6.3 SIZE 2

CONTENTS PGE102

Ordering Code

Technical Information

Dimensions

ORDERING CODE

6.3.1 External Gear Pump

PGE102 – 1000 – R B R 1 – N – XXXX

External gear pump
Size 2

Displacement

450	4.5 cm³/rev
630	6.3 cm³/rev
820	8.2 cm³/rev
1000	10.0 cm³/rev
1130	11.3 cm³/rev
1200	12.0 cm³/rev
1400	14.0 cm³/rev
1500	15.0 cm³/rev
1600	16.0 cm³/rev
1730	17.3 cm³/rev
1900	19.0 cm³/rev
2200	22.0 cm³/rev
2500	25.0 cm³/rev
2800	28.0 cm³/rev

Shaft rotation (viewed from shaft end)

R	Clockwise
L	Anti-clockwise

Shaft

A	Tapered keyed shaft 1:5
B	Tapered keyed shaft 1:8
C	Tang
E	Splined shaft SAE A - J 744 16-4 9T
G	Splined shaft SAE J 744 19-4 11T
H	Keyed shaft SAE A - J 744 16-1 A
I	Keyed shaft ISO Ø 18 mm
Z	Special shaft (only on request)

Mounting flange

N	2-hole mounting, centering Ø 50 mm
O	2-hole mounting, centering Ø 52 mm with O-ring
R	Square flange, centering Ø 36.5 mm
T	Square flange, centering Ø 80 mm
W	SAE J 744 82-2 A Ø 82.55 mm
X	SAE J 744 101-2 B Ø 101.6 mm
Y	Outboard bearing Ø 80 mm, type 1
Z	Special flange (only on request)

Ports

1	Pipe thread ISO 228-1
2	Metric thread DIN 3852-1
3	Thread UN 2B SAE O-ring boss
4	Square flange (Italian design)
5	Square flange DIN 3901/ ISO 8435
9	Special ports (only on request)

Seals

N	NBR
V	FPM

Modification number

XXXX	Determined by manufacturer

Not all combinations in the ordering code are possible.
Please refer to point 6.3.12 Preferred series, or consult HYDAC.
Special options are possible upon request.

TECHNICAL INFORMATION

6.3.2 Specifications

Pump size			450	630	820	1000	1130	1200	1400	1500	1600	1730	1900	2200	2500	2800
Geometric displacement		[cm³/rev]	4.5	6.3	8.2	10	11.3	12	14	15	16	17.3	19	22	25	28
Pressure	Rated	[bar]	250						250			220	200	180	160	120
	Intermittent		280						270			250	220	200	180	140
	Peak		300						280			270	230	210	190	150
Drive speed	Min.	[rpm]	750													
	Max.		3500							3000				2500		
Approx. weight		[kg]	3.34	3.36	3.37	3.57	3.62	3.64	3.78	4.16	4.2	4.24	4.32	4.44	4.56	4.68

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.

6.3.3 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)

6.3.4 Viscosity range

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

For other viscosity ranges, please contact HYDAC.

6.3.5 Temperature range

Ambient temperature range
-22 to 55 °C

Fluid temperature range
NBR
-25 to 85 °C
Viton
-15 to 90 °C

6.3.6 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.

6.3.7 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.

6.3.8 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 permitted misalignment of the shafts is 0.2 mm and the angular deviation must be less than 0.2°.

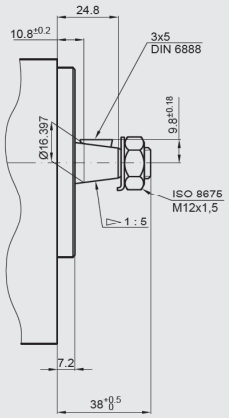
Drive shafts with tang are for direct mounting onto an electric motor or a gearbox. The driver for the tang is not included.

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

DIMENSIONS

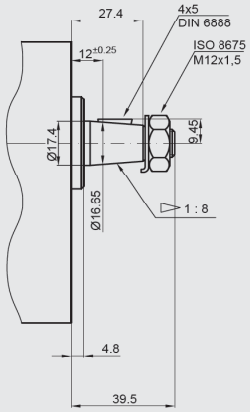
6.3.9 Drive shafts

A Tapered keyed shaft 1:5



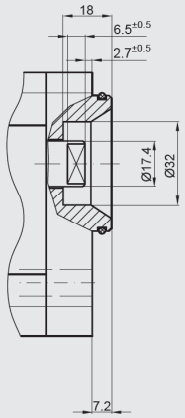
relevant mounting flange **T** **N** **Y**

