



6.1 SIZE 1  
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PGE101

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## ORDERING CODE

### 6.2.1 External Gear Pump

|                                               |                                                |         | PGE101 | 100 | R | B | Q | 1 | N | XXXX |
|-----------------------------------------------|------------------------------------------------|---------|--------|-----|---|---|---|---|---|------|
| <b>External gear pump</b>                     |                                                |         |        |     |   |   |   |   |   |      |
| <b>Size 1</b>                                 |                                                |         |        |     |   |   |   |   |   |      |
| <b>Displacement</b>                           |                                                |         |        |     |   |   |   |   |   |      |
| 100                                           | 1                                              | cm³/rev |        |     |   |   |   |   |   |      |
| 125                                           | 1.25                                           | cm³/rev |        |     |   |   |   |   |   |      |
| 160                                           | 1.6                                            | cm³/rev |        |     |   |   |   |   |   |      |
| 200                                           | 2                                              | cm³/rev |        |     |   |   |   |   |   |      |
| 250                                           | 2.5                                            | cm³/rev |        |     |   |   |   |   |   |      |
| 315                                           | 3.15                                           | cm³/rev |        |     |   |   |   |   |   |      |
| 365                                           | 3.65                                           | cm³/rev |        |     |   |   |   |   |   |      |
| 420                                           | 4.2                                            | cm³/rev |        |     |   |   |   |   |   |      |
| 500                                           | 5                                              | cm³/rev |        |     |   |   |   |   |   |      |
| 610                                           | 6.1                                            | cm³/rev |        |     |   |   |   |   |   |      |
| 740                                           | 7.4                                            | cm³/rev |        |     |   |   |   |   |   |      |
| <b>Shaft rotation (viewed from shaft end)</b> |                                                |         |        |     |   |   |   |   |   |      |
| R                                             | Clockwise                                      |         |        |     |   |   |   |   |   |      |
| L                                             | Anti-clockwise                                 |         |        |     |   |   |   |   |   |      |
| <b>Shaft</b>                                  |                                                |         |        |     |   |   |   |   |   |      |
| A                                             | Tapered keyed shaft 1:5                        |         |        |     |   |   |   |   |   |      |
| B                                             | Tapered keyed shaft 1:8                        |         |        |     |   |   |   |   |   |      |
| C                                             | Tang                                           |         |        |     |   |   |   |   |   |      |
| Z                                             | Special shaft (only on request)                |         |        |     |   |   |   |   |   |      |
| <b>Mounting flange</b>                        |                                                |         |        |     |   |   |   |   |   |      |
| L                                             | 2-hole mounting, centering Ø 32 mm             |         |        |     |   |   |   |   |   |      |
| M                                             | 2-hole mounting, centering Ø 32 mm with O-ring |         |        |     |   |   |   |   |   |      |
| Q                                             | Square flange centering Ø 25.4 mm              |         |        |     |   |   |   |   |   |      |
| Z                                             | Special flange (only on request)               |         |        |     |   |   |   |   |   |      |
| <b>Ports</b>                                  |                                                |         |        |     |   |   |   |   |   |      |
| 1                                             | Pipe thread ISO 228-1                          |         |        |     |   |   |   |   |   |      |
| 2                                             | Metric thread DIN 3852-1                       |         |        |     |   |   |   |   |   |      |
| 3                                             | Thread UN 2B SAE O-ring boss                   |         |        |     |   |   |   |   |   |      |
| 4                                             | Square flange (ital. design)                   |         |        |     |   |   |   |   |   |      |
| 5                                             | Square flange DIN 3901/ ISO 8435               |         |        |     |   |   |   |   |   |      |
| 9                                             | Special ports (only on request)                |         |        |     |   |   |   |   |   |      |
| <b>Seals</b>                                  |                                                |         |        |     |   |   |   |   |   |      |
| N                                             | NBR                                            |         |        |     |   |   |   |   |   |      |
| V                                             | FPM                                            |         |        |     |   |   |   |   |   |      |
| <b>Modification number</b>                    |                                                |         |        |     |   |   |   |   |   |      |
| XXXX                                          | Determined by manufacturer                     |         |        |     |   |   |   |   |   |      |

**Not all combinations in the ordering code are possible.**  
 Please refer to 6.2.12 Preferred series, or consult HYDAC.  
 Special options are possible upon request.

## TECHNICAL INFORMATION

### 6.2.2 Specifications

| Pump size              |              |           | 100  | 125  | 160  | 200  | 250  | 315  | 365  | 420  | 500  | 610  | 740  |
|------------------------|--------------|-----------|------|------|------|------|------|------|------|------|------|------|------|
| Geometric displacement |              | [cm³/rev] | 1    | 1.25 | 1.6  | 2    | 2.5  | 3.15 | 3.65 | 4.2  | 5    | 6.1  | 7.4  |
| Pressure               | Rated        | [bar]     | 250  |      |      |      |      |      |      |      |      | 200  | 170  |
|                        | Intermittent |           | 280  |      |      |      |      |      |      |      |      | 220  | 190  |
|                        | Peak         |           | 300  |      |      |      |      |      |      |      |      | 230  | 200  |
| Drive speed            | min.         | [rpm]     | 750  |      |      |      |      |      |      |      |      |      |      |
|                        | max.         |           | 3500 |      |      |      |      |      |      |      |      | 3000 | 2500 |
| Approx. weight         |              | [kg]      | 1    | 1.02 | 1.04 | 1.05 | 1.07 | 1.11 | 1.14 | 1.18 | 1.25 | 1.3  | 1.37 |

The continuous and maximum pressures given here only apply to pumps with flange ports. If threaded ports are required, the performance will be reduced. To find out whether a pump with threaded ports can be used in a high pressure application, please consult HYDAC.

