

PGP 500 Series **PGM 500 Series**

Single or Multiple Aluminum Pumps and Motors

Catalog HY09-0500/US



- Single or Multiple Pumps and Motors
- Continuous Pressures to 4000 psi
- Pump Flows to 37 gpm
- Motors with outputs to over 60 Hp
- Displacement range: 2 - 52cc (.12 - 3.17 cir)

Heavy-Duty Aluminum Pumps and Motors

PGP/PGM 500 Series

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- Consistent quality
- Technical innovation
- Premier customer service

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We manufacture hydraulic components for a wide range of industries including:

- Material Handling
- Construction
- Turf Care
- Forestry
- Agriculture
- Industrial



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Heavy-Duty Aluminum Pumps and Motors

PGP/PGM 500 Series

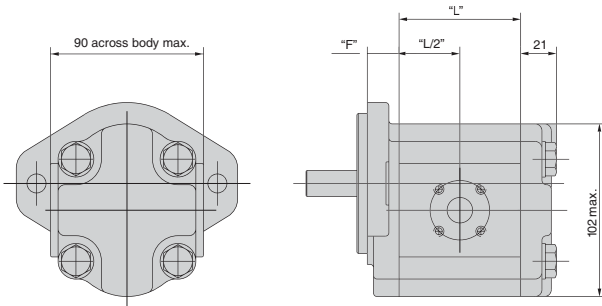
PGP/PGM 511 Specifications

Description	Code	0060	0070	0080	0100	0110	0140	0160	0180	0190	0210	0230	0270	0280	0310
Displacements	cm ³ /rev in ³ /rev	6 0.37	7 0.43	8 0.49	10 0.61	11 0.67	14 0.85	16 0.98	18 1.10	19 1.16	21 1.28	23 1.40	27 1.65	28 1.71	31 1.89
Continuous Pressure	bar psi	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	235 3408	235 3408	190 2755	185 2683	165 2393
Intermittent Pressure	bar psi	300 4350	300 4350	300 4350	300 4350	300 4350	300 4350	300 4350	300 4350	300 4350	255 3698	255 3698	210 3045	200 2900	180 2610
Minimum Speed @ Max. Outlet Pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. Outlet Pressure	rpm	4000	4000	4000	3600	3600	3300	3000	3000	3000	2800	2800	2400	2300	2300
Pump Input Power @ Max. Pressure and 1500 rpm	kW HP	4.5 6.03	5.25 7.04	6 8.05	7.5 10.06	8.3 11.1	10.5 14.0	12 16.0	13.5 18.1	14.3 19.1	14.4 19.3	14.7 19.7	14.9 19.9	15.8 21.1	16.7 22.4
Dimension "L"	mm in	51.8 2.04	53.3 2.10	54.9 2.16	57.9 2.28	59.4 2.34	64 2.52	67 2.64	70.1 2.76	71.6 2.82	76.6 3.02	77.6 3.06	83.7 3.30	84.2 3.31	89.8 3.54
Approximate Weight ¹⁾	kg LB	3.4 7.51	3.44 7.60	3.47 7.67	3.55 7.85	3.57 7.89	3.71 8.20	3.79 8.38	3.89 8.60	3.91 8.64	3.95 8.73	4.06 8.97	4.21 9.30	4.23 9.35	4.37 9.66

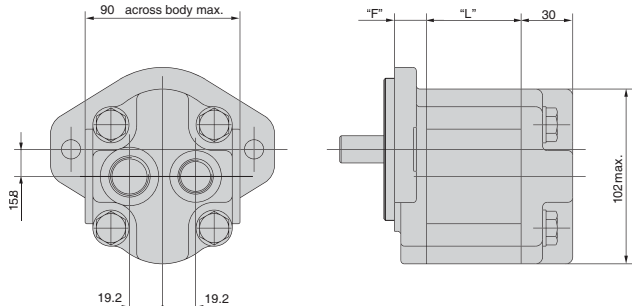
¹⁾ Single pump with Shaft End Cover Q1 and non ported Port End Cover.

