

# Radial piston pumps

## Type BRK11/12

heavy duty series

1000 bar

0,47 up to 8,14 cm<sup>3</sup>/rev

500 bar → see data sheet BRK501/502

700 bar → see data sheet BRK701/702

### Features

- High volumetric efficiency
- Self-priming and venting
- Low pulsation
- Low noise level
- Combination with gear pump possible (see separate data sheet BKP)



### Design

- Radial piston pump of modular design
- With valve controlled pump elements
- Can be supplied with 3, 5, 7 and 9 pistons per section (depending on size)

### Applications

- Specially designed for demanding applications with continuous pressures (S1) up to 1000 bar → long economic lifetime!
- Clamping device
- Power units (e.g. for presses)
- Test stands
- Accumulator loading systems
- Lifting and advancing systems

### Technical data

|                                             |                                                                 |                      |
|---------------------------------------------|-----------------------------------------------------------------|----------------------|
| Hydraulic fluid                             | Mineral oil according to DIN 51524<br>(other fluids on request) |                      |
| Fluid temperature range                     | NBR: -30 to 80 °C<br>FPM: -20 to 80 °C                          |                      |
| Ambient temperature range                   | -30 to 50 °C                                                    |                      |
| Viscosity range                             | 5 to 220 mm <sup>2</sup> /s (optimal: 15-35 mm <sup>2</sup> /s) |                      |
| Max. Betriebsdruck                          | 1000 bar continuous pressure (S1)                               |                      |
| Operation pressure at suction port          | -0,2 bar to 0,5 bar gauge pressure                              |                      |
| Filtration                                  | According to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12       |                      |
| Weight                                      | See product information                                         |                      |
| Radial force/Axial force onto driving shaft | Not allowed                                                     |                      |
| Max. speed range                            | 2000 min <sup>-1</sup>                                          |                      |
| Direction of rotation                       | Any                                                             |                      |
| Suction height                              | Max. 500 mm                                                     |                      |
| Material                                    | Pressure flange 1000 bar:                                       | steel                |
|                                             | Pressure flange 700 bar:                                        | cast steel           |
|                                             | Driving shaft:                                                  | steel                |
|                                             | Cover:                                                          | die casted aluminium |

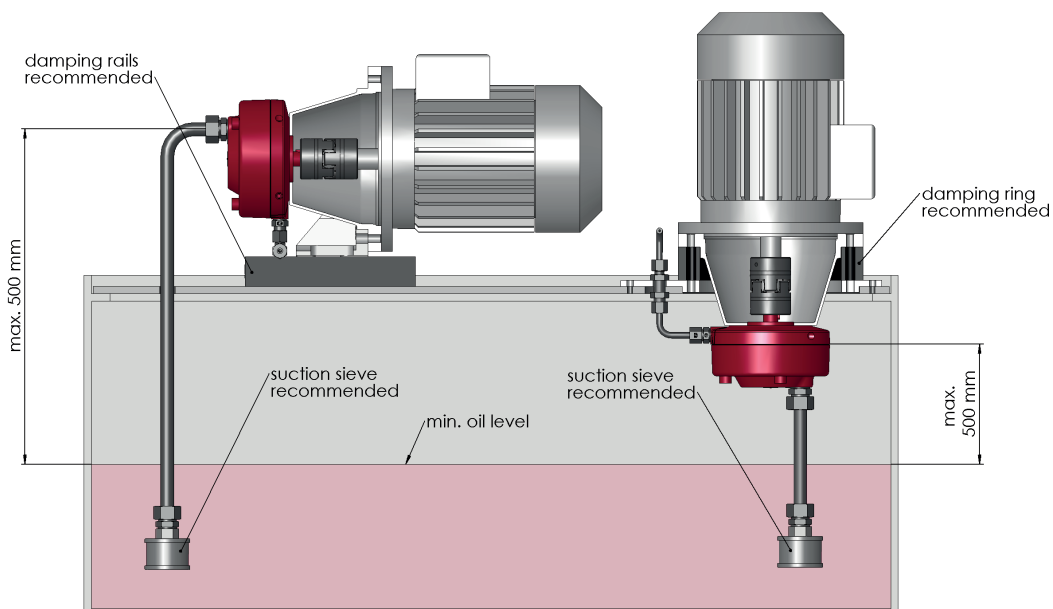
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## Ordering code

| Example                             |                                                       | BRK | 11 | - | 0,47 | - | 1000 | - | P | - |  |  | 00                                                                                                                            |
|-------------------------------------|-------------------------------------------------------|-----|----|---|------|---|------|---|---|---|--|--|-------------------------------------------------------------------------------------------------------------------------------|
| Radial piston pump                  |                                                       |     |    |   |      |   |      |   |   |   |  |  | <b>Special design</b><br>01 ... 99<br>(00 for standard)                                                                       |
| Size                                | 11<br>12                                              |     |    |   |      |   |      |   |   |   |  |  |                                                                                                                               |
| Displacement [cm <sup>3</sup> /rev] | see product inform.                                   |     |    |   |      |   |      |   |   |   |  |  |                                                                                                                               |
| Max. operating pressure [bar]       | see product information                               |     |    |   |      |   |      |   |   |   |  |  |                                                                                                                               |
| Seal material                       | P [NBR]<br>V [FPM]<br>other seal materials on request |     |    |   |      |   |      |   |   |   |  |  | <b>Part index</b><br>Please leave it blank<br>(small letters a-z; different letters do not effect interchangeability)         |
|                                     |                                                       |     |    |   |      |   |      |   |   |   |  |  | <b>Design revision</b><br>see dimension drawings<br>(capital letters A-Z; identical letters equal same connecting dimensions) |

