



Pump & Motor Division

RPGP/RPGM 500 Series Gear Pumps and Motors in Single and Multiple Configurations



RUICHEN HYDRAULIC MACHINERY MANUFACTURING Co., LTD

<https://www.rchchdraulics.com/>

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■ **Up to 280 bar continuous operation**

High strength materials and large journal diameters provide low bearing loads for high pressure operation.

■ **High efficiency**

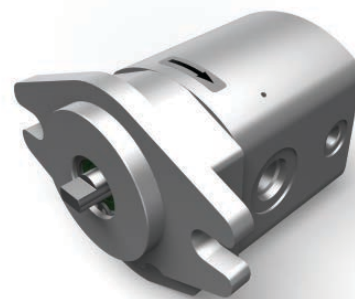
Pressure balanced bearing blocks assure maximum efficiency under all operating conditions.

■ **Low noise**

9 tooth gear profile and optimized flow metering provide reduced pressure pulsation and exceptionally quiet operation.

■ **Application flexibility**

International mounts and connections, and common inlet multiple pump configurations provide unmatched design and application versatility.



Product Features	Description
Pump Type	Pressure balanced, aluminum, external gear
Mounting	SAE, rectangular, thru-bolt standard, specials on request
Ports	SAE and metric split flanges and others
Shaft Style	Keyed, tapered, cylindrical tang drive, specials on request
Maximum Speed	500 - 5000 rpm, see Specifications
Theor. displacement	See Specifications
Drive	Drive direct with flexible coupling is recommended.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Maximum suggested inlet flow velocity for pumps: 2.5 mps. Consultation is recommended.
Outlet pressure	See Specifications
Pressure rising rate	Max. 3000 bar/s
Hydraulic fluids	Hydraulic oil HLP, ISO, DIN 51524-2
Fluid viscosity	Range of operating viscosity 20 to 1000 mm ² /s. Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm ² /s at operating pressure $p \leq 10$ bar and speed $n \leq 1500$ rpm.

Product Features	Description
Fluid temperature	For NBR seals, range of operating temperature -40° to +80°C. For FKM seals, range of operating temperature -20° to +105°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.
Filtration	According to ISO 4406 Cl. 19/17/13
Direction of rotation (looking at the drive shaft)	Clockwise or counter-clockwise. Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	- Available in two or three sections, limitations shown in the shaft loading rating table in this catalog. - 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: - Each gear housing has individual inlet and outlet ports. Common inlet configuration: - Two gear sets share a common inlet.

RPGP/RPGM 500 Series

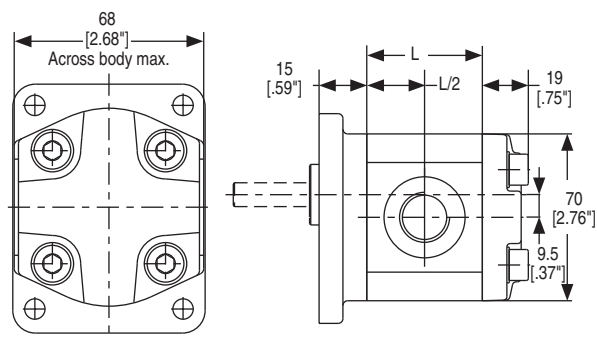
RPGP/RPGM502 Specifications/Dimensions Single/Multiple Aluminum Pumps & Motors

RPGP/RPGM502 Specifications

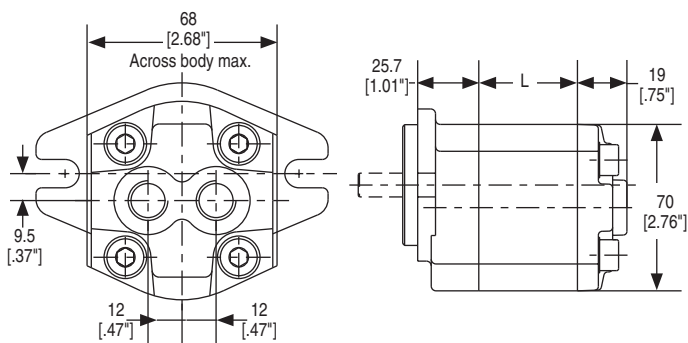
Code		0008	0012	0016	0021	0025	0033	0036	0043	0048	0058	0062	0079
Displacements	cm ³ /rev	0.8	1.2	1.6	2.1	2.5	3.3	3.6	4.3	4.8	5.8	6.2	7.9
	in ³ /rev	0.05	0.07	0.10	0.13	0.15	0.20	0.22	0.26	0.29	0.35	0.38	0.48
Continuous Pressure	bar	280	280	280	280	280	280	260	250	230	200	180	160
	psi	4061	4061	4061	4061	4061	4061	3771	3626	3336	2901	2611	2321
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	5000	5000	4500	4500	4000	4000	4000	3500	3000	3000	3000	3000
Input Power @ Max. Pressure and 1500 rpm	HP	1.10	1.48	1.88	2.28	2.68	3.35	3.49	3.49	3.22	3.75	3.89	4.02
	kW	0.82	1.1	1.4	1.7	2.0	2.5	2.6	2.6	2.4	2.8	2.9	3.0
Dimension L	mm	35.3	36.8	38.3	39.9	41.5	44.5	45.6	48.5	50.0	53.8	55.3	61.6
	in	1.39"	1.45"	1.51"	1.57"	1.63"	1.75"	1.80"	1.91"	1.97"	2.12"	2.18"	2.43"
Approximate Weight	lbs	2.43	2.43	2.43	2.43	2.65	2.65	2.65	2.87	3.09	3.09	3.31	3.53
	kg	1.10	1.10	1.10	1.10	1.20	1.20	1.20	1.30	1.40	1.40	1.50	1.60

RPGP/RPGM502 Dimensions

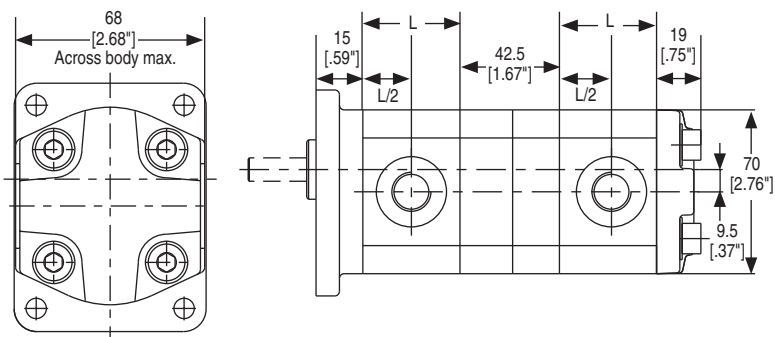
Single Unit



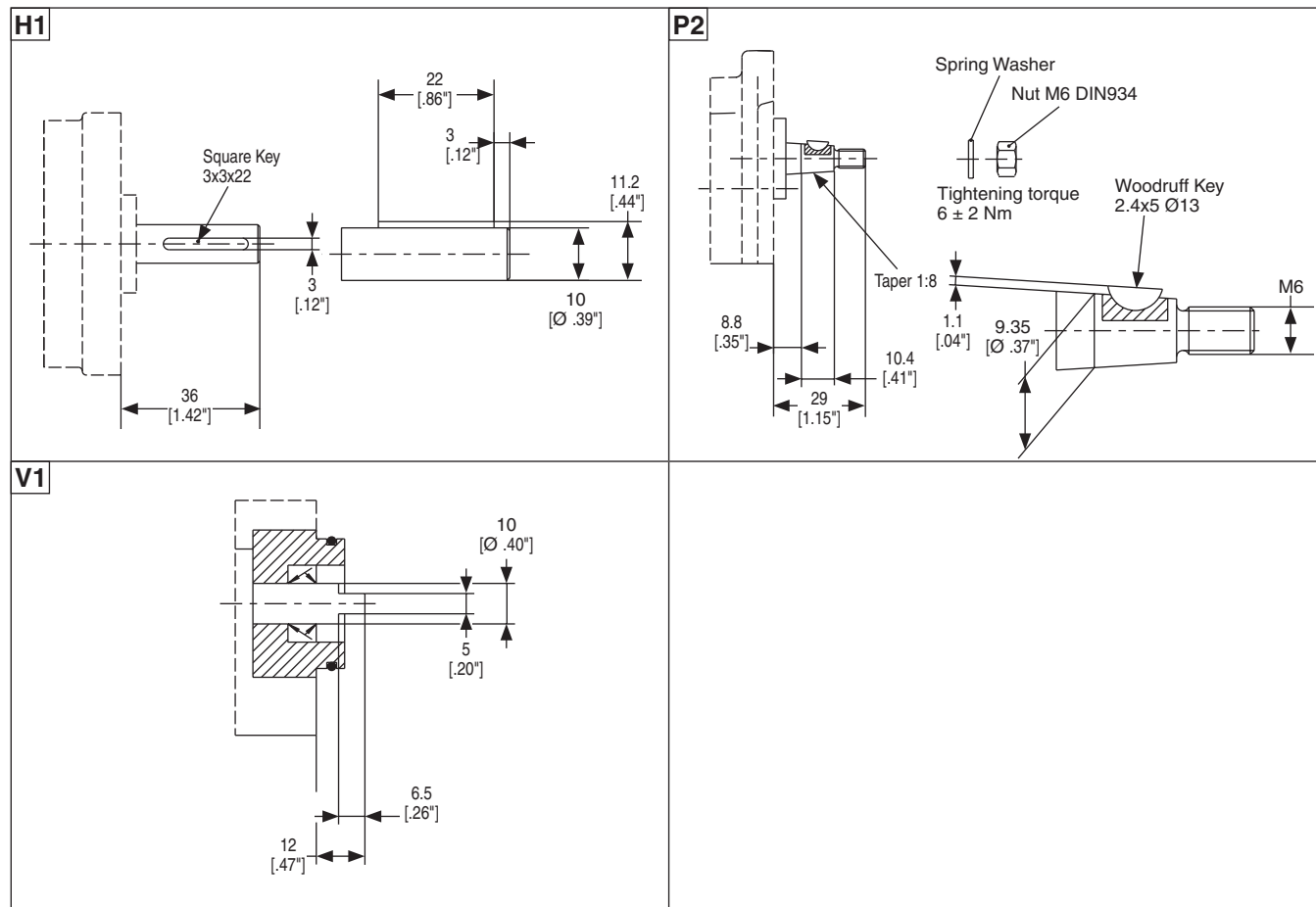
Single Unit with Rear Ports



Tandem Unit



RPGP/RPGM502 Drive Shafts



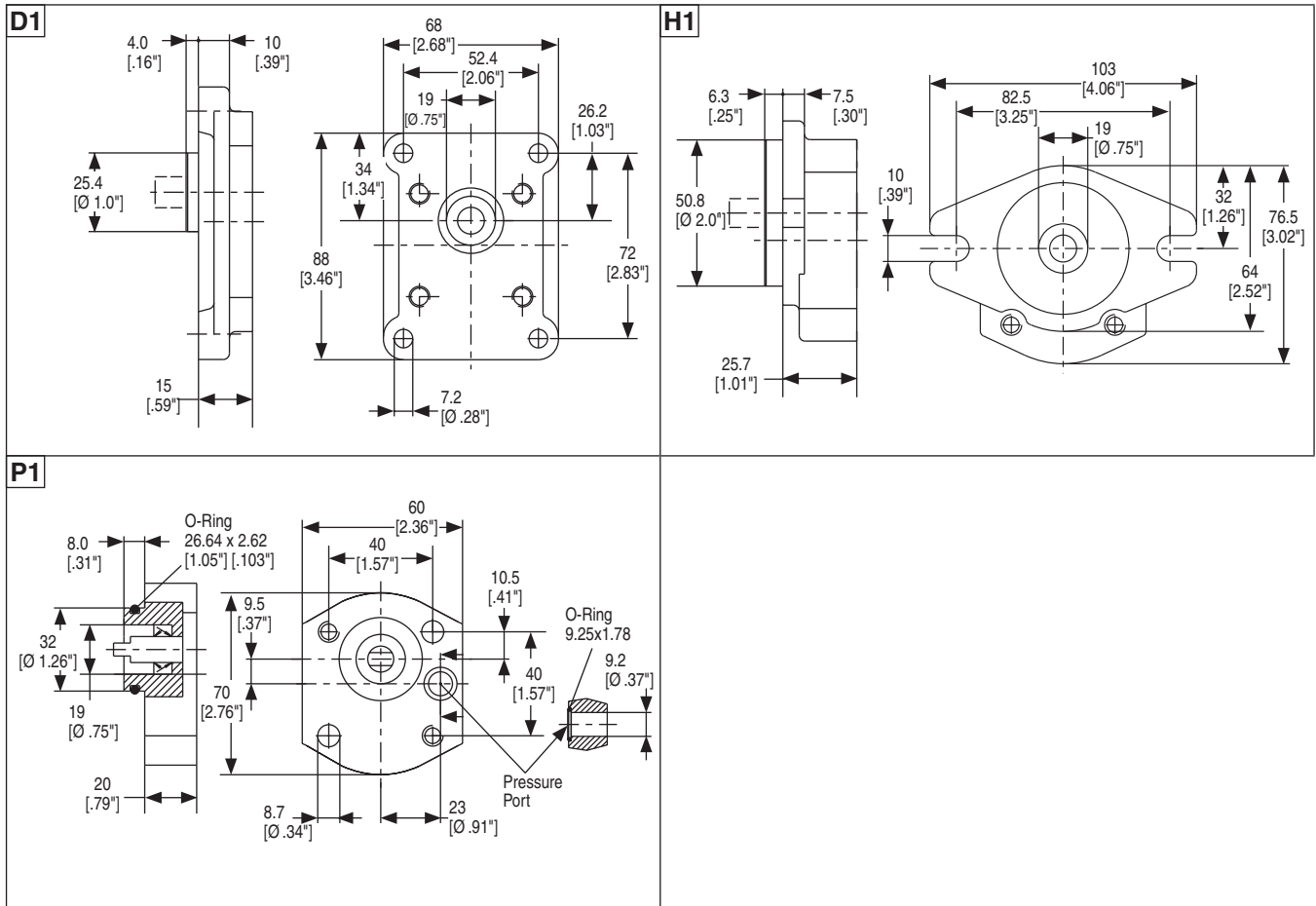
RPGP/RPGM502 Shaft Load Capacity

Code	Description	Torque Rating [Nm]
H1	Ø 10, 3.0 Key, no thread, 36L parallel	30
P2	Ø 9.35, 8.8L, 2.4 Key, M6 taper 1:8	30
V1	5 x 6.5 long shaft w/o coupling tang drive	20

