

Gear Pumps / Motors

Series PGP / PGM
Fixed Displacement Pumps,
Cast-Iron and Aluminium Designs

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



ENGINEERING YOUR SUCCESS.

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 **WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

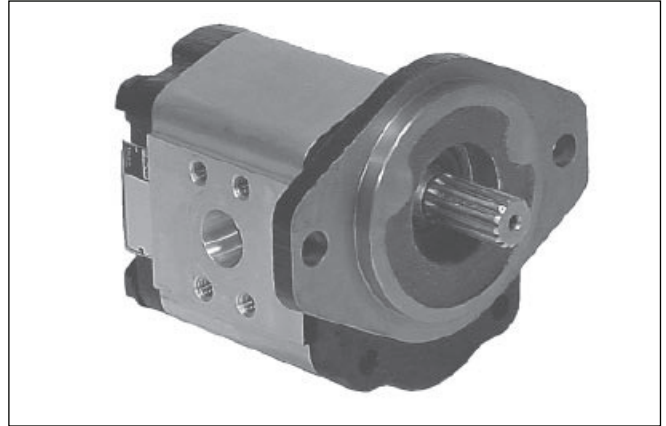
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PGP 500 pumps offer superior performance, high efficiency and low noise operation at high operating pressures. They are produced in four frame sizes (PGP 502, PGP 505, PGP 511, PGP 517) with displacements ranging from 0.8 to 70 cm³/rev. A wide variety of standard options is available to meet specific application requirements.



Characteristics

- **Up to 280 bar continuous operation**
High strength materials and large journal diameters provide low bearing loads for high pressure operation.
- **Low noise**
PGP 502 - 9 tooth gear profile, PGP 505 and 517 - 13 tooth gear profile, PGP 511 - 12 tooth gear profile and optimized flow metering provide reduced pressure pulsation and exceptionally quiet operation (PGP511 also available as noise reduced “stealth” version).

- **High efficiency**
Pressure balanced bearing blocks assure maximum efficiency under all operating conditions.
- **Application flexibility**
International mounts and connections, integrated valve capabilities and common inlet multiple pump configurations provide unmatched design and application versatility.
- **Large range of integrated valves**

Technical data

Pump type	Heavy-duty, aluminium, external gear.
Mounting	SAE, rectangular, thru-bolt standard specials on request.
Ports	SAE and metric split flanges and others
Shaft style	SAE splined, keyed, tapered, cylindrical tang drive, specials on request.
Speed	500 - 5000 rpm, see Technical Data
Theor. displacement	See Technical Data
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Units subject to axial or radial loads must be specified with an outboard bearing.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Consultation is recommended.
Outlet pressure	See Technical Data
Pressure rising rate	Max. 3000 bar/s
Flow velocity	See Nomograph for Pipe Velocity
Hydraulic fluids	Hydraulic oil HLP, DIN 51524-2
Fluid temperature	Range of operating temperature -15 to +80 °C. Max. permissible operating pressure dependent on fluid temperature. Temperature for cold start -20 to -15 °C at speed ≤ 1500 rpm. Max. permissible operating pressure dependent on fluid temperature.

Fluid viscosity	Range of operating viscosity 8 to 1000 mm ² /s (511 & 517) 20 to 1000 mm ² /s (502 & 505) Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm ² /s at operating pressure p≤10 bar and speed n≤1500 rpm.
Range of ambient temperature	-40 °C to +70 °C
Filtration	According to ISO 4406 Cl. 18/16/13
Direction of rotation (looking at the drive shaft)	Clockwise, counter-clockwise or double. Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	<ul style="list-style-type: none"> • Available in two or three section configuration. • Max. shaft load must be conform to the limitations shown in the shaft loading rating table in this catalogue. • Max. load is determined by adding the torque values for each pumping section that will be simultaneously loaded.
Separate or common inlet capability	Separate inlet configuration: <ul style="list-style-type: none"> • Each gear housing has individual inlet and outlet ports. Common inlet configuration: <ul style="list-style-type: none"> • Two gear sets share a common inlet.

