



5.3 SIZE 3 CONTENT

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ORDERING CODE

5.3.1 External Gear Pump

PGE103 – 2000 – R B S 1 – N – XXXX

External Gear Pump
Size 3

Displacement

2000	20.0 cm ³ /rev
2250	22.5 cm ³ /rev
2500	25.0 cm ³ /rev
2800	28.0 cm ³ /rev
3200	32.0 cm ³ /rev
3600	36.0 cm ³ /rev
4200	42.0 cm ³ /rev
4600	46.0 cm ³ /rev
5000	50.0 cm ³ /rev
5500	55.0 cm ³ /rev
6000	60.0 cm ³ /rev

Shaft Rotation (viewed from shaft end)

R	clockwise
L	anti-clockwise

Shaft

A	tapered key shaft 1:5
B	tapered key shaft 1:8
F	spline shaft SAE B - J 744 22-4 13T

Mounting Flange

S	Square flange centering Ø 50.8 mm
V	Square flange centering Ø 105 mm
X	SAE J 744 101-2 B Ø 101.6 mm

Ports

1	Pipe thread ISO 228-1
4	Square flange (ital. design)
5	Square flange DIN 3901/ ISO 8435
7	SAE-flange w. metric threads
8	SAE-flange w. UNC-threads

Seals

N	NBR
V	FPM

Modification Number

XXXX Determined by Manufacturer

Not all variants from the ordering code are possible!

Please refer to 5.3.12 preference types or consult HYDAC!

Special options are possible upon request

TECHNICAL INFORMATION

5.3.2 Specifications

Pump Size		2000	2250	2500	2800	3200	3600	4200	4600	5000	5500	6000	
Geometric Displacement		[cm ³ /rev]	20	22.5	25.0	28.0	32.0	36.0	42.0	46.0	50.0	55.0	60.0
Pressure	Rated	[bar]	220					200		170		150	
	Peak		250					230		200		180	
Shaft Speed	Min.	[rpm]	750										
	Max.		3000					2800	2500	2300	2100	1750	
Approx. Mass		[kg]	7.83	8.0	8.16	8.34	8.78	8.99	9.25	9.47	9.60	9.85	10.10

5.3.3 Hydraulic Fluids

The Pump series is prepared for

HL Petroleum Base Oil
(Normal Mineral Oil)
and

HLP R&O type hydraulic oils
(Rust and Oxidation inhibitor).

5.3.4 Viscosity Range

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

5.3.5 Temperature Range

Ambient temperature range
-22 up to 55 °C

Fluid temperature range
-25 up to 80 °C

5.3.6 Seals

The pump series is equipped with NBR seals.

For special seals for the use with synthetic fluids consult HYDAC.

5.3.7 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

21/18/15 per ISO 4406:1999

or

Grade 9 per NAS 1638

At system pressures above 160 bar cleanliness level

19/17/14 per ISO 4406:1999

or

Grade 8 per NAS 1638 is required.

5.3.8 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 the 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:
2.2 bar abs.

C. Drive

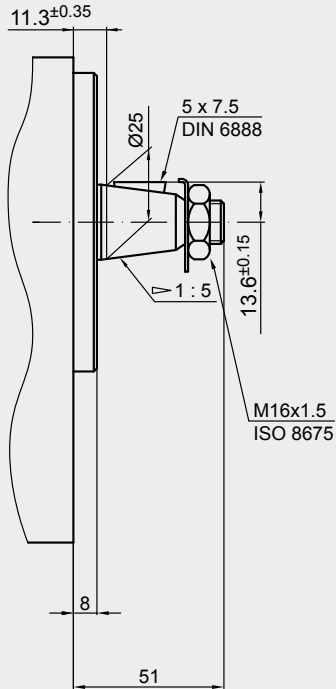
Employ a flexible coupling whenever possible. Radial or axial loads on the pump shaft are not allowed. The maximum radial runout of the shafts is less than 0.2 mm and the angular displacement has to be within 0.2°.

For indirect drives (by gear, chains or belt transmissions) please consult Hydac.

