






Hydraulic-
Pumps And Motors
ASMR Catalogue

CAT.ASEAN_HYG_PAM_DEC2016

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

ENGINEERING YOUR SUCCESS.

Parker Hannifin Corporation

Parker can be found on and around everything that move. We manufacture highly engineered components and systems that facilitate motion and the controlled flow of liquids and gasses for a wide variety of global markets to increase our customers' productivity and profitability.

From flying aircraft and building infrastructure; to developing more efficient energy, advancing medical science and engineered materials, providing clean food and water, and supporting military efforts.

Parker's 55,000 employees bring it all together, partnering with our customers to help solve some of the world's greatest engineering challenges.

History

The history of our great company is an interesting account of the transformation of technology over a period of nearly 100 years.

Founded in 1918, the evolution of the Parker Appliance Company into Parker Hannifin Corporation illustrates a legacy of innovation.

We believe our future growth is assured by honoring Parker's tradition of excellence and fair dealings.

1918	Founded
822,000	Products Sold
58,151	Customers
13,000	Distribution/MRO Outlets
1,200	Markets
316	Manufacturing Plants
50	Countries

Solving The World's Greatest Engineering

Our focus on solving some of the world's greatest engineering challenges sparks our passion for innovation and secures our future growth.

The development of more efficient energy sources; the desire to produce and distribute clean water; new drug discovery and medical advances; the building of infrastructure and transportation to support a growing population; the safe cultivation, transportation and preservation of food sources; emerging developments in defense; and the protection of our environment – all of these challenges drive Parker people forward, seeking new ways to innovate, combine technologies, collaborate, develop systems and partner with our customers to solve problems.

Partnership in Motion
From hidden costs to visible profits

Partnership is an important aspect of the Parker Hannifin business philosophy. We feel that together we can increase your productivity and profitability by utilizing all the products, services and systems in our portfolio.

Whether your needs is to develop sophisticated new machinery or to keep production lines running 24 hours a day, Parker is there to work with you to help you achieve your goals.

Parker Hannifin ASEAN & Australasia

ASEAN Sales Office Presence

- **SINGAPORE** (Head Office)
- **MALAYSIA**
  Kuala Lumpur
  Penang
  Johor Bahru
- **INDONESIA**
  Jakarta
- **THAILAND**
  Bangkok
- **VIETNAM**
  Ho Chi Minh City
- **PHILIPPINES**
  Manila

Australasia Sales Office Presence

- **SYDNEY** (Head Office)
- **AUSTRALIA**
  Perth
  Melbourne
  Brisbane
  Adelaide
  Mackay
  Newcastle
- **NEW ZEALAND**
  Auckland

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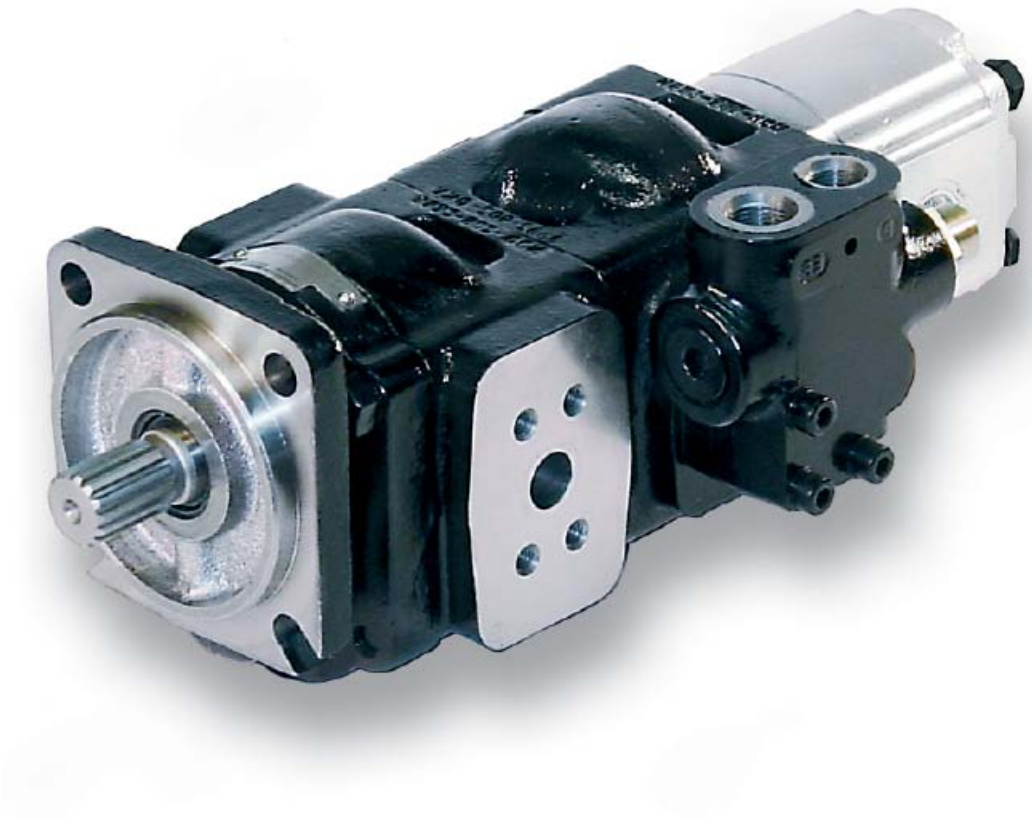

Gear Pumps and Motors

1/ Fixed Displacement

Parker

ENGINEERING YOUR SUCCESS.

Gear P&M Product Table

Displacement (ccm)	CAST IRON							ALUMINIUM			
	PGP 300				PGP 600			PGP 500			
0 - 10	PGP 315								PGP/M 511		
20		PGP 330				PGP/M 620				PGP 517	
30			PGP 350				PGP/M 640				
40				PGP 365							
50											
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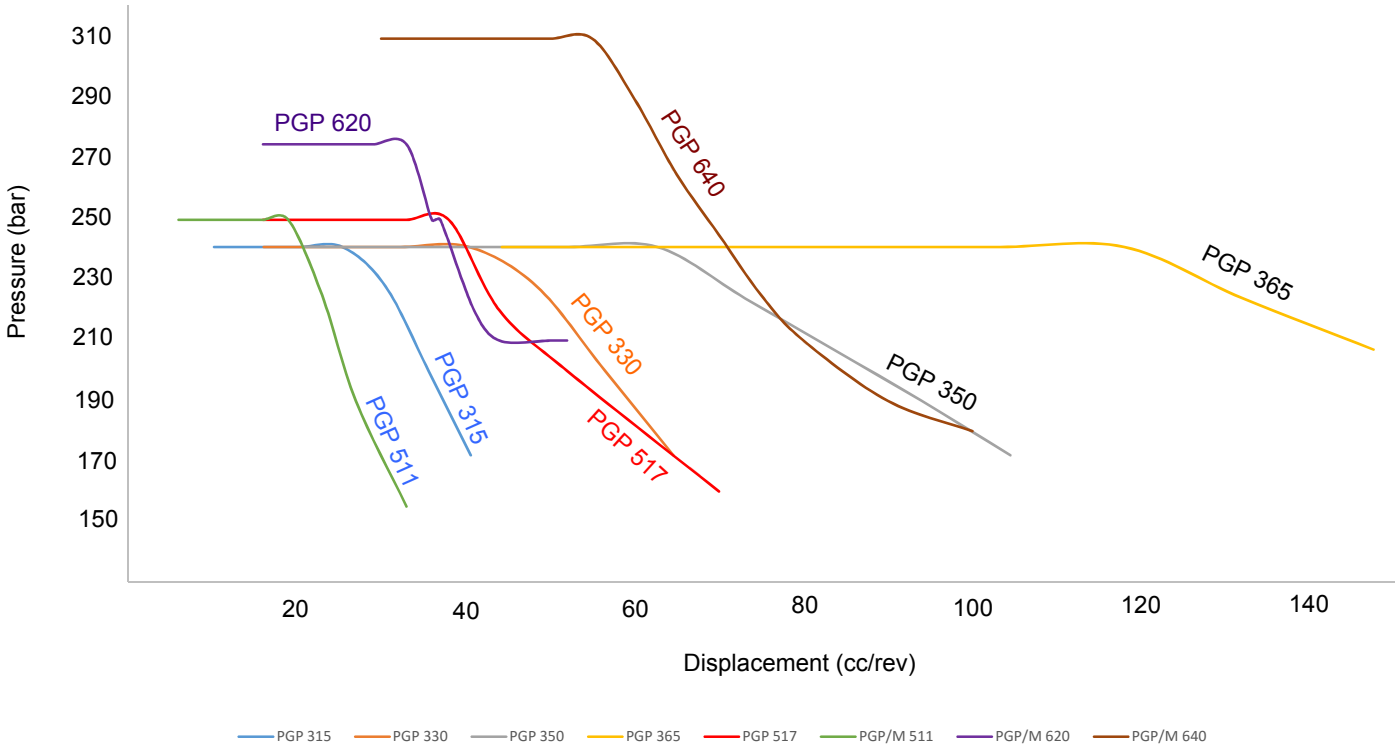
150											