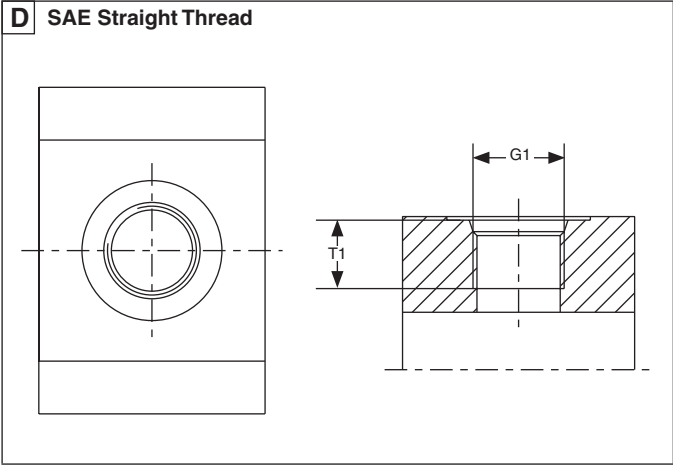
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3/\text{rev]} \times \text{Pressure [bar]}}{57.2}$$

RPGP/RPGM502 Mounting Flanges

RPGP/RPGM 500 Series Single/Multiple Aluminum Pumps & Motors

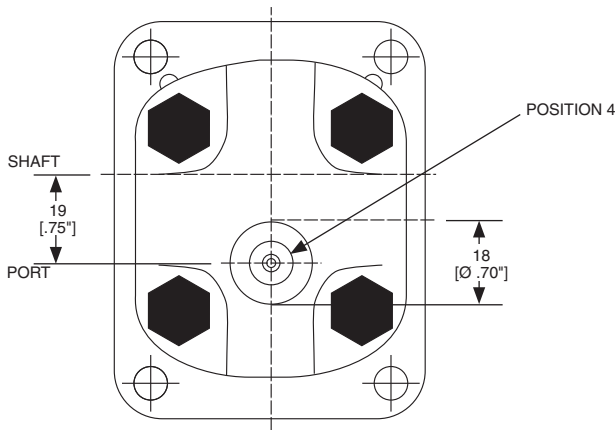


RPGP/RPGM502 Port Options



Code	SAE J1926-1 Dash Size	Nominal Tube OD	G1	T1
			Thread	Dimensions
D2	#6	3/8"	9/16" - 18 UNF	12.7 [0.50"]
D3	#8	1/2"	3/4" - 16 UNF	14.3 [0.56"]

RPGP/RPGM502 Drain Position



RPGP/RPGM502 Ordering Code

RPGP/RPGM 500 Series Single/Multiple Aluminum Pumps & Motors

RPG 1 502 2 3 4 5 6 7 8 8 8¹⁾ 8¹⁾ 9²⁾ 10³⁾ 12⁵⁾ 502 2 3 7 8 8 11 3) 4)

Code	1 – Type
P	Pump
M	Motor

Code	2 – Unit	
	Pump	Motor
A	Single unit	Standard Motor without checks
B	Multiple unit	Standard Motor with two checks
C	—	Standard Motor w/ one anti-cavitation check (ACC)
Option C MUST NOT HAVE A DRAIN		

3 – 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	4 – Rotation
C	Clockwise
A	Counter-clockwise
B	Bi-directional

Code	5 – Shaft
H1	Ø 10, 3.0 Key, no thread, 36L, parallel
P2	Ø 9.35, 8.8L, 2.4 Key, M6, taper 1:8
V1	5 x 6.5 long shaft w/o coupling tang drive

Code	6 – Flange	Material
D1	52.2 x 72.0 - Ø 25.4 rectangular	Aluminum
H1	82.5 - Ø 50.8 SAE A-A 2-Bolt	Aluminum
P1	40.0 x 40.0 - Ø 32.0 w/ seal ported, thru bolt	Aluminum

Code	7 – Shaft Seal
X	No seal
N	NBR
V	FPM, FKM
Standard motor seals are rated for max 75 PSI	

Code	8 – Port Options
B1	No ports
D2	9/16" - 18 UNF thread
D3	3/4" - 16 UNF thread

Code	9 – Motor Drain Option
B1	No drain
P	M10X1 Metric-Thread

Code	10 – Drain Port Position
4	Rear drain

Code	11 – Section Connection
S	Separate inlets
C	Common inlets
No code for single unit	

Code	12 – Corrosion Protection
Z	Zinc coated (5)
P1	Black paint 100 hour salt spray
P4	Black paint 400 hour salt spray
No code for no protection	

Not all variances of ordering codes can be offered. Please check available part numbers first. For not yet implemented part numbers or special requests please contact RCHC .

- 1) Only coded for the last section.
- 2) Only for motors.
- 3) For further unit repeat displacement, shaft seal between section, side suction port, side pressure port, rear suction port, rear pressure port.
- 4) For adding built-in valves enter valve description at the end of the model code. Valve options described on pages 31-41.
- 5) Mounting flange and rear cover are in aluminum; Zinc coating for fasteners only.

RPGP/RPGM502 Ordering Example**RPGP/RPGM 500 Series****Single/Multiple Aluminum Pumps & Motors**

RPGP	502	B	0062	C	P2	D1	N	D3	D2	S	502	A	0036	X	D3	D2	B1	B1
RPGP	Gear Design / Type		RCHC Gear Pump															
502	Series First Section																	
B	Unit		Tandem Unit															
0062	Displacement		6.2 cc/rev															
C	Rotation Direction		Clockwise															
P2	Drive Shaft		Taper 1:8															
D1	Mounting Flange Type		52.2 x 72.0 Rectangular															
N	Shaft Seal		NBR															
D3	Side Suction Port		3/4" - 16 UNF Thread															
D2	Side Pressure Port		9/16" - 18 UNF Thread															
S	Section Connection		Separate Inlets															
502	Series Second Section																	
A	Unit		Single Unit															
0036	Displacement		3.6 cc/rev															
X	Shaft Seal		No Shaft Seal															
D3	Side Suction Port		3/4" - 16 UNF Thread															
D2	Side Pressure Port		9/16" - 18 UNF Thread															
B1	Rear Suction Port		No Port															
B1	Rear Pressure Port		No Port															

RPGP/RPGM505 Characteristics

■ Up to 275 bar continuous operation

High strength materials and large journal diameters provide low bearing loads for high pressure operation.

■ High efficiency

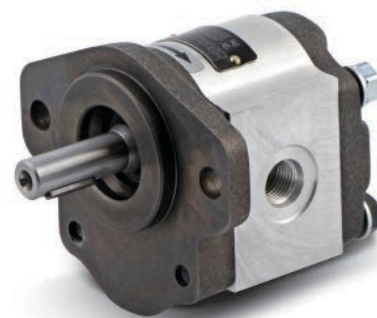
Pressure balanced bearing blocks assure maximum efficiency under all operating conditions.

■ Low noise

13 tooth gear profile and optimized flow metering provide reduced pressure pulsation and exceptionally quiet operation.

■ Application flexibility

International mounts and connections, integrated valve capabilities and common inlet multiple pump configurations provide unmatched design and application versatility.



Product Features	Description
Pump Type	Pressure balanced, aluminum, 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
Maximum Speed	500 - 4000 rpm, see Specifications
Theor. displacement	See Specifications
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Consult with product service for allowable loading.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Maximum suggested inlet flow velocity for pumps: 2.5 mps. Consultation is recommended.
Outlet pressure	See Specifications
Pressure rising rate	Max. 3000 bar/s
Hydraulic fluids	Hydraulic oil HLP, ISO, DIN 51524-2
Fluid viscosity	Range of operating viscosity 20 to 1000 mm ² /s. Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm ² /s at operating pressure $p \leq 10$ bar and speed $n \leq 1500$ rpm.

Product Features	Description
Fluid temperature	For NBR seals, range of operating temperature -40° to +80°C. For FKM seals, range of operating temperature -20° to +105°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.
Filtration	According to ISO 4406 Cl. 19/17/13
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	- Available in two or three sections; 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: - Each gear housing has individual inlet and outlet ports. Common inlet configuration: - Two gear sets share a common inlet.

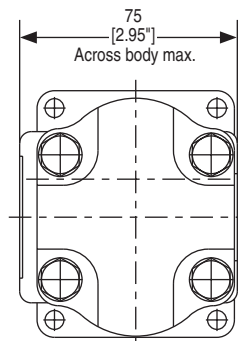
RPGP/RPGM505 Specifications/Dimensions

RPGP/RPGM505 Specifications

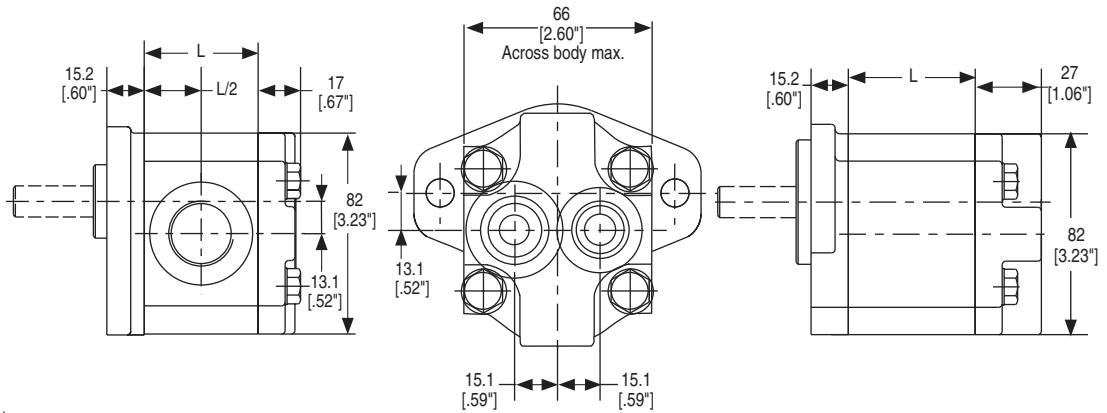
Code		0020	0030	0040	0050	0060	0070	0080	0090	0100	0110	0120
Displacements	cm ³ /rev	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0
	in ³ /rev	0.12	0.18	0.24	0.31	0.37	0.43	0.49	0.55	0.61	0.67	0.73
Continuous Pressure	bar	275	275	275	275	275	275	275	250	250	250	220
	psi	3988	3988	3988	3988	3988	3988	3988	3625	3625	3625	3190
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	4000	4000	4000	4000	3600	3300	3000	2800	2800	2400	2400
Input Power @ Max. Pressure and 1500 rpm	HP	2.15	3.08	4.02	5.10	6.03	7.11	8.05	8.45	9.25	10.19	10.06
	kW	1.6	2.3	3.0	3.8	4.5	5.3	6.0	6.3	6.9	7.6	7.5
Dimension L	mm	38.5	41.1	43.8	46.5	49.1	51.8	54.5	57.2	59.8	62.5	65.2
	in	1.52"	1.62"	1.72"	1.83"	1.93"	2.04"	2.15"	2.25"	2.35"	2.46"	2.57"
Approximate Weight	lbs	4.76	4.89	5.00	5.11	5.25	5.36	5.47	5.60	5.69	5.80	5.91
	kg	2.16	2.22	2.27	2.32	2.38	2.43	2.48	2.54	2.58	2.63	2.68