B Tapered keyed shaft 1:8



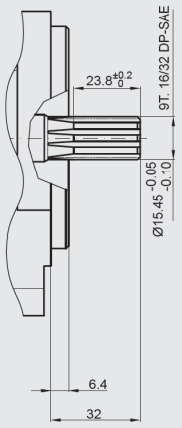
relevant mounting flange **R**

C Tang



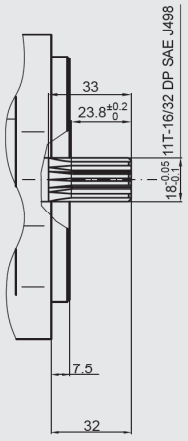
relevant mounting flange **O**

E Splined shaft SAE A - J 744 16-4 9T



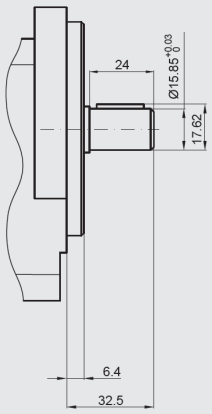
relevant mounting flange **W**

G Splined shaft SAE J 744 19-4 11T



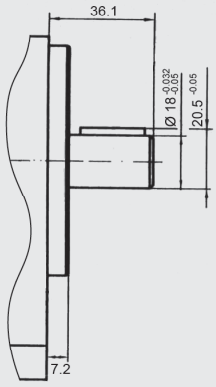
relevant mounting flange **W** **X**

H Keyed shaft SAE A - J 744 16-1 A



relevant mounting flange **W**

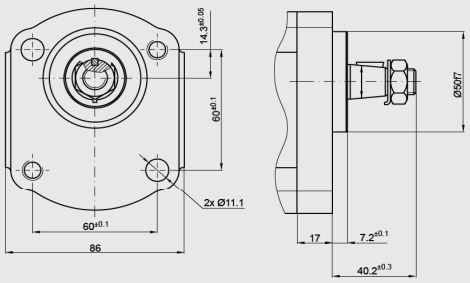
I Keyed shaft ISO Ø 18 mm



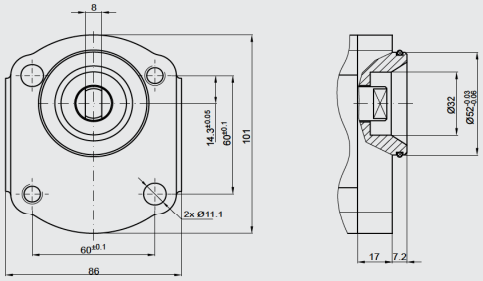
relevant mounting flange **T**

6.3.10 Mounting flange

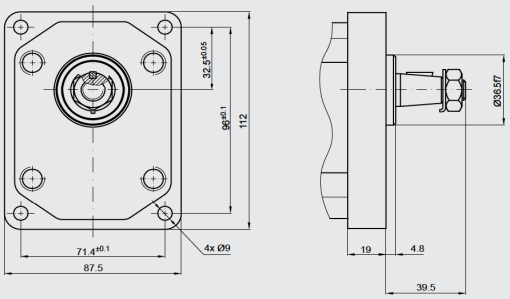
N 2-hole mounting
centering Ø 50 mm



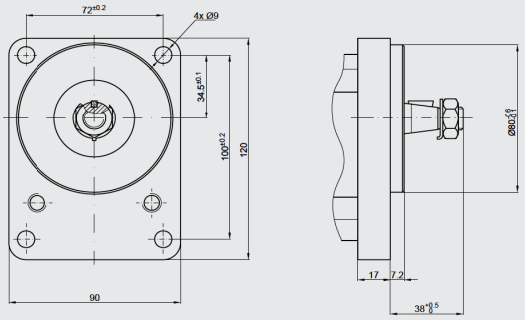
O 2-hole mounting
centering Ø 52 mm with O-ring



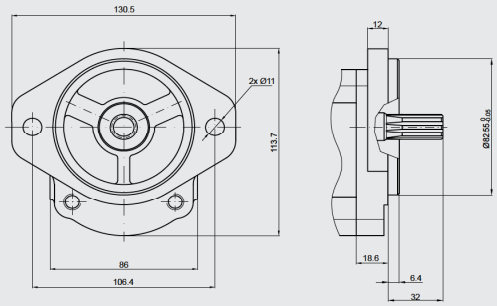
R Square flange
centering Ø 36.5 mm



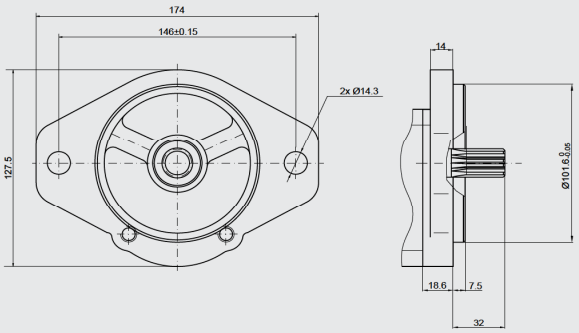
T Square flange
centering Ø 80 mm



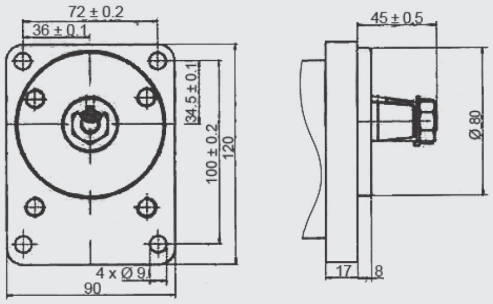
W SAE J 744 82-2 A
Ø 82.55 mm



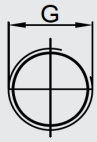
X SAE J 744 101-2 B
Ø 101.6 mm



Y Outboard bearing
Ø 80 mm type 1

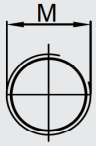


6.3.11 Ports



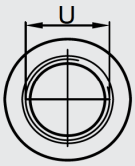
1 Pipe thread
ISO 228/1

Ordering code	Displacement	Outlet G	Inlet G
1	4.5 ... 8.2 cm³	G 1/2	G 1/2
	10 ... 25 cm³	G 1/2	G 3/4
	28 cm³	G 3/4	G 1



