



1.1 MEDIUM PRESSURE SERIES SIZE 2 CONTENT

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ORDERING CODE

1.1.1 Medium Pressure Series

PGI100 - 2 - 005 - R A 0 4 - 11 - XXXX

Medium Pressure Series

Framesize

Displacement

005	5.4 cm ³ /rev
006	6.4 cm ³ /rev
008	7.9 cm ³ /rev
011	10.9 cm ³ /rev
013	13.3 cm ³ /rev
016	15.8 cm ³ /rev
019	19.3 cm ³ /rev
022	22.2 cm ³ /rev
025	25.2 cm ³ /rev

Shaft Rotation

R	clockwise
L	anti-clockwise

Shaft

A	keyshaft
B	spline shaft SAE A - J744 16-4 9T
D	two-surface claw
K	keyshaft w. through drive (only multiple pumps)

Mounting Flange

0	SAE J744 82-2 A - Ø 82.55 mm
2	SAE J744 101-2 B - Ø 101.6 mm
3	2-bolt mounting Ø 52 mm w. O-Ring

Ports

4	Square flange DIN 3901 / ISO 8435
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Design Series

Modification Number

XXXX	Determined by Manufacturer
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TECHNICAL INFORMATION

1.1.2 Specifications

Pump Size		005	006	008	011	013	016	019	022	025
Geometric Displacement	[cm ³ /rev]	5.4	6.4	7.9	10.9	13.3	15.8	19.3	22.2	25.2
Pressure	Rated	250								
	Peak	320			300		280			
Shaft Speed	Min.	200						100		
	Max.	4000			3600			3000		
Approx. Mass	[kg]	2.9	3.0	3.1	3.3	3.5	3.6	3.8	4.0	4.2

1.1.3 Hydraulic Fluids

The pump series is prepared for

HLP Mineral Oil

Before using other fluids, please contact HYDAC:

HEES, HETG Environmental Friendly Hydraulic Fluids

HFC Water Glycol

HFD-U Polyol Ester
Fire Resistant Fluids

HFD-R Phosphate Ester
Fire Resistant Fluids

1.1.4 Viscosity Range

	cSt (mm ² /s)
Minimal viscosity:	10
Normal operating viscosity:	10 - 300
Maximal viscosity:	2.000

1.1.5 Temperature Range

Operating temperature range
-20 up to 100 °C

Maximum ambient temperature range
-40 up to 80 °C

Maximum fluid temperature range
-40 up to 120 °C

1.1.6 Seals

The pump series is equipped with FKM- (Viton-) seals.
Please contact HYDAC before using synthetic fluids.

1.1.7 Filtration

For maximum pump and system component life time, the system should be protected from contamination by effective filtration. Maintain the degree of contamination within

20/ 18/ 15 per ISO 4406:1999

or

Grade 9 per NAS 1638

In order to ensure a longer operating lifetime, the contamination should be better than

18/16/13 per ISO 4406:1999

or

Grade 7 per NAS 1638

1.1.8 Installation Notes

A. Mounting

The pump can be mounted in horizontal direction or vertical with the shaft upwards. If the pump is installed on the tank or at a position higher than the tank top cover, the height of the suction port of the pump should be less than 1 metre from the oil level.

B. Suction Line

When the pump is installed over the tank oil level, it is recommended to pay attention to the inlet pressure. The minimum section of the inlet pipe must be equal or larger to the section of the inlet port of the pump. The suction pressure must be within the specified values.

Minimum suction pressure: 0.8 bar abs.

Maximum suction pressure: 2.0 bar abs.

C. Drive

Employ a flexible coupling whenever possible. Radial or axial loads on the pump shaft are not allowed. The maximum radial runout of the shaft is less than 0.2 mm and the angular displacement has to be within 0.2°.

Drive shafts with tang are for the close-coupling to an electrical motor or a gear. The driver for the tang is included.

