

# Radial piston pumps

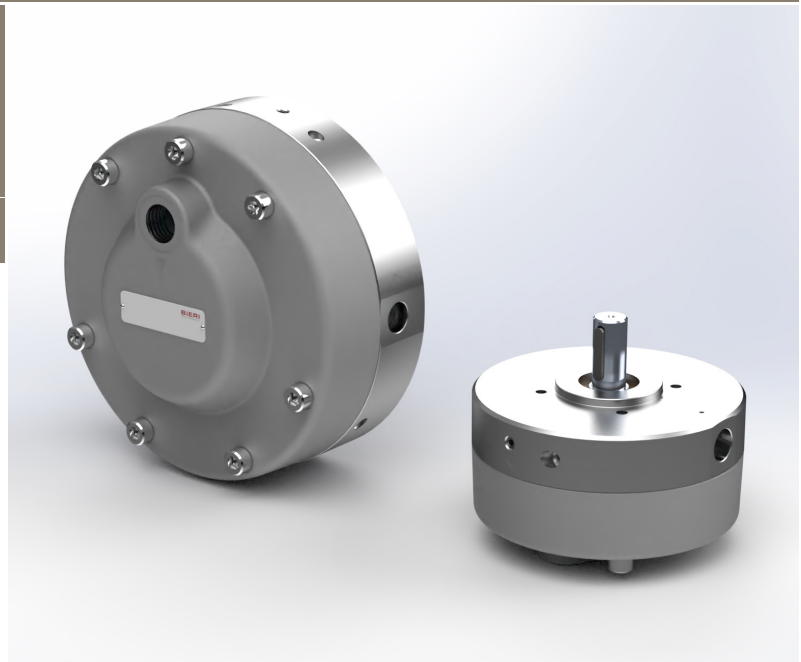
## Type BRK1001/1002

heavy version  
up to **1000 bar**  
0.47 to 3.56 cm<sup>3</sup>/rev

500 bar → see data sheet BRK501/502  
700 bar → see data sheet BRK701/702

### Features

- High volumetric efficiency
- Selfventing and selfpriming
- Low pulsation
- Combination with gear pump possible (see separate technical data sheet BKP)

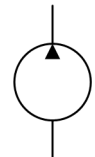


### Applications

- Specially designed for demanding applications with continuous pressures up to 1000 bar → long economic lifetime!
- Machine tools
- Clamping device
- Power units (e.g. for presses)
- Test benches
- Accumulator charging systems
- Lifting and advancing systems

### Design

- Radial piston pump of modular design
- With valve controlled pumping elements
- With 3, 5 or 7 pumping elements



### Technical data

|                                 |   |                     |
|---------------------------------|---|---------------------|
| Hydraulic fluid                 | mineral oil according to DIN 51524<br>(other fluids on request) |                     |
| Fluid temperature range         | -20 to 80 °C  |                     |
| Ambient temperature range       | -30 to 50 °C  |                     |
| Viscosity range                 | 5 to 220 mm <sup>2</sup> /s                                     |                     |
| Filtration (recommendation)     | according to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12       |                     |
| Max. operating pressure         | 1000 bar  |                     |
| Operating pressure suction side | -0.2 bar to 0.5 bar gauge pressure                              |                     |
| Displacement volume             | 0.47 to 3.56 cm <sup>3</sup> /rev                               |                     |
| Axial force onto driving shaft  | can't be taken up   |                     |
| Radial force onto driving shaft | on request  |                     |
| Max. rotation speed             | 2000 to 3600 rpm (see overview "Product information")           |                     |
| Direction of rotation           | any   |                     |
| Suction height                  | max. 500 mm   |                     |
| Weight                          | see overview "Product information"                              |                     |
| Materials                       | pressure flange:  | high-strength steel |
|                                 | driving shaft:  | steel               |
|                                 | cover:  | diecast aluminium   |