Pressure Vs Displacement



Parker 500 Series

Heavy Duty Aluminium pumps & motors

High pressure operation

PGP 500 series pumps offer superior performance, high efficiency and low noise operation at high operating pressures. They are produced in three frame sizes, with displacements ranging from 0.8 to 70 cc/per rev. A wide variety of standard options are available to meet specific application requirements.

Up to 250 bar continuous operation

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

Low Noise

PGP 505 and 517, 13 tooth gear profile, PGP 511, 12 tooth gear profile and optimised flow metering provide reduced pressure pulsation and exceptionally quiet 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.

Characteristics

Mounting	SAE, rectangular, thru-bolt.
Shaft	SAE splined, keyed, tapered, parallel standard, tang drive on request.
Speed	500 – 4000 rpm, see table in catalogue
Axial/Radial Load	Units subject to axial, radial load must be specified with an outboard bearing.
Fluids	Mineral oils, fire resistant fluids – water-oil emulsion 60/40, HFB – watar-glycol, HFC – phospate-esters, HFD
Temperature	Fluid range of operating temperature – 15 to 80 deg C
Fluid Viscosity	Range of operating viscosity 8 to 100 mm2/s max
Filtration	According to ISO 4406 Cl. 16/13
Multiple Pumps	– Available in two, three, or four sections – Max shaft load must conform to limitations shown in catalogue – Max load is calculated by adding the torque values for each pumping sections that will be simultaneously loaded.

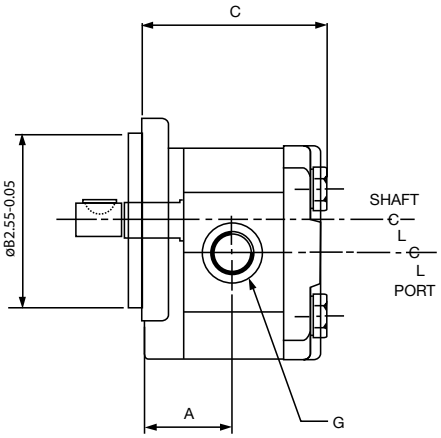
PGP511 Series Aluminium

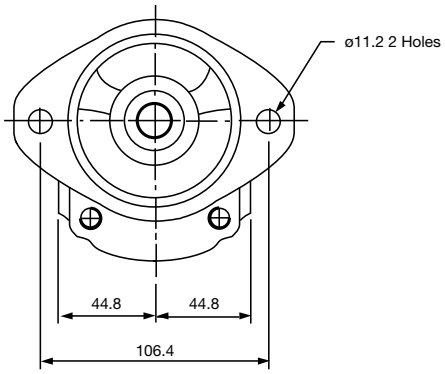
PGP511 Series Aluminium
SAE "A" 2 Bolt Mount (Option Code "H2")
5/8" Keyed (Option Code "K1")
Model Code : PGP511M XXX C K1H2 N DX DX B1B1

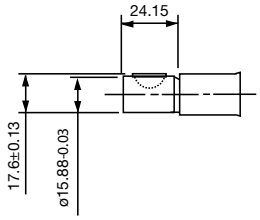
Sub Class CAQ

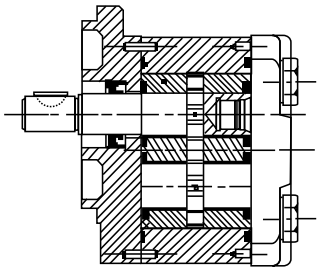
DISP	DIMENSION MM		INLET	OUTLET			PART NUMBER	PART NUMBER
cc/rev	A	C	"G" UNF	"G" UNF	Max RPM	Max Bar	Clockwise	CCW
4	42.6	86.7	7/8"	3/4"	3500	250	3349116034	3349116034A
6	44.1	89.8	1-1/16"	7/8"	3500	250	3349116035	3349116035A
8	45.7	83.0	1-1/16"	7/8"	3500	250	3349116036	3349116036A
10	47.3	96.1	1-1/16"	7/8"	3500	250	-	-
11	48.1	97.7	1-5/16"	1-1/16"	3500	250	3349116031	3349116031A
14	50.4	102.4	1-5/16"	1-1/16"	3500	250	3349116032	3349116032A
16	52.0	105.6	1-5/16"	1-1/16"	3400	250	3349116033	3349116033A
19	54.4	110.3	1-5/16"	1-1/16"	2900	220	3349116473	3349116473A
23	57.5	116.6	1-5/8"	1-5/16"	2750	210	3349116038	3349116038A
27	60.7	122.9	1-5/8"	1-5/16"	2300	180	3349116039	3349116039A

Seal Kit 8611-023-00N









Parker 500 Series

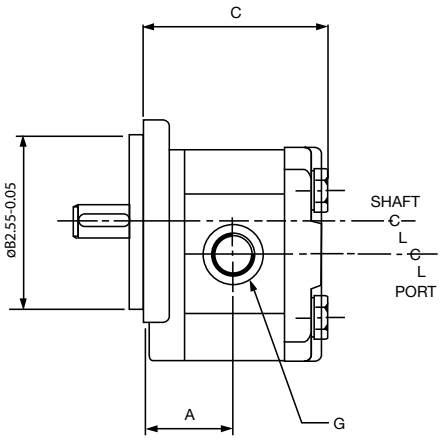
PGP511 Series Aluminium

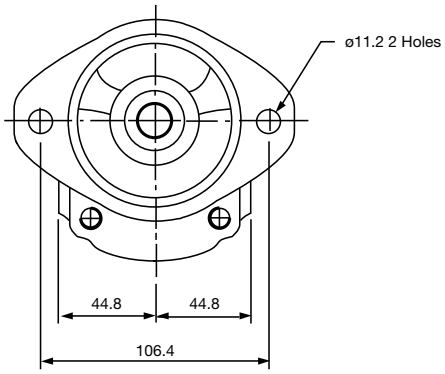
PGP511 Series Aluminium
SAE "A" 2 Bolt Mount (Option Code "H2")
3/4" Keyed Shaft (Option Code "L6")
Model Code : PGP511M XXX C L6 H2 N DX DX B1B1