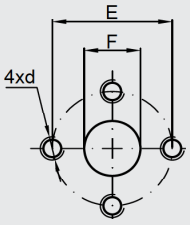
2 Metric thread
DIN 3852-1

Ordering code	Displacement	Outlet M	Inlet M
2	4.5 ... 25 cm³	M16x1.5	M20x1.5
	28 cm³	M20x1.5	M27x2



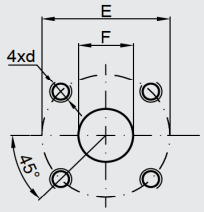
3 Pipe thread
UN 2B SAE
O-ring boss

Ordering code	Displacement	Outlet U	Inlet U
3	4.5 ... 25 cm³	7/8" -14 UNF	1 1/16" -12 UN
	28 cm³	1 1/16" -12 UN	1 5/16" -12 UN



4 Square flange
(Italian design)

Ordering code	Displacement	Outlet E	Outlet F	Outlet d	Inlet E	Inlet F	Inlet d
4	4.5 ... 8.2 cm³	30	13.1	M6	30	13.1	M6
	10 ... 22 cm³	30	14.2	M6	40	19	M8
	25 ... 28 cm³	40	19	M8	40	19	M8

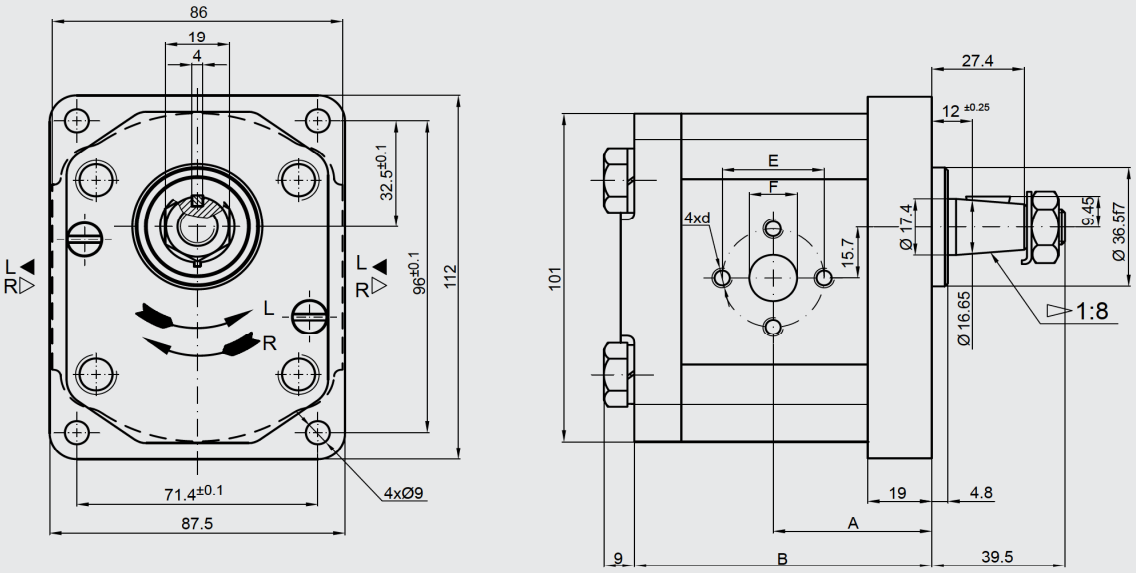


5 Square flange
DIN 3901/ ISO 8435

Ordering code	Displacement	Outlet E	Outlet F	Outlet d	Inlet E	Inlet F	Inlet d
5	4.5 ... 6.3 cm³	35	15	M6	40	15	M6
	8.2 ... 25 cm³	35	15	M6	40	20	M6
	28 cm³	40	20	M6	40	20	M6