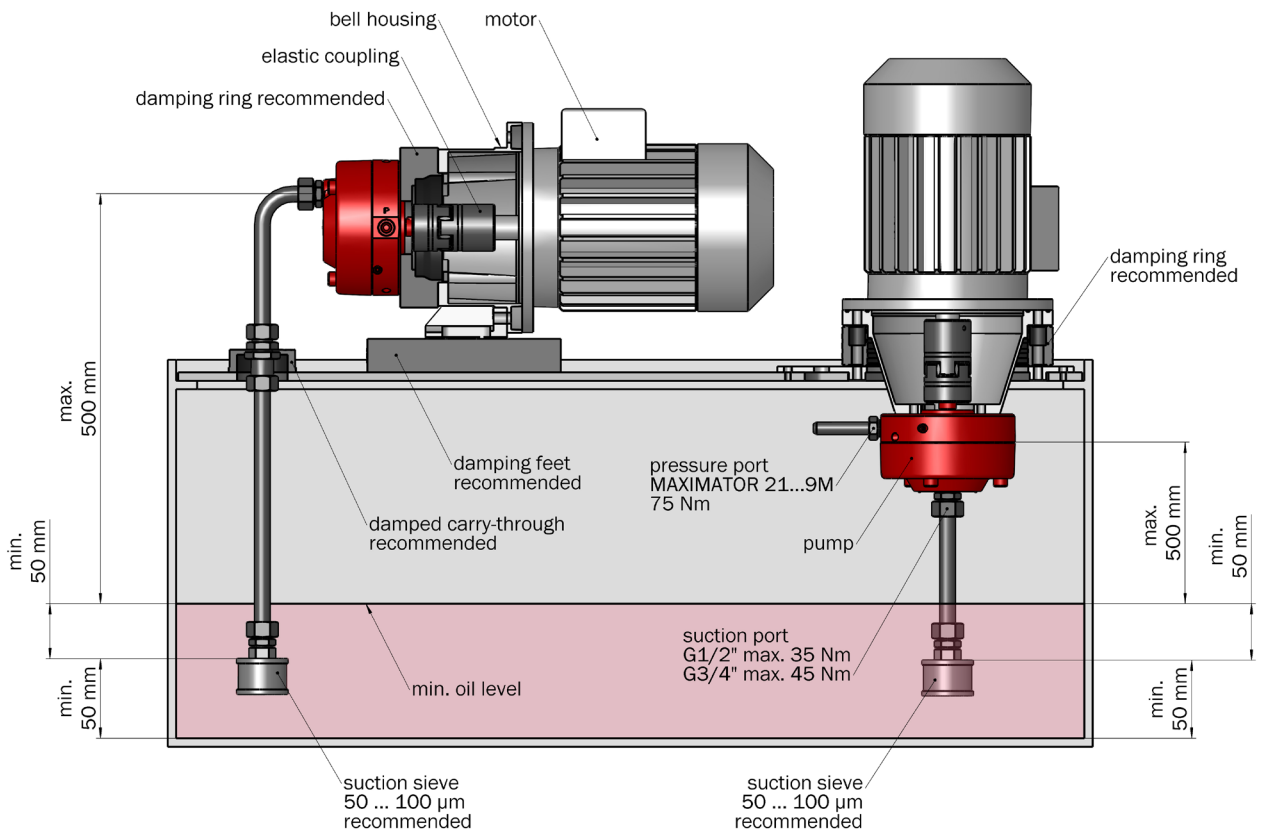
## Type BRK1001/1002

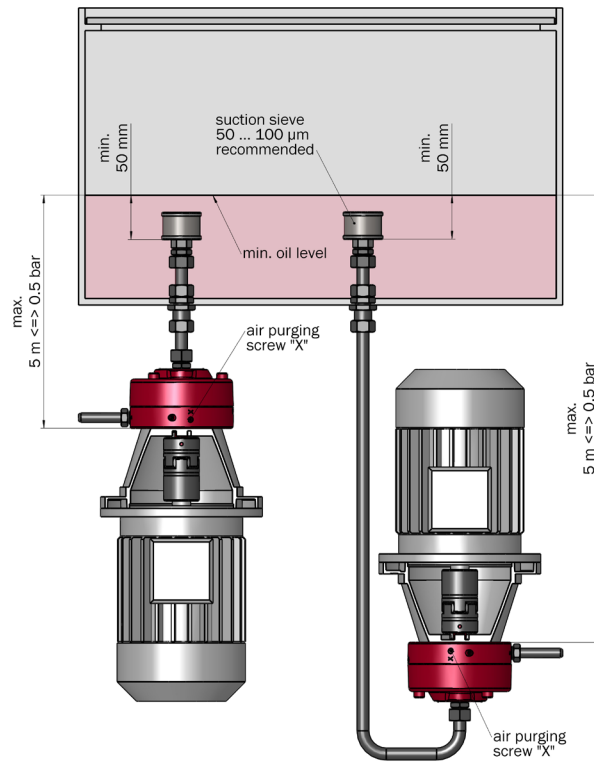
heavy version  
to 1000 bar  
0.47 up to 3.56 cm<sup>3</sup>/rev