### 6.2.3 Hydraulic fluids

The pump series is designed for use with

**HL** Hydraulic oil  
(normal mineral oil)  
and

**HLP** Hydraulic oils of the R&O type  
(Rust and Oxidation inhibitor)

### 6.2.4 Viscosity range

**Normal** operating viscosity:  
16 - 200 cSt (mm²/s)

For other viscosity ranges, please  
contact HYDAC.

### 6.2.5 Temperature range

Ambient temperature range  
**-22 to 55 °C**

Fluid temperature range  
NBR

**-25 up to 85 °C**

Viton

**-15 up to 90 °C**

## 6.2.6 Seals

The pump series is equipped with NBR seals.

If special hydraulic fluids are used, the seal material must be changed if required. Please contact HYDAC.

## 6.2.7 Filtration

For maximum service life of the pump and system components, the system should be protected from contamination by effective filtration. Cleanliness class:

**21/ 18/ 15 to ISO 4406:1999**

or

**Class 9 to NAS 1638 or cleaner.**

At system pressures above 160 bar cleanliness class:

**19/17/14 to ISO 4406:1999**

or

**Class 8 to NAS 1638** is required.

## 6.2.8 Installation notes

### A. Mounting

The pump can be installed horizontally or vertically with the shaft at the top. If the pump is installed on the tank or above the oil level, the distance between the pump inlet and the oil level should not exceed 1 metre.

When installing a HYDAC pump always ensure that the fluid remains in the pump during stoppages.

### B. Suction pipe

If the pump is installed above the oil level, particular attention must be paid to the suction pressure. The cross-section of the suction pipe must be equal to or larger than the cross-section of the pump port. The suction pressure must be kept within the values specified.

Minimum suction pressure:  
0.8 bar abs.

Maximum suction pressure:  
2.2 bar abs.

### C. Drive

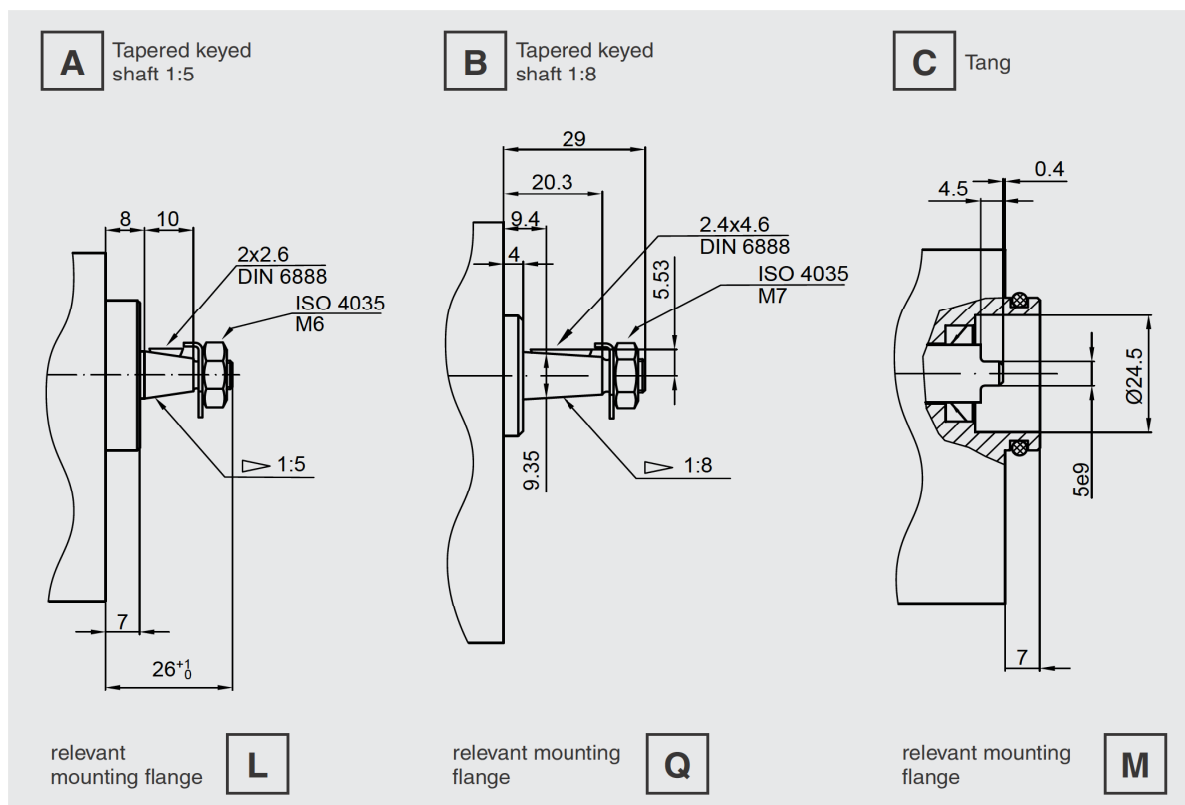
**Use a flexible coupling whenever possible. There must not be any radial or axial forces on the pump shaft. The maximum misalignment of the shafts is 0.2 mm and the angular deviation must be less than 0.2°.**

Drive shafts with tang are for direct mounting onto an electric motor or a gearbox. The driver for the tang is not included.