1.1.9 Multiple Pumps

The Internal Gear Pumps of the PGI100-Series can be combined to double or triple units (for larger units please contact HYDAC). Generally, the specifications for the single pumps apply, but the following notes should be observed:

- It is recommended to position the pump with the largest load on the drive side
- The max. speed of the multiple pump unit is determined by the pump rated with the lowest speed
- The maximum input torque and through drive torques must be verified for each application.
- The resulting torque of the pump combination can be calculated by the following formula:

$$M_{\max} = \frac{\Delta p_1 \cdot V_1}{20 \cdot \pi \cdot \eta_{mh}} + \frac{\Delta p_2 \cdot V_2}{20 \cdot \pi \cdot \eta_{mh}} + \frac{\Delta p_3 \cdot V_3}{20 \cdot \pi \cdot \eta_{mh}}$$

Admissible Input and Through Drive Torques

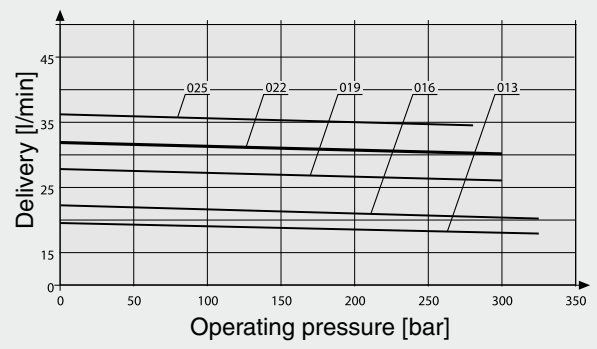
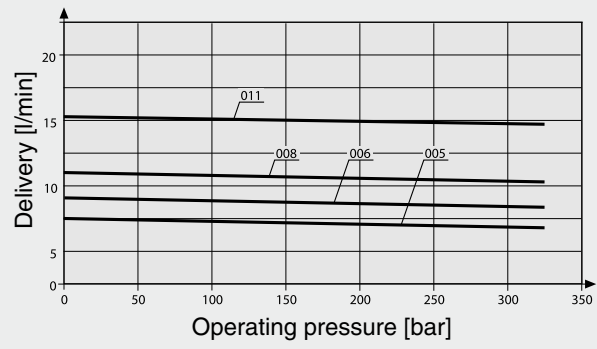
Displacement	Input Torque	Through Drive Torque
005 – 025	100 Nm	100 Nm

- Common suction is not possible.
- The pumps are not sealed from each other.

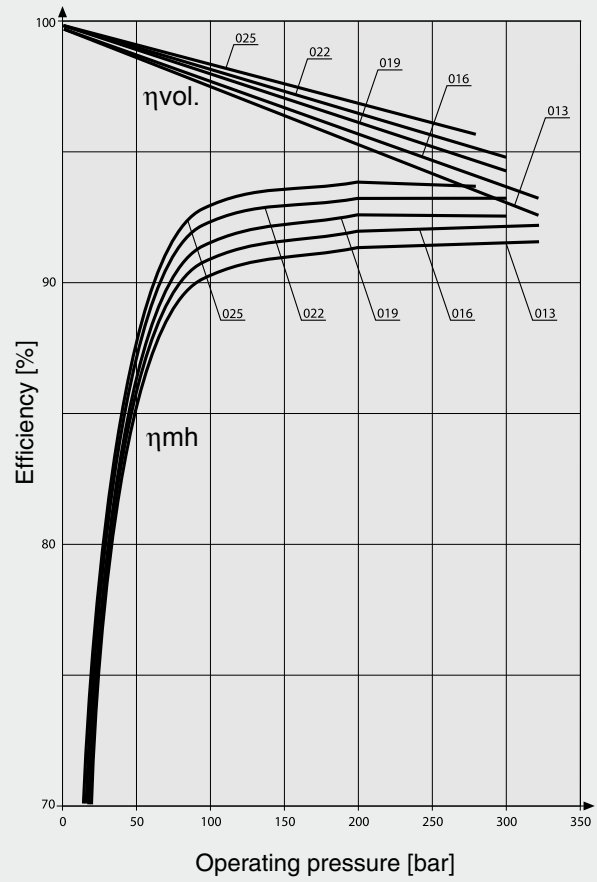
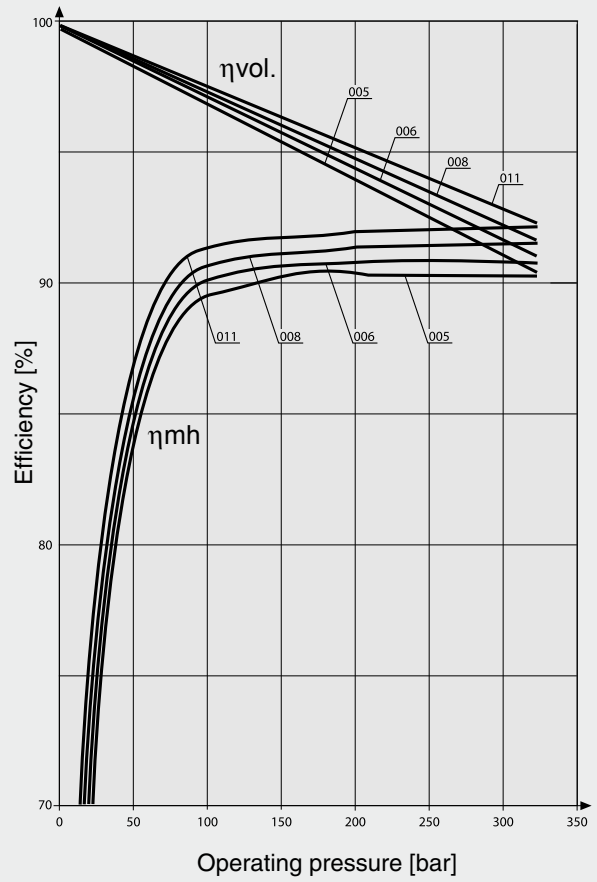
PERFORMANCE DATA