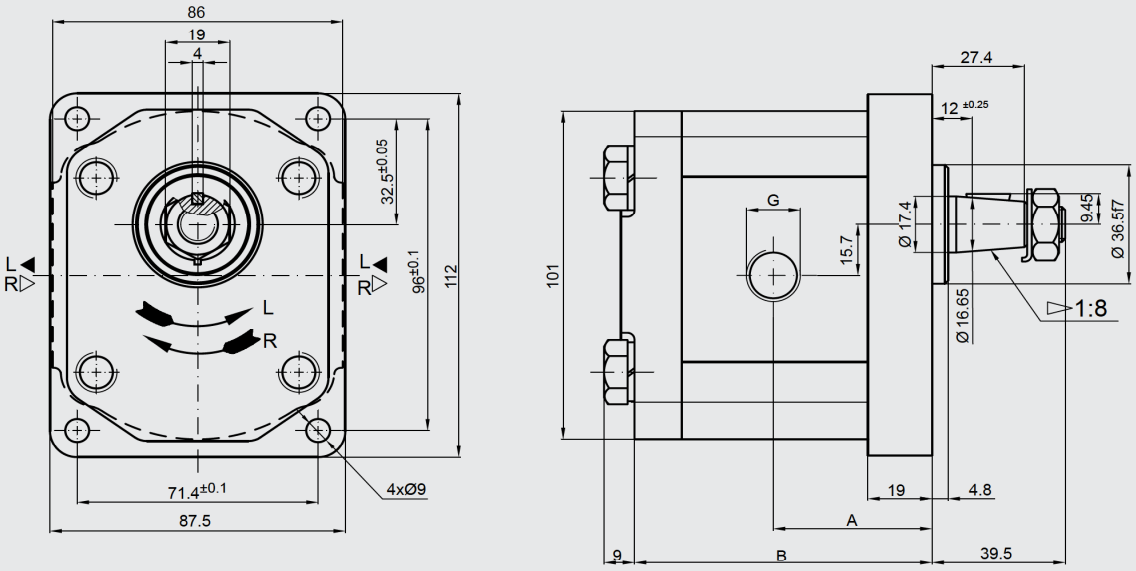
6.3.12 Preferred series

PGE102-...-. BR4-N



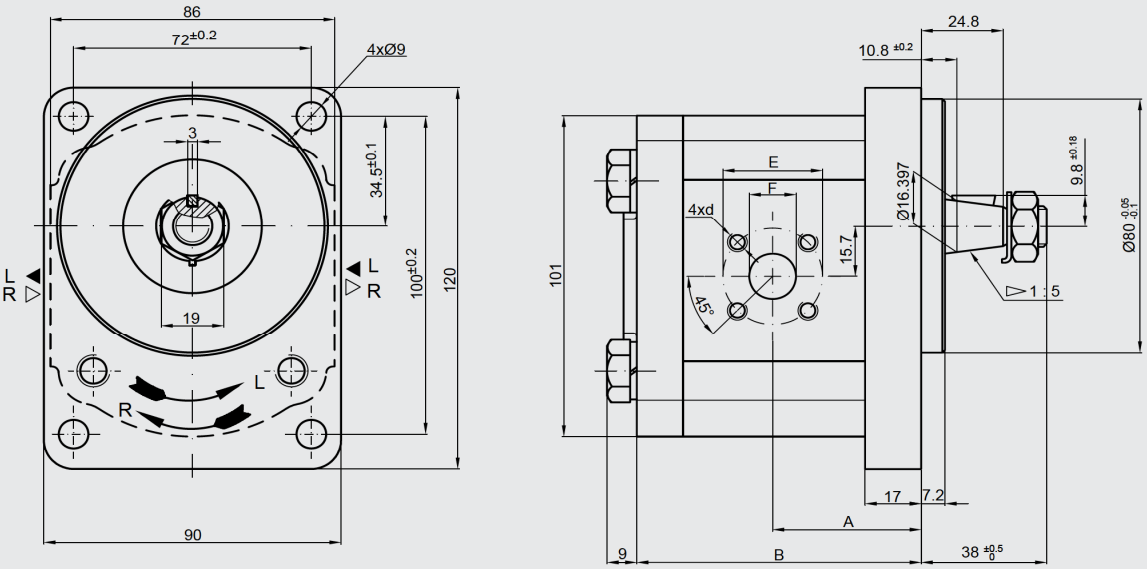
Type	Displacement	Output flow		Rated	Drive speed	Dimension						
		at 1500 rpm	at max. rpm		n	A	B	Inlet			Outlet		
	[cm³/rev]	[l/min]	[l/min]	[bar]	[rpm]	[mm]	[mm]	E	F	d	E	F	d
PGE102-450-. BR4-N	4.5	6.14	14.33	250	3500	42.5	80	30	13.1	M6	30	13.1	M6
PGE102-630-. BR4-N	6.3	8.69	20.29			42.5	80						
PGE102-820-. BR4-N	8.2	11.32	26.40			42.5	80						
PGE102-1000-. BR4-N	10	13.95	32.55			47	89	40	19	M8		14.2	
PGE102-1130-. BR4-N	11.3	15.76	36.78			48	91.1						
PGE102-1200-. BR4-N	12	16.92	39.48			48.6	92.3						
PGE102-1400-. BR4-N	14	19.95	46.55			50	95.4						
PGE102-1500-. BR4-N	15	21.60	43.20		3000	56	107.2						
PGE102-1600-. BR4-N	16	23.04	46.08			56.9	108.8						
PGE102-1730-. BR4-N	17.3	24.91	49.82	220		58	110.9						
PGE102-1900-. BR4-N	19	27.36	54.72	200		59.4	113.8						
PGE102-2200-. BR4-N	22	31.68	52.80	180	2500	61.9	118.8						
PGE102-2500-. BR4-N	25	36.00	60.00	160		64.3	123.7				40	19	M8
PGE102-2800-. BR4-N	28	40.32	67.20	120		66.8	128.5						