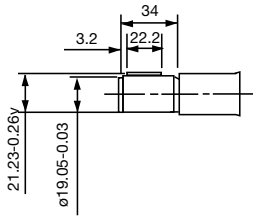
Sub Class CAQ

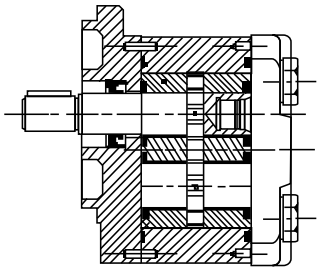
DISP	DIMENSION MM		INLET	OUTLET			PART NUMBER	ORDER CODE
cc/rev	A	C	"G" UNF	"G" UNF	Max RPM	Max Bar	Clockwise	CCWbbmk88
4	42.6	86.7	7/8"	3/4"	3500	250	3349116042	3349116042A
6	44.1	89.8	1-1/16"	7/8"	3500	250	3349116043	3349116043A
8	45.7	83.0	1-1/16"	7/8"	3500	250	3349116044	3349116044A
10	47.3	96.1	1-5/16"	1-1/16"	3500	250	3349116045	3349116045A
11	48.1	97.7	1-5/16"	1-1/16"	3500	250	3349116046	3349116046A
14	50.4	102.4	1-5/16"	1-1/16"	3500	250	3349116047	3349116047A
16	52.0	105.6	1-5/16"	1-1/16"	3400	250	3349116048	3349116048A
19	54.4	110.3	1-5/8"	1-5/16"	3250	250	3349116049	3349116049A
23	57.5	116.6	1-5/8"	1-5/16"	2750	210	3349116050	3349116050A
27	60.7	122.9	1-5/8"	1-5/16"	2300	180	3349116051	3349116051A

Seal Kit 8611-023-Q1N









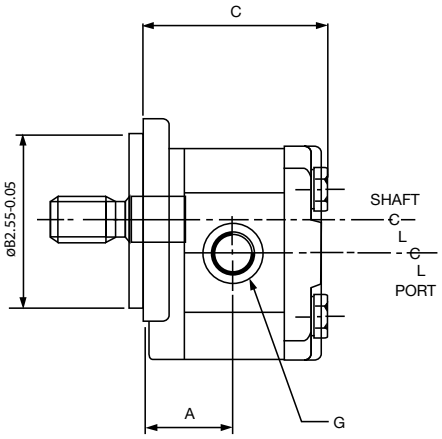
PGP511 Series Aluminium

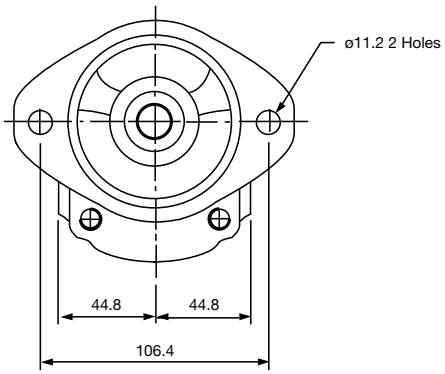
PGP511 Series Aluminium Gear Pumps
SAE "A" 2 Bolt Mount (Option Code "H2")
5/8" 9 Tooth Spline (Option Code "A1")
Model Code : PGP511M XXX C A1 H2 N DX DX B1B1

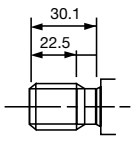
Sub Class CAQ

DISP	DIMENSION MM		INLET	OUTLET			ORDER CODE	ORDER CODE
cc/rev	A	C	"G" UNF	"G" UNF	Max RPM	Max Bar	Clockwise	CCW
4	42.6	86.7	7/8"	3/4"	3500	250	3349111578	3349111578A
6	44.1	89.8	1-1/16"	7/8"	3500	250	3349111579	3349111579A
8	45.7	93.0	1-1/16"	7/8"	3500	250	3349111580	3349111580A
10	47.3	96.1	1-5/16"	1-1/16"	3500	250	3349111581	3349111581A
11	48.1	97.7	1-5/16"	1-1/16"	3500	250	3349111582	3349111582A
14	50.4	102.4	1-5/16"	1-1/16"	3500	250	3349111583	3349111583A
16	52.0	105.6	1-5/16"	1-1/16"	3400	250	-	-
19	54.4	110.3	1-5/8"	1-5/16"	3250	250	3349111585	3349111585A
23	57.5	116.6	1-5/8"	1-5/16"	2750	210	3349111586	3349111586A
27	60.7	122.9	1-5/8"	1-5/16"	2300	180	3349111587	3349111587A
31	63.8	129.2	1-5/8"	1-5/16"	2100	160	3349111588	3349111588A
33	65.4	132.3	1-5/8"	1-5/16"	2000	150	3349111589	3349111589A

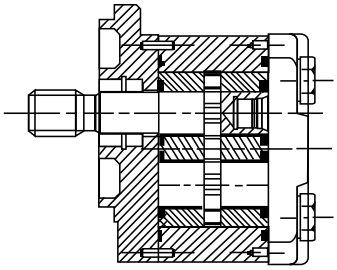
Seal Kit 8611-023-00N







SAE INVOLUTE SPLINE
9 TEETH - 16/32 PITCH
FLAT ROOT SIDE FIT
MAJOR DIA. 15.32 - 15.47
MINOR DIA 12.281 MAX



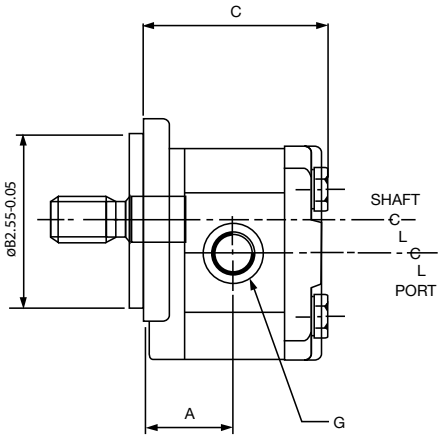
PGP511 Series Aluminium

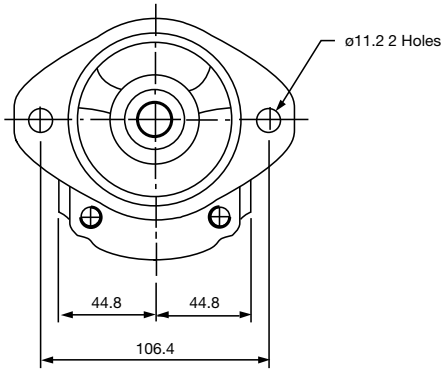
PGP511 Series Aluminium Gear Pumps
SAE "A" 2 Bolt Mount (Option Code "H2")
3/4" 11 Tooth Spline (Option Code "C1")
Model Code : PGP511M XXX C C1 H2 N DX DX B1B1

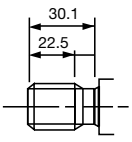
Sub Class CAQ

DISP	DIMENSION MM		INLET	OUTLET			ORDER CODE	ORDER CODE
cc/rev	A	C	"G" UNF	"G" UNF	Max RPM	Max Bar	Clockwise	CCW
4	42.6	86.7	7/8"	3/4"	3500	250	3349111602	3349111602A
6	44.1	89.8	1-1/16"	7/8"	3500	250	3349111603	3349111603A
8	45.7	93.0	1-1/16"	7/8"	3500	250	3349111604	3349111604A
10	47.3	96.1	1-5/16"	1-1/16"	3500	250	-	-
11	48.1	97.7	1-5/16"	1-1/16"	3500	250	-	-
14	50.4	102.4	1-5/16"	1-1/16"	3500	250	3349111607	3349111607A
16	52.0	105.6	1-5/16"	1-1/16"	3400	250	3349111608	3349111608A
19	54.4	110.3	1-5/8"	1-5/16"	3250	250	3349111609	3349111609A
23	57.5	116.6	1-5/8"	1-5/16"	2750	210	3349111610	3349111610A
27	60.7	122.9	1-5/8"	1-5/16"	2300	190	3349111611	3349111611A
31	63.8	129.2	1-5/8"	1-5/16"	2100	165	3349111612	3349111612A
33	65.4	132.3	1-5/8"	1-5/16"	2000	155	3349111613	3349111613A