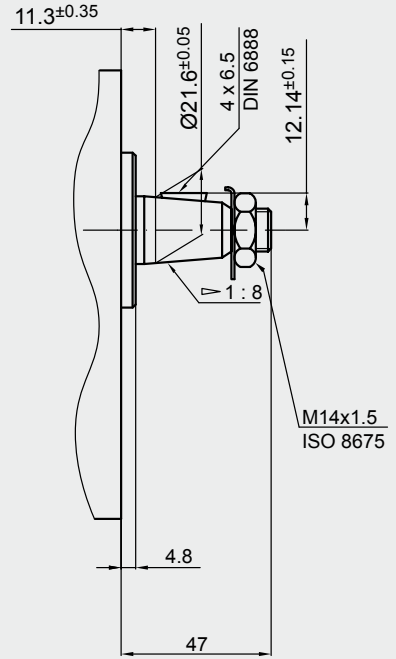
DIMENSIONS

5.3.9 Drive Shafts

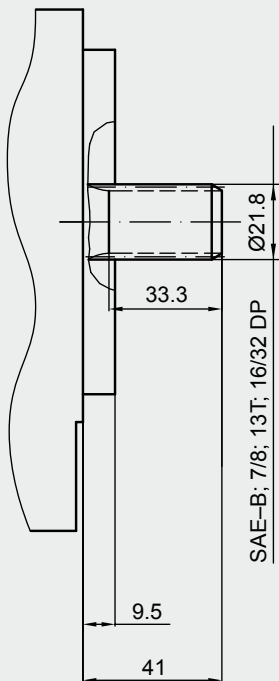
A Tapered key shaft 1:5



B Tapered key shaft 1:8

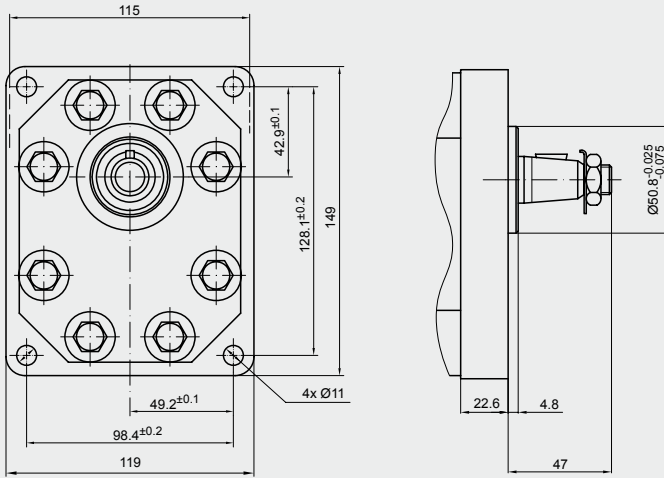


F Spline shaft
SAE-B - J 744 22-4 13T

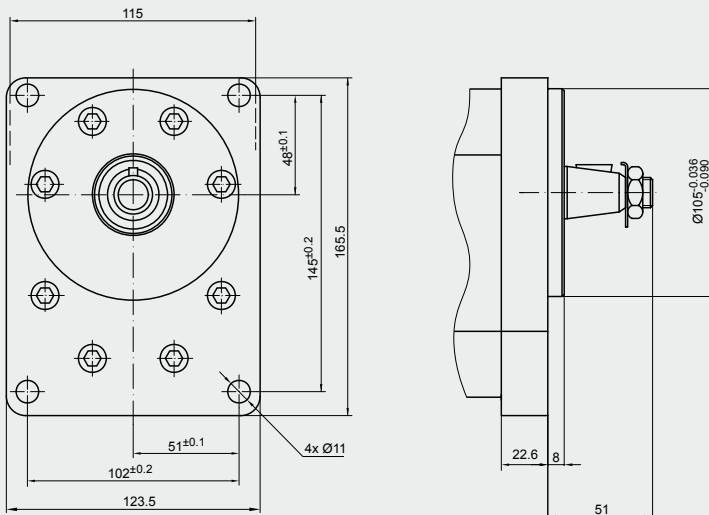


5.3.10 Front Cover

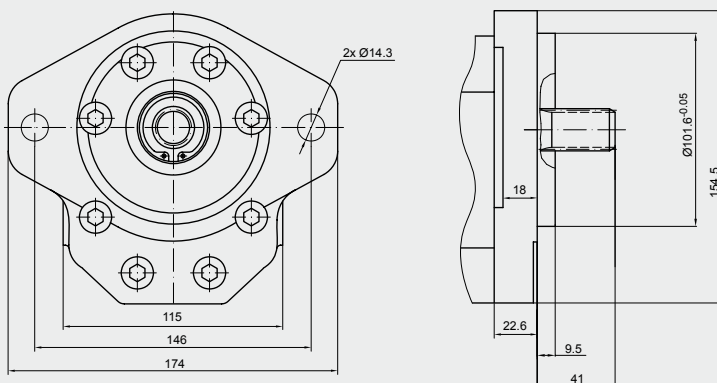
S Square flange
centering $\varnothing 50.8$ mm