RPGP/RPGM505 Dimensions

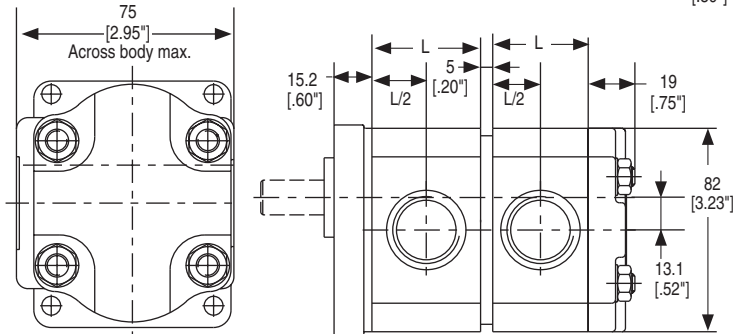
Single Unit



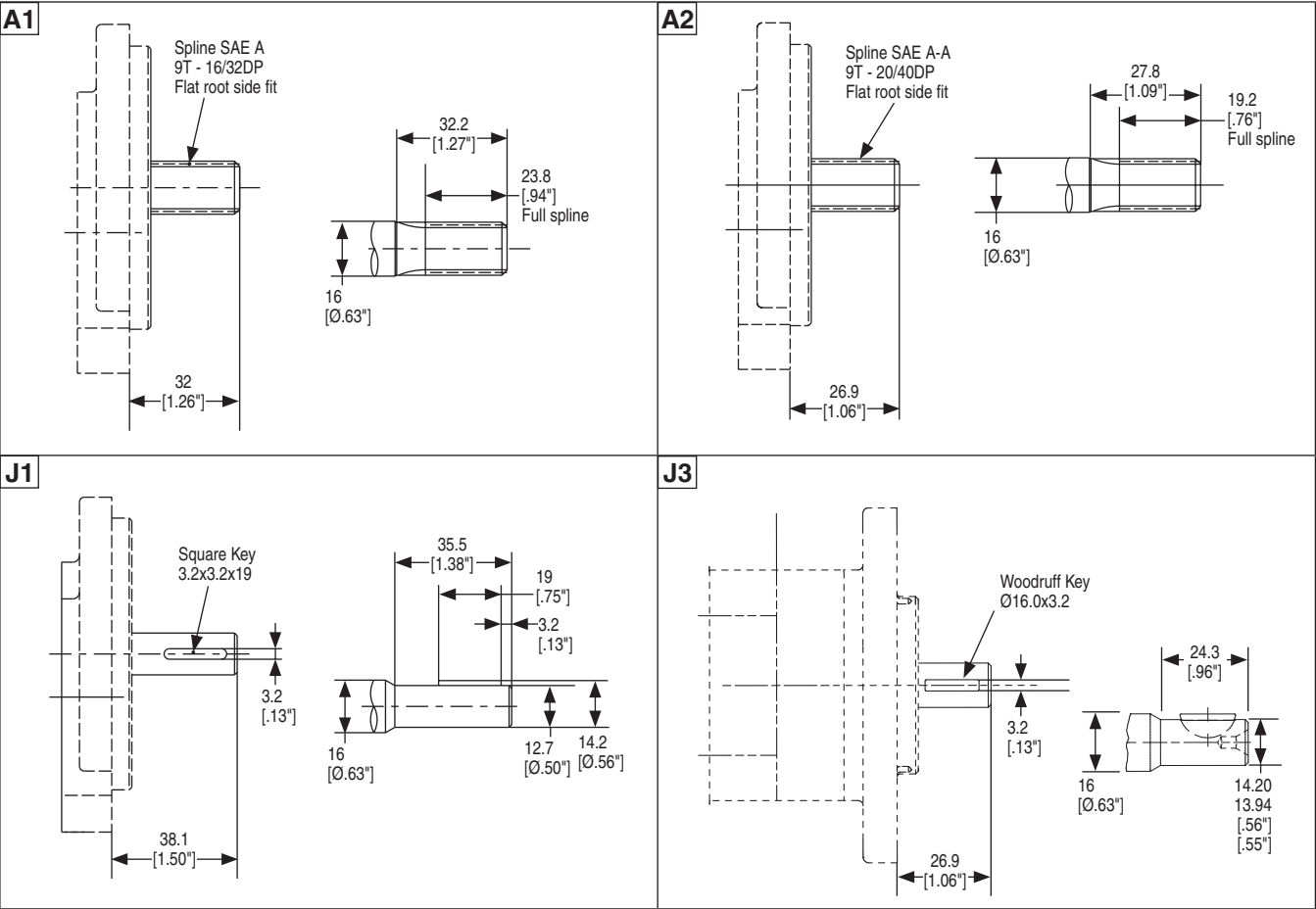
Single Unit with Rear Ports



Tandem Unit



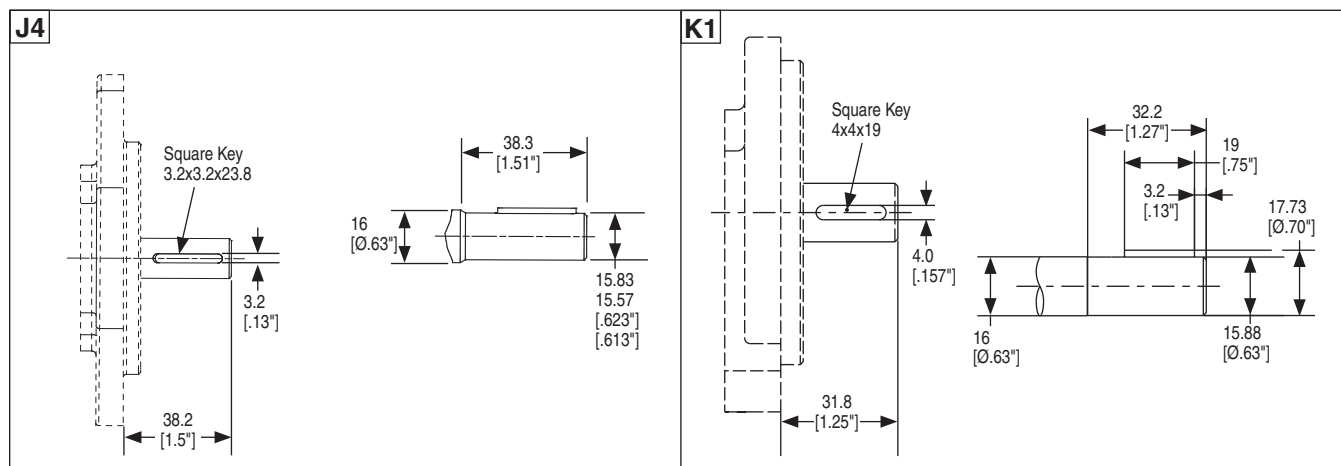
RPGP/RPGM505 Drive Shafts



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RPGP/RPGM505 Drive Shafts/Load Capacity

RPGP/RPGM505 Drive Shafts (Continued)

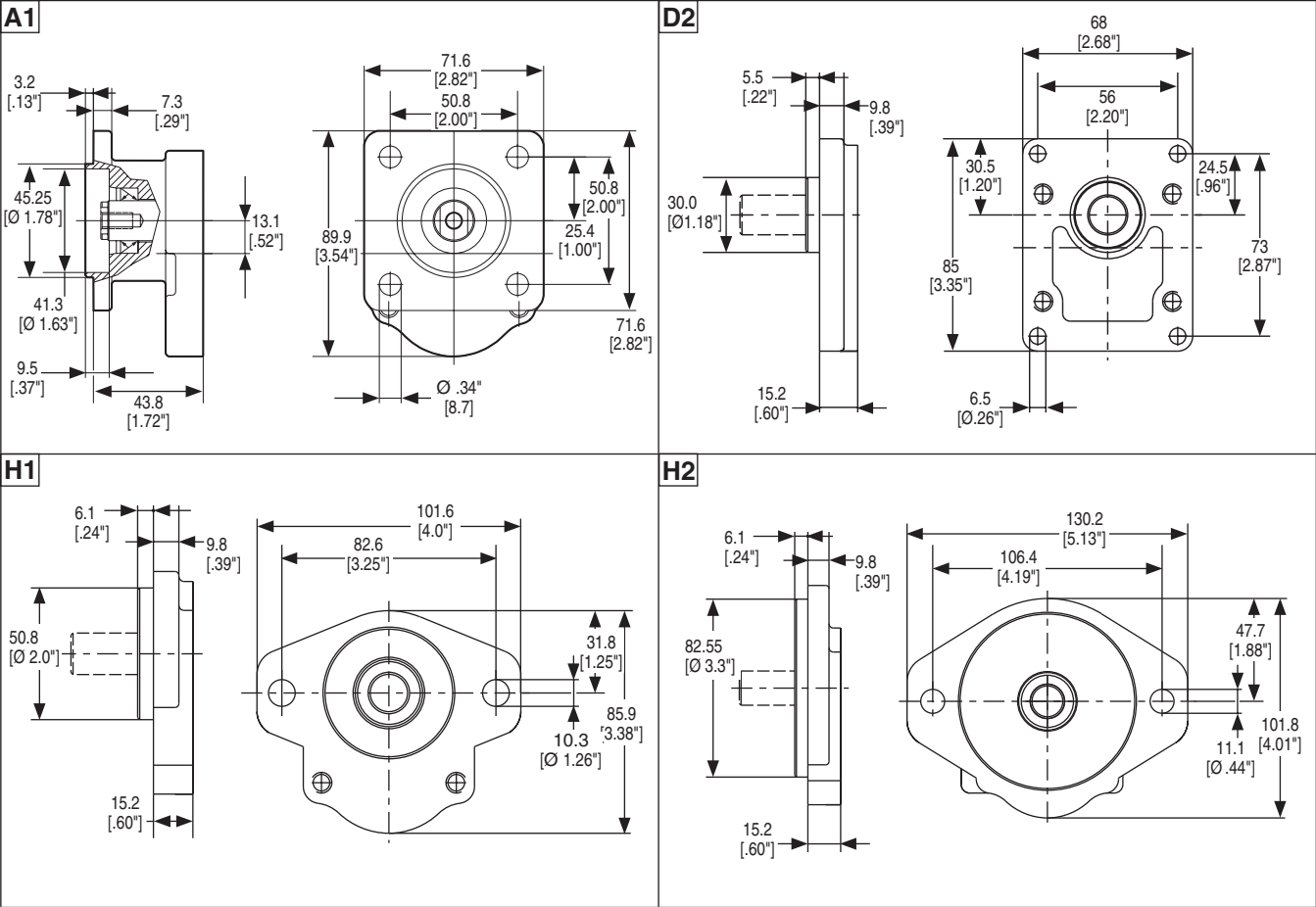


$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

RPGP/RPGM505 Shaft Load Capacity

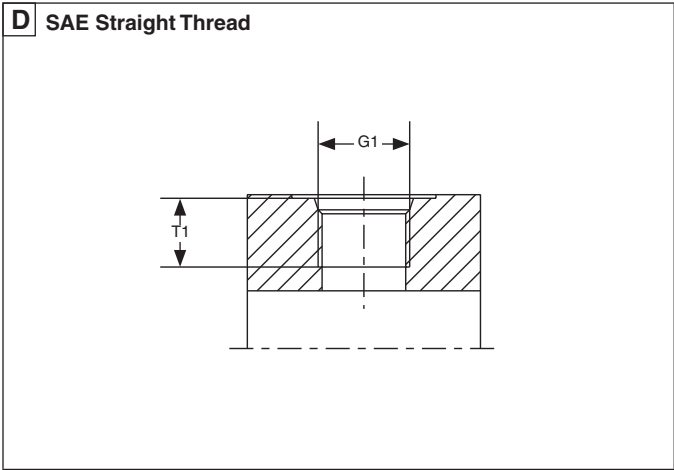
Code	Description		Torque Rating [Nm]
A1	9T, 16/32DP, 32L, SAE A	spline	108
A2	9T, 20/40DP, 26.9L, SAE AA	spline	108
J1	Ø 12.7, 3.2 Key, no thread, 38L	parallel	43
J3	Ø 12.7, 3.2 Key, no thread, 26.9L	parallel	43
J4	Ø 14.26, 3.2 Key, no thread, 38.1L	parallel	43
K1	Ø 15.88, 4.0 Key, no thread, 32L, SAE A	parallel	85
	Multiple pump connection shaft		36

RPGP/RPGM505 Mounting Flanges



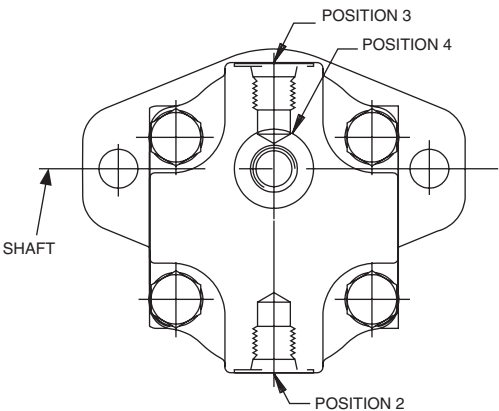
RPGP/RPGM505 Port Options/Drain Positions

RPGP/RPGM505 Port Options



Code	SAE J1926-1 Dash Size	Nominal Tube OD	G1	T1
			Thread	Dimensions
D2	#6	3/8"	9/16" - 18 UNF	12.7 [0.50"]
D3	#8	1/2"	3/4" - 16 UNF	14.3 [0.56"]
D4	#10	5/8"	7/8" - 14 UNF	16.7 [0.66"]
D5	#12	3/4"	1-1/16" - 12 UN	19.0 [0.75"]

RPGP/RPGM505 Drain Positions



RPGP/RPGM505 Ordering Code

RPG 1 505 2 3 4 5 6 7 8 8 8¹⁾ 8¹⁾ 9²⁾ 10²⁾ 12⁵⁾ 505 2 3 7 8 8 11 3) 4)

Code	1 – Type
P	Pump
M	Motor

Code	2 – Unit	
	Pump	Motor
A	Single unit	Standard motor without checks
B	Multiple unit	Standard motor with two checks
C	—	Standard Motor w/ one anti-cavitation check (ACC)
M	Single distributor unit	

Option C MUST NOT HAVE A DRAIN

3 – Displacement	
Code	ccm
0020	2.0
0030	3.0
0040	4.0
0050	5.0
0060	6.0
0070	7.0
0080	8.0
0090	9.0
0100	10.0
0110	11.0
0120	12.0

Code	4 – Rotation
C	Clockwise
A	Counter-clockwise
B	Bi-directional

Code	5 – Shaft
A1	9T, 16/32DP, 32L, SAE A spline
A2	9T, 20/40DP, 26.9L, SAE AA spline
J1	Ø 12.7, 3.2 Key, no thread, 38L, parallel
J3	Ø 12.7, 3.2 Key, no thread, 26.9L, parallel
J4	Ø 14.26, 3.2 Key, no thread, 38.1L, parallel
K1	Ø 15.88, 4.0 Key, no thread, 32L, SAE A, parallel

Code	6 – Flange	Material
A1	50.8 x 50.8 - Ø 45.25 4-Bolt square	Cast Iron
D2	56.0 x 73.0 - Ø 30.0 rectangular	Cast Iron
H1	82.5 - Ø 50.8 SAE A-A 2-Bolt	Cast Iron
H2	106.4 - Ø 82.55 SAE A 2-Bolt	Cast Iron

Code	7 – Shaft Seal
X	No seal
N	NBR
M	Double NBR
W	Double FPM
V	FPM, FKM

Standard motor seals are rated for max 75 PSI. For special higher pressure shaft seal solutions please contact RCHC.

Code	8 – 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" - 12 UN thread

Code	9 – Motor Drain Option
B1	No drain
A	7/16" - 20 UNF thread
C	9/16" - 18 UNF thread

Code	10 – Drain Port Position
2	Drain on bottom
3	Drain on top
4	Rear drain

Code	11 – Section Connection
S	Separate inlets
C	Common inlets
No code for single unit	

Code	12 – Corrosion Protection
Z	Zinc coated (5)
P1	Black paint 100 hour salt spray
P4	Black paint 400 hour salt spray
No code for no protection	

Not all variances of ordering codes can be offered. Please check available part numbers first. For not yet implemented part numbers or special requests please contact RCHC .