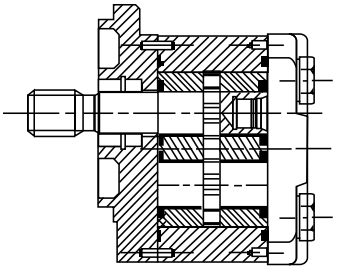
Seal Kit 8611-023-Q1N







SAE INVOLUTE SPLINE
11 TEETH - 16/32 PITCH
FLAT ROOT SIDE FIT
MAJOR DIA. 18.50 - 18.63
MINOR DIA 15,456



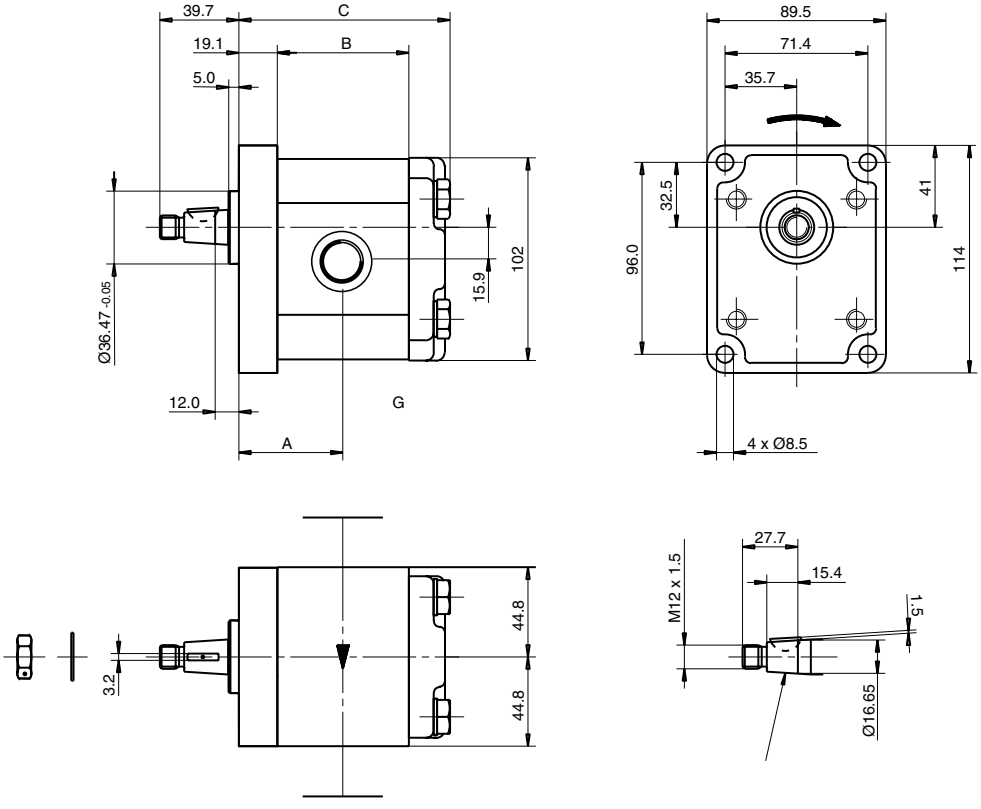
PGP511 Series Aluminium

PGP511 Series Aluminium
DIN Group 2, 4 Bolt Mount (Option Code "D3")
1:8 Taper Shaft (Option Code "S2")
Model Code : PGP511M XXX C S2 D3 N EX EX B1B1

Sub Class CAQ

DISP	DIMENSION MM		INLET	OUTLET			ORDER CODE	ORDER CODE
cc/rev	A	C	G	G	Max RPM	Max Bar	Clockwise	CCW
4	42.6	86.7	3/4"-BSP	1/2"-BSP	3500	250	3349111711	3349111711A
6	44.1	89.8	3/4"-BSP	1/2"-BSP	3300	250	3349111712	3349111712A
8	45.7	93.0	3/4"-BSP	1/2"-BSP	3500	250	3349111713	3349111713A
10	47.3	69.1	3/4"-BSP	1/2"-BSP	3500	250	3349116005	3349116005A
11	48.1	97.7	3/4"-BSP	1/2"-BSP	3500	250	3349111714	3349111714A
14	50.4	102.4	3/4"-BSP	1/2"-BSP	2800	250	3349111715	3349111715A
16	52.0	105.6	3/4"-BSP	1/2"-BSP	2400	250	3349111716	3349111716A
19	54.4	110.3	3/4"-BSP	1/2"-BSP	2000	250	-	-
23	57.5	116.6	3/4"-BSP	1/2"-BSP	1700	225	3349111718	3349111718A
27	60.7	122.9	1"-BSP	3/4"-BSP	2350	190	3349111719	3349111719A
31	63.8	129.2	1"-BSP	3/4"-BSP	2000	165	3349111720	3349111720A
33	65.4	132.3	1"-BSP	3/4"-BSP	1900	155	3349111721	3349111721A

Seal Kit 8611-023-00N



Data

Code	Type
P	Pump
M	Motor

Side Ports

Rear Ports

Unit		
Code	Pump	Motor
A	Single Unit	Standard Motor w/o checks
B	Multiple Unit	Standard Motor two checks
C	---	Standard Motor one a/c check

Displacement	
Code	cc
0040	4.0
0060	6.0
0080	8.0
0100	10.0
0110	11.0
0140	14.0
0160	16.0
0190	19.0
0230	23.0
0270	27.0
0310	31.0
0330	33.0

Code	Rotation
C	Clockwise
A	Counter Clockwise
B	Bi-directional

Code	Shaft
A1	9T, 16/32DP, 32L, SAE "A" spline
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline
K1	015.88, 4.0key, no thread, 32L SAE "A", parallel
L6	019.05, 4.8key, no thread, 32L SAE 19-1, parellel
S1	017.0, 7.7L. 3.Okey. M12x1 5, taper 1:5
S2	016.65, 12.0L, 3.2kev. M12x1.5. taper 1:8
S4	016.65, 12.0L, 4.0kev. M2x1.5 taper 1:8

Code	Port Options (pumps)
E3E3	1/2 - 12 BSP thread/ 1/2 -12 BSP thread for 4cc to 8cc
D4D3	7/8-14 UNF Thread/ 3/4-14 UNF Thread for 4cc to 8cc
E5E3	3/4-14 BSP Thread 1/2-12 BSP Thread for 4cc to 19cc
D5D4	1-1/16 12UNF Thread 7/8-I4UNF Thread for 6cc to 23cc
D6D5	1-5/16-12UNF Thread 1-1/16 12UNF Thread for 10cc to 33cc
E6E5	1-11 BSP Thread 3/4-14 BSP Thread for 14cc to 33cc(*)
Code	Port Options (motors)
E3E3	1/2-14 BSP thread/ 1/2-14 BSP thread/ only from 4cc to 11cc
E5E5	3/4-14 BSP thread 3/4-14 BSP thread only from 14cc to 33cc
D4D4	7/8-14 UNF thread 7/8-14 UNF thread only from 4cc to 11cc
D6D6	1-5/16-12UNF thread/ 1-5/16-12UNF thread only from 14cc tp 33cc

*) Recommended Port sizes @ 1900rpm

Code	Shaft Seal
X	No seal
N	NBR
M	Double NBR

Code	Flange
D3	71.4X960.0-036.47 rectangular
D4	72.0X100.0.080 rectangular
H2	106.4 - 082.55 SAE 'A 2 bolt flange
H3	146.1 - 01O1.06 SAE "B" 2 bolt flange
Q2	60.0x60.0 - 0.50 w eal O' thrubolt flange top RJHS
Q4	60.0 x 60.0 - 050.0w Seal O. thru bolt flange top LHS

Available Options
- Relief Valve
- Priority Flow Divider
- Load Sensing Priority Valve
- Over-run check valve

Data

Code	Type
P	Pump

Code	Pump
A	Single Unit
B	Multiple Unit

Displacement	
Code	cc
0160	16.0
0190	19.0
0230	23.0
0280	28.0
0330	33.0
0380	38.0
0440	44.0
0520	52.0
0700	70.0

Code	Rotation
C	Clockwise
A	Counter Clockwise

Code	Shaft
D1	13T, 16/32DP, 41.2L, SAE "B spline
M1	Dia 22.2, 6.3 key, 41.2L SAE 'B' parallel
M2	Dia 25.4, 6.3 key, 46L SAE 'BB' parallel SAE "A", parallel
T1	Dia 21.59, 11.2L 4.0 key
	M14 x 1.5 taper