1.1.10 PG1100

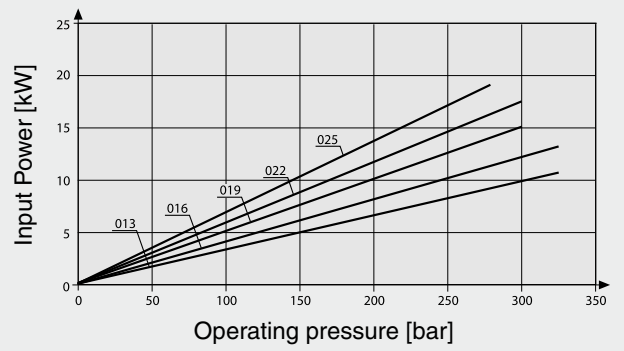
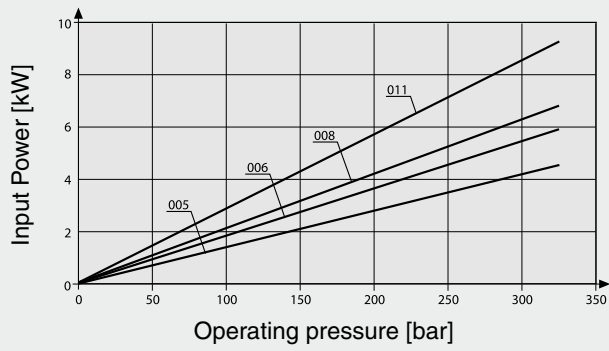
Volumetric flow



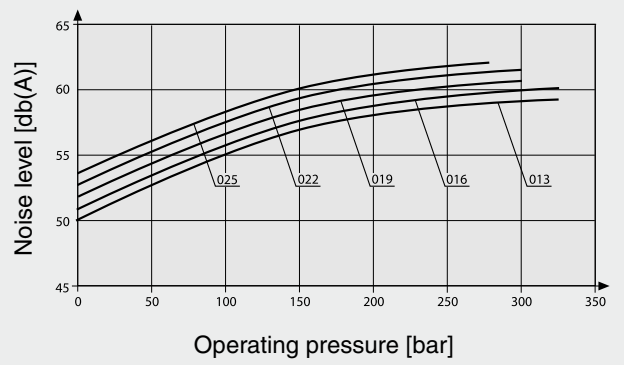
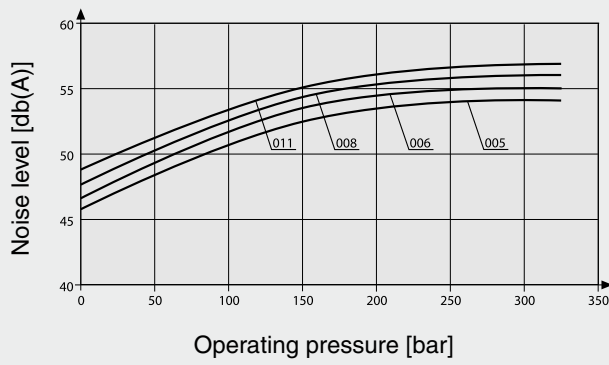
Efficiency