- 1) Only coded for the last section.
- 2) Only for motors.
- 3) For further unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.
- 4) For adding built-in valves enter valve description at the end of the model code. Valve options described on [pages 31-41](#).
- 5) Mounting flange and rear cover are in cast iron; Zinc coating for covers and fasteners.

RPGP/RPGM505 Ordering Example

RPGP	505	B	0100	C	A1	H2	V	D5	D3	C	505	A	0040	X	B1	D2	B1	B1
RPGP	Gear Design / Type		RCHC Gear Pump															
505	Series First Section																	
B	Unit		Tandem Unit															
0100	Displacement		10.0 cc/rev															
C	Rotation Direction		Clockwise															
A1	Drive Shaft		9T Spline SAE A, 32L															
H2	Mounting Flange Type		SAE A 2-Bolt															
V	Shaft Seal		Viton															
D5	Side Suction Port		1-1/16" - 12 UN Thread															
D3	Side Pressure Port		3/4" - 16 UNF Thread															
C	Section Connection		Common Inlets															
505	Series Second Section																	
A	Unit		Single Unit															
0040	Displacement		4.0 cc/rev															
X	Shaft Seal		No Shaft Seal															
B1	Side Suction Port		No Port															
D2	Side Pressure Port		9/16" - 18 UNF Thread															
B1	Rear Suction Port		No Port															
B1	Rear Pressure Port		No Port															

RPGP/RPGM511 Characteristics

■ Up to 250 bar continuous operation

High strength materials and large journal diameters provide low bearing loads for high pressure operation.

■ 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.

■ Low noise

12 tooth gear profile and optimized flow metering provide reduced pressure pulsation and quiet operation.

■ Large range of integrated valves



Product Features	Description
Pump Type	Pressure balanced, aluminum, external gear
Mounting	SAE, rectangular, thru-bolt standard, specials on request
Ports	SAE and metric split flanges and others
Shaft Style	SAE splined, keyed, cylindrical tang drive, specials on request
Maximum Speed	500 - 3500 rpm, see Specifications
Theor. displacement	See Specifications
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Consult with product service for allowable loading.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Maximum suggested inlet flow velocity for pumps: 2.5 mps. Consultation is recommended.
Outlet pressure	See Specifications
Pressure rising rate	Max. 3000 bar/s
Hydraulic fluids	Hydraulic oil HLP, ISO, DIN 51524-2
Fluid viscosity	Range of operating viscosity 8 to 1000 mm ² /s. Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm ² /s at operating pressure $p \leq 10$ bar and speed $n \leq 1500$ rpm.

Product Features	Description
Fluid temperature	For NBR seals, range of operating temperature -40° to +80°C. For FKM seals, range of operating temperature -20° to +105°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.
Filtration	According to ISO 4406 Cl. 19/17/13
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	- Available in two or three sections; limitations shown in the shaft loading rating table in this catalog. - 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: - Each gear housing has individual inlet and outlet ports. Common inlet configuration: - Two gear sets share a common inlet.

RPGP/RPGM511 Specifications/Dimensions

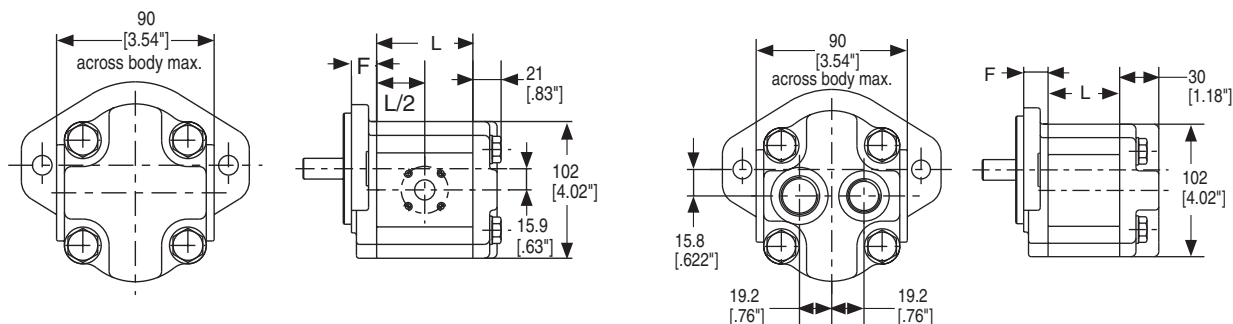
RPGP/RPGM511 Specifications

Code		0040	0050	0060	0070	0080	0100	0110	0120	0140	0160	0180	0190	0210	0230	0250	0270	0280	0310	0330
Displacements	cm ³ /rev	4	5	6	7	8	10	11	12	14	16	18	19	21	23	25	27	28	31	33
	in ³ /rev	0.24	0.31	0.37	0.43	0.49	0.61	0.67	0.73	0.85	0.98	1.10	1.16	1.28	1.40	1.53	1.65	1.71	1.89	2.01
Continuous Pressure	bar	250	250	250	250	250	250	250	250	250	250	250	250	235	225	210	190	185	165	155
	psi	3625	3625	3625	3625	3625	3625	3625	3625	3625	3625	3625	3625	3410	3265	3045	2755	2685	2395	2248
Intermittent Pressure	bar	275	275	275	275	275	275	275	275	275	275	275	275	240	235	220	200	190	170	160
	psi	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3480	3408	3190	2900	2755	2465	2320
Min. Speed @ Max. Outlet Pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Max. Speed @ 0 Inlet & Max. Outlet Pressure	rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3250	3250	2800	2750	2500	2350	2350	2350	2000
Pump Input Power @ Max. Pressure and 1500 rpm	HP	4.02	5.03	6.03	7.04	8.05	10.06	11.13	12.07	14.08	16.09	18.10	19.18	19.31	19.71	19.98	20.12	21.19	22.40	23.20
	kW	3.0	3.8	4.5	5.3	6.0	7.5	8.3	9.0	10.5	12.0	13.5	14.3	14.4	14.7	14.9	15.0	15.8	16.7	17.3
Dimension L	mm	47.0	48.6	50.1	51.7	53.3	56.5	58.0	59.6	62.8	65.9	69.0	70.6	73.7	76.9	80.0	83.2	84.8	89.5	92.6
	in	1.85"	1.91"	1.97"	2.04"	2.10"	2.22"	2.28"	2.35"	2.47"	2.59"	2.72"	2.78"	2.90"	3.03"	3.15"	3.28"	3.34"	3.52"	3.65"
Approximate Weight	lbs	7.1	7.3	7.5	7.7	7.7	7.8	7.9	8.2	8.2	8.4	8.6	8.6	8.8	9.0	9.3	9.3	9.5	9.7	9.9
	kg	3.2	3.3	3.4	3.5	3.5	3.6	3.6	3.7	3.7	3.8	3.9	3.9	4.0	4.1	4.2	4.2	4.3	4.4	4.5

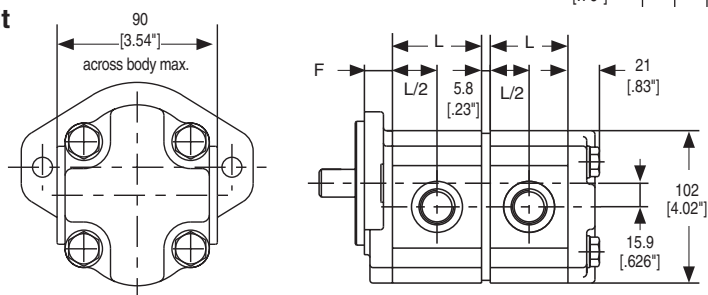
RPGP/RPGM511

Dimensions Single Unit

Single Unit with Rear Ports

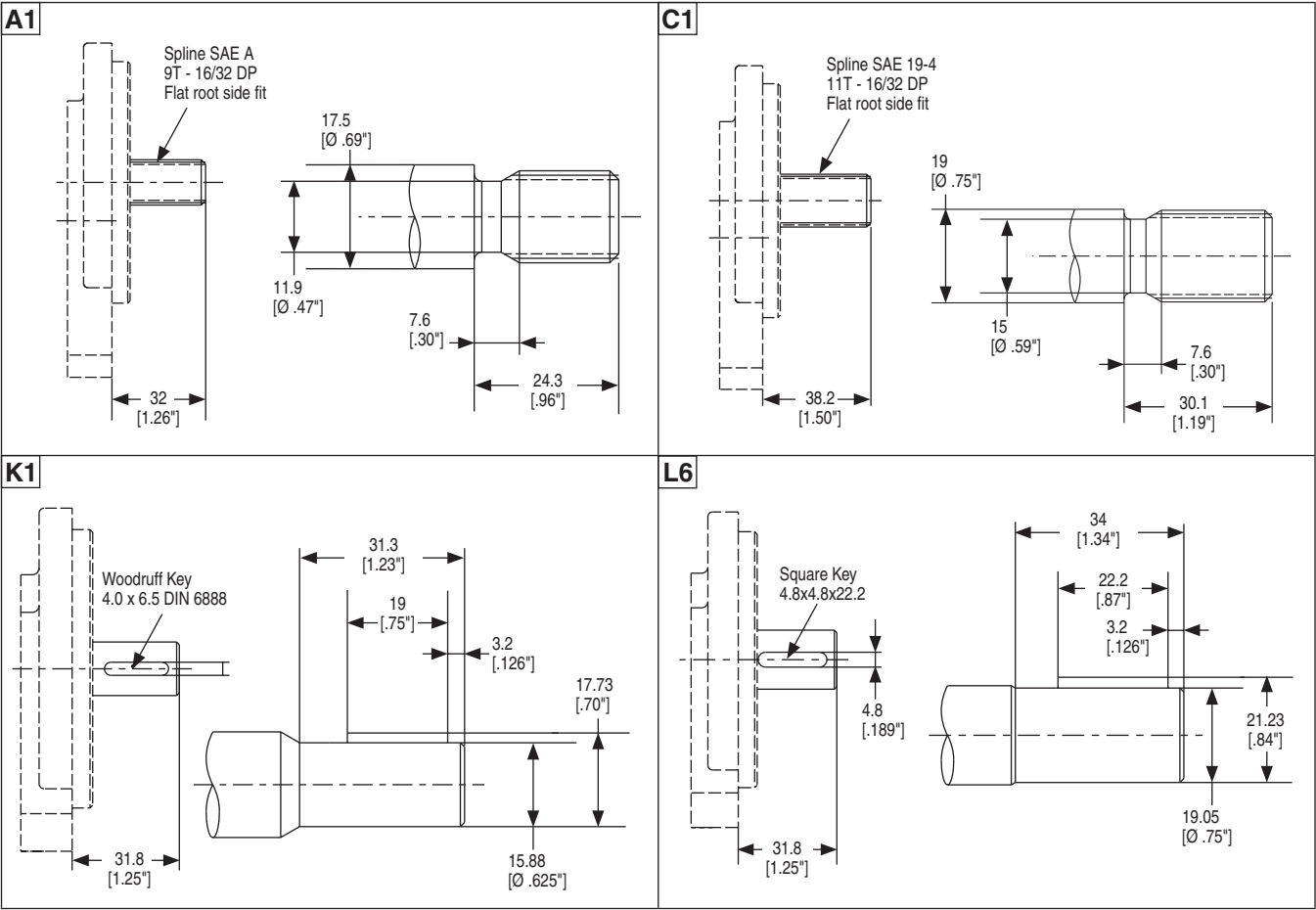


Tandem Unit



Dimension F:
See Flanges on [page 24](#)

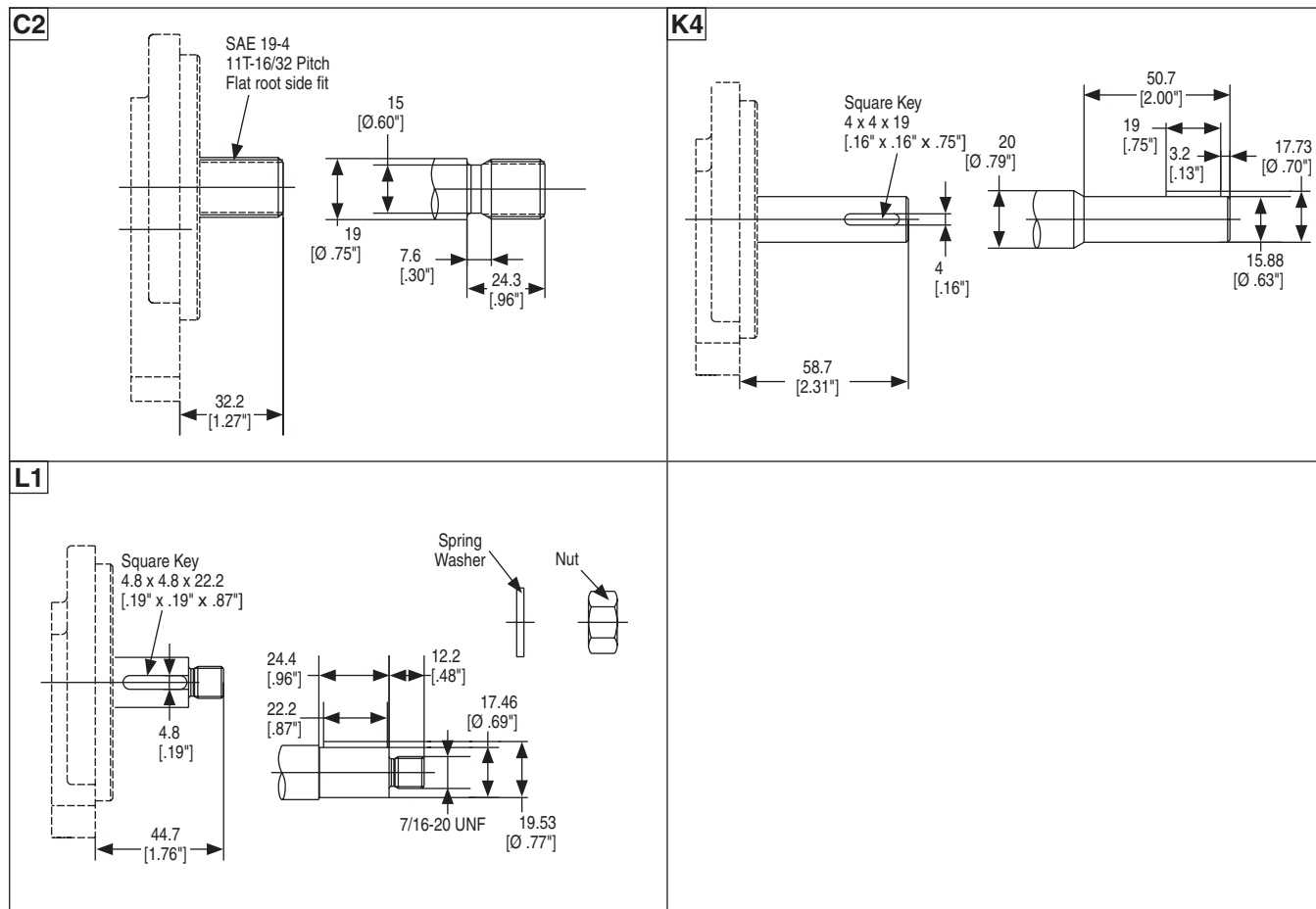
RPGP/RPGM511 Drive Shafts



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RPGP/RPGM511 Drive Shafts/Load Capacity