PGP/PGM 511 Dimensions

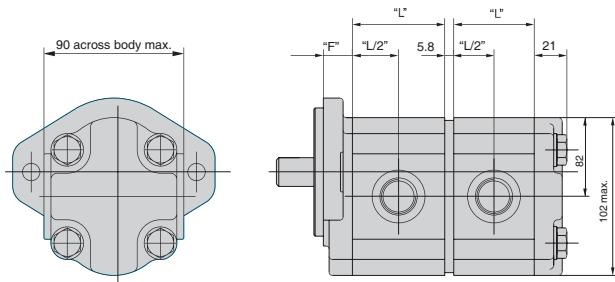
Single Unit PGP/PGM 511



Single Unit PGP/PGM 511 with rear ports



Tandem Unit PGP/PGM 511



NOTE:

Dimension "F" see shaft end covers on page 12

Dimension "L" see table above

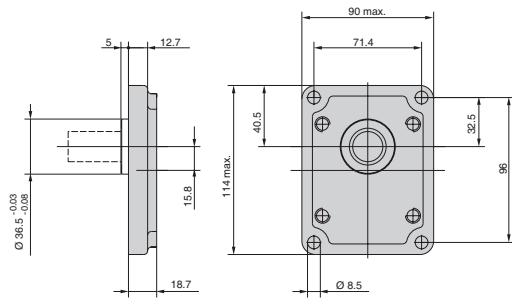
- Notes: 1. Dimensions are in millimeters.
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.
4. To convert from millimeters to inches, divide millimeters by 25.4.