Input power



Noise level

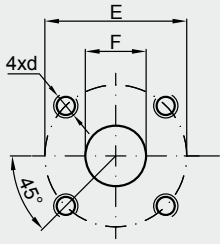


Measurement conditions:

Speed 1450 rpm, viscosity 46 mm²/sec., operating temperature 40 °C
 Sound pressure measured in low-reflection anechoic room in accordance with DIN 45 635 sheet 26;
 Microphone distance 1.0 m axial.

DIMENSIONS

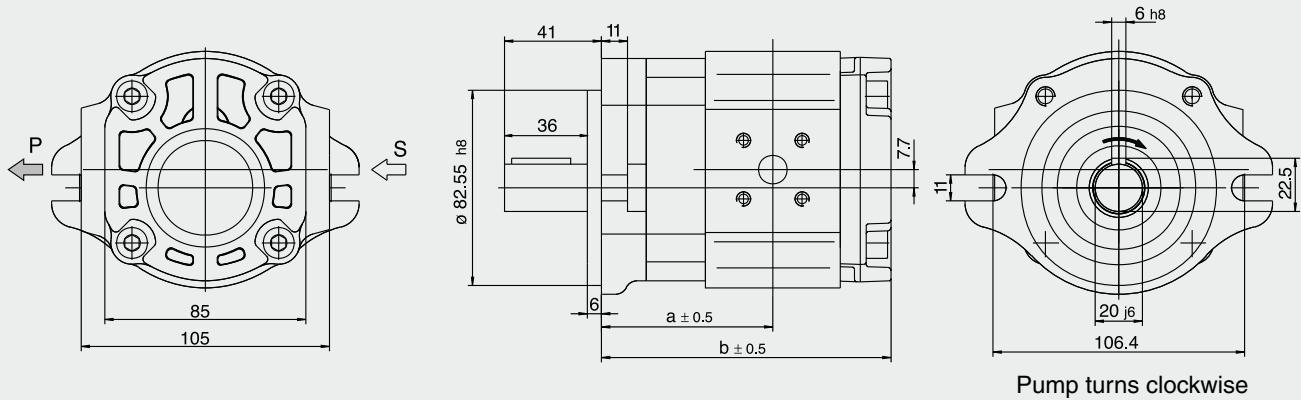
1.1.11 Ports



4 Square flange
DIN 3901/ ISO 8435

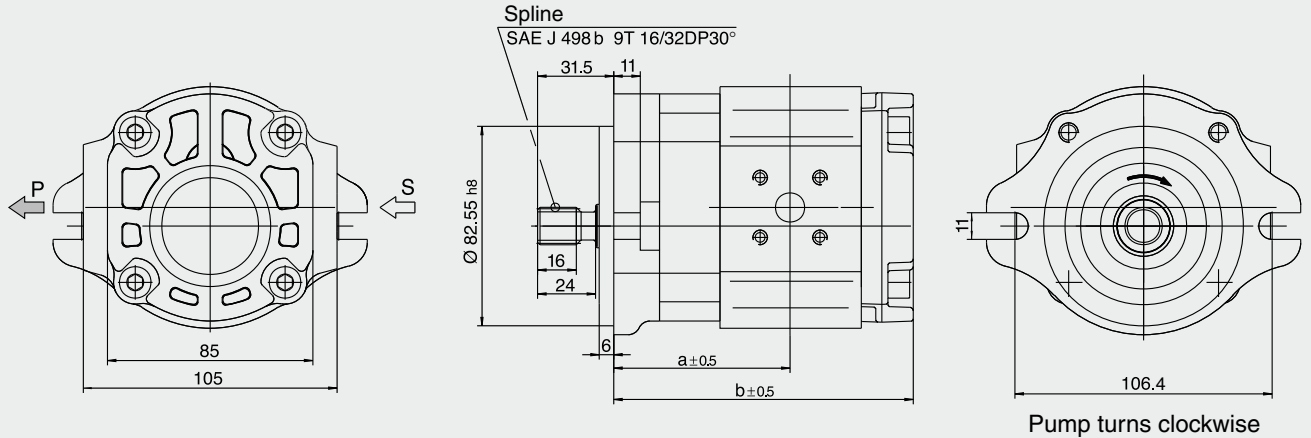
Displacement	Outlet			Inlet		
	E	F	d	E	F	d
005 - 006	35	5	M6	40	20	M6
008	35	7	M6	40	20	M6
011 - 013	35	10	M6	40	20	M6
016	35	12	M6	40	20	M6
019 - 025	35	12	M6	55	26	M8