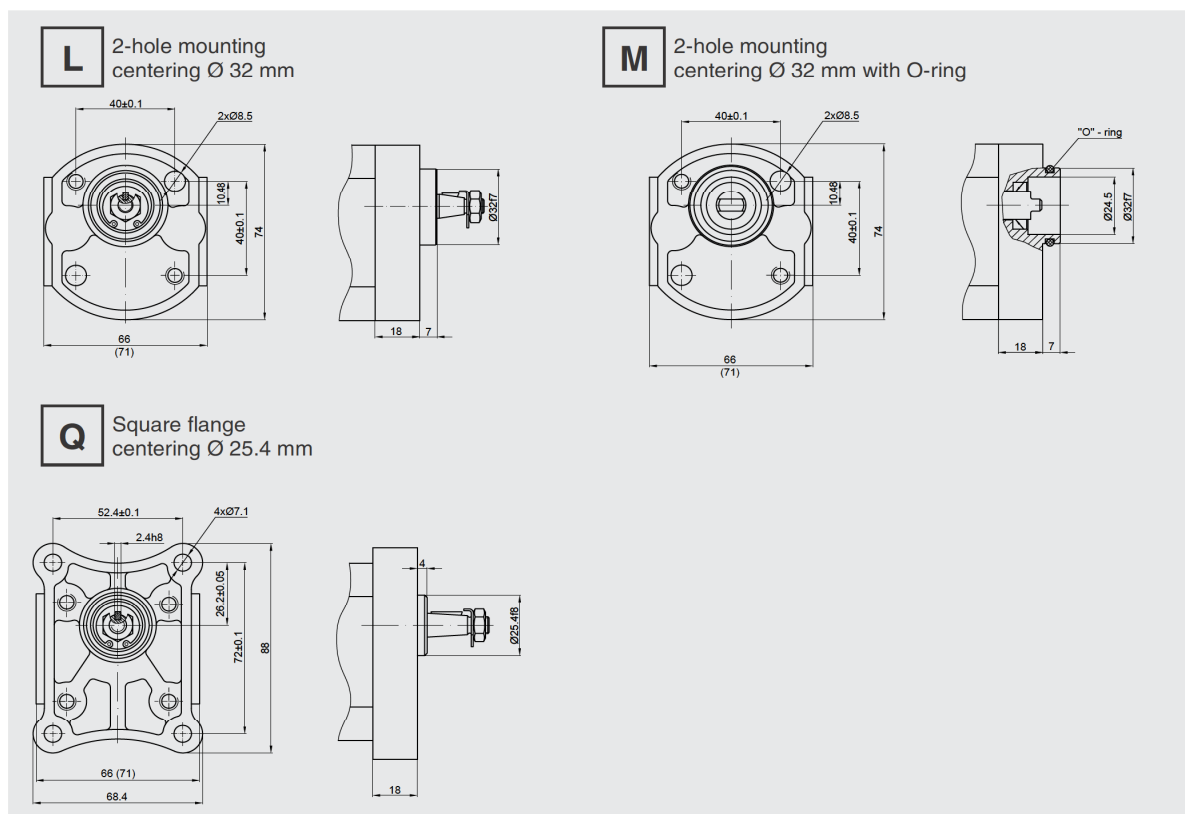
For indirect drives (with gear, chain or belt drives) please consult Hydac.

## DIMENSIONS

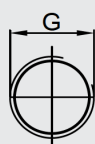
### 6.2.9 Drive shafts



### 6.2.10 Mounting flange

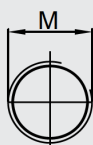


## 6.2.11 Ports



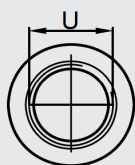
### 1 Pipe thread ISO 228/1

| Ordering code | Displacement                 | Outlet<br>G | Inlet<br>G |
|---------------|------------------------------|-------------|------------|
| 1             | 1 ... 2.5 cm <sup>3</sup>    | G 3/8       | G 3/8      |
|               | 3.15 ... 7.4 cm <sup>3</sup> | G 3/8       | G 1/2      |



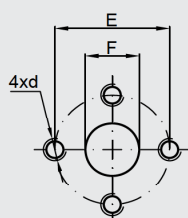
### 2 Metric thread DIN 3852-1

| Ordering code | Displacement                 | Outlet<br>M | Inlet<br>M |
|---------------|------------------------------|-------------|------------|
| 2             | 1 ... 2.5 cm <sup>3</sup>    | M16x1.5     | M16x1.5    |
|               | 3.15 ... 6.1 cm <sup>3</sup> | M16x1.5     | M20x1.5    |
|               | 7.4 cm <sup>3</sup>          | M18x1.5     | M22x1.5    |



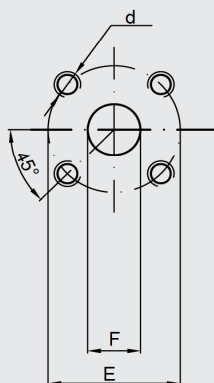
### 3 Pipe thread UN 2B SAE O-ring boss

| Ordering code | Displacement              | Outlet<br>U | Inlet<br>U |
|---------------|---------------------------|-------------|------------|
| 3             | 1 ... 6.1 cm <sup>3</sup> | 9/16-18 UNF | 3/4-16 UNF |
|               | 7.4 cm <sup>3</sup>       | 3/4 16 UNF  | 7/8-14 UNF |