PGE102-...-.BR1-N



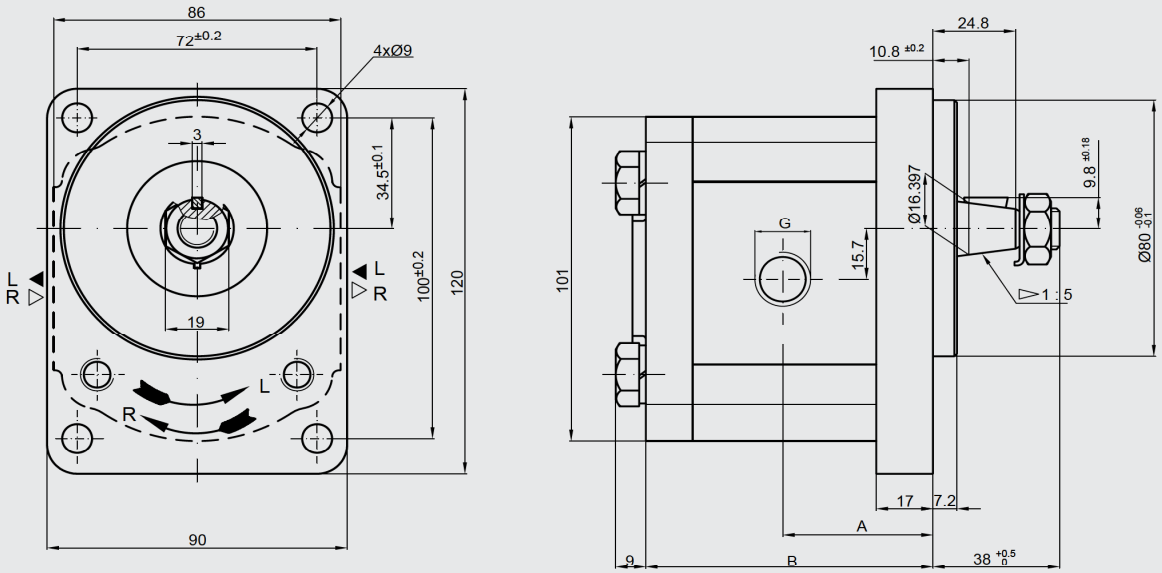
Type	Displace-ment	Output flow		Rated	Drive speed	Dimension			
		at 1500 rpm	at max. rpm		n	A	B	Inlet	Outlet
	[cm³/rev]	[l/min]	[l/min]	[bar]	[rpm]	[mm]	[mm]	G	G
PGE102-450-. BR1-N	4.5	6.14	14.33			42.5	80		
PGE102-630-. BR1-N	6.3	8.69	20.29			42.5	80	G 1/2	
PGE102-820-. BR1-N	8.2	11.32	26.40			42.5	80		
PGE102-1000-. BR1-N	10	13.95	32.55		3500	47	89		
PGE102-1130-. BR1-N	11.3	15.76	36.78	250		48	91.1		
PGE102-1200-. BR1-N	12	16.92	39.48			48.6	92.3		
PGE102-1400-. BR1-N	14	19.95	46.55			50	95.4	G 3/4	G 1/2
PGE102-1500-. BR1-N	15	21.60	43.20			56	107.2		
PGE102-1600-. BR1-N	16	23.04	46.08		3000	56.9	108.8		
PGE102-1730-. BR1-N	17.3	24.91	49.82	220		58	110.9		
PGE102-1900-. BR1-N	19	27.36	54.72	200		59.4	113.8		
PGE102-2200-. BR1-N	22	31.68	52.80	180		61.9	118.8		
PGE102-2500-. BR1-N	25	36.00	60.00	160	2500	64.3	123.7		
PGE102-2800-. BR1-N	28	40.32	67.20	120		66.8	128.5	G 1	G 3/4

PGE102-...-.AT5-N



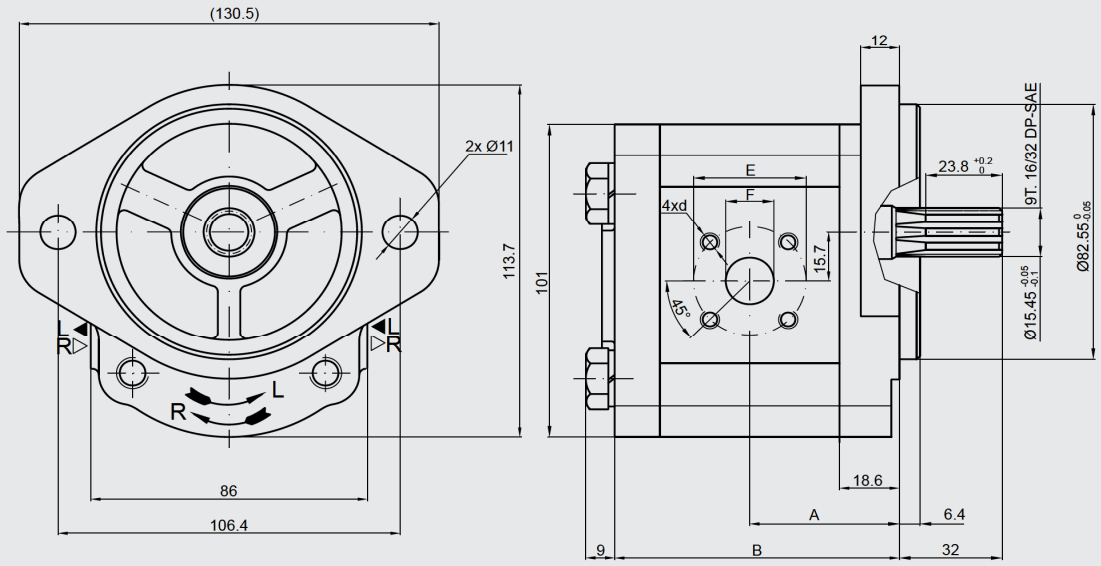
Type	Displacement [cm³/rev]	Output flow at 1500 rpm [l/min]	Output flow at max. rpm [l/min]	Rated [bar]	Drive speed n [rpm]	Dimension A [mm]	Dimension B [mm]	Inlet E	Inlet F	Inlet d	Outlet E	Outlet F	Outlet d
PGE102-450-. AT5-N	4.5	6.14	14.33	250	3500	39.8	78	40	15	M6	35	15	M6
PGE102-630-. AT5-N	6.3	8.69	20.29			41	81						
PGE102-820-. AT5-N	8.2	11.32	26.40			43.1	83.9		20				
PGE102-1000-. AT5-N	10	13.95	32.55			47.5	87						
PGE102-1130-. AT5-N	11.3	15.76	36.78				89						
PGE102-1200-. AT5-N	12	16.92	39.48				90.3						
PGE102-1400-. AT5-N	14	19.95	46.55				93.4						
PGE102-1500-. AT5-N	15	21.60	43.20		3000		105.2						
PGE102-1600-. AT5-N	16	23.04	46.08				106.8						
PGE102-1730-. AT5-N	17.3	24.91	49.82	220			108.9						
PGE102-1900-. AT5-N	19	27.36	54.72	200			111.8						
PGE102-2200-. AT5-N	22	31.68	52.80	180	2500	55	116.8						
PGE102-2500-. AT5-N	25	36.00	60.00	160		57.2	121.7						
PGE102-2800-. AT5-N	28	40.32	67.20	120		64.8	126.5				40	20	