PI PGP-PGM UK.PMD RH





Gear design

Type

Unit

**Dis-
placement**

Rotation

Shaft

Flange

Shaft seal

**Inlet
side ports
option**

**Outlet
side ports
option**

No rear ports
(rear ports on request)

Code	Type
P	Pump

Code	Unit
	Pump
A	Single unit
B	Multiple unit

Displacement	
Code	ccm
0008	0.8
0012	1.2
0016	1.6
0021	2.1
0025	2.5
0033	3.3
0036	3.6
0043	4.3
0048	4.8
0058	5.8
0062	6.2
0079	7.9

Code	Rotation
C	Clockwise
A	Counter-clockwise

Code	Shaft
H1 ²⁾	Ø10, 3.0 key, no thread, 36L, parallel
P2 ³⁾	Ø9.35, 8.8L, 2.4 key, M6, taper 1:8
V1 ⁴⁾	5x6.5 long shaft w/o coupling tang drive
V2 ⁵⁾	5x4.5 short shaft w/o coupling tang drive

Code	Port options
E3E2	1/2" - 14 BSP thread/ 3/8" - 19 BSP thread
J4J3	Ø12 mm - Ø30 mm - M6 square flange/ Ø8 mm - Ø30 mm - M6 square flange

Example: E3 = inlet port
E2 = outlet port

Code	Shaft seal
X	No seal
N	NBR

Code	Flange
D1	52.2x72.0 - Ø25.4 rectangular
H1	82.5 - Ø50.8 SAE "A-A" 2 bolt flange
P3	40.0x40.0 - Ø32.0 w/ seal, thrubolt flange
P4	40.0x40.0 - Ø32.0 w/ seal f. short shaft, thrubolt flange

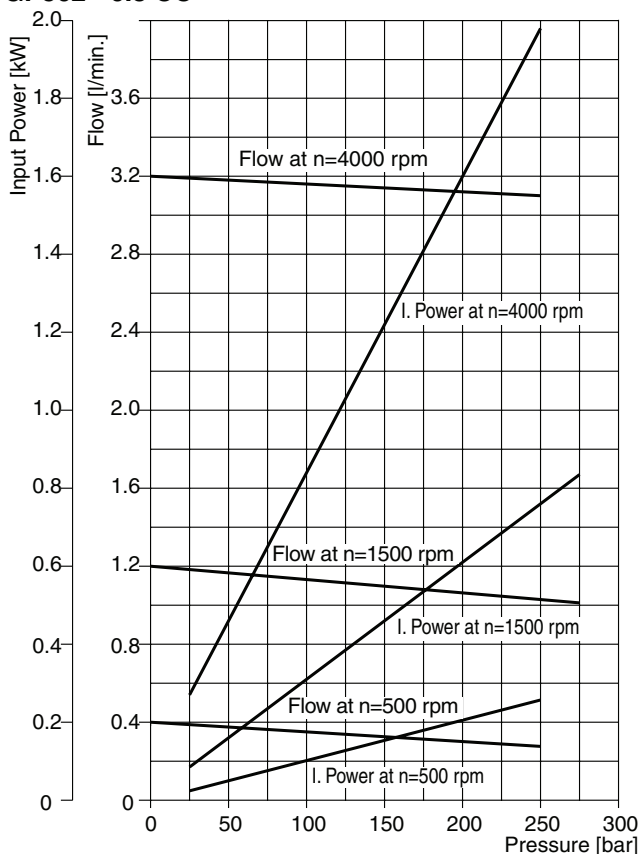
²⁾ Only used with flange H1, D1.

³⁾ Only used with flange D1.