Heavy-Duty Aluminum Pumps and Motors

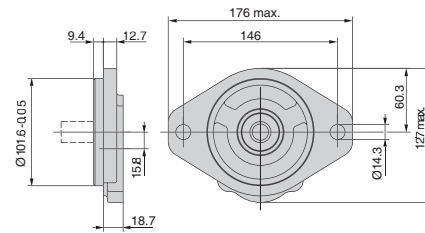
PGP/PGM 500 Series

PGP/PGM 511 Shaft End Covers

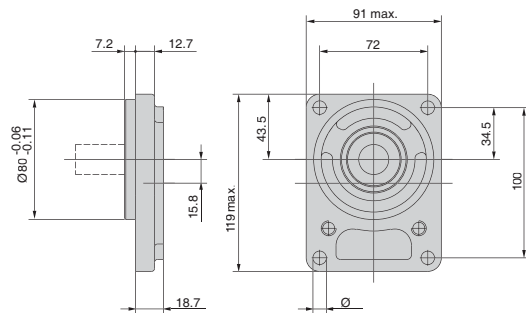
Code D3



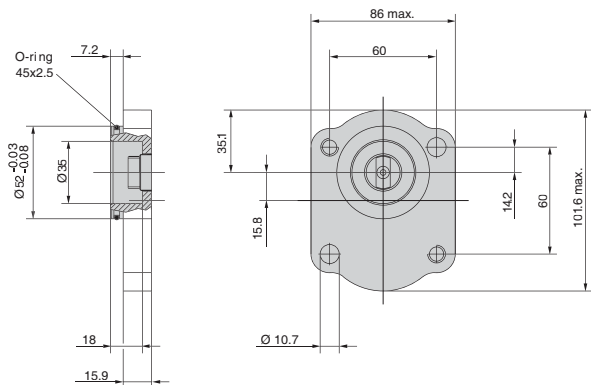
Code H3



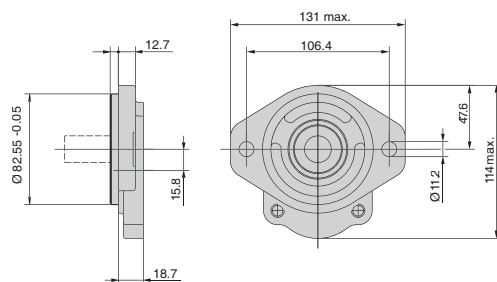
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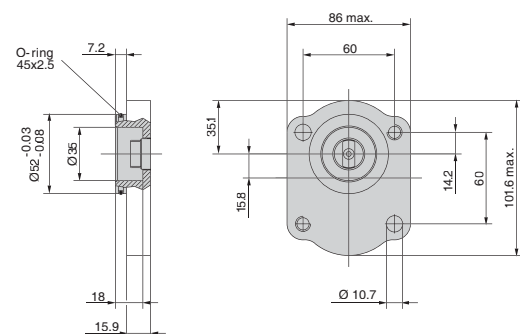
Code Q1



Code H2



Code Q3



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Heavy-Duty Aluminum Pumps and Motors

PGP/PGM 500 Series

PGP/PGM 511 Porting

Code D

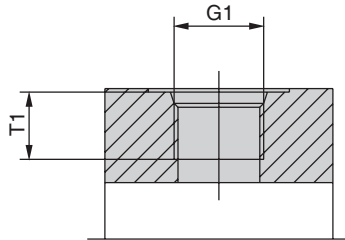
SAE straight thread

See table at right for specific port dimensions.

Code H

ISO metric straight

See table at right for specific port dimensions.



Code	G1 Thread	T1 Dimensions
D2	9/16"-18 UNF	12.7
D3	3/4"-16 UNF	14.3
D4	7/8"-14 UNF	16.7
D5	1 1/16"-12 UN	19.0
D6	1 5/16"-12 UN	19.0
D7	1 5/8"-12 UN	19.0
D8	1 7/8"-12 UN	19.0
H1	M 14x1.5	11.5
H2	M 16x1.5	13.0
H3	M 18x1.5	14.5
H4	M 22x1.5	15.5
H6	M 27x2	19.0
H8	M 33x2	19.0

Code N

SAE Split flange

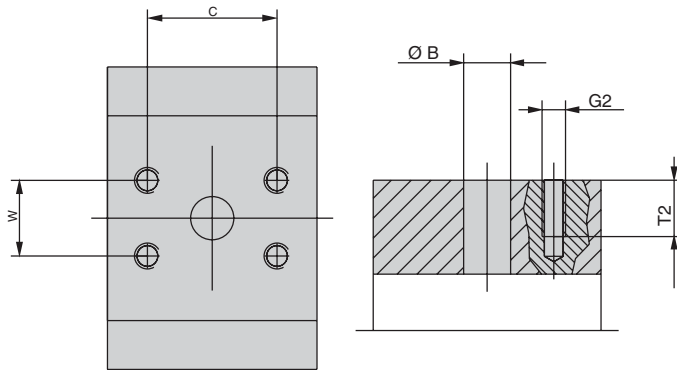
See table at right for specific port dimensions.

Code P

SAE Split flange

metric thread

See table at right for specific port dimensions.



Code	G2 Thread	Ø B	C	W	T2
		Dimensions			
N1	5/16"-18 UNC	12.7	38.10	17.48	15.0
N2	3/8"-16 UNC	19.0	47.63	22.23	14.0
N3	3/8"-16 UNC	25.4	52.37	26.19	20.6
N4	7/16"-14 UNC	31.8	58.72	30.17	20.6
P1	M 8x1.25	12.7	38.10	17.48	15.0
P2	M 10x1.50	19.0	47.63	22.23	20.6
P3	M 10x1.50	25.4	52.37	26.19	21.4
P4	M 10x1.50	31.8	58.72	30.17	20.6
P5	M 12x1.75	38.1	69.82	35.71	20.6

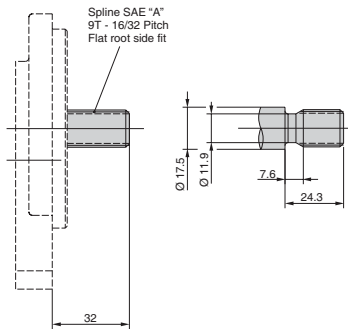
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Heavy-Duty Aluminum Pumps and Motors