Side Ports

Rear Ports

Code	Port Options (pumps)
E6E5	1"-11 BSPP thread 3/4" - 14 BSPP thread from 16cc to 33cc(*)
E7E6	1.1/4" - 11 BSPP thread 1" - 11 BSP thread only from 23cc to 38cc
E8E6	1.1/2 - 11 BSPP thread 1" - 11 BSP thread for 44cc to 70cc

*) Recommended Port sizes @ 1900rpm

Code	Shaft Seal
X	No seal
N	NBR
M	Double NBR

Code	Flange
D7	98.4 x 128.2 x 50.77 pilot rectangular
H3	146.1 - 01O1.06 SAE "B" 2 bolt flange

Parker 300 Series

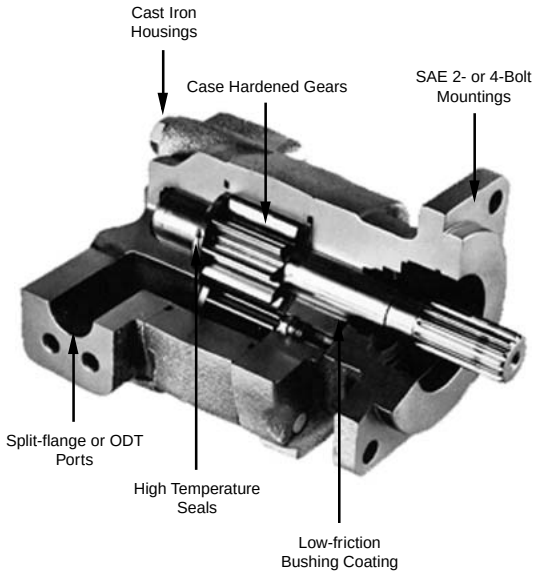
300 Series Cast Iron

Three-piece cast iron construction. Low friction bushing design. Heavy-duty application. Single, multiple, piggyback and thru-drive assemblies.

The PGP/PGM300 Series pumps and motors set the standard for superior performance and reliability in heavy-duty hydraulic application. The three-piece cast iron construction with large area, low-friction bushings provide strength, high efficiency, and long life in severe operating environments. The design includes an advanced thrust plate and seal configuration, which optimizes performance even in high temperature and low viscosity conditions.

The PGP300 Series pumps are available in single,multiple, piggyback, and thru-drive assemblies. Multiple pumps reduce mounting costs, allow for as mall package size and common inlet capabilities. Assemblies up to six pumping sections are available. Piggyback pumps allow the combination of pump sections of different frame size to use a common inlet in tandem configuration.

The thru-drive feature allows an independent piston or gear pump to be mounted to a rear SAE drive pad. Multiple section motors are also available providing enhanced torque and speed control as well as smooth torque ripple. Relief valve, priority valve, load-sense unloading,and other integrated or bolt-on valve options are also available.



PGP Cast Iron Specifications

	GEAR WIDTH	05	07	10	12	15	17	20	22	25
		1/2"	3/4"	1"	1.1/4"	1.1/2"	1.3/4"	2"	2.1/4"	2.1/2"
315	HOUSING SIZE (IN)	0.90	1.14	1.40	1.64	1.90	2.14	2.40		
	HOUSING SIZE (MM)	22.86	28.96	35.56	41.66	48.26	54.36	60.96		
	DISPLACEMENT CC/REV	10.20	15.20	20.30	25.40	30.50	35.60	40.60		
	DISPLACEMENT CI/REV	0.62	0.93	1.24	1.55	1.86	2.17	2.48		
	PRESSURE (PSI)	3500	3500	3500	3500	3300	2900	2500		
	PRESSURE (BAR)	241	241	241	241	228	200	172		
330	HOUSING SIZE (IN)	1.00	1.25	1.50	1.75	2.00	2.25	2.50		
	HOUSING SIZE (MM)	25.40	31.75	38.10	44.45	50.80	57.15	63.50		
	DISPLACEMENT CC/REV	16.10	24.20	32.30	40.40	48.40	56.50	64.60		
	DISPLACEMENT CI/REV	0.98	1.48	1.97	2.46	2.95	3.45	3.94		
	PRESSURE (PSI)	3500	3500	3500	3500	3500	3250	3000		
	PRESSURE (BAR)	241	241	241	241	241	224	207		
350	HOUSING SIZE (IN)	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
	HOUSING SIZE (MM)	25.40	31.75	38.10	44.45	50.80	57.15	63.50	69.85	76.20
	DISPLACEMENT CC/REV	20.90	31.30	41.80	52.20	62.70	73.10	83.60	94.00	104.50
	DISPLACEMENT CI/REV	1.28	1.91	2.55	3.18	3.83	4.46	5.10	5.74	6.38
	PRESSURE (PSI)	3500	3500	3500	3500	3500	3250	3000	2750	2500
	PRESSURE (BAR)	241	241	241	241	241	224	207	190	172
365	HOUSING SIZE (IN)		1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
	HOUSING SIZE (MM)		31.75	38.10	44.45	50.80	57.15	63.50	69.85	76.20
	DISPLACEMENT CC/REV		44.30	59.00	73.80	88.50	103.30	118.00	132.00	147.50
	DISPLACEMENT CI/REV		2.70	3.60	4.50	5.40	6.30	7.20	8.05	9.00
	PRESSURE (PSI)		3500	3500	3500	3500	3500	3500	3250	3000
	PRESSURE (BAR)		241	241	241	241	241	241	224	207

Performance Data shown are the average results based on a series of tests of production units and are not necessarily representative of any one unit.

PGP/PGM315 Series – Coding

Cast Iron Bushing Design

Tandem: Repeat if Required

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(6)	(7)	(10)
	3 1 5											

Pump/Motor (1)	
P	Pump
M	Motor (no tandem motors available)

Unit (2)	
A	Single Unit
B	Tandem Unit (flush studs)
L	Unit with Extended studs

Shaft End Cover (3)	
1	Pump, cw w/o O.B bearing
2	Pump, ccw w/o O.B bearing
4	Pump, cw with O.B bearing (Code 490 Only)
5	Pump, ccw with O.B bearing (Code 590 Only)
9	Motor bi-rot w/o O.B bearing +1/4" ODT drain

Shaft End Cover (4)	
90	4 bolt 72x100mm 80mm pilot
93	SAE 'A' 2 bolt
95	Pad mount for clutch
96	SAE 'B' 2 bolt

Gear Housing (6)	
AB	Pump
EB	Motor

Port End Cover (5)

(Side Ported)			
IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
1"	3/4"	EJ	JE
1"	1/2"	EK	KE
3/4"	3/4"	EL	LE
3/4"	1/2"	EM	ME
1"	-	OE	EO
3/4"	-	OF	FO
-	3/4"	OJ	JO
-	1/2"	OL	LO
SAE Split Flange (motor)			
1"	1"	DR-Double	
3/4"	3/4"	DS-Double	
Unported (pump)			
BI	Unported		
OD Tube Porting (pump)			
1-1/4"	1"	FB	BF
1-1/4"	7/8"	FC	CF
1-1/4"	3/4"	FG	GF
1-1/4"	5/8"	FJ	JF
1"	1"	FL	LF
1"	7/8"	FV	VF
1"	3/4"	FW	WF
1"	5/8"	FX	XF
7/8"	7/8"	FY	YF
7/8"	3/4"	BG	GB
3/4"	3/4"	BJ	JB
3/4"	5/8"	BL	LB
3/4"	1/2"	BN	NB
1 1/4"	-	BV	VB
1"	-	BW	WB
7/8	-	BX	XB
3/4"	-	BY	YB
-	1"	BZ	ZB
-	7/8"	PD	DP
-	3/4"	PE	EP
-	5/8"	PM	MP
-	1/2"	PN	NP