### 4 Square flange (Italian design)

| Ordering code | Displacement              | Outlet |    |    | Inlet |    |    |
|---------------|---------------------------|--------|----|----|-------|----|----|
|               |                           | F      | E  | d  | F     | E  | d  |
| 4             | 1 ... 7.4 cm <sup>3</sup> | 12     | 30 | M6 | 12    | 30 | M6 |

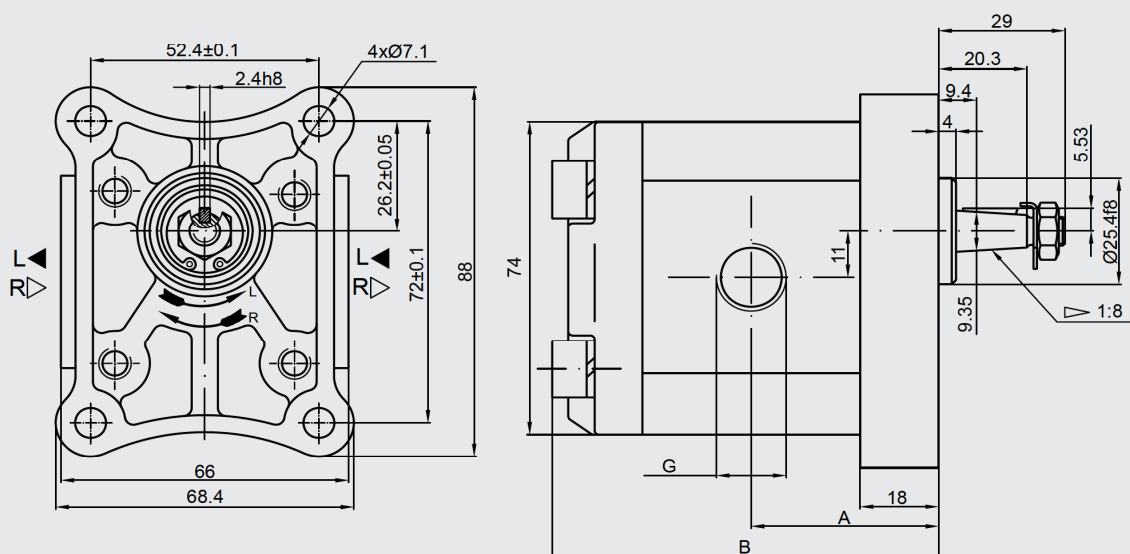


### 5 Square flange DIN 3901/ ISO 8435

| Ordering code | Displacement              | Outlet |    |    | Inlet |    |    |
|---------------|---------------------------|--------|----|----|-------|----|----|
|               |                           | F      | E  | d  | F     | E  | d  |
| 5             | 1 ... 7.4 cm <sup>3</sup> | 12     | 30 | M6 | 12    | 30 | M6 |