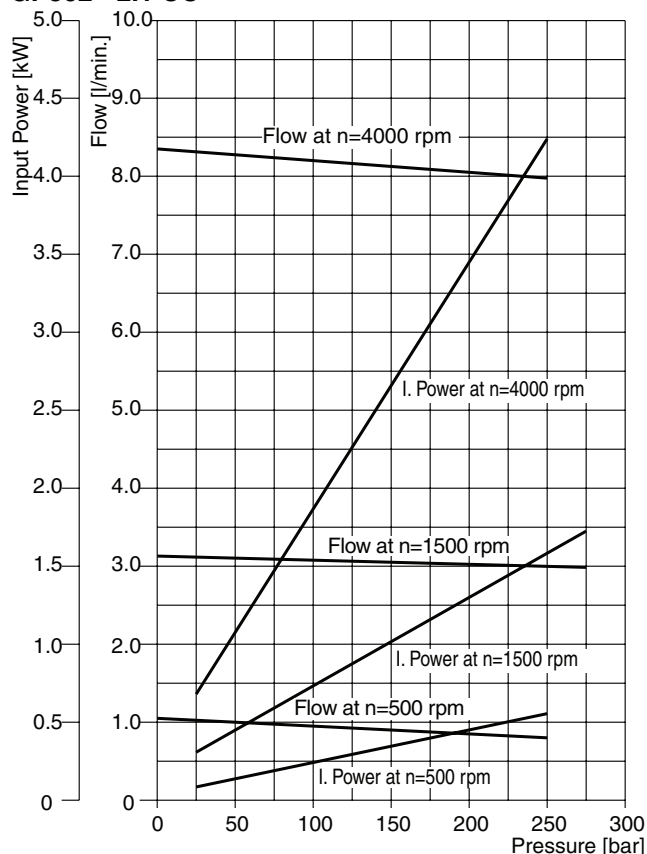
⁴⁾ Only used with flange H1.

⁵⁾ Only used with flange P3, P4.