RPGP/RPGM511 Drive Shafts (Continued)

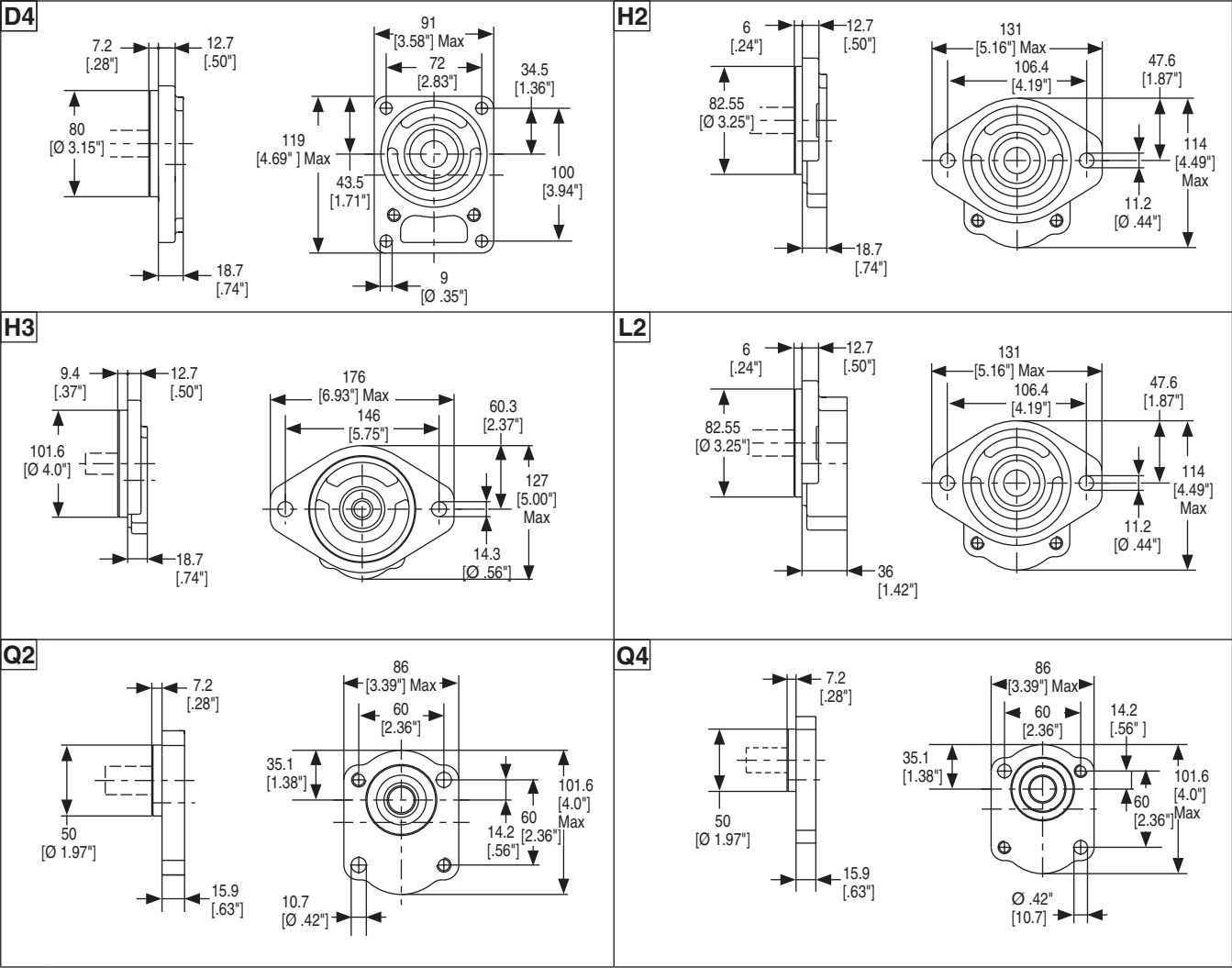


RPGP/RPGM511 Shaft Load Capacity

Code	Description		Torque Rating [Nm]
A1	9T, 16/32DP, 32L, SAE A	spline	86
C1	11T, 16/32DP, 38.2L, SAE 19-4	spline	184
C2	11T, 16/32DP, 32.2L, SAE 19-4	spline	184
K1	Ø 15.88, 4.0 Key, no thread, 32L, SAE A	parallel	75
K4	Ø 15.88, 3.95 Key, no thread, 58.7L	parallel	75
L1	Ø 17.46, 4.8 Key, 7/16" UNF ext., 44.2L	parallel	112
L6	Ø 19.05, 4.8 Key, no thread, 32L, SAE 19-1	parallel	145
	Tandem pump connection shaft	spline	110

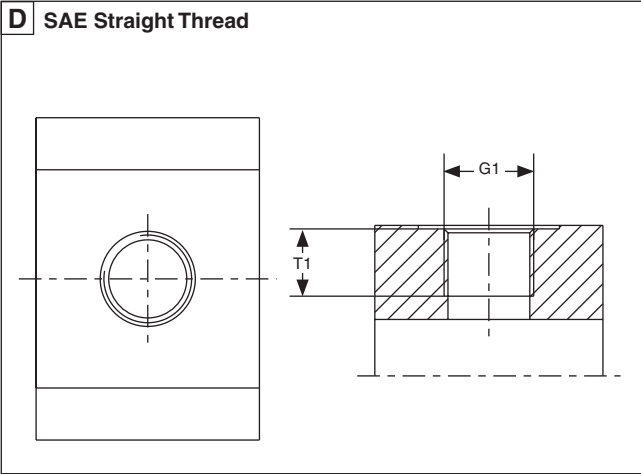
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

RPGP/RPGM511 Mounting Flanges



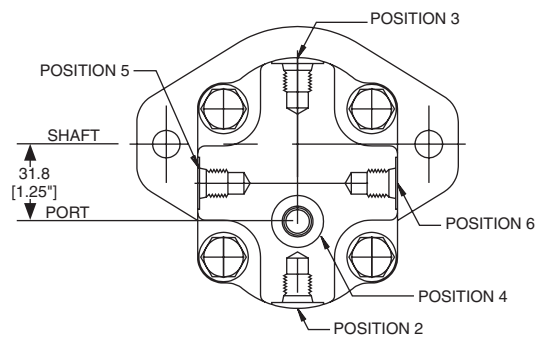
RPGP/RPGM511 Port Options/Drain Positions

RPGP/RPGM511 Port Options



Code	SAE J1926-1 Dash Size	Nominal Tube OD	G1	T1
			Thread	Dimensions
D2	#6	3/8"	9/16" - 18 UNF	0.50" [12.7]
D3	#8	1/2"	3/4" - 16 UNF	0.56" [14.3]
D4	#10	5/8"	7/8" - 14 UNF	0.66" [16.7]
D5	#12	3/4"	1-1/16" - 12 UN	0.75" [19.0]
D6	#16	1"	1-5/16" - 12 UN	0.75" [19.0]
D7	#20	1-1/4"	1-5/8" - 12 UN	0.75" [19.0]
D8	#24	1-1/2"	1-7/8" - 12 UN	0.75" [19.0]

RPGP/RPGM511 Drain Positions



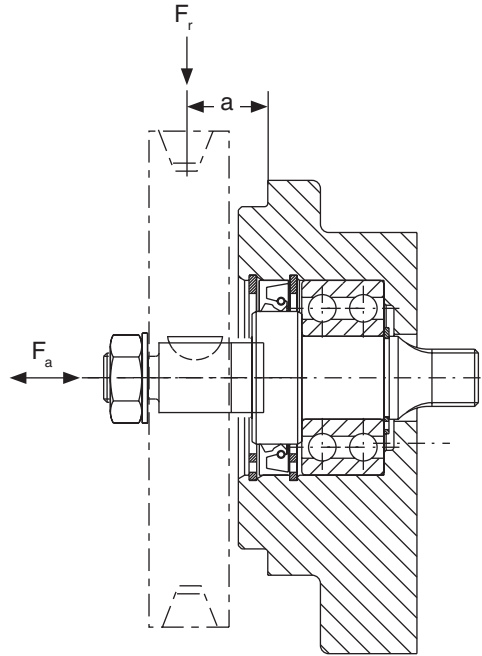
RPGP/RPGM511 Outboard Bearings

Bearing loads for code L2

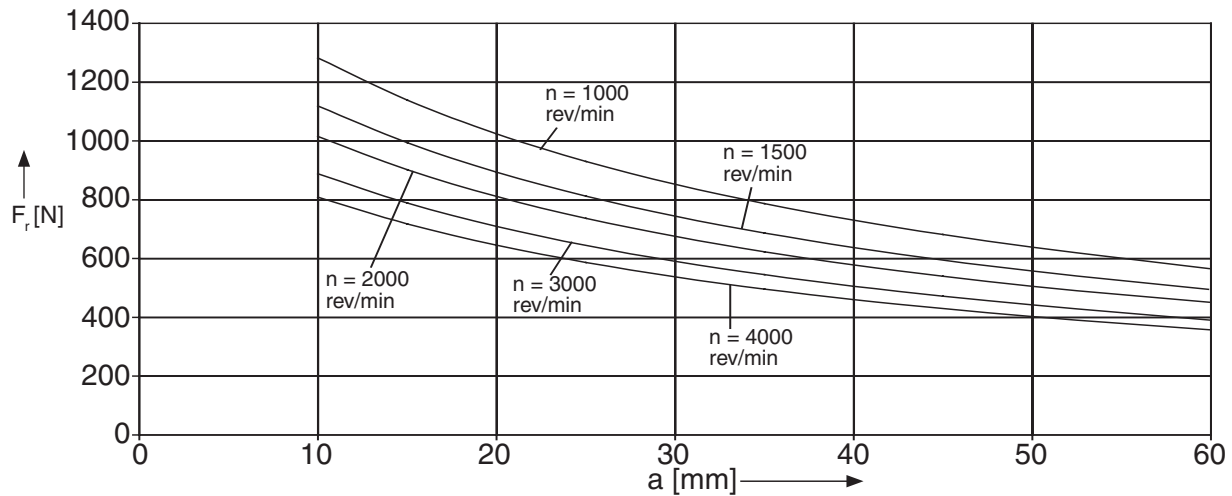
Units subject to axial or radial loads, for instance drive with V-belts or gear wheels, must be specified with an outboard bearing. The diagrams below show the maximum axial or radial loads that can be tolerated referred to a bearing life of $L_H = 1000$ h.

F_r is reduced by $0,7 F_a$ when axial loading is applied.

Outboard Bearing Code L2



Shaft load for outboard bearings



RPGP/RPGM511 Ordering Code

RPG 1 511 2 3 4 5 6 7 8 8 8¹⁾ 8¹⁾ 9²⁾ 10³⁾ 12⁵⁾ 511 2 3 7 8 8 11 3) 4)

Code	1 – Type
P	Pump
M	Motor

Code	2 – Unit	
	Pump	Motor
A	Single unit	Standard Motor without checks
B	Multiple unit	Standard Motor with two checks
C	—	Standard Motor w/ one anti-cavitation check (ACC)
D	—	Standard Motor w/ one ACC + restrictor
M	Single distributor unit	—

Option C MUST NOT HAVE A DRAIN

Option D MUST HAVE A DRAIN

3 – Displacement*	
Code	ccm
0040	4.0
0050	5.0
0060	6.0
0070	7.0
0080	8.0
0100	10.0
0110	11.0
0120	12.0
0140	14.0
0160	16.0
0180	18.0
0190	19.0
0210	21.0
0230	23.0
0250	25.0
0270	27.0
0280	28.0
0310	31.0
0330	33.0

* Others on request

Code	4 – Rotation
C	Clockwise
A	Counter-clockwise
B	Bi-directional

Code	5 – Shaft
A1	9T, 16/32DP, 32L, SAE A spline
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline
C2	11T, 16/32DP, 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, SAE 19-1, parallel

Code	6 – Flange	Material
D4	72.0 x 100.0 - Ø80 rectangular	Aluminum
H2	106.4 - Ø82.55 SAE A 2-Bolt	Aluminum
H3	146.1 - Ø101.6 SAE B 2-Bolt	Aluminum
Q2	60.0 x 60.0 - Ø50.0 w/ seal, O thru bolt	Aluminum
Q4	60.0 x 60.0 - Ø50.0 w/ seal, O thru bolt	Aluminum
L2	106.4 - Ø82.55 SAE A 2-Bolt, w/ OBB and cont. drive shaft	Cast Iron

Code	7 – Shaft Seal
X	No seal
N	NBR
V	FPM, FKM
M	Double NBR
W	Double FPM
Standard motor seals are rated for max 75 PSI. For special higher pressure shaft seal solutions please contact RCHC.	