1.1.12 PGI100 with SAE A – 2-Hole Flange and Cylindrical Shaft



NG	a	b
005	62	101.5
006	63	103.5
008	64.5	106.5
011	67.5	112.5
013	70	117.5
016	72.5	112.5
019	76	129.5
022	79	135.5
025	82	141.5

1.1.13 PGI100 with SAE A – 2-Hole Flange and Spline Shaft

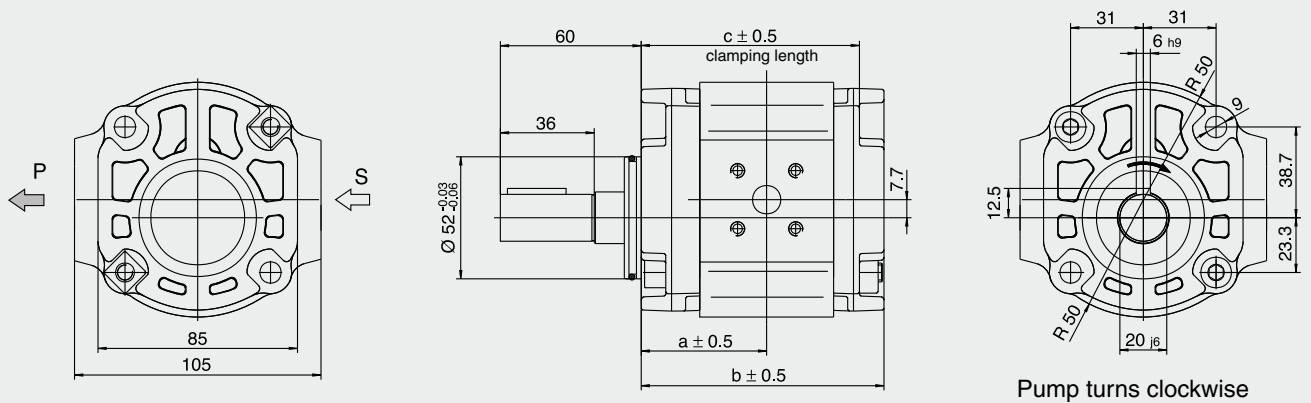


NG	a	b
005	62	101.5
006	63	103.5
008	64.5	106.5
011	67.5	112.5
013	70	117.5
016	72.5	112.5
019	76	129.5
022*	79	135.5
025*	82	141.5