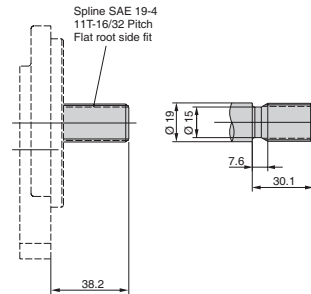
PGP/PGM 500 Series

PGP/PGM 511 Drive Shaft

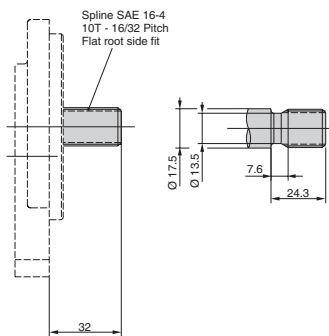
Code A1



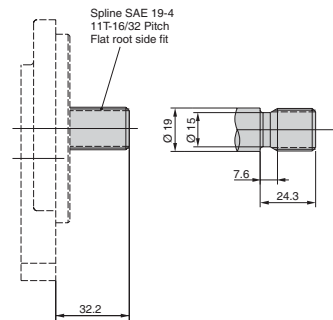
Code C1



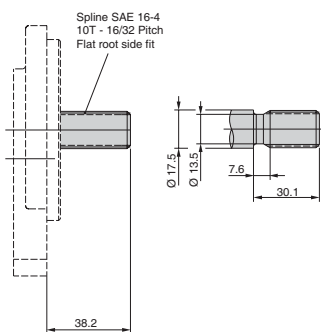
Code B1



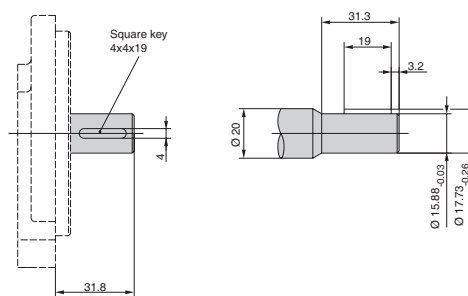
Code C2



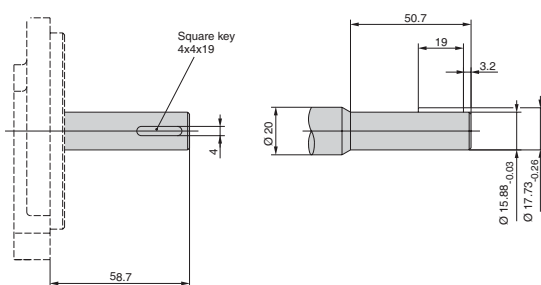
Code B2



Code K1



Code K4



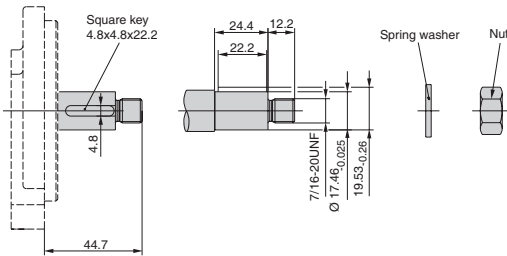
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Heavy-Duty Aluminum Pumps and Motors