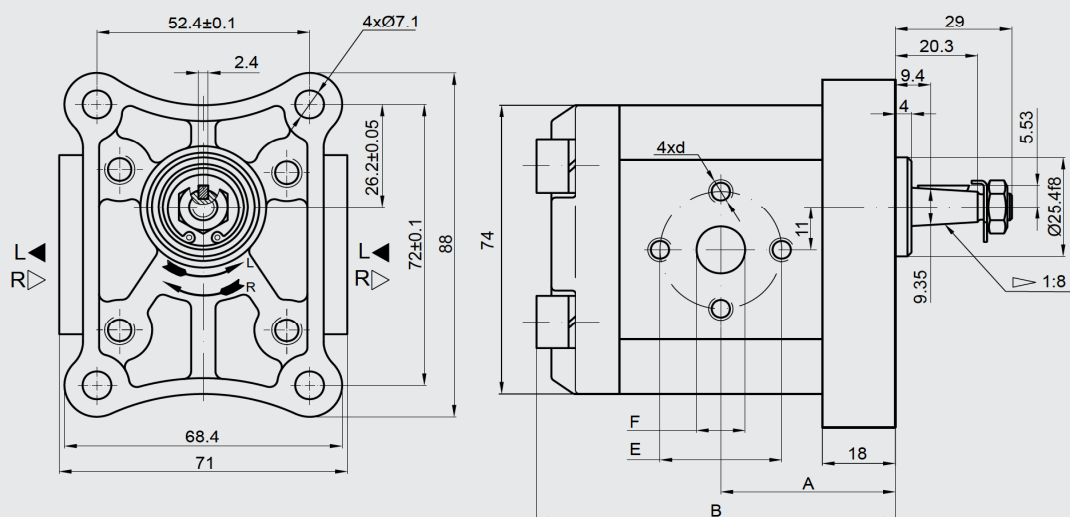
## 6.2.12 Preferred series

### PGE101-...-BQ1-N



| Type               | Displacement<br><br>[cm³/rev] | Output flow               |                           | Rated<br><br>[bar] | Max. speed<br><br>n<br>[rpm] | Dimension |           |            |             |  |
|--------------------|-------------------------------|---------------------------|---------------------------|--------------------|------------------------------|-----------|-----------|------------|-------------|--|
|                    |                               | at<br>1500 rpm<br>[l/min] | at<br>max. rpm<br>[l/min] |                    |                              | A<br>[mm] | B<br>[mm] | Inlet<br>G | Outlet<br>G |  |
| PGE101-100-. BQ1-N | 1                             | 1.40                      | 3.26                      | 250                | 3500                         | 39.1      | 81        | G 3/8"     | G 3/8"      |  |
| PGE101-125-. BQ1-N | 1.25                          | 1.74                      | 4.07                      |                    |                              | 39.5      | 82        |            |             |  |
| PGE101-160-. BQ1-N | 1.6                           | 2.23                      | 5.21                      |                    |                              | 40.3      | 83.6      |            |             |  |
| PGE101-200-. BQ1-N | 2                             | 2.82                      | 6.58                      |                    |                              | 41.1      | 85.2      |            |             |  |
| PGE101-250-. BQ1-N | 2.5                           | 3.53                      | 8.23                      |                    |                              | 42.1      | 87.2      | G 1/2"     |             |  |
| PGE101-315-. BQ1-N | 3.15                          | 4.44                      | 10.36                     |                    |                              | 43.5      | 89.8      |            |             |  |
| PGE101-365-. BQ1-N | 3.65                          | 5.15                      | 12.01                     |                    |                              | 44.4      | 91.9      |            |             |  |
| PGE101-420-. BQ1-N | 4.2                           | 5.92                      | 13.82                     |                    |                              | 45.5      | 94.1      |            |             |  |
| PGE101-500-. BQ1-N | 5                             | 7.05                      | 14.10                     | 200                | 3000                         | 47.1      | 97.2      | G 1/2"     | G 3/8"      |  |
| PGE101-610-. BQ1-N | 6.1                           | 8.69                      | 14.49                     |                    |                              | 49.4      | 101.8     |            |             |  |
| PGE101-740-. BQ1-N | 7.4                           | 10.55                     | 17.58                     | 170                | 2500                         | 52.1      | 107.2     |            |             |  |

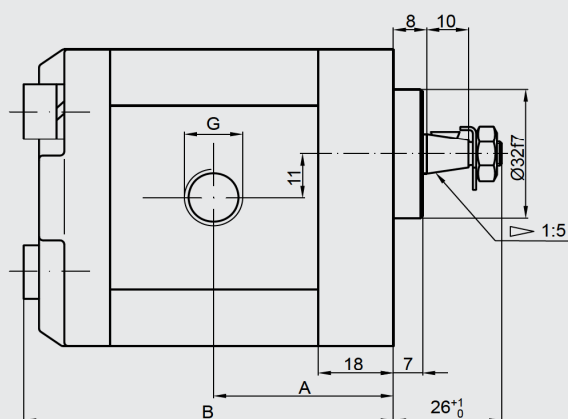
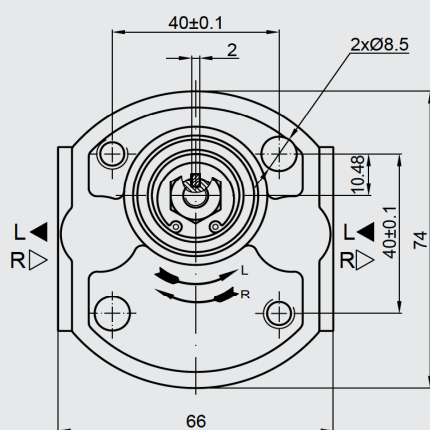
## PGE101-...-BQ4-N



| Type               | Displacement<br>[cm³/rev] | Output flow               |                           | Rated<br>[bar] | Max. speed<br>n<br>[rpm] | Dimension |           |       |      |        |      |
|--------------------|---------------------------|---------------------------|---------------------------|----------------|--------------------------|-----------|-----------|-------|------|--------|------|
|                    |                           | at<br>1500 rpm<br>[l/min] | at<br>max. rpm<br>[l/min] |                |                          | A<br>[mm] | B<br>[mm] | Inlet |      | Outlet |      |
|                    |                           |                           |                           |                |                          |           |           | E     | F    | d      |      |
| PGE101-100-. BQ4-N | 1                         | 1.40                      | 3.26                      | 250            | 3500                     | 39.1      | 81        | Ø 30  | Ø 12 | M6     | Ø 30 |
| PGE101-125-. BQ4-N | 1.25                      | 1.74                      | 4.07                      |                |                          | 39.5      | 82        |       |      |        |      |
| PGE101-160-. BQ4-N | 1.6                       | 2.23                      | 5.21                      |                |                          | 40.3      | 83.6      |       |      |        |      |
| PGE101-200-. BQ4-N | 2                         | 2.82                      | 6.58                      |                |                          | 41.1      | 85.2      |       |      |        |      |
| PGE101-250-. BQ4-N | 2.5                       | 3.53                      | 8.23                      |                |                          | 42.1      | 87.2      |       |      |        |      |
| PGE101-315-. BQ4-N | 3.15                      | 4.44                      | 10.36                     |                |                          | 43.5      | 89.8      |       |      |        |      |
| PGE101-365-. BQ4-N | 3.65                      | 5.15                      | 12.01                     |                |                          | 44.4      | 91.9      |       |      |        |      |
| PGE101-420-. BQ4-N | 4.2                       | 5.92                      | 13.82                     |                |                          | 45.5      | 94.1      |       |      |        |      |
| PGE101-500-. BQ4-N | 5                         | 7.05                      | 14.10                     | 200            | 3000                     | 47.1      | 97.2      | Ø 30  | Ø 12 | M6     | Ø 30 |
| PGE101-610-. BQ4-N | 6.1                       | 8.69                      | 14.49                     |                |                          | 49.4      | 101.8     |       |      |        |      |
| PGE101-740-. BQ4-N | 7.4                       | 10.55                     | 17.58                     |                |                          | 52.1      | 107.2     |       |      |        |      |