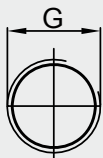
V Square flange
centering $\varnothing 105$ mm



X SAE J 744 101-2 B
 $\varnothing 101.6$ mm

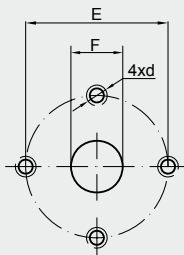


5.3.11 Ports



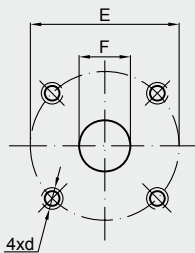
1 Pipe thread ISO 228/1

Ordering code	Displacement	Outlet G	Inlet G
1	20 ... 28 cm ³	G 3/4 - A	G 3/4 - A
	32 ... 60 cm ³	G 3/4 - A	G 1 - A



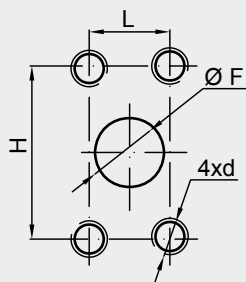
4 Square flange (ital. design)

Ordering code	Displacement	Outlet			Inlet		
		F	E	d	F	E	d
4	20 ... 28 cm ³	19	40	M8	19	40	M8
	32 ... 60 cm ³	19	40	M8	27	51	M10



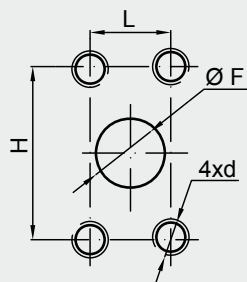
5 Square flange DIN 3901/ ISO 8435

Ordering code	Displacement	Outlet			Inlet		
		F	E	d	F	E	d
5	20 ... 28 cm ³	19	40	M8	19	40	M8
	32 ... 60 cm ³	19	55	M8	27	55	M8



7 SAE-flange w. metric threads

Ordering code	Displacement	Outlet				Inlet			
		F	H	L	d	F	H	L	d
7	20 ... 28 cm ³	19	47.6	22.2	M10	19	47.6	22.2	M10
	32 ... 60 cm ³	19	47.6	22.2	M10	27	52.4	26.2	M10

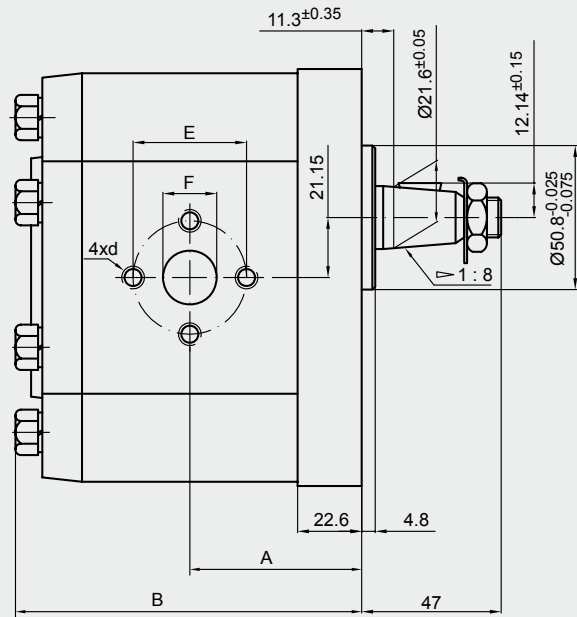
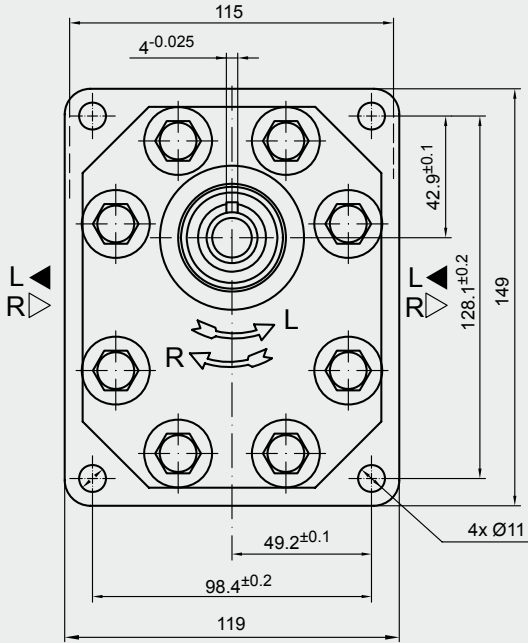