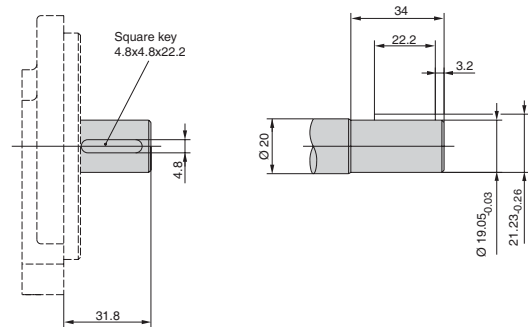
PGP/PGM 500 Series

PGP/PGM 511 Drive Shaft

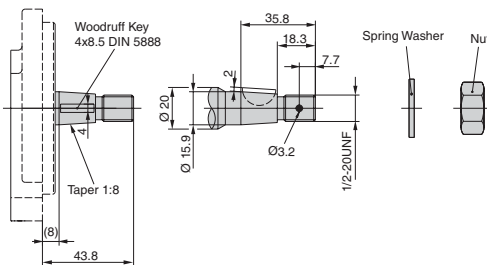
Code L1



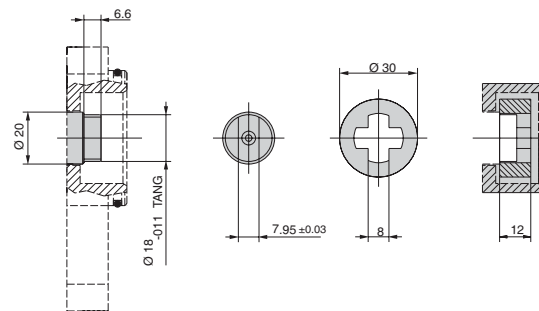
Code L6



Code R1



Code V5



- Notes: 1. Dimensions are in millimeters.
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.
4. To convert from millimeters to inches, divide millimeters by 25.4.

PGP/PGM 511 - Shaft Load Capacity

Code	Description	Style	Torque Rating
A1	9T, 16/32 Pitch, 32L, SAE "A"	Spline	86Nm/759in-lb
B1	10T, 16/32 Pitch, 32L, SAE "A"	Spline	124Nm/1095in-lb
B2	10T, 16/32 Pitch, 38.2L, SAE "A"	Spline	124Nm/1095in-lb
C1	11T, 16/32 Pitch, 38.2L, SAE 19-4	Spline	184Nm/1625in-lb
C2	11T, 16/32 Pitch, 38.2L, SAE 19-4	Spline	184Nm/1625in-lb
K1	Ø 15.88 4.0 Key, no thread, 32L, SAE "A"	Parallel	75Nm/662in-lb
K4	Ø 15.88, 3.95 Key, no thread, 58.7L	Parallel	75Nm/662in-lb
L1	Ø 17.46, 4.8 Key, 7/16UNF ext., 44.2L	Parallel	112Nm/989in-lb
L6	Ø 19.05, 4.8 Key, no thread, 32L, SAE 19-1	Parallel	145Nm/1280in-lb
R1	Ø 15.9, 43.8L, 4.0 Key, 1/2UNF, SAE "A"	1:8 Taper	156Nm/1377in-lb
V5	8x6.6 Short Shaft	Tang Drive	60Nm/530in-lb
	Tandem pump Connecting Shaft	Spline	110Nm/971in-lb

When applying a multiple section pump, the maximum drive shaft load is determined by adding the torque values for each pumping section that will be simultaneously loaded.

$$\text{Torque [in-lb]} = \frac{\text{Displacement [in}^3/\text{rev]} \times \text{Pressure [psi]}}{5.72} \quad \text{Torque [Nm]} = \frac{\text{Displacement [cc/rev]} \times \text{Pressure [bar]}}{57.2}$$