Code	8 – 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" - 12 UN thread
D6	1-5/16" - 12 UN thread
D7	1-5/8" - 12 UN thread
D8	1-7/8" - 12 UN thread

Code	9 – Motor Drain Option
B1	No drain
A	7/16" - 20 UNF thread
C	9/16" - 18 UNF thread

Code	10 – Drain Position
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

Code	11 – Section Connection
S	Separate inlets
C	Common inlets
No code for single unit	

Code	12 – Corrosion Protection
Z	Zinc coated (5)
P1	Black paint 100 hour salt spray
P4	Black paint 400 hour salt spray
No code for no protection	

Not all variances of ordering codes can be offered. Please check available part numbers first. For not yet implemented part numbers or special requests please contact RCHC .

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

- 4) For adding built-in valves enter valve description at the end of the model code. Valve options described on [pages 31-41](#).
- 5) Rear cover is in cast iron; Zinc coating for rear cover and fasteners, and for mounting flange code L2.

RPGP/RPGM511 Ordering Example

RPGP	511	B	0100	A	C1	H2	N	D6	D5	S	511	A	0110	X	D6	D5	B1	B1	P
RPGP	Gear Design / Type		RCHC Gear Pump																
511	Series																		
B	Unit		Tandem Unit																
0100	Displacement		10.0 cm³/rev.																
A	Rotation Direction		Counter-Clockwise																
C1	Drive shaft		SAE 19-4 Spline 11T, 16/32 DP																
H2	Flange		Mounting Flange SAE 2-Bolt A																
N	Shaft Seal		Shaft Seal NBR																
D6	Side Suction Port		1-5/16" - 12 UN Thread																
D5	Side Pressure Port		1-1/16" - 12 UN Thread																
S	Section Connection		Separate Inlets																
511	Series Second Section																		
A	Unit		Single Unit																
110	Displacement		11.0 cm³/rev.																
X	Shaft Seal		No Seal																
D6	Side Suction Port		1-5/16" - 12 UN Thread																
D5	Side Pressure Port		1-1/16" - 12 UN Thread																
B1	Rear Suction Port		No Port																
B1	Rear Pressure Port		No Port																
P1	Corrosion Protection		Black Paint 100 Hour Salt Spray																

RPGP/RPGM517 Characteristics

■ Up to 250 bar continuous operation

High strength materials and large journal diameters provide low bearing loads for high pressure operation.

■ High efficiency

Pressure balanced bearing blocks assure maximum efficiency under all operating conditions.

■ Low noise

13 tooth gear profile and optimized flow metering provide reduced pressure pulsation and exceptionally quiet operation.

■ 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



Product Features	Description
Pump Type	Pressure balanced, aluminum, 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
Maximum Speed	500 - 3400 rpm, see Specifications
Theor. displacement	See Specifications
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Consult with product service for allowable loading.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Maximum suggested inlet flow velocity for pumps: 2.5 mps. Consultation is recommended.
Outlet pressure	See Specifications
Pressure rising rate	Max. 3000 bar/s
Hydraulic fluids	Hydraulic oil HLP, ISO, DIN 51524-2
Fluid viscosity	Range of operating viscosity 8 to 1000 mm ² /s. Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm ² /s at operating pressure $p \leq 10$ bar and speed $n \leq 1500$ rpm.

Product Features	Description
Fluid temperature	For NBR seals, range of operating temperature -40° to +80°C. For FKM seals, range of operating temperature -20° to +105°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.
Filtration	According to ISO 4406 Cl. 19/17/13
Direction of rotation (looking at the drive shaft)	Clockwise, counter-clockwise. Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	- Available in two or three sections, limitations shown in the shaft loading rating table in this catalog. - 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: - Each gear housing has individual inlet and outlet ports. Common inlet configuration: - Two gear sets share a common inlet.

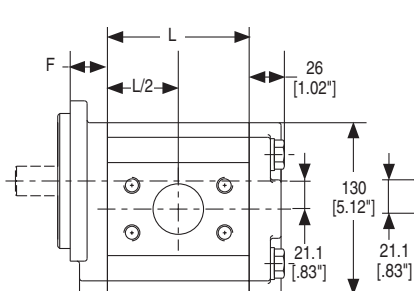
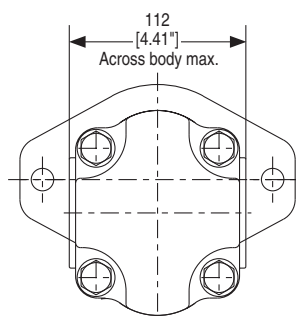
RPGP/RPGM517 Specifications/Dimensions

RPGP/RPGM517 Specifications

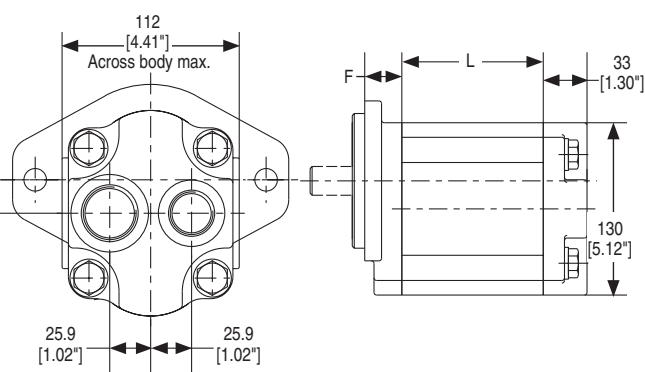
Code		0140	0160	0190	0230	0250	0280	0330	0360	0380	0440	0520	0580	0700
Displacements	cm³/rev	14.0	16.0	19.0	23.0	25.0	28.0	33.0	36.0	38.0	44.0	52.0	58.0	70.0
	in³/rev	0.85	0.98	1.16	1.40	1.53	1.71	2.01	2.20	2.32	2.69	3.17	3.54	3.05
Continuous Pressure	bar	250	250	250	250	250	250	250	250	250	220	200	180	160
	psi	3625	3625	3625	3625	3625	3625	3625	3625	3625	3190	2900	2610	2320
Intermittent Pressure	bar	275	275	275	275	275	275	275	275	275	240	220	200	180
	psi	3988	3988	3988	3988	3988	3988	3988	3988	3988	3480	3190	2900	2610
Min. Speed @ Max. Outlet Pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500
Max. Speed @ 0 Inlet & Max. Outlet Pressure	rpm	3400	3400	3300	3300	3100	3100	3000	3000	3000	2800	2700	2600	2400
Pump Input Power @ Max. Pressure and 1500 rpm	HP	12.87	14.75	17.57	21.19	23.03	25.88	30.44	33.16	35.00	36.21	38.35	40.23	41.84
	kW	9.6	11.0	13.1	15.8	17.2	19.3	22.7	24.7	26.1	27.0	28.6	30.0	31.2
Dimension L	mm	68.3	70.3	73.3	77.4	79.4	82.4	87.5	90.5	92.5	98.6	106.7	112.8	124.9
	in	2.69"	2.77"	2.89"	3.05"	3.13"	3.24"	3.44"	3.56"	3.64"	3.88"	4.20"	4.44"	4.92"
Approximate Weight	lbs	17.4	17.6	17.9	18.3	18.5	18.7	19.2	19.4	19.6	20.2	20.9	21.5	22.6
	kg	7.9	8.0	8.1	8.3	8.4	8.5	8.7	8.8	8.9	9.2	9.5	9.8	10.2

RPGP/RPGM517 Dimensions

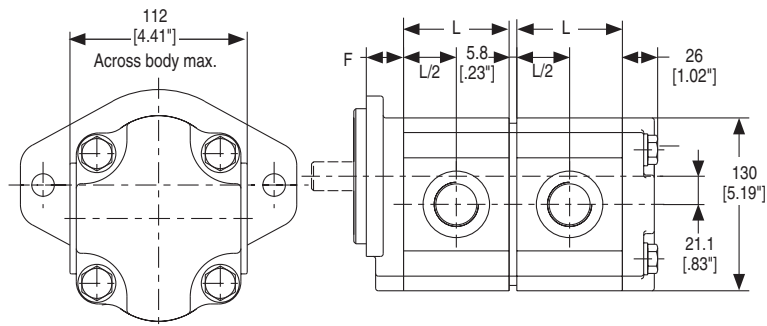
Single Unit



Single Unit with Rear Ports



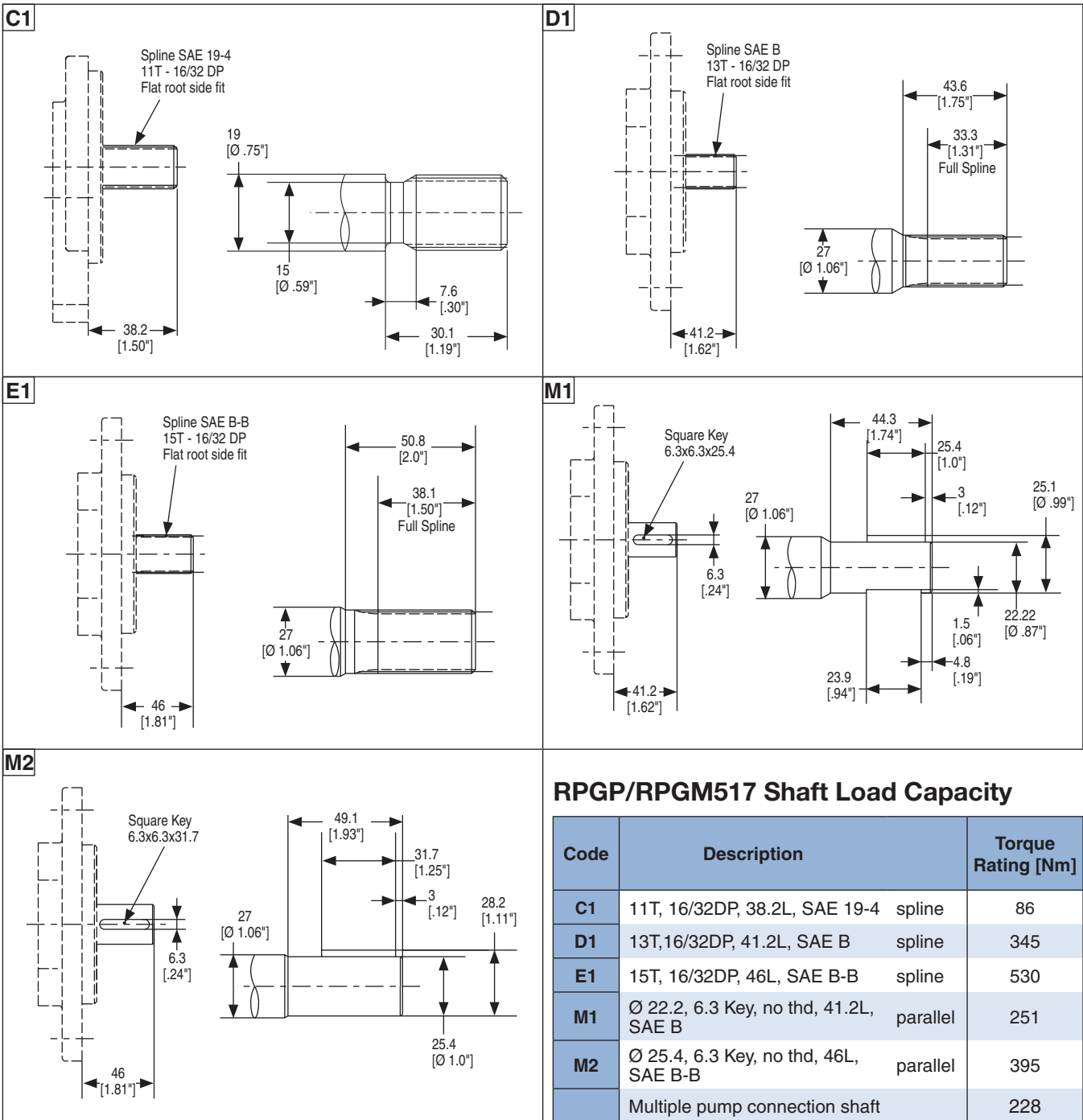
Tandem Unit



Dimension F:
See Flanges on [page 34](#)

RPGP/RPGM517 Drive Shafts/Load Capacity

RPGP/RPGM517 Drive Shafts

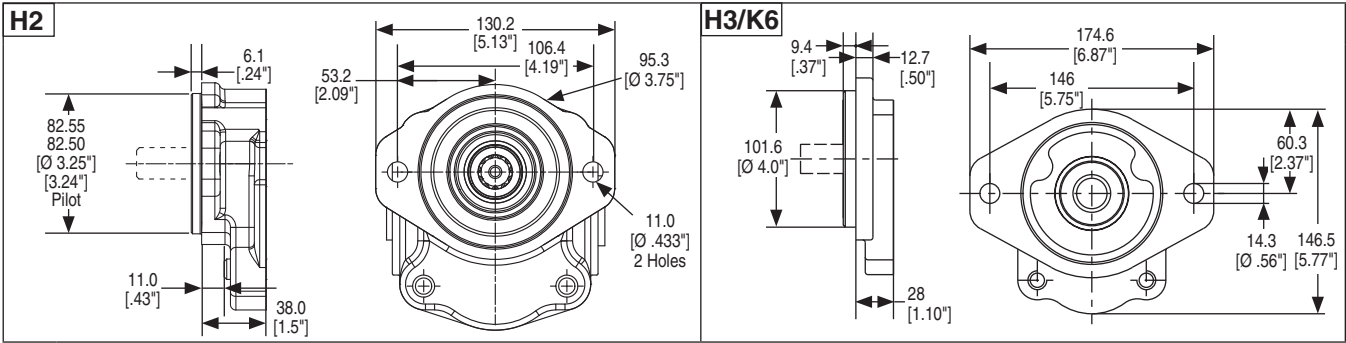


RPGP/RPGM517 Shaft Load Capacity

Code	Description	Torque Rating [Nm]
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline	86
D1	13T,16/32DP, 41.2L, SAE B spline	345
E1	15T, 16/32DP, 46L, SAE B-B spline	530
M1	Ø 22.2, 6.3 Key, no thd, 41.2L, SAE B parallel	251
M2	Ø 25.4, 6.3 Key, no thd, 46L, SAE B-B parallel	395
	Multiple pump connection shaft	228