8 SAE-flange w. UNC-threads

Ordering code	Displacement	Outlet				Inlet			
		F	H	L	d	F	H	L	d
8	20 ... 28 cm ³	19	47.6	22.2	3/8 - 16 UNC-2B	19	47.6	22.2	3/8 - 16 UNC-2B
	32 ... 60 cm ³	19	47.6	22.2		27	52.4	26.2	

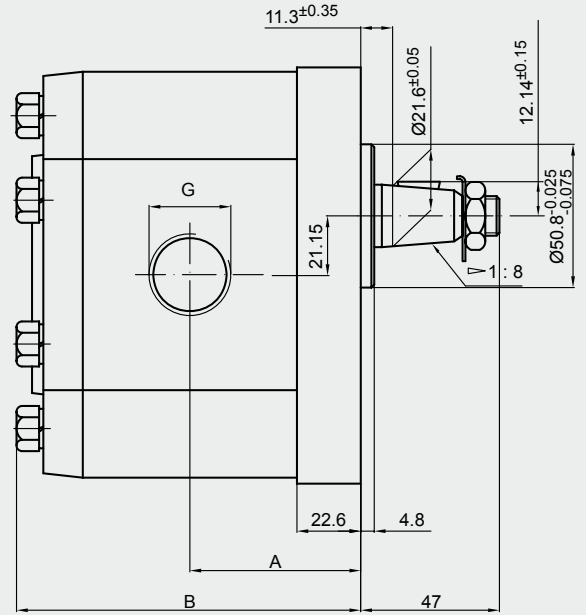
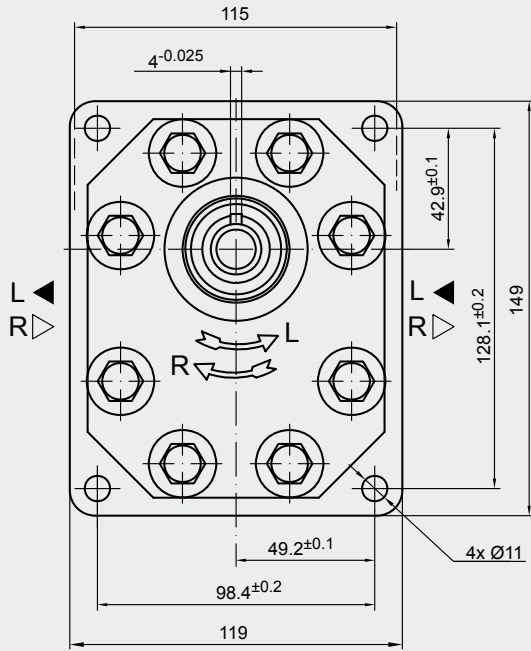
5.3.12 Preference Types