Heavy-Duty Aluminum Pumps and Motors

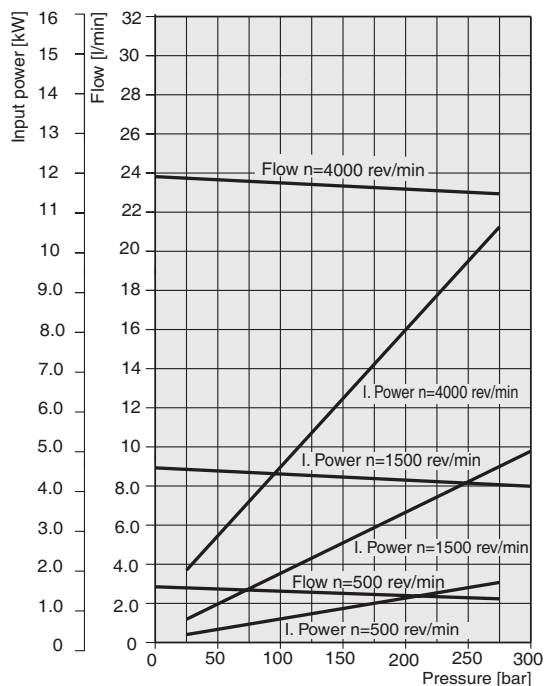
PGP/PGM 500 Series

PGP/PGM 511 - 6.0 CC

Fluid Temperature = $45 \pm 2^\circ\text{C}$

Viscosity = $36\text{mm}^2/\text{s}$

Inlet Pressure = $0.9 + 0.1$ bar absolute

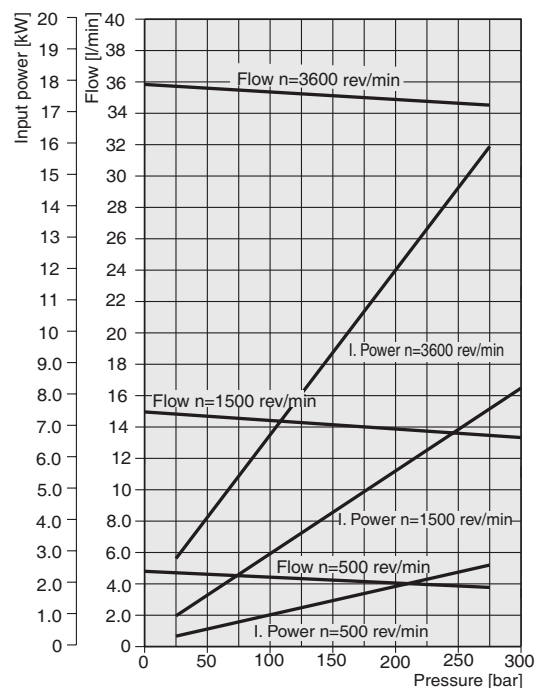


PGP/PGM 511 - 10.0 CC

Fluid Temperature = $45 \pm 2^\circ\text{C}$

Viscosity = $36\text{mm}^2/\text{s}$

Inlet Pressure = $0.9 + 0.1$ bar absolute

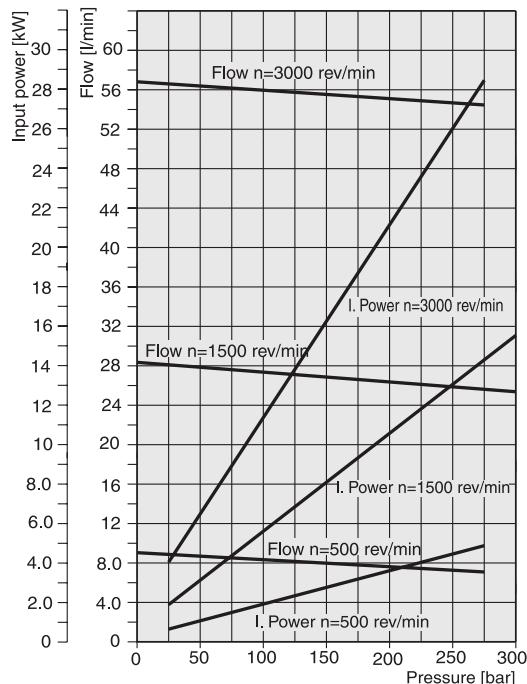


PGP/PGM 511 - 19.0 CC

Fluid Temperature = $45 \pm 2^\circ\text{C}$

Viscosity = $36\text{mm}^2/\text{s}$

Inlet Pressure = $0.9 + 0.1$ bar absolute

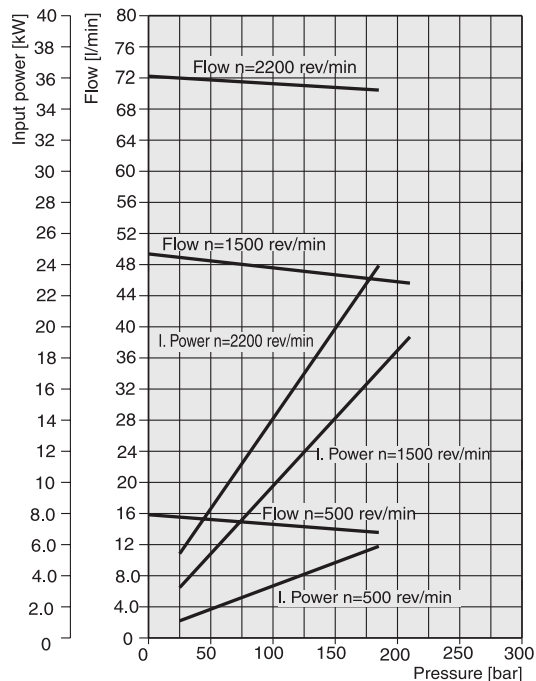


PGP/PGM 511 - 33.0 CC

Fluid Temperature = $45 \pm 2^\circ\text{C}$

Viscosity = $36\text{mm}^2/\text{s}$

Inlet Pressure = $0.9 + 0.1$ bar absolute



Performance data shown is based upon a series of laboratory tests and is not representative of any one unit.



Commercial
Hydraulics



Heavy-Duty Aluminum Pumps and Motors

PGP/PGM 500 Series

PGP/PGM 511 How to Specify

Omit for tandem														Continue for tandem												
								Side Suction Port		Side Pressure Port		Rear Suction Port ¹		Rear Pressure Port ¹		Side Suction Port		Side Pressure Port		Rear Suction Port ¹		Rear Pressure Port ¹		3		
Gear Design	Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (10)	Box (11)	Box (12)	Box (13)	Box (14)	Box (15)	Box (16)	Box (17)	Box (18)	Box (19)	Box (20)	Box (21)	Box (22)				