PGE102-...-.AT1-N



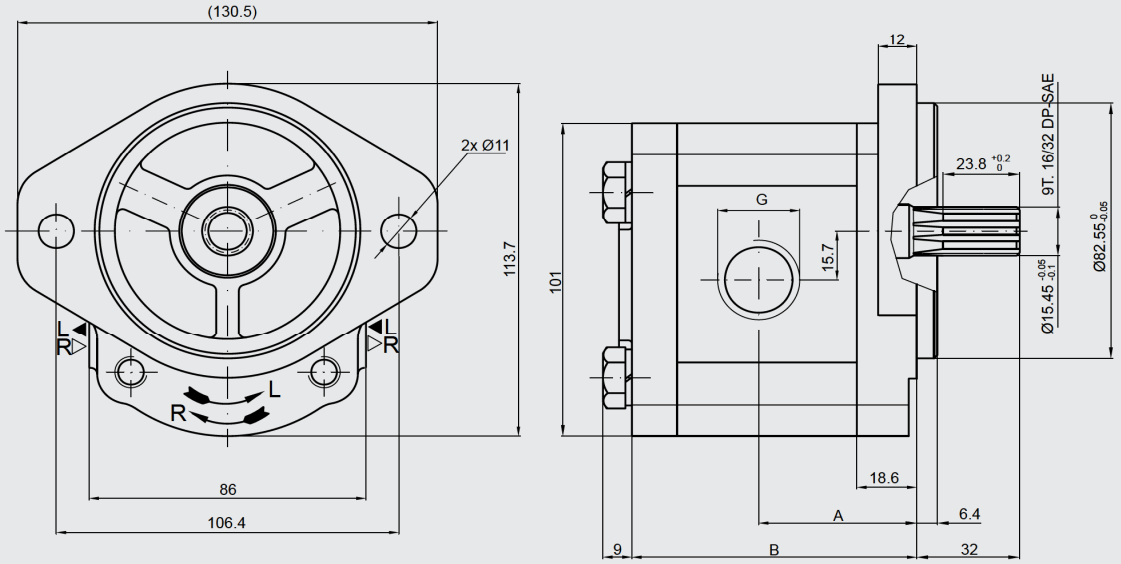
Type	Displace-ment	Output flow		Rated	Drive speed	Dimension			
		at 1500 rpm	at max. rpm		n	A	B	Inlet	Outlet
	[cm³/rev]	[l/min]	[l/min]	[bar]	[rpm]	[mm]	[mm]	G	G
PGE102-450-. AT1-N	4.5	6.14	14.33	250	3500	40.4	78	G 1/2	G 1/2
PGE102-630-. AT1-N	6.3	8.69	20.29			42	81		
PGE102-820-. AT1-N	8.2	11.32	26.40			43.4	83.9		
PGE102-1000-. AT1-N	10	13.95	32.55			45	87	G 3/4	
PGE102-1130-. AT1-N	11.3	15.76	36.78			46	89		
PGE102-1200-. AT1-N	12	16.92	39.48			46.6	90.3		
PGE102-1400-. AT1-N	14	19.95	46.55			48	93.4		
PGE102-1500-. AT1-N	15	21.60	43.20		3000	54	105.2		
PGE102-1600-. AT1-N	16	23.04	46.08			54.9	106.8		
PGE102-1730-. AT1-N	17.3	24.91	49.82	220		56	108.9		
PGE102-1900-. AT1-N	19	27.36	54.72	200		57.4	111.8		
PGE102-2200-. AT1-N	22	31.68	52.80	180	2500	59.9	116.8		
PGE102-2500-. AT1-N	25	36.00	60.00	160		64.3	121.7		
PGE102-2800-. AT1-N	28	40.32	67.20	120		64.8	126.5	G 1	G 3/4