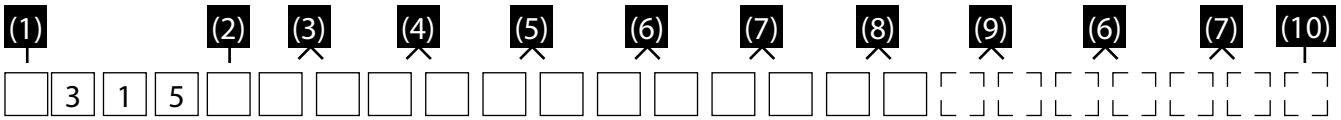
(Side Ported) (cont.)			
IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (motor)			
1"	1/2"	VN-Double	
3/4"	3/4"	VR-Double	
3/4"	1/2"	VQ-Double	

(Rear Ported)			
IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (pump)			
1-1/4"	1"	UC	CU
1-1/4"	7/8"	UF	FU
1-1/4"	3/4"	UN	NU
1"	1"	UD	DU
1"	7/8"	UP	PU
1"	3/4"	UQ	QU
1"	5/8"	UR	RU
7/8"	7/8"	LN	NL
7/8"	3/4"	LP	PL
7/8"	5/8"	LQ	QL
3/4"	3/4"	LR	RL
3/4"	5/8"	LS	SL
3/4"	1/2"	LT	TL
OD Tube Porting (motor)			
1"	1"	RN-Double	
3/4"	3/4"	RQ-Double	
1/2"	1/2"	RS-Double	

PGP/PGM315 Series – Coding

Cast Iron Bushing Design

Tandem: Repeat if Required



Gear Width (7)				
	Gear Width	In.³/rev.	cm³/rev.	Max Pressure
05	1/2"	.62	10.2	3500psi (241 bar)
07	3/4"	.93	15.2	3500psi (241 bar)
10	1"	1.24	20.3	3500psi (241 bar)
12	1-1/4"	1.55	25.4	3500psi (241 bar)
15	1-1/2"	1.86	30.5	3300psi (228 bar)
17	1-3/4"	2.17	35.6	2900psi (200 bar)
20	2"	2.48	40.6	2500psi (172 bar)

Shaft Type (8)	
(For Single or Tandem Units -unless noted)	
97	SAE "A" Keyed
96	SAE "A" Splined
66	SAE "B" Keyed
65	SAE "B" Splined
56	Clutch Pump Tapered, 5/16 - 24 thd. (internal), #6 Woodruff Keyed (single unit only); 1:4 taper

Bearing Carriers (9)				
(Dual Outlet – Pump Only)				
Outlets: for clockwise porting the top port number comes first; or counter-clockwise porting the bottom port number comes first				
IN	OUT		CW	CWW
•	•		•	•
SAE Split Flange				
1-1/4"	3/4"	3/4"	CA	AC
1-1/4"	3/4"	1/2"	DA	AD
1-1/4"	1/2"	1/2"	EA	AE
1"	3/4"	3/4"	FA	AF
1"	3/4"	1/2"	GA	AG
1"	1/2"	1/2"	HA	AH
OD Tube Porting				
1-1/2"	1"	1"	JG	GJ
1-1/2"	1"	7/8"	KG	GK
1-1/2"	7/8"	7/8"	LG	GL
1-1/2"	1"	3/4"	MG	GM
1-1/2"	3/4"	3/4"	NG	GN
1-1/4"	1"	1"	PG	GP
1-1/4"	1"	7/8"	QG	GQ
1-1/4"	7/8"	7/8"	RG	GR
1-1/4"	1"	3/4"	SG	GS
1-1/4"	3/4"	3/4"	TG	GT
1-1/4"	3/4"	5/8"	UG	GU
1-1/4"	3/4"	1/2"	VG	VG
1-1/4"	5/8"	5/8"	WG	GW
1-1/4"	1/2"	1/2"	XG	GX
1"	1"	1"	YG	GY
1"	1"	7/8"	ZG	GZ
1"	7/8"	7/8"	RC	CR
1"	1"	3/4"	SC	CS
1"	3/4"	3/4"	TC	CT
1"	3/4"	3/4"	VC	CV
1"	3/4"	1/2"	WC	CW
1"	5/8"	5/8"	XC	CX
1"	1/2"	1/2"	YC	CY

(Single Outlet - Pump Only)				
IN	OUT		CW	CCW
•	•		•	•
SAE Split Flange				
1-1/4"	1-1/4"		CJ	JC
1-1/4"	1"		CL	LC
1-1/4"	3/4"		CM	MC
1-1/4"	1/2"		HB	BH
1"	1"		HC	CH
1"	3/4"		HF	FH
1"	1/2"		HL	LH
3/4"	3/4"		HM	MH
3/4"	1/2"		HN	NH
OD Tube Porting				
1-1/2"	1-1/2"		KB	BK
1-1/2"	1-1/4"		KC	CK
1-1/2"	1"		KF	FK
1-1/2"	7/8"		KL	LK
1-1/2"	3/4"		KM	MK
1-1/4"	1-1/4"		KN	NK
1-1/4"	1"		KO	OK
1-1/4"	7/8"		KP	PK
1-1/4"	3/4"		KQ	QK
1-1/4"	5/8"		MB	BM
1-1/4"	1/2"		ML	LM
1"	1"		MN	NM
1"	7/8"		MQ	QM
1"	3/4"		MR	RM
1"	5/8"		MS	SM
1"	1/2"		MT	TM
3/4"	3/4"		MU	UM
3/4"	5/8"		MV	VM
3/4"	1/2"		MW	WM
Common Inlet Passage				
No Ports			C	D

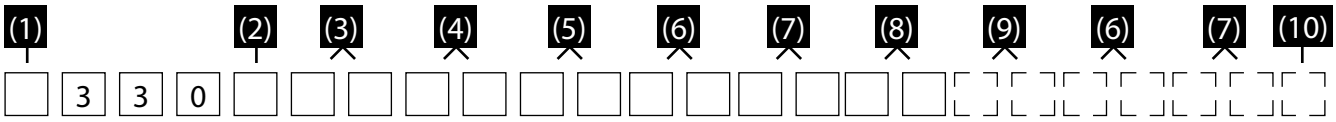
Assembly
Available Option
Priority Flow Control

Connecting Shaft (10)	
For connecting tandem units.	
1	Connecting Shaft

PGP/PGM330 Series Coding

Cast Iron Bushing Design

Tandem: Repeat if Required



Pump/Motor (1)	
P	Pump
M	Motor

Unit (2)	
A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)	
1	Pump, cw, w/o O.B bearing
2	Pump ccw w/o O.B, bearing
4	Pump, cw with O.B, bearing
5	Pump, ccw with O.B. bearing
8	Motor bi-rot w/ O.B, bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B, bearing + 1/4" ODT drain

Shaft End Cover (4)	
42	SAE "B" 4 bolt
78	SAE "C" 4 bolt
97	SAE "B" 2 bolt

Port end covers (5)			
(Side Ported)			
IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
1-1/2"	1-1/4"	EJ	JE
1-1/2"	1"	EK	KE
1-1/4"	1-1/4"	EL	LE
1-1/4"	1"	EM	ME
1"	1"	EN	NE
1-1/2"	-	OF	FO
1-1/4"	-	OG	GO
1"	-	OJ	JO
-	1-1/4"	OM	MO
-	1"	ON	NO
SAE Split Flange (motor)			
1-1/4"	1-1/4"	CS-Double	
1"	1"	CT-Double	
3/4"	3/4"	CV-Double	
OD/Tube Porting (pump)			
1-1/4"	1"	FJ	JF
1"	1"	FL	LF
1-1/4"	-	BG	GB
1"	-	BJ	JB
-	1"	BN	NB
OD/Tube Porting (motor)			
1-1/4"	1-1/4"	VC-Double	
1"	1"	VN-Double	
3/4"	3/4"	VR-Double	

Port end covers (5)			
(Side Ported)			
IN	OUT	CW	CCW
•	•	•	•
Unported (pump)			
BI	Unported		
Unported (motor)			
BA	Unported		