## Type code

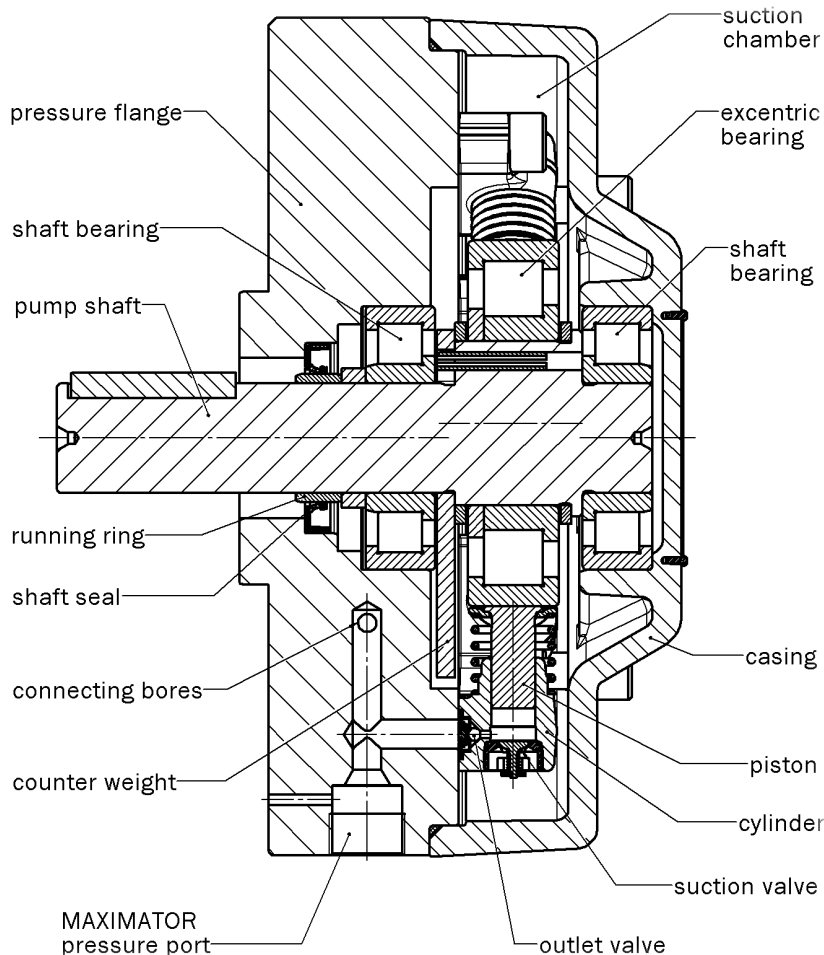
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|---|--|--|--|--|--|--|---|
| <b>Example</b>                                  | BRK 1002 - 3,56 - 1000 - V - C - 00      |  |  |  |  |  |   |
| <b>Radial piston pumps</b>                      |  |  |  |  |  |  | <b>Design</b><br>00 ... 99<br>For internal purposes         |
| <b>Size</b>                                     | 1001<br>1002                             |  |  |  |  |  | <b>Index</b><br>Please leave blank<br>For internal purposes |
| <b>Displacement volume [cm<sup>3</sup>/rev]</b> | See overview<br>"Product information"    |  |  |  |  |  |   |
| <b>Max. operating pressure [bar]</b>            | See overview<br>"Product information"    |  |  |  |  |  | <b>Design revision</b><br>For internal purposes             |
| <b>Seal material</b>                            | V FKM<br>other seal materials on request |  |  |  |  |  |   |

## Mounting





**Main components**



|  |
|--|
| <b>Type BRK1001/1002</b>   |
| heavy version<br>to 1000 bar<br>0.47 up to 3.56 cm <sup>3</sup> /rev |

