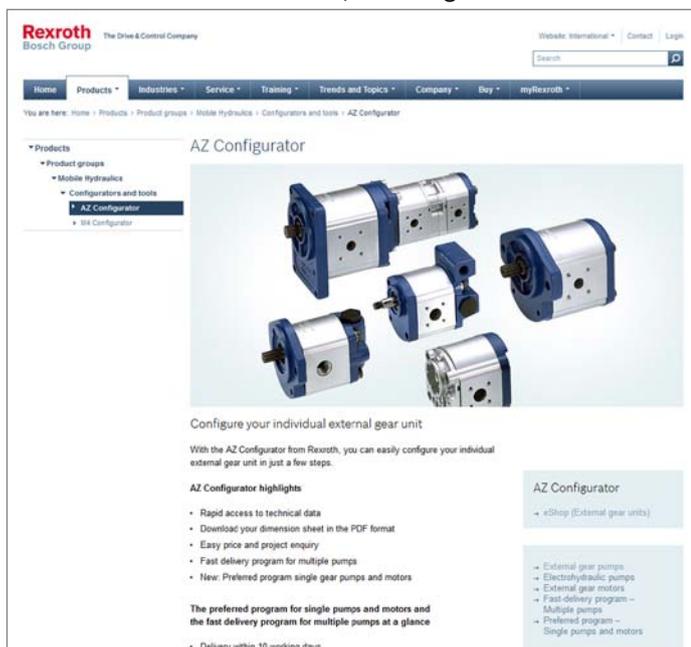
With our practical product selector, it will take you next to no time to find the right solution for your applications, no matter whether it is High Performance or another external gear unit.

The selector guides you through a selection of features to all of the products available for order. By clicking on the order number, you can view and download the following product information: Data sheet, dimension sheet, instruction manual, operating conditions, and tightening torques. You can order your selection directly via our online shop and at the same time benefit from an additional discount of 2%. And if you need something really quickly, simply use our fast delivery and preferred programs (GoTo). Then the goods will be sent within 10 business days.

You also have the possibility to easily and conveniently configure your individual external gear unit with our AZ configurator. All the necessary data that you need for the project planning of external gear units is requested by means of the menu navigation.

For an already existing configuration you receive as a result the order number, the type code, as well as further information. If your configuration does not lead to a product that is available for order, our online tools provide you with the possibility of sending a project request directly to Bosch Rexroth. We will then get in contact with you.

Link: [www.boschrexroth.com/az-configurator](http://www.boschrexroth.com/az-configurator)



## Fit4SILENCE app

You want to quickly determine the noise level of an application but don't have a measuring device at hand? No problem with Fit4SILENCE! Our new noise measurement app for all Android devices can be immediately downloaded free of charge. After calibration, you can start using it straight away and conduct fast, accurate noise measurements with different weightings in no time at all. An additional measuring device is no longer necessary, because calibrated smartphones using the app can achieve an accuracy that approximates professional measuring devices. Last but not least, the app contains interesting information about the SILENCE PLUS technology, including an audio sample.

Link: [www.boschrexroth.com/silence-plus](http://www.boschrexroth.com/silence-plus)

### ▼ Download the Android app:



**Bosch Rexroth AG**

Mobile Applications  
Robert-Bosch-Straße 2  
71701 Schwieberdingen, Germany  
Phone +49 711 811-10063  
brm-az.info@boschrexroth.de  
www.boschrexroth.com

© Bosch Rexroth AG 2016. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights. The data specified within only serves to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.