PG		511													511											

Box 1 Pump/Motor	
P	Pump
M	Motor
F	Flow divider

Boxes 2,15 Unit		
	Pump	Motor
A	Single unit	Standard Motor w/o checks
B	Multiple unit	Standard Motor w/ two checks
C	—	Standard Motor w/one anti cavitation check (ACC)
D	—	Standard Motor w. one ACC + restrictor
M	Single distributor unit	—
N	Multiple distributor unit	—
S *	Single split gear unit	—
T *	Multiple split gear unit	—

Boxes 3,16 Displacement	
0060	6.0 ccm
0070	7.0 ccm
0080	8.0 ccm
0100	10.0 ccm
0110	11.0 ccm
0140	14.0 ccm
0160	16.0 ccm
0180	18.0 ccm
0190	19.0 ccm
0210	21.0 ccm
0230	23.0 ccm
0270	27.0 ccm
0280	28.0 ccm
0310	31.0 ccm

Box 4 Rotation	
C	Clockwise
A	Counter clockwise
B	Bi-directional

Box 5 Shaft	
A1	9T, 16/32 Pitch, 32L, SAE "A" spline
B1	10T, 16/32 Pitch, 32L spline
B2	10T, 16/32 Pitch, 38.2L spline
C1	11T, 16/32 Pitch, 38.2L, SAE 19-4 spline
C2	11T, 16/32 Pitch, 32.2L, SAE 19-4 spline
K1	Ø15.88, 4.0 Key, no thread, 32L, SAE "A", parallel
K4	Ø15.88, 4.0 Key, no thread, 58.7L, parallel
L1	Ø17.46, 4.8 Key, 7/16" UNF ext., 44.7L, parallel
L6	Ø19.05, 4.8 Key, no thread, 32L, parallel
R1	Ø15.9, 8.0L, 4.0 Key, 1/2" UNF, SAE "A", taper 1:8
V5	8x6.5 short shaft, tang drive

* Only for displacement codes 0060 to 0280

NOTES:

- 1 Only coded for the last section.
- 2 Only for motors
- 3 For further "B" triple unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.