Torque [Nm] = $\frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$

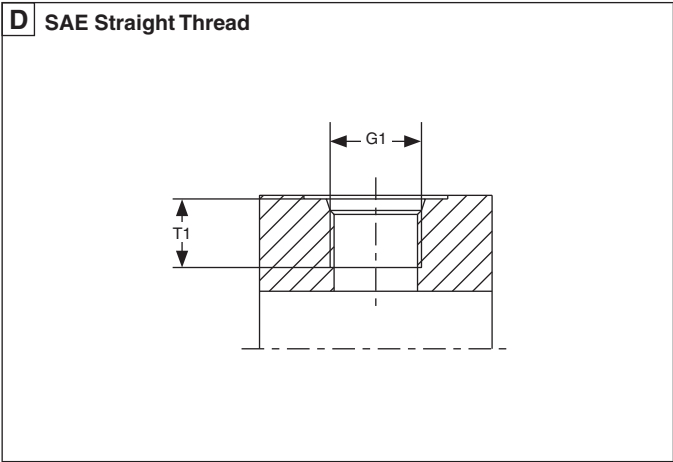
RPGP/RPGM517 Mounting Flanges



H2 = Cast Iron
H3 = Cast Iron
K6 = Aluminum

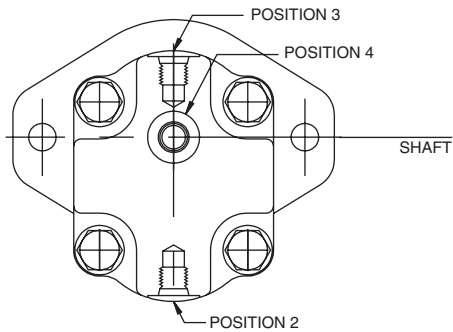
RPGP/RPGM517 Port Options/Drain Positions

RPGP/RPGM517 Port Options



Code	SAE J1926-1 Dash Size	Nominal Tube OD	G1	T1
			Thread	Dimensions
D2	#6	3/8"	9/16" - 18 UNF	12.7 [0.50"]
D3	#8	1/2"	3/4" - 16 UNF	14.3 [0.56"]
D4	#10	5/8"	7/8" - 14 UNF	16.7 [0.66"]
D5	#12	3/4"	1-1/16" - 12 UN	19.0 [0.75"]
D6	#16	1"	1-5/16" - 12 UN	19.0 [0.75"]
D7	#20	1-1/4"	1-5/8" - 12 UN	19.0 [0.75"]
D8	#24	1-1/2"	1-7/8" - 12 UN	19.0 [0.75"]

RPGP/RPGM517 Drain Positions



WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

RPGP/RPGM517 Ordering Code

RPG 1 517 2 3 4 5 6 7 8 8 8¹⁾ 8¹⁾ 9²⁾ 10²⁾ 12⁵⁾ 517 2 3 7 8 8 11 3) 4)

Code	1 – Type
P	Pump
M	Motor

Code	2 – Unit	
	Pump	Motor
A	Single unit	Standard Motor without checks
B	Multiple unit	Standard Motor with two checks
C	—	Standard Motor w/ one anti-cavitation check (ACC)
D	—	Standard Motor w/ one ACC + restrictor
M	Single distributor unit	—
Option C MUST NOT HAVE A DRAIN		
Option D MUST HAVE A DRAIN		

3 – Displacement*	
Code	ccm
0140	14
0160	16
0190	19
0230	23
0250	25
0280	28
0330	33
0360	36
0380	38
0440	44
0520	52
0580	58
0700	70
* Others on request	

Code	4 – Rotation
C	Clockwise
A	Counter-clockwise
B	Bi-directional

Code	5 – Shaft
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline
D1	13T, 16/32DP, 41.2L, SAE B spline
E1	15T, 16/32DP, 46L, SAE B-B spline
M1	Ø 22.2, 6.3 Key, no thread, 41.2L, SAE B, parallel
M2	Ø 25.4, 6.3 Key, no thread, 46L, SAE B-B, parallel

Code	6 – Flange	Material
H2	106.4 - Ø 82.55 SAE A 2-Bolt	Cast Iron
H3	146.1 - Ø 101.6 SAE B 2-Bolt	Cast Iron
K6	146.1 - Ø 101.6 SAE B 2-Bolt	Aluminum

Code	7 – Shaft Seal
X	No seal
N	NBR
V	FPM, FKM
M	Double NBR
W	Double FPM
Standard motor seals are rated for max 75 PSI. For special higher pressure shaft seal solutions please contact RCHC.	

Code	8 – Port Options
B1	No ports
D3	3/4" - 16 UNF thread
D4	7/8" - 14 UNF thread
D5	1-1/16" - 12 UN thread
D6	1-5/16" - 12 UN thread
D7	1-5/8" - 12 UN thread
D8	1-7/8" - 12 UN thread

Code	9 – Motor Drain Option
B1	No drain
A	7/16" - 20 UNF thread
C	9/16" - 18 UNF thread

Code	10 – Drain Port Position
2	Drain on bottom
3	Drain on top
4	Rear drain

Code	11 – Section Connection
S	Separate inlets
C	Common inlets
No code for single unit	

Code	12 – Corrosion Protection
Z	Zinc coated (5)
P	Black primer paint
No code for no protection	

Not all variances of ordering codes can be offered. Please check available part numbers first. For not yet implemented part numbers or special requests please contact RCHC.

- 1) Only coded for the last section.
- 2) Only for motors.
- 3) For further unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.
- 4) For adding built-in valves enter valve description at the end of the model code. Valve options described at [pages 31-41](#).
- 5) Rear cover is in cast iron; Zinc coating for rear cover, fasteners, and for mounting flange code H2 and H3.

RPGP/RPGM517 Ordering Examples

RPGP **517** **A** **0230** **A** **D1** **H3** **N** **D6** **D5** **B1** **B1** **Z**

RPGP	Gear Design / Type	RCHC Gear Pump
517	Series	
A	Unit	Single Unit
0230	Displacement	23.0 cm ³ /rev.
A	Rotation Direction	Counter-Clockwise
D1	Shaft	SAE B Spline 13T, 16/32 DP
H3	Flange	Mounting Flange SAE 2-Bolt B
N	Shaft Seal	Shaft Seal NBR
D6	Side Suction Port	1-5/16" - 12 UN Thread
D5	Side Pressure Port	1-1/16" - 12 UN Thread
B1	Rear Suction Port	No Port
B1	Rear Pressure Port	No Port
Z	Corrosion Protection	Zinc Coated

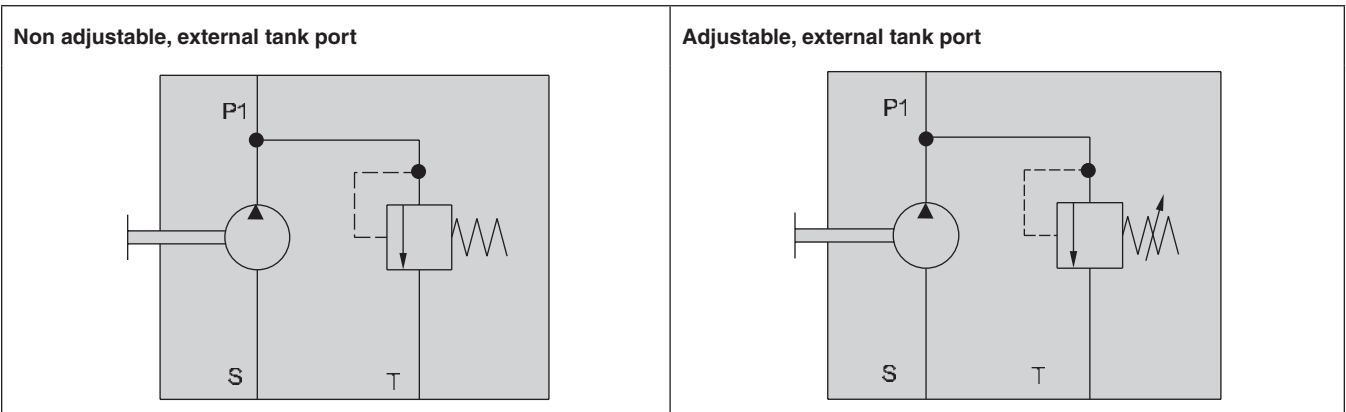
Pump and Motor Valve Options

Valve Type	PGP502	RPGP505	RPGP511	RPGP517
Pressure-Relief Valve - Adjustable - External Vent	x	x	x	x
Pressure-Relief Valve - Non Adjustable - External Vent	x	x	x	x
Two Stage Pump	x	x	x	x
Priority Flow Divider Valve			x	x
Load Sensing Priority Valve			x	x

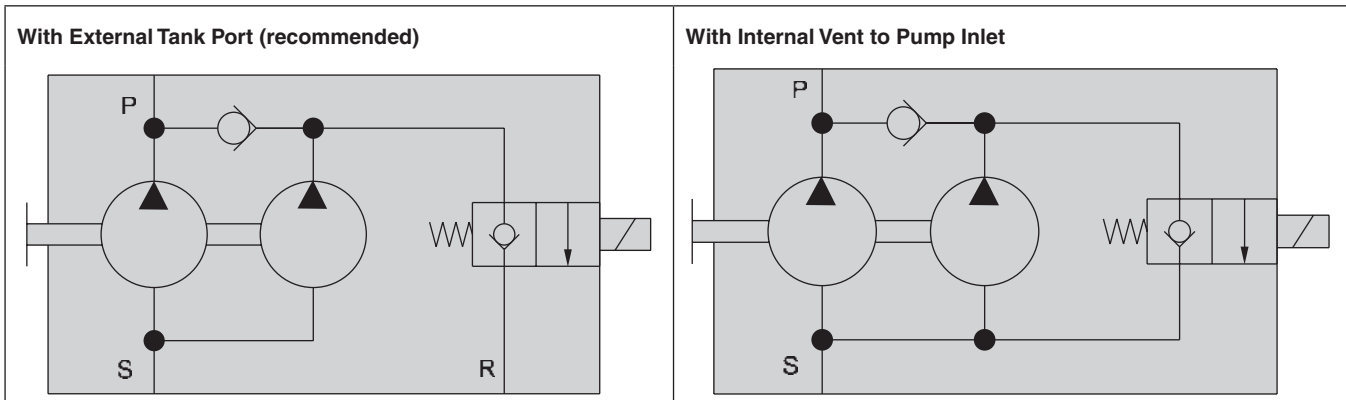
Valve Type	RPGM502	RPGM505	RPGM511	RPGM517
Single Pressure-Relief Valve	x	x	x	x
Single Pressure-Relief Valve with Anti-cav	x	x	x	x
Cross Port Pressure-Relief Valves		x	x	
Cross Port Pressure-Relief Valves with Anti-cav		x	x	
Cross Port Pressure-Relief Valves with Anti-cav plus Check Valves		x	x	
Solenoid Proportional Pressure-Relief Valve		x	x	x
Speed Sensor	x	x	x	x

Pump Valve Options

Pressure-Relief Valves – RPGP502, RPGP505, RPGP511 and RPGP517



Two - Stage Pump – RPGP505, RPGP511 and RPGP517



Pump Valve Options (Continued)

Priority Flow Divider

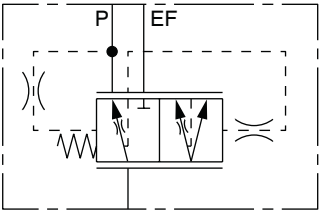
Port Configuration
End Priority, End Excess
Side Priority, Side Excess
End Priority, Side Excess
Side Priority, End Excess
Double Side Ported

Port Orientation
Priority Port on Pump Inlet Side
Priority Port on Pump Outlet Side

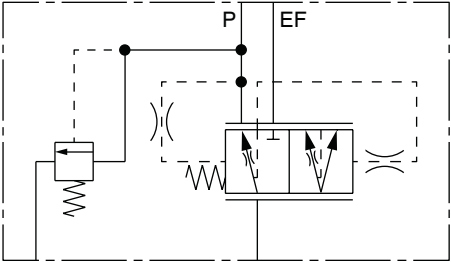
Function
Priority Flow Divider
PFD with Full Flow R/V
PFD with Pilot R/V

Priority Flow
8 lpm
11 lpm
15 lpm
19 lpm
23 lpm
30 lpm
38 lpm
others on request

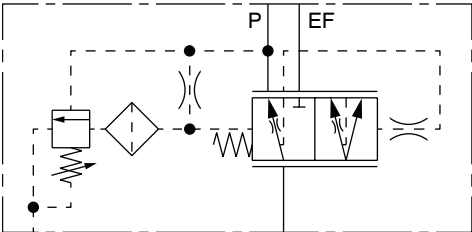
R/V Setting
No Relief Valve
Adjustable 40 - 120 bar
Adjustable 130 - 250 bar
50 bar
80 bar
100 bar
110 bar
120 bar
130 bar
140 bar
150 bar
160 bar
170 bar
180 bar
200 bar
others on request



Priority Flow Divider
Function A



Priority Flow Divider with Full Flow R/V
Function B



Priority Flow Divider with Pilot R/V
Function C

Pump Valve Options (Continued)

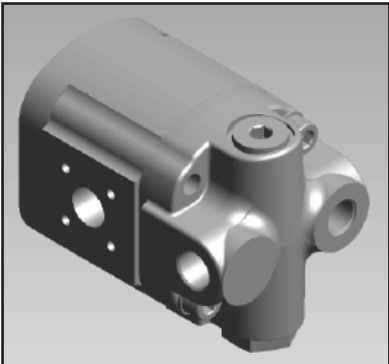
Priority Flow Divider

Pressure Range	
P-port Maximum	230 bar
EF-port Maximum	250 bar

Maximum Flows	
for RPGP511	
P-port	32 lpm
EF-port	70 lpm
max. input flow	70 lpm
for RPGP517	
P-port	45 lpm
EF-port	100 lpm
max. input flow	100 lpm



Port Configuration A
Port Orientation B



Port Configuration D
Port Orientation A



Port Configuration C
Port Orientation B

Comments:

The Priority Flow Divider provides a constant and specified flow for power steering or other priority functions. The balance of flow produced by the pump is available from the EF port for additional functions such as open center directional control valves, fan drives, etc. It can also be fitted with a pressure-relief valve.