PGE103-...-BS4-N



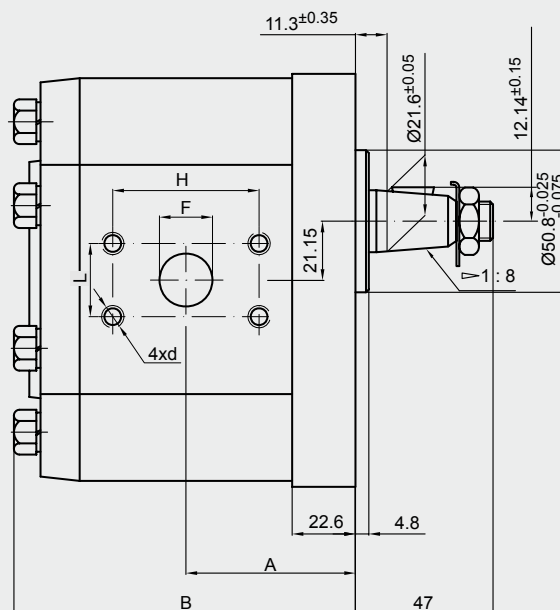
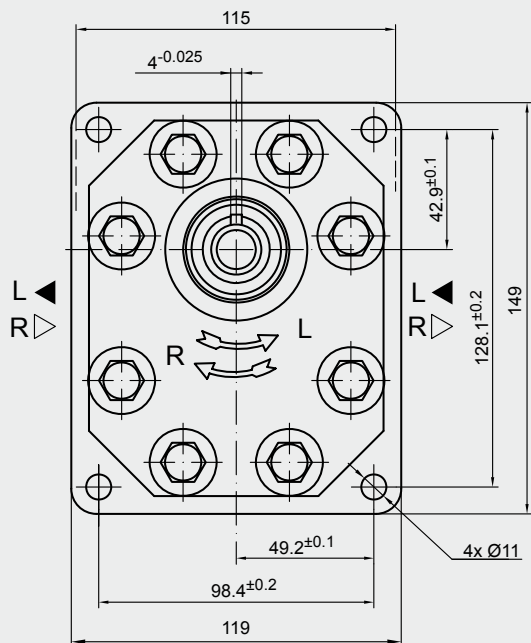
Type	Displacement [cm ³ /rev]	Flow		Pressure Rated [bar]	max Speed n [rpm]	Dimension							
		at 1500 rpm [l/min]	at max. rpm [l/min]			A [mm]	B [mm]	Inlet		Outlet			
						E	F	d	E	F	d		
PGE103-2000-. BS4-N	20	28.2	56.4	220	3000	56.1	116.7	40	19	M8	40	19	M8
PGE103-2250-. BS4-N	22.5	31.7	63.5			57.6	119.7						
PGE103-2500-. BS4-N	25	35.3	70.5			58.3	121.1						
PGE103-2800-. BS4-N	28	39.5	79			60.2	124.7						
PGE103-3200-. BS4-N	32	45.1	90.2			66.5	137.3						
PGE103-3600-. BS4-N	36	51.3	95.8	200	2800	68.0	140.5	51	27	M10	40	19	M8
PGE103-4200-. BS4-N	42	59.9	99.8			70.8	146.1						
PGE103-4600-. BS4-N	46	65.6	100.5	170	2100	72.7	149.8						
PGE103-5000-. BS4-N	50	71.3	99.8			74.5	153.4						
PGE103-5500-. BS4-N	55	78.4	91.4			76.7	157.9						
PGE103-6000-. BS4-N	60	85.5	99.8	150	1750	78.7	162.4						