## Mounting



## Product information

| Size | Displacement<br>[cm <sup>3</sup> /rev] | Operating<br>pressure<br>max. [bar] | Number of<br>pumping<br>elements | Weight<br>ca. [kg] | Part No.<br>with NBR seals<br>[Bieri/SAP] | Part No.<br>with FPM seals<br>[Bieri/SAP] |
|------|----------------------------------------|-------------------------------------|----------------------------------|--------------------|-------------------------------------------|-------------------------------------------|
| 11   | 0,47                                   | 1000                                | 3                                | 7,0                | 69681/3674522                             | 69681.01/3675409                          |
| 11   | 0,68                                   | 1000                                | 3                                | 7,0                | 69682/3675412                             | 69682.01/3675413                          |
| 11   | 0,79                                   | 1000                                | 5                                | 7,5                | 69691/3675417                             | 69691.01/3675418                          |
| 11   | 1,13                                   | 1000                                | 5                                | 7,5                | 69692/3675441                             | 69692.01/3675442                          |
| 11   | 1,21                                   | 1000                                | 3                                | 7,0                | 64581/3675447                             | 64581.01/3675448                          |
| 11   | 1,53                                   | 1000                                | 3                                | 7,0                | 64590/3675453                             | 64590.01/3675454                          |
| 11   | 1,88                                   | 900                                 | 3                                | 7,0                | 64597/3675466                             | 64597.01/3675467                          |
| 11   | 2,01                                   | 1000                                | 5                                | 7,5                | 64583/3675469                             | 64583.01/3675470                          |
| 11   | 2,54                                   | 900                                 | 5                                | 7,5                | 64592/3677016                             | 64592.01/3677017                          |
| 11   | 2,71                                   | 850                                 | 3                                | 7,5                | 69683/3677024                             | 69683.01/3677035                          |
| 12   | 1,10                                   | 1000                                | 7                                | 12,5               | 69704/3677087                             | 69704.01/3677088                          |
| 12   | 1,58                                   | 1000                                | 7                                | 12,5               | 69705/3677090                             | 69705.01/3677091                          |
| 12   | 2,81                                   | 1000                                | 7                                | 12,5               | 69706/3677093                             | 69706.01/3677094                          |
| 12   | 3,56                                   | 1000                                | 7                                | 12,5               | 64585/3677096                             | 64585.01/3677097                          |
| 12   | 4,40                                   | 900                                 | 7                                | 12,5               | 64616/3677099                             | 64616.01/3677100                          |
| 12   | 5,65                                   | 700                                 | 9                                | 12,5               | 69874/3677102                             | 69874.01/3677103                          |
| 12   | 6,33                                   | 650                                 | 7                                | 12,5               | 64617/3677105                             | 64617.01/3677106                          |
| 12   | 8,14                                   | 500                                 | 9                                | 12,5               | 69878/3674339                             | 69878.01/3677108                          |

## 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 [cm<sup>3</sup>/rev]

n = Speed [rpm]

η<sub>t</sub> = Overall efficiency approx. 0,8

k = Pulsation factor

- with 3 pumping elements: k approx. 1,05

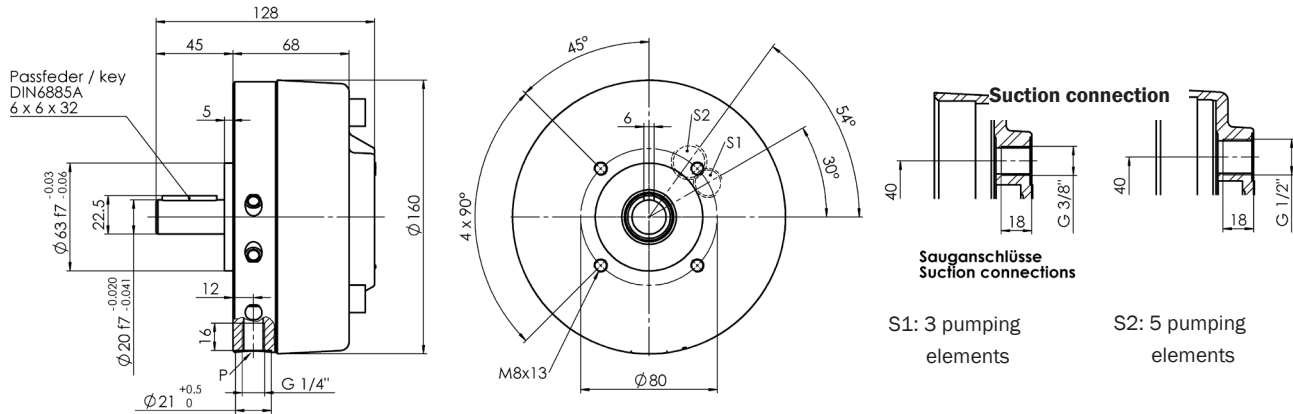
- with 5 pumping elements: k approx. 1,0

- with 7 pumping elements: k approx. 1,0

- with 9 pumping elements: k approx. 1,0

## Dimensional drawings

**Size BRK11** / Design revision B



**Size BRK12** / Design revision B