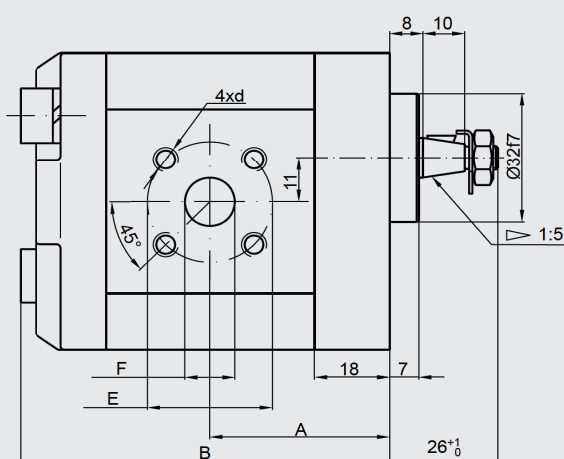
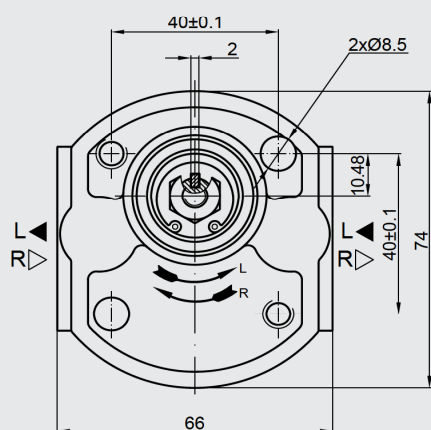
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## PGE101-...-AL1-N



| Type               | Displacement<br><br>[cm³/rev] | Output flow               |                           | Rated<br><br>[bar] | Max. speed<br><br>n<br>[rpm] | Dimension |           |            |             |  |
|--------------------|-------------------------------|---------------------------|---------------------------|--------------------|------------------------------|-----------|-----------|------------|-------------|--|
|                    |                               | at<br>1500 rpm<br>[l/min] | at<br>max. rpm<br>[l/min] |                    |                              | A<br>[mm] | B<br>[mm] | Inlet<br>G | Outlet<br>G |  |
| PGE101-100-. AL1-N | 1                             | 1.40                      | 3.26                      | 250                | 3500                         | 39.1      | 81        | G 3/8"     | G 3/8"      |  |
| PGE101-125-. AL1-N | 1.25                          | 1.74                      | 4.07                      |                    |                              | 39.5      | 82        |            |             |  |
| PGE101-160-. AL1-N | 1.6                           | 2.23                      | 5.21                      |                    |                              | 40.3      | 83.6      |            |             |  |
| PGE101-200-. AL1-N | 2                             | 2.82                      | 6.58                      |                    |                              | 41.1      | 85.2      |            |             |  |
| PGE101-250-. AL1-N | 2.5                           | 3.53                      | 8.23                      |                    |                              | 42.1      | 87.2      | G 1/2"     |             |  |
| PGE101-315-. AL1-N | 3.15                          | 4.44                      | 10.36                     |                    |                              | 43.5      | 89.8      |            |             |  |
| PGE101-365-. AL1-N | 3.65                          | 5.15                      | 12.01                     |                    |                              | 44.4      | 91.9      |            |             |  |
| PGE101-420-. AL1-N | 4.2                           | 5.92                      | 13.82                     |                    |                              | 45.5      | 94.1      |            |             |  |
| PGE101-500-. AL1-N | 5                             | 7.05                      | 14.10                     | 200                | 3000                         | 47.1      | 97.2      | G 1/2"     | G 3/8"      |  |
| PGE101-610-. AL1-N | 6.1                           | 8.69                      | 14.49                     |                    |                              | 49.4      | 101.8     |            |             |  |
| PGE101-740-. AL1-N | 7.4                           | 10.55                     | 17.58                     |                    |                              | 52.1      | 107.2     |            |             |  |