Variations for RPGP511/RPGP517

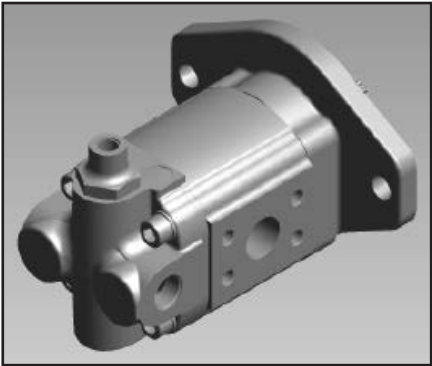
- without priority relief valve (Function A)
- with full flow priority relief valve (Function B)
- with pilot priority relief valve (Function C)

Pump Valve Options (Continued)

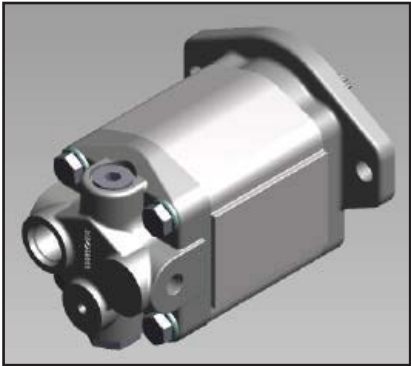
Load Sensing Priority Valve

Pressure Range	
P-port Maximum	230 bar
EF-port Maximum	equal to max. rating of pump

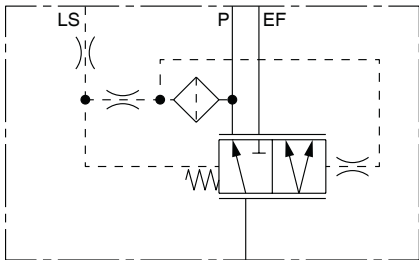
Maximum Flows	
for RPGP511	
P-port	32 lpm
EF-port	70 lpm
max. input flow	70 lpm
for RPGP517	
P-port	45 lpm
EF-port	100 lpm
max. input flow	100 lpm



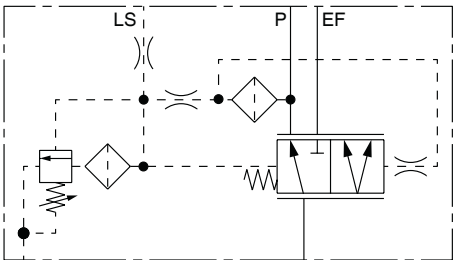
Port Configuration B
Port Orientation A



Port Configuration D
Port Orientation B



Load Sensing Priority Valve
with Dynamic Load Sensing Signal
Function F



Load Sensing Priority Valve
with Dynamic Load Sensing Signal
Function G

Comments:

The Load Sense Priority Valve provides priority flow on demand, typically for LS power steering: The balance of the flow produced by the pump is available from the EF port for additional functions such as open center directional control valves, fan drives, etc. When the power steering is idle, full pump flow is available for these functions.

The selection of pilot relief and static or dynamic signal is dependent on the characteristics of the selected steering unit.

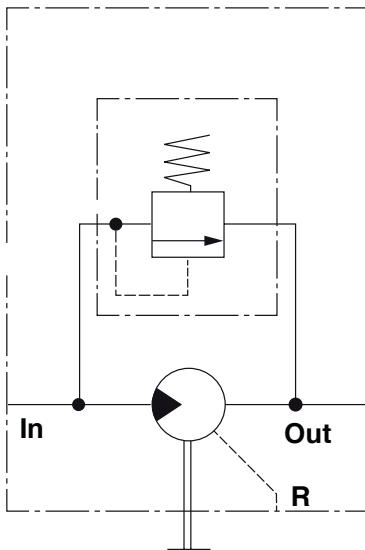
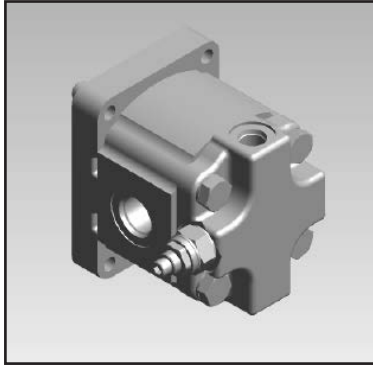
Variations for RPGP511/RPGP517

- without pilot relief
- dynamic LS signal (Function G) / with pilot relief
- dynamic LS signal (Function F) / without pilot relief
- static LS signal / with pilot relief
- static LS signal

Motor Valve Options

Single Pressure-Relief Valve

Motor Range RPGM511	
Maximum Flow	75 lpm
Pressure Range	25-250 bar



Comments:

Integral relief valve to protect the motor.

Motors with this valve may be applied in series with relief valve providing a limit to the pressure differential, and hence, the output torque.

Variations for RPGM511

adjustable / with internal or external drain

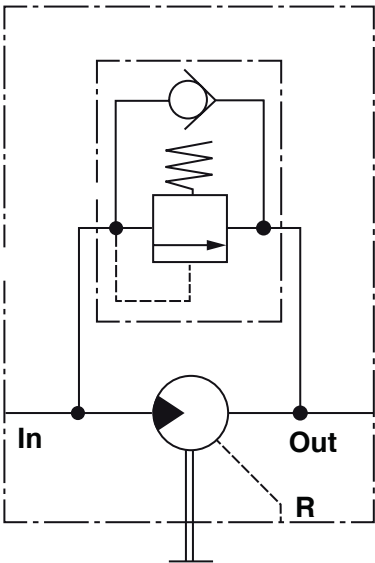
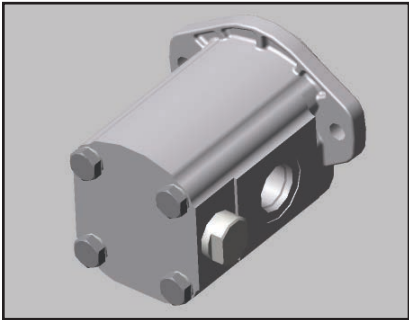
Applications

Fan Drives, Mower Blade Drives, Compressor Drives and Water Pump Drives

Motor Valve Options (Continued)

Single Pressure-Relief Valve with Anti-Cavitation

Motor Range RPGM511	
Maximum Flow	100 lpm
Pressure Range	35-250 bar



Comments:

- Motors fitted with this relief valve may be applied in series with relief valve providing a limit to the pressure differential, and hence, the output torque.
- The check valve allows the motor and driven load to “spool down” when the fluid supply is shut off or reduced due to engine speed fluctuations.
- In series operation, the check valve permits the motor to come to a controlled stop should the outlet flow be suddenly blocked.
- This valve reduces the risk of damaging the motor or blowing a hydraulic line.
- Motors fitted with this valve are available with side or rear facing ports.

Variations for RPGM511

- Non-adjustable / with reverse flow check with internal or external drain

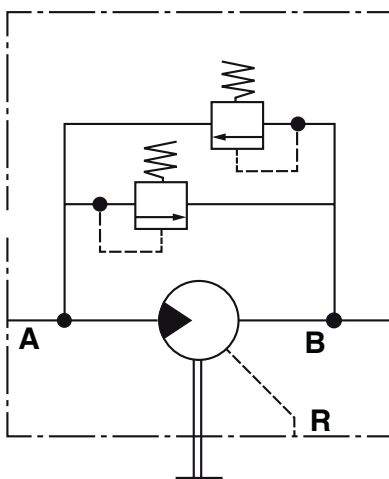
Applications

- Fan Drives, Mower Blade Drives, Compressor Drives and Water Pump Drives

Motor Valve Options (Continued)

Cross Port Pressure-Relief Valves

Motor Range RPGM511	
Maximum Flow	75 lpm
Pressure Range	25-250 bar



Comments:

Integral cross port relief to protect motor and to limit torque in both directions of rotation.

Motors fitted with this relief valve cover may be operated in series with other motors downstream when using external case drain.

Limited change to the factory set is possible.

Side ports are standard in order to minimize overall length.

Variations for RPGM511

adjustable / with internal and external drain

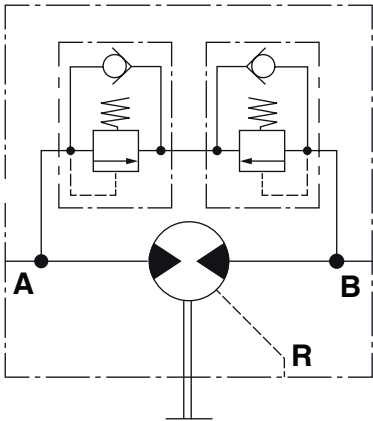
Applications

Fan Drives, Mower Reel Drives, and all low-medium power reversible drives

Motor Valve Options (Continued)

Cross Port Pressure-Relief Valves with Anti-Cavitation

Motor Range RPGM511	
Maximum Flow	100 lpm
Pressure Range	35-250 bar



Comments:

Motors fitted this relief valve may be applied in series or in hydraulic transmission with relief valve providing a limit to the pressure differential, and hence, the output torque.
The check valves allow flow to return to the inlet of the motor to prevent cavitation.
Motor available with side ports, rear ports or combination of side and rear ports.

Variations for RPGM511

non-adjustable / with internal or external drain

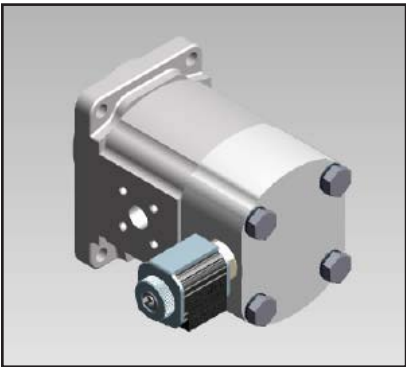
Applications

Fan Drives, Mower Blade Drives, Water Pump Drives and reversible hydrostatic transmissions

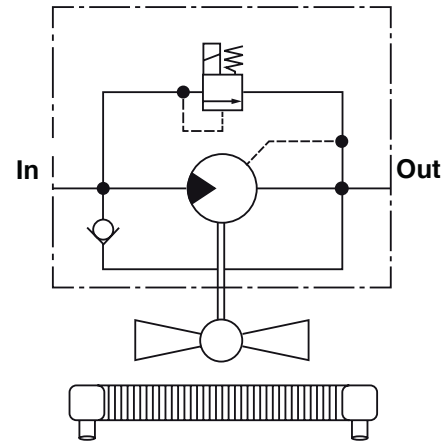
Motor Valve Options (Continued)

Solenoid Proportional Pressure-Relief Valve

Motor Range RPGM511	
Maximum Flow	95 lpm



Pressure Range	
Pressure Range	standby pressure differential: 5 bar max.: equal to the max. pressure rating of the motor
Standard Pressure-Relief Settings	100 / 210 / 350 bar others on request
Termination	on request



Comments:

In a fan drive circuit fan speed is adjusted by providing a varying Pulse Width Modulated electrical current signal to the proportional relief valve which controls the flow to the fan motor. The proportional valve is typically a normal closed type to assure failsafe full fan speed in case of a lost signal.
The anti-cavitation check valve allows the motor to spin freely when the fan is powered down.

Variations for RPGM511

normally open valves / increasing pressure with increasing current
normally closed valves / decreasing pressure with increasing current with internal or tank return

Applications

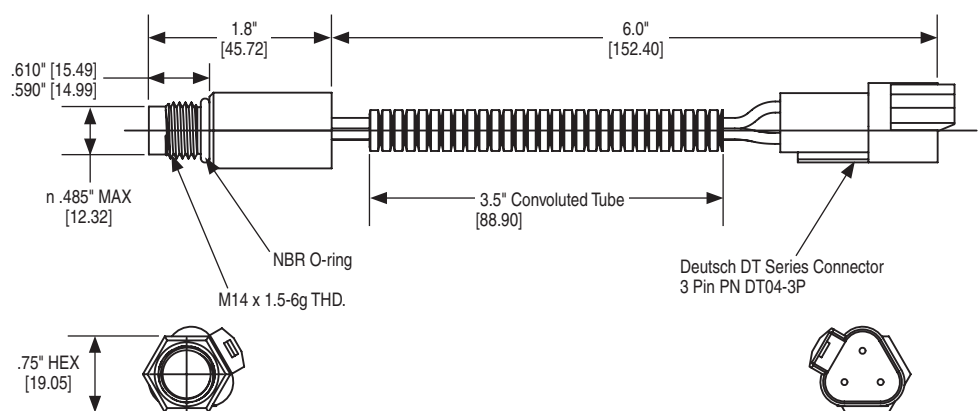
Fan Drives

Reversing Options

Speed Sensor

This rugged, weather resistant sensor uses proven reliable technology and was developed to meet the demanding needs of mobile applications.

- Tough stainless steel housing
- Sealed electrical connectors
- Easy installation
- Protected against shock, vibration and electromagnetic interference
- Excellent stability
- Wide range of operating conditions (IP67)



Speed Sensor Data	
Supply Voltage	5-30 VDC
Operational Voltage	5-27 VDC
Supply Current	13.5 mA MAX
Reverse Polarity Protection Switching Frequency	0 to 15 kHz
Output	Open collector no internal pull-up resistor 470 OHM series output resistor
Sensor Output	15 pulses/rev

PIN CONNECTIONS		
A	Red	Supply
B	Black	Ground
C	White	Signal