PGE102-...-.EW5-N



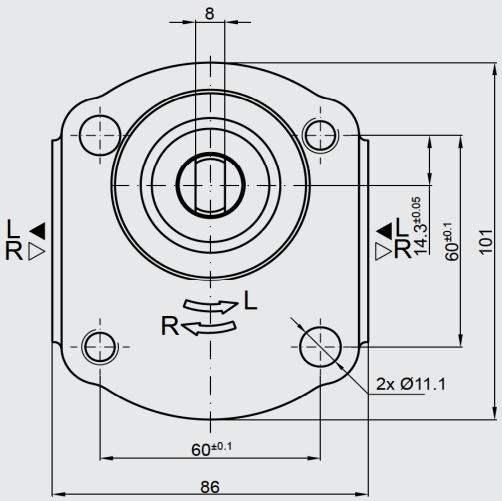
Type	Displace-ment	Output flow		Rated	Drive speed	Dimension								
		at 1500 rpm	at max. rpm		n	A	B	Inlet			Outlet		
	[cm³/rev]	[l/min]	[l/min]	[bar]	[rpm]	[mm]	[mm]	E	F	d	E	F	d
PGE102-450-. EW5-N	4.5	6.14	14.33	250	3500	42	79.6	40	15	M6	35	15	M6
PGE102-630-. EW5-N	6.3	8.69	20.29			43.6	82.6		20				
PGE102-820-. EW5-N	8.2	11.32	26.40			45	85.6						
PGE102-1000-. EW5-N	10	13.95	32.55			46.6	88.7						
PGE102-1130-. EW5-N	11.3	15.76	36.78			47.6	90.7						
PGE102-1200-. EW5-N	12	16.92	39.48			48.2	91.9						
PGE102-1400-. EW5-N	14	19.95	46.55			49.6	95						
PGE102-1500-. EW5-N	15	21.60	43.20		3000	55.6	106.8						
PGE102-1600-. EW5-N	16	23.04	46.08			56.5	108.4						
PGE102-1730-. EW5-N	17.3	24.91	49.82	220		57.6	110.5						
PGE102-1900-. EW5-N	19	27.36	54.72	200		59	113.4						
PGE102-2200-. EW5-N	22	31.68	52.80	180	2500	61.5	118.4						
PGE102-2500-. EW5-N	25	36.00	60.00	160		63.9	123.3						
PGE102-2800-. EW5-N	28	40.32	67.20	120		66.4	128.1				40	20	

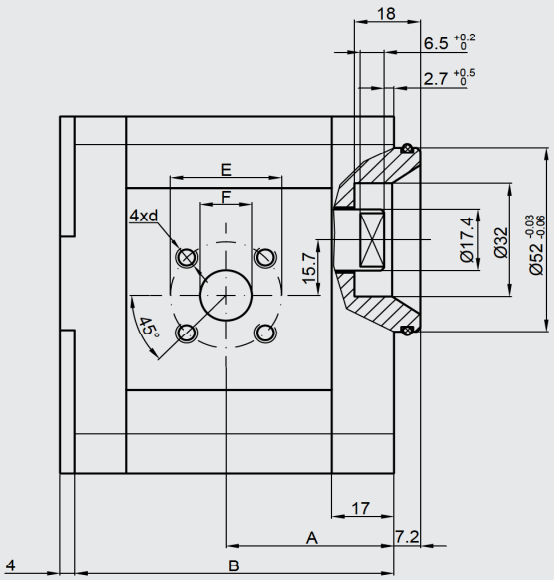
PGE102-...-.EW1-N



Type	Displace-ment	Output flow		Rated	Drive speed	Dimension			
		at 1500 rpm	at max. rpm		n	A	B	Inlet	Outlet
	[cm³/rev]	[l/min]	[l/min]	[bar]	[rpm]	[mm]	[mm]	G	G
PGE102-450-. EW1-N	4.5	6.14	14.33	250	3500	42	79.6	G 1/2	G 1/2
PGE102-630-. EW1-N	6.3	8.69	20.29			43.6	82.6		
PGE102-820-. EW1-N	8.2	11.32	26.40			45	85.6		
PGE102-1000-. EW1-N	10	13.95	32.55			46.6	88.7	G 3/4	
PGE102-1130-. EW1-N	11.3	15.76	36.78			47.6	90.7		
PGE102-1200-. EW1-N	12	16.92	39.48			48.2	91.9		
PGE102-1400-. EW1-N	14	19.95	46.55			49.6	95		
PGE102-1500-. EW1-N	15	21.60	43.20		3000	55.6	106.8		
PGE102-1600-. EW1-N	16	23.04	46.08			56.5	108.4		
PGE102-1730-. EW1-N	17.3	24.91	49.82	220		57.6	110.5		
PGE102-1900-. EW1-N	19	27.36	54.72	200		59	113.4		
PGE102-2200-. EW1-N	22	31.68	52.80	180	2500	61.5	118.4		
PGE102-2500-. EW1-N	25	36.00	60.00	160		63.9	123.3		
PGE102-2800-. EW1-N	28	40.32	67.20	120		66.4	128.1	G 1	G 3/4