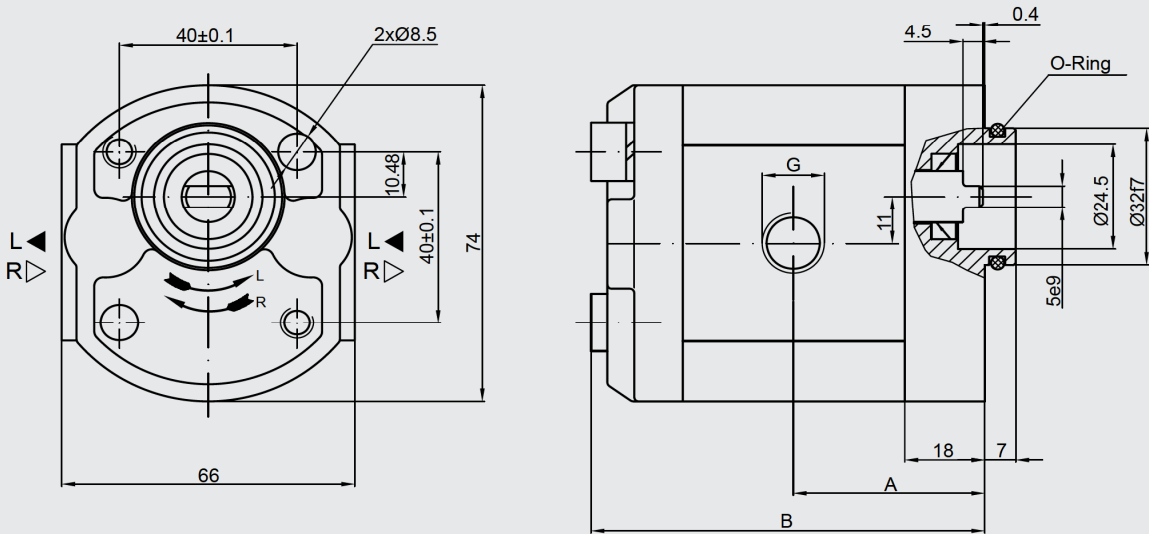
## PGE101-...-AL5-N



| Type               | Displacement<br>[cm <sup>3</sup> /rev] | Output flow               |                           | Rated<br>[bar] | Max. speed<br>n<br>[rpm] | Dimension |           |       |      |        |      |
|--------------------|----------------------------------------|---------------------------|---------------------------|----------------|--------------------------|-----------|-----------|-------|------|--------|------|
|                    |                                        | at<br>1500 rpm<br>[l/min] | at<br>max. rpm<br>[l/min] |                |                          | A<br>[mm] | B<br>[mm] | Inlet |      | Outlet |      |
|                    |                                        |                           |                           |                |                          |           |           | E     | F    | d      |      |
| PGE101-100-..AL5-N | 1                                      | 1.40                      | 3.26                      | 250            | 3500                     | 39.1      | 81        | Ø 30  | Ø 12 | M6     | Ø 30 |
| PGE101-125-..AL5-N | 1.25                                   | 1.74                      | 4.07                      |                |                          | 39.5      | 82        |       |      |        |      |
| PGE101-160-..AL5-N | 1.6                                    | 2.23                      | 5.21                      |                |                          | 40.3      | 83.6      |       |      |        |      |
| PGE101-200-..AL5-N | 2                                      | 2.82                      | 6.58                      |                |                          | 41.1      | 85.2      |       |      |        |      |
| PGE101-250-..AL5-N | 2.5                                    | 3.53                      | 8.23                      |                |                          | 42.1      | 87.2      |       |      |        |      |
| PGE101-315-..AL5-N | 3.15                                   | 4.44                      | 10.36                     |                |                          | 43.5      | 89.8      |       |      |        |      |
| PGE101-365-..AL5-N | 3.65                                   | 5.15                      | 12.01                     |                |                          | 44.4      | 91.9      |       |      |        |      |
| PGE101-420-..AL5-N | 4.2                                    | 5.92                      | 13.82                     |                |                          | 45.5      | 94.1      |       |      |        |      |
| PGE101-500-..AL5-N | 5                                      | 7.05                      | 14.10                     | 200            | 3000                     | 47.1      | 97.2      | Ø 30  | Ø 12 | M6     | Ø 30 |
| PGE101-610-..AL5-N | 6.1                                    | 8.69                      | 14.49                     |                |                          | 49.4      | 101.8     |       |      |        |      |
| PGE101-740-..AL5-N | 7.4                                    | 10.55                     | 17.58                     |                |                          | 52.1      | 107.2     |       |      |        |      |

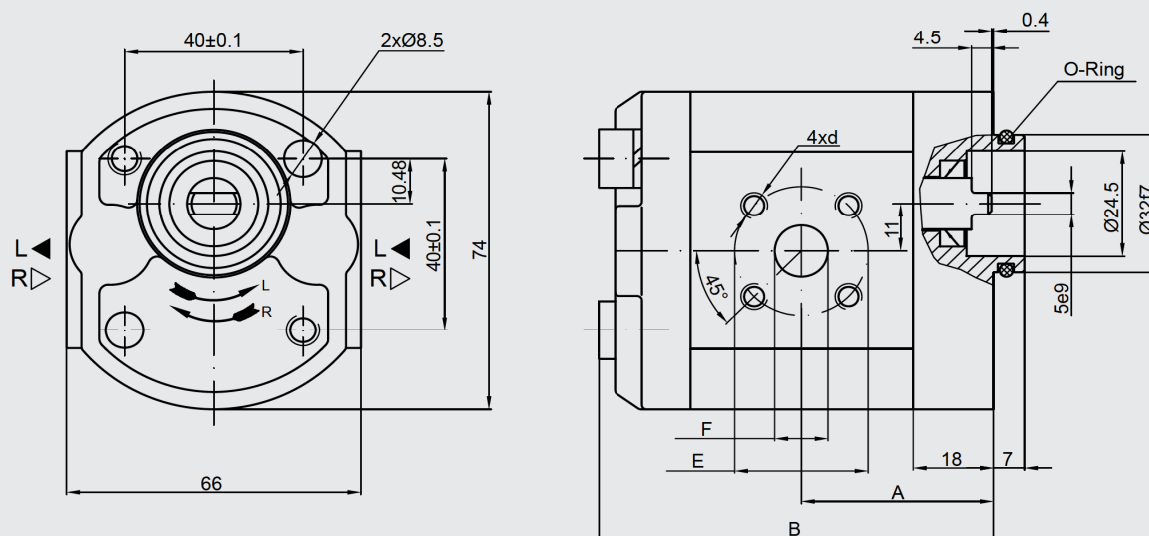
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PGE101-...-CM1-N