Heavy-Duty Aluminum Pumps and Motors

PGP/PGM 500 Series

PGP/PGM 511 How to Specify

Example:

		Omit for tandem														Continue for tandem							
		Side Suction Port	Side Pressure Port	Rear Suction Port ¹	Rear Pressure Port ¹											Side Suction Port	Side Pressure Port	Rear Suction Port ¹	Rear Pressure Port ¹	3			
Gear Design	Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (10)	Box (11)	Box (12)	Box (13)	Box (14)	Box (15)	Box (16)	Box (17)	Box (18)	Box (19)	Box (20)	Box (21)	Box (22)	
PG	P	511	A	0140	C	K1	H2	N	D6	D5	B1	B1											

Box 6 Shaft End Covers	
D3	71.4x96.0 - Ø36.47 rectangular
D4	72.0x100.0 - Ø80 rectangular
H2	106.4 - Ø82.55 SAE "A" 2bolt flange
H3	146.1 - Ø101.6 SAE "B" 2bolt flange
Q1	60.0x60.0 - Ø52.0 w/o seal , O' thrubolt flange
Q2	60.0x60.0 - Ø50.0 w. seal , O' thrubolt flange
Q3	60.0x60.0 - Ø52.0 w/o seal , O' thrubolt flange
Q4	60.0x60.0 - Ø50.0 w. seal , O' thrubolt flange
J5	H2 with slots, spec 2bolt
F3	71.4x96.0 - Ø36.47 rect., w. OBB and cont. drive shaft
F4	72.0x100.0 - Ø80.0 rect., w. OBB and cont. drive shaft
L2	106.4 - Ø82.55 SAE "A" 2bolt, w. OBB + cont. drive shaft
L3	146.1 - Ø101.6 SAE "B" 2bolt, w. OBB + cont. drive shaft
L5	106.4 - Ø82.55 SAE "A" 2bolt, w. OBB + int. drive shaft
L6	146.1 - Ø101.6 SAE "B" 2bolt, w. OBB + int. drive shaft

Boxes 8,9,10,11,18,19,20,21 Port Options	
B1	No ports
D2	9/16" - 18 UNF thread
D3	3/4" - 16 UNF thread
D4	7/8" - 14 UNF thread
D5	1 1/16" - 12UN thread
D6*	1 5/16" - 12 UN thread
D7*	1 5/8" - 12 UN thread
D8*	1 7/8" - 12 UN thread
H1	M 14x1.5 thread
H2	M 16x1.5 thread
H3	M 18x1.5 thread
H4	M 22x1.5 thread
H6*	M 27x2 thread
H8*	M 33x2 thread
N1*	1/2"-5/16"-18UNC SAE Split Flange
N2*	3/4"-3/8"-16UNC SAE Split Flange
N3*	1 3/8"-16UNC SAE Split Flange
N4*	1 1/4"-7/16-14UNC SAE Split Flange
P1*	12.7mm - M8 Metric Split Flange
P2*	19.0mm - M10 Metric Split Flange
P3*	25.4mm - M10 Metric Split Flange
P4*	31.8mm - M10 Metric Split Flange
P5*	38.1mm - M12 Metric Split Flange

*Not usable for rear ports.

Box 12 Motor Drain Option ²	
B1	No drain
C	9/16-18 UNF thread

Box 13 Drain Position ²	
2	Drain on bottom
3	Drain on top
4	Rear drain
5	Drain right view on drive shaft
6	Drain left view on drive shaft

Box 14 Section Connection	
S	Separate inlets
C	Common inlets

Boxes 7,17 Shaft Seal	
X	No seal
N	NBR
V	FPM, FKM
M	Double NBR
W	Double FPM

NOTES:

- Only coded for the last section.
- Only for motors
- For further "B" triple unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.