* on request

Pump turns clockwise

1.1.14 PGI100 with Direct Mounting and Cylindrical Shaft



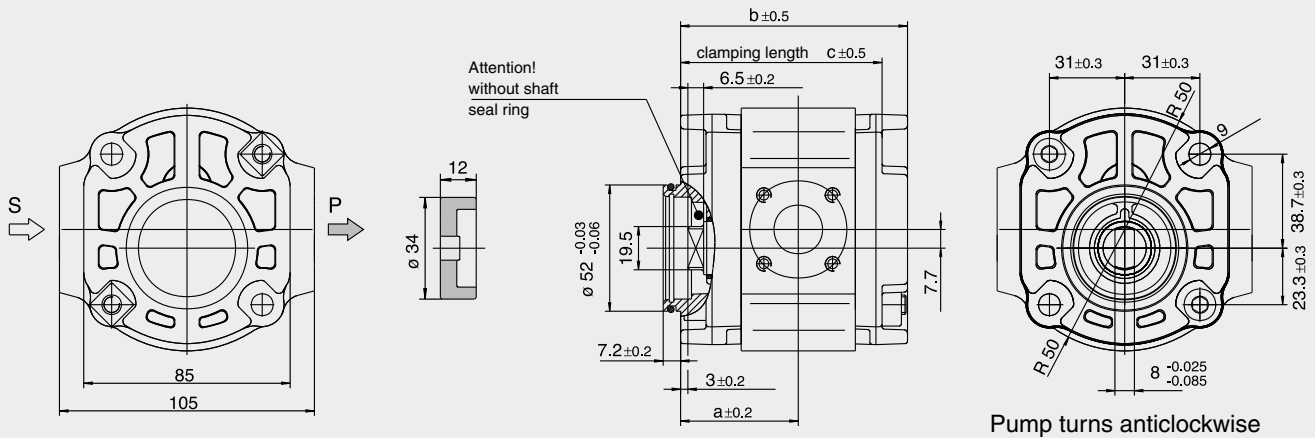
NG	a	b	c
005	43	82.5	72
006	44	84.5	74
008	45.5	87.5	77
011	48.5	93.5	83
013	51	98.5	88
016	53.5	103.5	93
019	57	110.5	100
022	60	116.5	106
025	63	122.5	112

Recommended screws for mounting:

2x M8 - ISO 4762 - 10.9 with washer ISO 7092
Tightening torque: $M = 25 + 5 \text{ Nm}$

Pump turns clockwise

1.1.15 PGI100 with Direct Mounting and Two-Surface Claw



Pump turns anticlockwise

NG	a	b	c
005	43	82.5	72
006	44	84.5	74
008	45.5	87.5	77
011	48.5	93.5	83
013	51	98.5	88
016	53.5	103.5	93
019	57	110.5	100
022	60	116.5	106
025	63	122.5	112

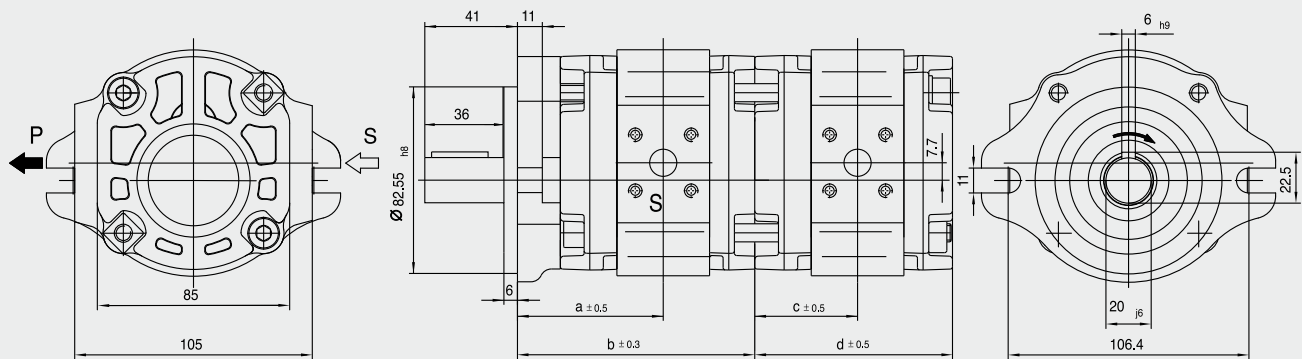
Coupling included

Recommended screws for mounting:

2x M8 - ISO 4762 - 10.9 with washer ISO 7092

Tightening torque: $M = 25 + 5 \text{ Nm}$

1.1.16 PGI100 Doublepump with SAE A – 2-Hole Flange and Cylindrical Shaft



Pump turns clockwise

NG	a	b	c	d
005	62	100	43	82.5
006	63	102	44	84.5
008	64.5	105	45.5	87.5
011	67.5	111	48.5	93.5
013	70	116	51	98.5
016	72.5	121	53.5	103.5
019	76	128	57	110.5
022	79	134	60	116.5
025	82	140	63	122.5