PGE103-...-BS1-N



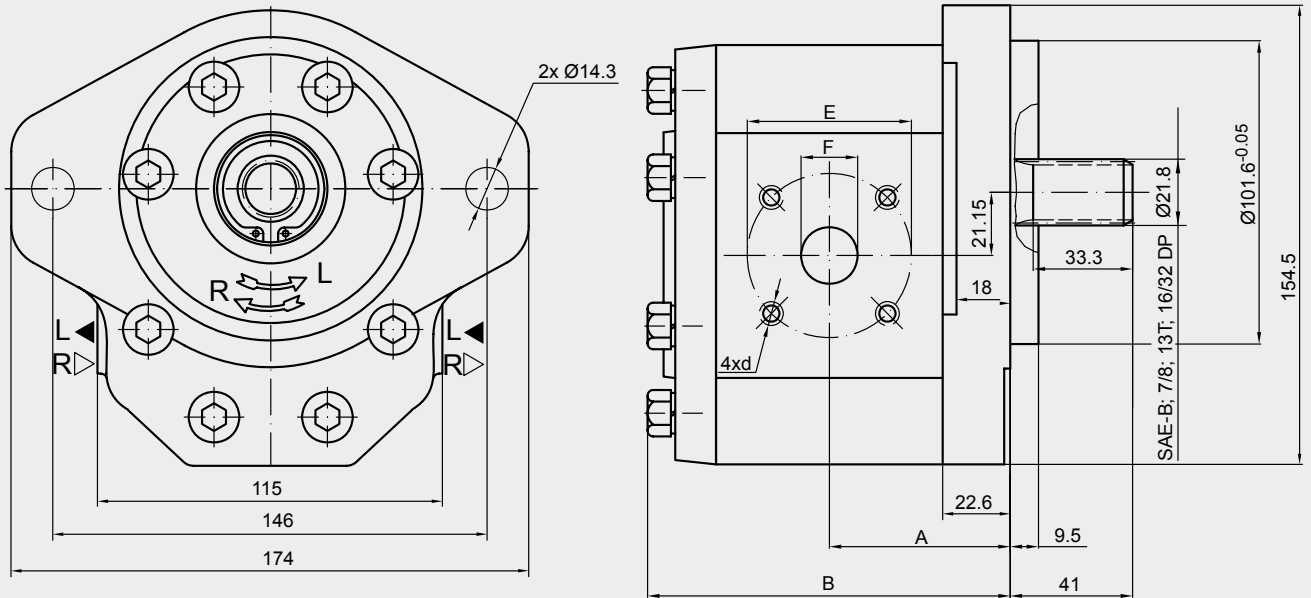
Type	Displacement [cm ³ /rev]	Flow		Pressure Rated [bar]	max Speed n [rpm]	Dimension			
		at 1500 rpm [l/min]	at max. rpm [l/min]			A [mm]	B [mm]	Inlet G	Outlet G
PGE103-2000-. BS1-N	20	28.2	56.4	220	3000	56.1	116.7	G 3/4 - A	G 3/4 - A
PGE103-2250-. BS1-N	22.5	31.7	63.5			57.6	119.7		
PGE103-2500-. BS1-N	25	35.3	70.5			58.3	121.1		
PGE103-2800-. BS1-N	28	39.5	79			60.2	124.7		
PGE103-3200-. BS1-N	32	45.1	90.2			66.5	137.3		
PGE103-3600-. BS1-N	36	51.3	95.8	200	2800	68.0	140.5	G 1 - A	
PGE103-4200-. BS1-N	42	59.9	99.8			2500	70.8		
PGE103-4600-. BS1-N	46	65.6	100.5	170	2100	72.7	149.8	G 1 - A	
PGE103-5000-. BS1-N	50	71.3	99.8			74.5	153.4		
PGE103-5500-. BS1-N	55	78.4	91.4			76.7	157.9		
PGE103-6000-. BS1-N	60	85.5	99.8	150	1750	78.7	162.4		

PGE103-...-BS7-N



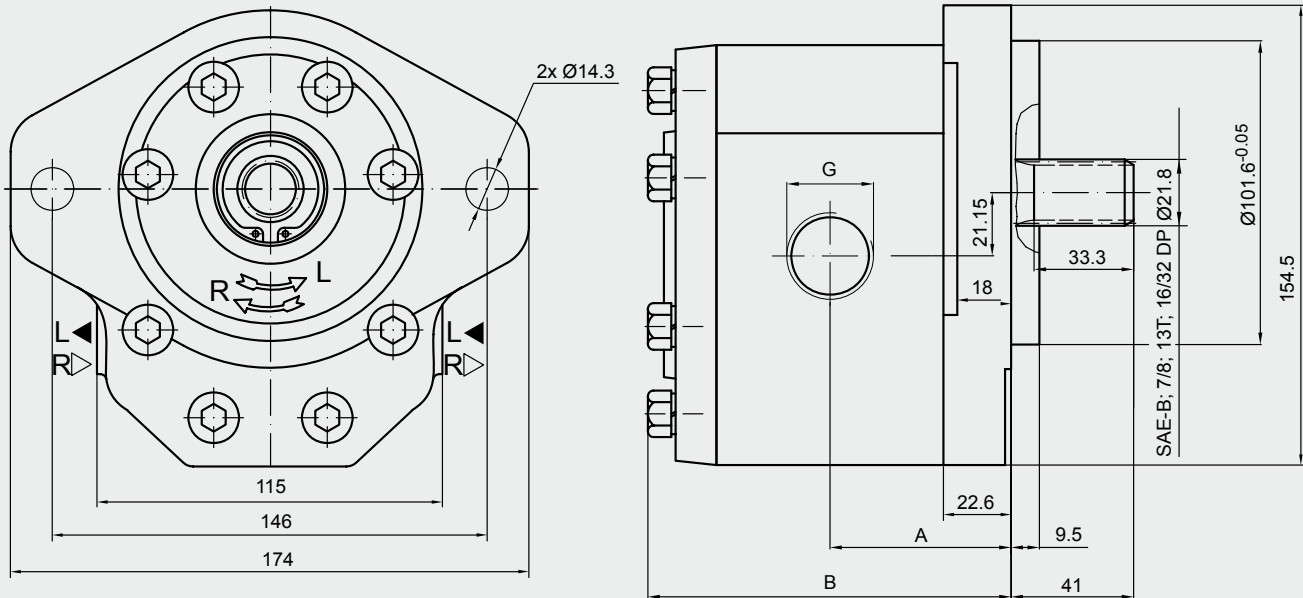
Type	Displacement [cm ³ /rev]	Flow		Pressure Rated [bar]	max Speed n [rpm]	Dimension									
		at 1500 rpm [l/min]	at max. rpm [l/min]			Inlet		Outlet							
						A [mm]	B [mm]	H	F	L	d	H	F	L	d
PGE103-2000-. BS7-N	20	28.2	56.4	220	3000	56.1	116.7	52.4	27	26.2	M10	52.4	19	26.2	M10
PGE103-2250-. BS7-N	22.5	31.7	63.5			57.6	119.7								
PGE103-2500-. BS7-N	25	35.3	70.5			58.3	121.1								
PGE103-2800-. BS7-N	28	39.5	79			60.2	124.7								
PGE103-3200-. BS7-N	32	45.1	90.2			66.5	137.3								
PGE103-3600-. BS7-N	36	51.3	95.8	200	2800	68.0	140.5								
PGE103-4200-. BS7-N	42	59.9	99.8			70.8	146.1								
PGE103-4600-. BS7-N	46	65.6	100.5	170	2300	72.7	149.8								
PGE103-5000-. BS7-N	50	71.3	99.8			74.5	153.4								
PGE103-5500-. BS7-N	55	78.4	91.4	150	1750	76.7	157.9								
PGE103-6000-. BS7-N	60	85.5	99.8			78.7	162.4								