Gear Housing (6)	
AB	Pump
EB	Motor

PGP/PGM330 Series Coding

Cast Iron Bushing Design

Tandem: Repeat if Required

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(6)	(7)	(10)
	3 3 0											

Gear Width (7)				
	Gear Width	in.³/rev	cm³/rev.	Max Pressure
05	1/2"	.99	16.1	3500psi (241 bar)
07	3/4"	1.48	24.2	3500psi (241 bar)
10	1"	1.97	32.3	3500psi (241 bar)
12	1-1/4"	2.46	40.4	3500psi (241 bar)
15	1-1/2"	2.96	48.4	3500psi (241 bar)
17	1-3/4"	3.45	56.5	3250psi (224 bar)
20	2"	3.94	64.5	3000psi (207 bar)

Shaft Type (8)	
For Single or Tandem Units - unless noted)	
7	SAE "C"Spline (two-piece only)
25	SAE "B" Spline
30	SAE "B" Keyed
98	SAE "BB" Splined
43	SAE "BB" Keyed

Bearing Carriers (9)

(Dual Outlet - Pump Only)

Outlets: for clockwise porting the top port number comes first; or counter-clockwise porting the bottom port number comes first.

IN •	OUT •		CW •	CWW •
SAE Split Flange				
2"	1-1/4"	1-1/4	AM	MA
2"	1-1/4"	1"	AN	NA
2"	1"	1"	AP	PA
1-1/2"	1-1/4"	1-1/4"	AT	TA
1-1/2"	1-1/4"	1"	AU	UA
1-1/2"	1"	1"	AV	VA
1-1/4"	1-1/4"	1-1/4"	AW	WA
1-1/4"	1-1/4"	1"	AX	XA
1-1/4"	1"	1"	AY	YA
1"	1"	1"	AZ	ZA
OD Tube Porting				
1-1/2"	1"	1"	GV	VG
1-1/4"	1"	1"	GY	YG
1"	1"	1"	GZ	ZG

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •		CW •	CWW •
SAE Split Flange				
2"	1-1/2"		HB	BH
2"	1-1/4"		HC	CH
2"	1"		HF	FH
1-1/2"	1-1/2"		HL	LH
1-1/2"	1-1/4"		HM	MH
1-1/2"	1"		HN	NH
1-1/4"	1-1/4"		HO	OH
1-1/4"	1"		HP	PH
1"	1"		HQ	QH
1-1/4"	1"		RS	SR
OD Tube Porting				
1 1/2"	1 1/4"	-	KM	MK
1 1/2"	1"	-	KN	NK
1 1/4"	1 1/4"	-	KO	OK
1 1/4"	1"	-	KP	PK
1"	1"	-	KQ	QK

(Combined Outlet)

Outlet for front section.

IN •	OUT •		CW •	CWW •
SAE Split Flange (pump)				
2"	1-1/2"		UN	NU
2"	1-1/4"		UO	OU
1-1/2"	1-1/2"		UP	PU
1-1/2"	1-1/4"		UQ	QU
1-1/4"	1-1/4"		UR	RU
SAE Split Flange (motor)				
1-1/2"	1-1/2"		BB-Double	
1-1/4"	1-1/4"		CC-Double	
1"	1"		EE-Double	
3/4"	3/4"		FF-Double	
OD Tube Porting (pump)				
1-1/2"	1-1/4"		PQ	QP
1-1/4"	1-1/4"		PR	RP
OD Tube Porting (motor)				
1-1/4"	1-1/4"		NN-Double	
1"	1"		QQ-Double	
1"	1"		RR-Double	
Common Inlet Passage (pump)				
No Ports			C	D

Connecting Shaft (10)

For connecting tandem units.

1 Connecting Shaft

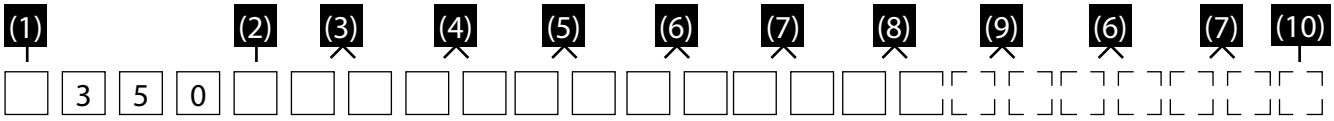
Available Assemby Options.

Piggyback
Priority Valve
Flow Dividers

PGP/PGM350 Series Coding

Cast Iron Bushing Design

Tandem: Repeat if Required



Pump/Motor (1)	
P	Pump
M	Motor

Unit (2)	
A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)	
1	Pump, cw, w/o O.B bearing
2	Pump ccw w/o O.B, bearing
4	Pump, cw with O.B, bearing
5	Pump, ccw with O.B. bearing
8	Motor bi-rot w/ O.B, bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B, bearing + 1/4" ODT drain

Shaft End Cover (4)	
42	SAE "B" 4 bolt
46	SAE "B" 2/4 bolt
62	"ZF" 4 bolt (462 only) 80mm pilot, 80x80mm
78	SAE "C" 4 bolt
97	SAE "B" 2 bolt
98	SAE "C" 2 bolt

Port end covers

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•

SAE Split Flange (pump)

2"	1-1/2"	EC	CE
2"	1-1/4"	EF	FE
2"	1"	EG	GE
1-1/2"	1-1/2"	EH	HE
1-1/2"	1-1/4"	EJ	JE
1-1/2"	1"	EK	KE
1-1/4"	1-1/4"	EL	LE
1-1/4"	1"	EM	ME
1"	1"	EN	NE
2"	-	OE	EO
1-1/2"	-	OF	FO
1-1/4"	-	OG	GO
1"	-	OJ	JO
-	1-1/2"	OL	LO
-	1-1/4"	OM	MO
-	1"	ON	NO

SAE Split Flange (motor)

1-1/2"	1-1/2"	CR-Double
1-1/4"	1-1/4"	CS-Double
1"	1"	CT-Double
3/4"	3/4"	CV-Double

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•

OD Tube Porting (pump)

1-1/2"	1-1/4"	FB	BF
1-1/2"	1"	FC	CF
1-1/4"	1-1/4"	FG	GF`
1-1/4"	1"	FJ	JF
1"	1"	FL	LF
1-1/2"	-	BC	CB
1-1/4"	-	BG	GB
1"	-	BJ	JB
-	1-1/4"	BL	LB
-	1"	BN	NB

OD Tube Porting (motor)

1-1/4"	1-1/4"	VC-Double
1"	1"	VN-Double
3/4"	3/4"	VR-Double

Unported (pump)

Unported	BI	IB

Unported (motor)

BA	Unported

Gear Housing (6)	
AB	Pump
EB	Motor

Parker 300 Series

PGP/PGM350 Series Coding

Cast Iron Bushing Design

Tandem: Repeat if Required

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(6)	(7)	(10)
	3 5 0											

Gear Width (7)

	Gear Width	in.³/rev	cm³/rev.	Max Pressure
05	1/2"	1.28	20.9	3500psi (241 bar)
07	3/4"	1.91	31.3	3500psi (241 bar)
10	1"	2.55	41.8	3500psi (241 bar)
12	1-1/4"	3.19	52.2	3500psi (241 bar)
15	1-1/2"	3.83	62.7	3500psi (241 bar)
17	1-3/4"	4.46	73.1	3250psi (224 bar)
20	2"	5.10	83.6	3000psi (207 bar)
22	2-1/4"	5.74	94.0	2750psi (190 bar)
25	2-1/2"	6.38	104.5	2500psi (172 bar)

Shaft Type (8)

(For Single, Tandem or Two-piece Shaft -unless noted)	
7	SAE "C"Spline
11	SAE "C" Keyed
25	SAE "B" Spline
43	SAE "BB" Keyed
98	SAE "BB" Splined (tandem only)

Bearing Carriers (9)

(Dual Outlet - Pump Only)

Outlets: for clockwise porting the top port number comes first; or counter-clockwise porting the bottom port number comes first.