| Type               | Displacement<br>[cm³/rev] | Output flow               |                           | Rated<br>[bar] | Max. speed<br><br>n<br>[rpm] | Dimension |           |            |             |      |
|--------------------|---------------------------|---------------------------|---------------------------|----------------|------------------------------|-----------|-----------|------------|-------------|------|
|                    |                           | at<br>1500 rpm<br>[l/min] | at<br>max. rpm<br>[l/min] |                |                              | A<br>[mm] | B<br>[mm] | Inlet<br>G | Outlet<br>G |      |
| PGE101-100-. CM1-N | 1                         | 1.40                      | 3.26                      | 250            | 3500                         | 39.1      | 81        | G 3/8"     | G 3/8"      |      |
| PGE101-125-. CM1-N | 1.25                      | 1.74                      | 4.07                      |                |                              | 39.5      | 82        |            |             |      |
| PGE101-160-. CM1-N | 1.6                       | 2.23                      | 5.21                      |                |                              | 40.3      | 83.6      |            |             |      |
| PGE101-200-. CM1-N | 2                         | 2.82                      | 6.58                      |                |                              | 41.1      | 85.2      |            |             |      |
| PGE101-250-. CM1-N | 2.5                       | 3.53                      | 8.23                      |                |                              | 42.1      | 87.2      | G 1/2"     |             |      |
| PGE101-315-. CM1-N | 3.15                      | 4.44                      | 10.36                     |                |                              | 43.5      | 89.8      |            |             |      |
| PGE101-365-. CM1-N | 3.65                      | 5.15                      | 12.01                     |                |                              | 44.4      | 91.9      |            |             |      |
| PGE101-420-. CM1-N | 4.2                       | 5.92                      | 13.82                     |                |                              | 45.5      | 94.1      |            |             |      |
| PGE101-500-. CM1-N | 5                         | 7.05                      | 14.10                     | 200            | 3000                         | 47.1      | 97.2      | G 1/2"     | G 3/8"      |      |
| PGE101-610-. CM1-N | 6.1                       | 8.69                      | 14.49                     |                |                              | 49.4      | 101.8     |            |             |      |
| PGE101-740-. CM1-N | 7.4                       | 10.55                     | 17.58                     |                |                              | 170       | 2500      |            |             | 52.1 |

## PGE101-...-CM5-N



| Type              | Displacement<br>[cm³/rev] | Output flow               |                           | Rated<br>[bar] | Max. speed<br>n<br>[rpm] | Dimension |           |       |      |        |      |
|-------------------|---------------------------|---------------------------|---------------------------|----------------|--------------------------|-----------|-----------|-------|------|--------|------|
|                   |                           | at<br>1500 rpm<br>[l/min] | at<br>max. rpm<br>[l/min] |                |                          | A<br>[mm] | B<br>[mm] | Inlet |      | Outlet |      |
|                   |                           |                           |                           |                |                          |           |           | E     | F    | d      |      |
| PGE101-100-.CM5-N | 1                         | 1.40                      | 3.26                      | 250            | 3500                     | 39.1      | 81        | Ø 30  | Ø 12 | M6     | Ø 30 |
| PGE101-125-.CM5-N | 1.25                      | 1.74                      | 4.07                      |                |                          | 39.5      | 82        |       |      |        |      |
| PGE101-160-.CM5-N | 1.6                       | 2.23                      | 5.21                      |                |                          | 40.3      | 83.6      |       |      |        |      |
| PGE101-200-.CM5-N | 2                         | 2.82                      | 6.58                      |                |                          | 41.1      | 85.2      |       |      |        |      |
| PGE101-250-.CM5-N | 2.5                       | 3.53                      | 8.23                      |                |                          | 42.1      | 87.2      |       |      |        |      |
| PGE101-315-.CM5-N | 3.15                      | 4.44                      | 10.36                     |                |                          | 43.5      | 89.8      |       |      |        |      |
| PGE101-365-.CM5-N | 3.65                      | 5.15                      | 12.01                     |                |                          | 44.4      | 91.9      |       |      |        |      |
| PGE101-420-.CM5-N | 4.2                       | 5.92                      | 13.82                     | 200            | 3000                     | 45.5      | 94.1      | Ø 30  | Ø 12 | M6     | Ø 30 |
| PGE101-500-.CM5-N | 5                         | 7.05                      | 14.10                     |                |                          | 47.1      | 97.2      |       |      |        |      |
| PGE101-610-.CM5-N | 6.1                       | 8.69                      | 14.49                     |                |                          | 49.4      | 101.8     |       |      |        |      |
| PGE101-740-.CM5-N | 7.4                       | 10.55                     | 17.58                     |                |                          | 52.1      | 107.2     |       |      |        |      |

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