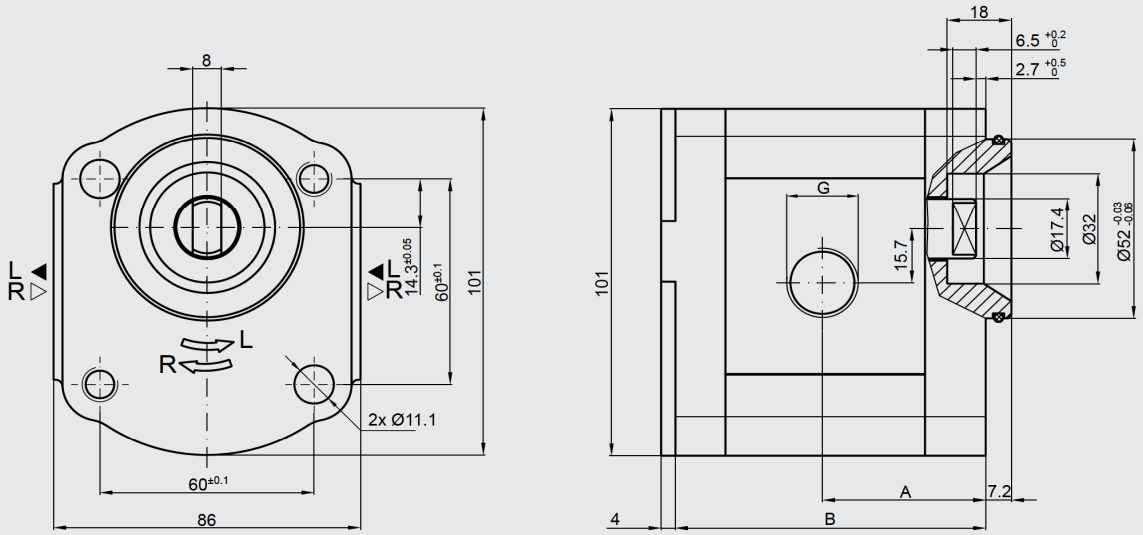
PGE102-...-.CO5-N





Type	Displace-ment	Output flow		Rated	Drive speed	Dimension								
		at 1500 rpm	at max. rpm		n	A	B	Inlet			Outlet		
	[cm³/rev]	[l/min]	[l/min]	[bar]	[rpm]	[mm]	[mm]	E	F	d	E	F	d
PGE102-450-. CO5-N	4.5	6.14	14.33	250	3500	37.3	78	40	15	M6	35	15	M6
PGE102-630-. CO5-N	6.3	8.69	20.29			38.6	81						
PGE102-820-. CO5-N	8.2	11.32	26.40			40.6	83.9		20				
PGE102-1000-. CO5-N	10	13.95	32.55			45	87						
PGE102-1130-. CO5-N	11.3	15.76	36.78			45	89						
PGE102-1200-. CO5-N	12	16.92	39.48			45	90.3						
PGE102-1400-. CO5-N	14	19.95	46.55			45	93.4						
PGE102-1500-. CO5-N	15	21.60	43.20		3000	54	105.2						
PGE102-1600-. CO5-N	16	23.04	46.08			54.9	106.8						
PGE102-1730-. CO5-N	17.3	24.91	49.82	220		56	108.9						
PGE102-1900-. CO5-N	19	27.36	54.72	200		57.4	111.8						
PGE102-2200-. CO5-N	22	31.68	52.80	180	2500	59.9	116.8						
PGE102-2500-. CO5-N	25	36.00	60.00	160		62.3	121.7				40	20	
PGE102-2800-. CO5-N	28	40.32	67.20	120		64.8	126.5						

PGE102-...-.CO1-N



Type	Displace-ment	Output flow		Rated	Drive speed	Dimension			
		at 1500 rpm	at max. rpm		n	A	B	Inlet	Outlet
	[cm³/rev]	[l/min]	[l/min]	[bar]	[rpm]	[mm]	[mm]	G	G
PGE102-450-. CO1-N	4.5	6.14	14.33	250	3500	40.5	78	G 1/2	G 1/2
PGE102-630-. CO1-N	6.3	8.69	20.29			42	81		
PGE102-820-. CO1-N	8.2	11.32	26.40			43.5	83.9		
PGE102-1000-. CO1-N	10	13.95	32.55			45	87	G 3/4	
PGE102-1130-. CO1-N	11.3	15.76	36.78			46	89		
PGE102-1200-. CO1-N	12	16.92	39.48			46.5	90.3		
PGE102-1400-. CO1-N	14	19.95	46.55			48	93.4		
PGE102-1500-. CO1-N	15	21.60	43.20		3000	54	105.2		
PGE102-1600-. CO1-N	16	23.04	46.08			54.9	106.8		
PGE102-1730-. CO1-N	17.3	24.91	49.82	220		56	108.9		
PGE102-1900-. CO1-N	19	27.36	54.72	200		57.4	111.8		
PGE102-2200-. CO1-N	22	31.68	52.80	180	2500	59.9	116.8		
PGE102-2500-. CO1-N	25	36.00	60.00	160		62.3	121.7		
PGE102-2800-. CO1-N	28	40.32	67.20	120		64.8	126.5	G 1	G 3/4