PGE103-....FX5-N



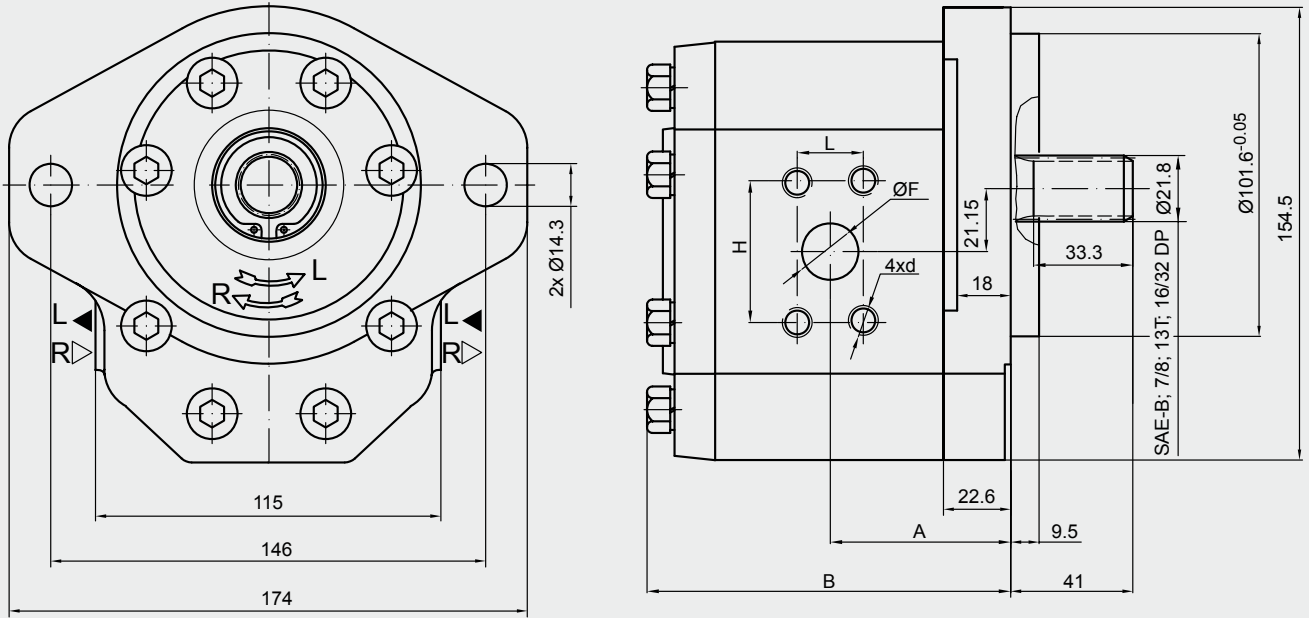
Type	Displacement [cm ³ /rev]	Flow		Pressure Rated [bar]	max Speed n [rpm]	Dimension							
		at 1500 rpm [l/min]	at max. rpm [l/min]			A [mm]	B [mm]	Inlet		Outlet			
								E	F	d	E	F	d
PGE103-2000-. FX5-N	20	28.2	56.4	220	3000	56.1	116.7	40	19		40		
PGE103-2250-. FX5-N	22.5	31.7	63.5			57.6	119.7						
PGE103-2500-. FX5-N	25	35.3	70.5			58.3	121.1						
PGE103-2800-. FX5-N	28	39.5	79			60.2	124.7						
PGE103-3200-. FX5-N	32	45.1	90.2			66.5	137.3						
PGE103-3600-. FX5-N	36	51.3	95.8			68.0	140.5						
PGE103-4200-. FX5-N	42	59.9	99.8	200	2500	70.8	146.1	55	27	M8	55	19	M8
PGE103-4600-. FX5-N	46	65.6	100.5		2300	72.7	149.8						
PGE103-5000-. FX5-N	50	71.3	99.8		2100	74.5	153.4						
PGE103-5500-. FX5-N	55	78.4	91.4	170	1750	76.7	157.9						
PGE103-6000-. FX5-N	60	85.5	99.8			150	78.7						