## Product information

| size | displacement volume [cm <sup>3</sup> /rev] | max. operating pressure [bar] | max. rotation speed [rpm] | number of pumping elements | weight [kg] | max. torque [Nm] | max. power* [kW] | part no. |
|------|--|-------------------------------|---------------------------|----------------------------|-------------|------------------|------------------|----------|
| 1001 | 0.47                                       | 1000                          | 3600                      | 3                          | 8.3         | 9.53             | 1.55             | 4488415  |
| 1001 | 0.68                                       | 1000                          | 3600                      | 3                          | 8.3         | 13.51            | 2.23             | 4488416  |
| 1001 | 0.79                                       | 1000                          | 3600                      | 5                          | 8.6         | 15.43            | 2.50             | 4488417  |
| 1001 | 1.13                                       | 1000                          | 3600                      | 5                          | 8.6         | 21.85            | 3.60             | 4488418  |
| 1001 | 1.21                                       | 1000                          | 2000                      | 3                          | 8.3         | 23.62            | 3.96             | 4488419  |
| 1001 | 1.53                                       | 1000                          | 2000                      | 3                          | 8.3         | 29.76            | 5.01             | 4488420  |
| 1001 | 2.01                                       | 1000                          | 2000                      | 5                          | 8.6         | 38.21            | 6.41             | 4488422  |
| 1001 | 2.54                                       | 900                           | 2000                      | 5                          | 8.6         | 43.41            | 7.30             | 4488423  |
| 1002 | 1.10                                       | 1000                          | 2000                      | 7                          | 21.7        | 21.42            | 3.47             | 4488424  |
| 1002 | 1.58                                       | 1000                          | 2000                      | 7                          | 21.7        | 30.35            | 5.00             | 4488535  |
| 1002 | 2.81                                       | 1000                          | 2000                      | 7                          | 21.7        | 53.06            | 8.88             | 4488537  |
| 1002 | 3.56                                       | 1000                          | 2000                      | 7                          | 21.7        | 66.86            | 11.24            | 4488538  |

\* at n = 1500 1/min;  $\eta_t = 0.8$ ;  $p = p_{max}$

### Calculation of driving motor power

$$P = \frac{p \cdot V_g \cdot n \cdot k}{\eta_t \cdot 600 \cdot 10^3}$$

P = driving power [kW]  
 p = operating pressure [bar]  
 V<sub>g</sub> = displacement volume [cm<sup>3</sup>/rev]  
 n = speed [rpm]  
 $\eta_t$  = overall efficiency approx. 0.8

k = pulsation factor  
 - with 3 pumping elements: k approx. 1.05  
 - with 5 pumping elements: k approx. 1.02  
 - with 7 pumping elements: k approx. 1.01