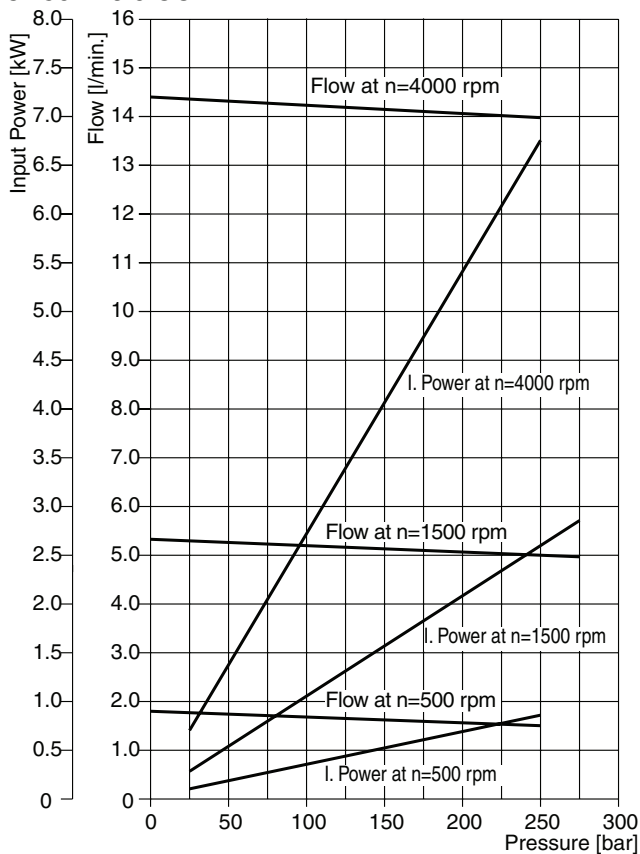
PGP502 - 0.8 CC



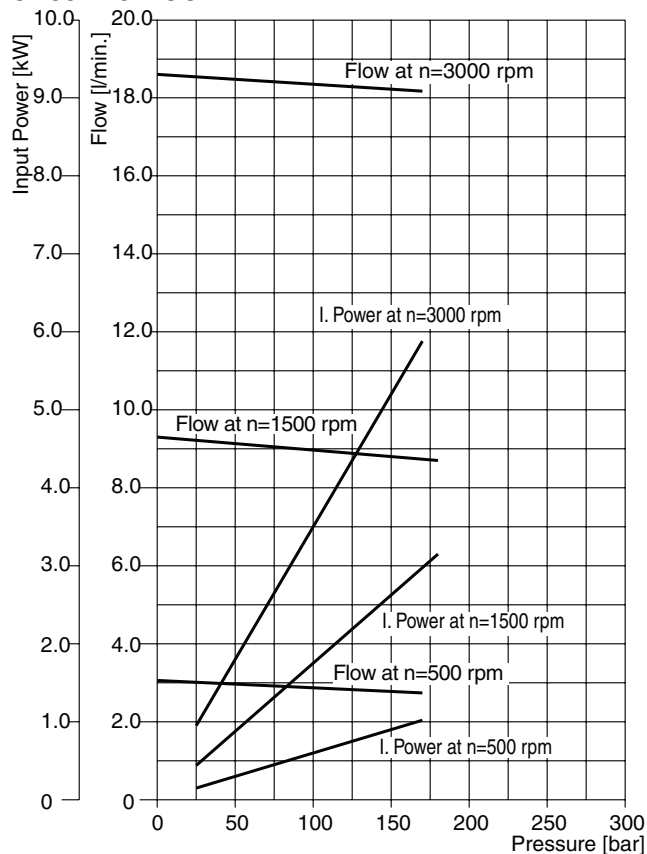
PGP502 - 2.1 CC



PGP502 - 3.6 CC



PGP502 - 6.2 CC



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Fluid temperature: 45 °C± 2K ; Viscosity: 36mm²/s ;

Inlet pressure: 0.9 + 0.1 bar absolute



PGP502 A XXXX Y P2 D1 N SS PP B1 B1

"Y" = C (clockwise rotation)
 = A (counter-clockwise rotation)

Displacement XXXX	cm ³ /rev	Dimension			Inlet port			Outlet port			Speed of rotation		Working pressure max. bar	Order number direction of rotation	
		A mm	B mm	C mm	SS	G mm	F mm	PP	G mm	F mm	min. rpm	max. rpm		clockwise	counter- clockwise
0008	0.8	32.6	65.3	94.0	E3	G 1/2"	33	E2	G 3/8"	24	500	5000	280	330 9111 346	330 9112 233
0012	1.2	33.4	66.8	96.0	E3	G 1/2"	33	E2	G 3/8"	24	500	5000	280	330 9111 347	330 9112 234
0016	1.6	34.1	68.3	97.5	E3	G 1/2"	33	E2	G 3/8"	24	500	5000	280	330 9111 348	330 9112 235
0021	2.1	34.9	69.9	99.0	E3	G 1/2"	33	E2	G 3/8"	24	500	4500	280	330 9111 349	
0025	2.5	35.7	71.5	100.5	E3	G 1/2"	33	E2	G 3/8"	24	500	4500	280	330 9111 350	330 9112 236
0033	3.3	37.2	74.5	103.5	E3	G 1/2"	33	E2	G 3/8"	24	500	4000	280	330 9111 351	330 9112 237
0036	3.6	37.8	75.6	104.5	E3	G 1/2"	33	E2	G 3/8"	24	500	4000	260	330 9111 352	330 9112 238
0043	4.3	39.2	78.5	107.5	E3	G 1/2"	33	E2	G 3/8"	24	500	4000	250	330 9111 353	
0048	4.8	40.0	80.0	109.0	E3	G 1/2"	33	E2	G 3/8"	24	500	3800	230	330 9111 354	330 9112 239
0058	5.8	41.9	83.8	113.0	E3	G 1/2"	33	E2	G 3/8"	24	500	3800	200	330 9111 355	330 9112 240
0062	6.2	42.6	85.3	114.5	E3	G 1/2"	33	E2	G 3/8"	24	500	3500	180	330 9111 356	330 9112 241
0079	7.9	45.8	91.6	121.0	E3	G 1/2"	33	E2	G 3/8"	24	500	3000	160	330 9111 357	

Dimensions (clockwise rotation shown)