PGE103-...-FX1-N



Type	Displacement [cm ³ /rev]	Flow		Pressure Rated [bar]	max Speed n [rpm]	Dimension			
		at 1500 rpm [l/min]	at max. rpm [l/min]			A [mm]	B [mm]	Inlet G	Outlet G
PGE103-2000-. FX1-N	20	28.2	56.4	220	3000	56.1	116.7	G 3/4 - A	G 3/4 - A
PGE103-2250-. FX1-N	22.5	31.7	63.5			57.6	119.7		
PGE103-2500-. FX1-N	25	35.3	70.5			58.3	121.1		
PGE103-2800-. FX1-N	28	39.5	79			60.2	124.7		
PGE103-3200-. FX1-N	32	45.1	90.2			66.5	137.3		
PGE103-3600-. FX1-N	36	51.3	95.8	2800	68.0	140.5	G 1 - A		
PGE103-4200-. FX1-N	42	59.9	99.8	2500	70.8	146.1			
PGE103-4600-. FX1-N	46	65.6	100.5	2300	72.7	149.8			
PGE103-5000-. FX1-N	50	71.3	99.8	2100	74.5	153.4			
PGE103-5500-. FX1-N	55	78.4	91.4	170	76.7	157.9			
PGE103-6000-. FX1-N	60	85.5	99.8	150	1750	78.7	162.4		

PGE103-...-FX7-N



Type	Displacement [cm ³ /rev]	Flow		Pressure Rated [bar]	max Speed n [rpm]	Dimension									
		at 1500 rpm [l/min]	at max. rpm [l/min]			A [mm]	B [mm]	Inlet			Outlet				
								H	F	L	d	H	F	L	d
PGE103-2000-. FX7-N	20	28.2	56.4	220	3000	56.1	116.7	47.6	19	22.2					
PGE103-2250-. FX7-N	22.5	31.7	63.5			57.6	119.7								
PGE103-2500-. FX7-N	25	35.3	70.5			58.3	121.1								
PGE103-2800-. FX7-N	28	39.5	79			60.2	124.7								
PGE103-3200-. FX7-N	32	45.1	90.2			66.5	137.3								
PGE103-3600-. FX7-N	36	51.3	95.8			68.0	140.5								
PGE103-4200-. FX7-N	42	59.9	99.8	200	2500	70.8	146.1	52.4	27	26.2	M10	47.6	19	22.2	M10
PGE103-4600-. FX7-N	46	65.6	100.5		2300	72.7	149.8								
PGE103-5000-. FX7-N	50	71.3	99.8	170	2100	74.5	153.4								
PGE103-5500-. FX7-N	55	78.4	91.4		1750	76.7	157.9								
PGE103-6000-. FX7-N	60	85.5	99.8	150	1750	78.7	162.4								