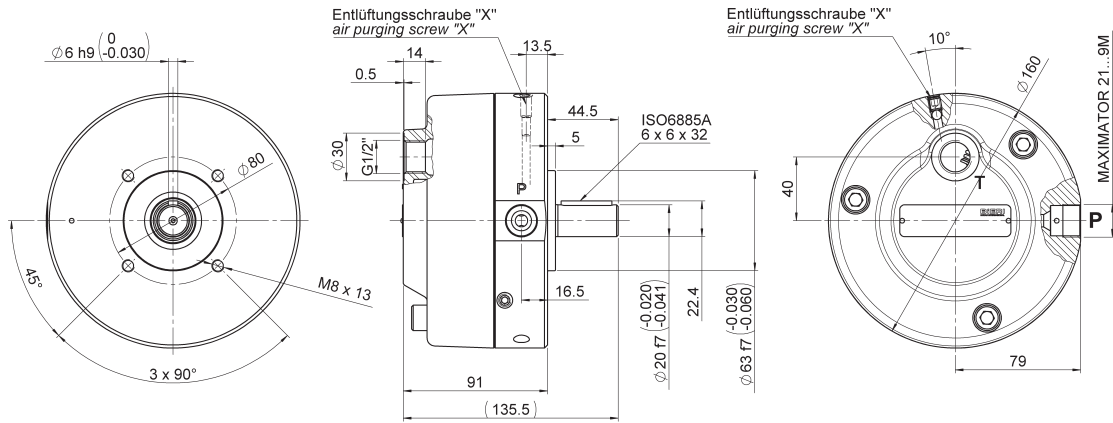
### Calculation of driving motor torque

$$M = \frac{p \cdot V_g}{62,8 \cdot \eta_t}$$

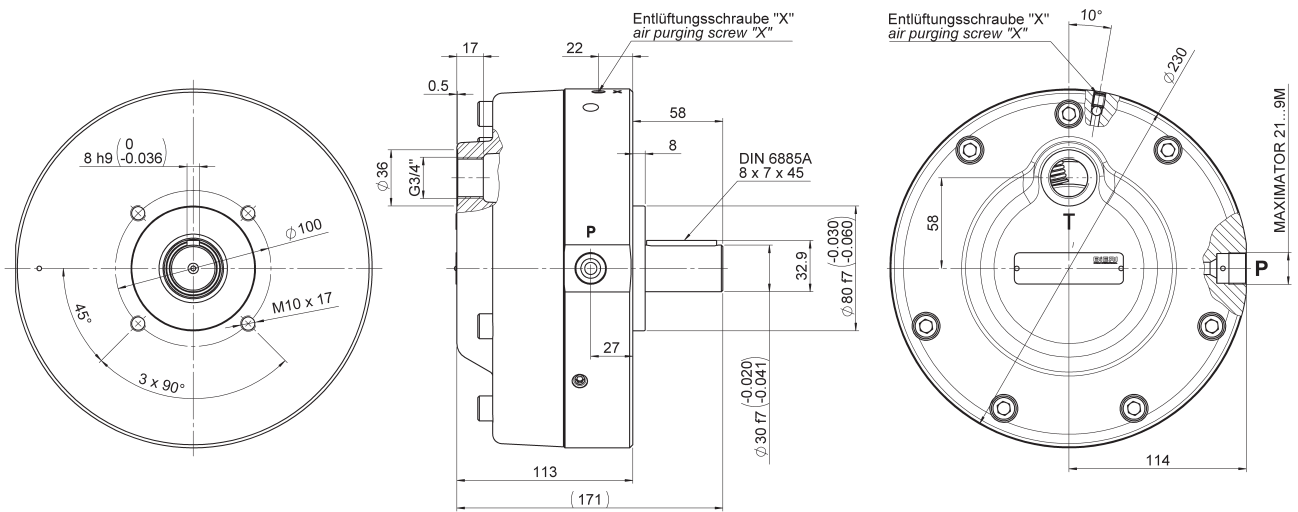
M = torque [Nm]

**Dimensional drawings**

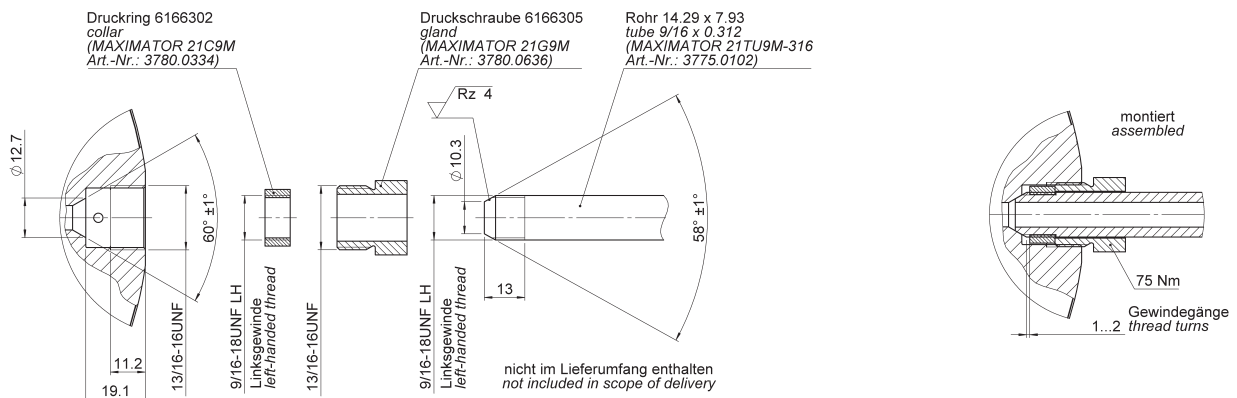
**Size BRK1001**



**Size BRK1002**



**Connection „P“ for MAXIMATOR piping 21...9M**



## Accessories

| item description        | part no. |
|-------------------------|----------|
| adapter G1/4" MAXIMATOR | 3939573  |