IN •	OUT •		CW •	CWW •
SAE Split Flange				
2-1/2"	1-1/4"	1-1/4"	AF	FA
2-1/2"	1-1/4"	1"	AG	GA
2-1/2"	1"	1"	AH	HA
2"	1-1/4"	1-1/4"	AM	MA
2"	1-1/4"	1"	AN	NA
2"	1"	1"	AP	PA
1-1/2"	1-1/4"	1-1/4"	AT	TA
1-1/2"	1-1/4"	1"	AU	UA
1-1/2"	1"	1"	AV	VA
1-1/4"	1-1/4"	1-1/4"	AW	WA
1-1/4"	1-1/4"	1"	AX	XA
1-1/4"	1"	1"	AY	YA
OD Tube Porting				
1-1/2"	1"	1"	GV	VG
1-1/4"	1"	1"	GY	YG
1"	1"	1"	GZ	ZG
1-1/2"	1"	1"	GV	VG
1-1/4"	1"	1"	GY	YG
1"	1"	1"	GZ	ZG

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •		CW •	CWW •
SAE Split Flange				
2"	1-1/2"		HB	BH
2"	1-1/4"		HC	CH
2"	1"		HF	FH
1-1/2"	1-1/2"		HL	LH
1-1/2"	1-1/4"		HM	MH
1-1/2"	1"		HN	NH
1-1/4"	1-1/4"		HO	OH
1-1/4"	1"		HP	PH
*1"	1"		HQ	QH
1-1/4"	1"		RS	SR
OD Tube Porting				
2"	1-1/2"	-	KB	BK
2"	1"	-	KF	FK
1-1/2"	1-1/2"	-	KL	LK
1-1/2"	1-1/4"	-	KM	MK
1-1/2"	1"	-	KN	NK
1-1/4"	1-1/4"	-	KO	OK
1-1/4"	1"	-	KP	PK
1"	1"	-	KQ	QK

(Combined Outlet)

Outlet for front section.

IN •	OUT •		CW •	CWW •
SAE Split Flange (pump)				
2"	1-1/2"		UN	NU
2"	1-1/4"		UO	OU
1-1/2"	1-1/2"		UP	PU
1-1/2"	1-1/4"		UQ	QU
1-1/4"	1-1/4"		UR	RU
SAE Split Flange (motor)				
2"	2"		AA-Double	
1-1/2"	1-1/2"		BB-Double	
1-1/4"	1-1/4"		CC-Double	
1"	1"		EE-Double	
3/4"	3/4"		FF-Double	
OD Tube Porting (pump)				
2"	1-1/2"		PE	EP
2"	1-1/4"		PM	MP
1-1/2"	1-1/2"		PN	NP
1-1/2"	1-1/4"		PQ	QP
1-1/4"	1-1/4"		PR	RP
OD Tube Porting (motor)				
1-1/2"	1-1/2"		MM-Double	
1-1/4"	1-1/4"		NN-Double	
1"	1"		QQ-Double	
3/4"	3/4"		RR-Double	
Common Inlet Passage (pump)				
No Ports			C	D

Connecting Shaft (10)

For connecting tandem units.
1 Connecting Shaft

Available Assemby Options.

Piggyback

Add-a-pump

Flow Dividers

PGP/PGM365 Series Coding

Cast Iron Bushing Design

Tandem: Repeat if Required

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(6)	(7)	(10)
	3 6 5											

Pump/Motor (1)	
P	Pump
M	Motor

Unit (2)	
A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)	
1	Pump. cw w/o O.B bearing
2	Pump ccw w/o O.B, bearing
4	Pump, cw with O.B, bearing
5	Pump, ccw with O.B. bearing
8	Motor bi-rot w/ O.B, bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B, bearing + 1/4" ODT drain

Shaft End Cover (4)	
42	SAE "B" 4 bolt
78	SAE "C" 4 bolt
97	SAE "B" 2 bolt
98	SAE "C" 2 bolt

Port end cover (5)			
(Side Ported)			
IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
2"	1-1/2"	EC	CE
2"	1-1/4"	EF	FE
2"	1"	EG	GE
1-1/2"	1-1/2"	EH	HE
1-1/2"	1-1/4"	EJ	JE
1-1/2"	1"	EK	KE
1-1/4"	1-1/4"	EL	LE
1-1/4"	1"	EM	ME
1"	1"	EN	NE
2"	-	OE	EO
1-1/2"	-	OF	FO
1-1/4"	-	OG	GO
1"	-	OJ	JO
-	1-1/2"	OL	LO
-	1-1/4"	OM	MO
-	1"	ON	NO
SAE Split Flange (motor)			
1-1/2"	1-1/2"	CR-Double	
1-1/4"	1-1/4"	CS-Double	
1"	1"	CT-Double	
3/4"	3/4"	CV-Double	

(Side Ported)			
IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (pump)			
1-1/2"	1-1/4"	FB	BF
1-1/2"	1"	FC	CF
1-1/4"	1-1/4"	FG	GF`
1-1/4"	1"	FJ	JF
1"	1"	FL	LF
1-1/2"	-	BC	CB
1-1/4"	-	BG	GB
1"	-	BJ	JB
-	1-1/4"	BL	LB
-	1"	BN	NB
OD Tube Porting (motor)			
1-1/4"	1-1/4"	VC-Double	
1"	1"	VN-Double	
3/4"	3/4"	VR-Double	
Unported (pump)			
Unported		BI	IB
Unported (motor)			
BA	Unported		

Gear Housing (6)	
AB	Pump
EB	Motor

Parker 300 Series

PGP/PGM365 Series Coding

Cast Iron Bushing Design

Tandem: Repeat if Required

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(6)	(7)	(10)
	3 6 5											

Gear Width (7)

	Gear Width	in.³/rev	cm³/rev.	Max Pressure
07	3/4"	2.70	44.3	3500psi (241 bar)
10	1"	3.60	59.0	3500psi (241 bar)
12	1-1/4"	4.50	73.8	3500psi (241 bar)
15	1-1/2"	5.40	88.5	3500psi (241 bar)
17	1-3/4"	6.30	103.3	3500psi (241 bar)
20	2"	7.20	118.0	3500psi (241 bar)
22	2-1/4"	8.10	132.8	3250psi (224 bar)
25	2-1/2"	9.00	147.5	3000psi (207 bar)

Shaft Type (8)

For Single or Tandem Units - unless noted)

7	SAE "C"Spline
11	SAE "C" Keyed
25	SAE "B" Spline (Single only)

Bearing Carriers (9)

(Dual Outlet - Pump Only)

Outlets: for clockwise porting the top port number comes first; or counter-clockwise porting the bottom port number comes first.

IN •	OUT •		CW •	CWW •
SAE Split Flange				
2-1/2"	1-1/2"	1-1/2"	AC	CA
2-1/2"	1-1/2"	1-1/4"	AD	DA
2-1/2"	1-1/2"	1"	AE	EA
2-1/2"	1-1/4"	1-1/4"	AF	FA
2-1/2"	1-1/4"	1"	AG	GA
2-1/2"	1"	1"	AH	HA
2"	1-1/2"	1-1/2"	AJ	JA
2"	1-1/2"	1-1/4"	AK	KA
2"	1-1/2"	1"	AL	LA
2"	1-1/4"	1-1/4"	AM	MA
2"	1-1/4"	1"	AN	NA
2"	1"	1"	AP	PA
1-1/2"	1-1/2"	1-1/2"	AQ	QA
1-1/2"	1-1/2"	1-1/4"	AR	RA
1-1/2"	1-1/2"	1"	AS	SA
1-1/2"	1-1/4"	1-1/4"	AT	TA
1-1/2"	1-1/4"	1"	AU	UA
1-1/2"	1"	1"	AV	VA
1-1/4"	1-1/4"	1-1/4"	AW	WA
1-1/4"	1-1/4"	1"	AX	XA
1-1/4"	1"	1"	AY	YA
1"	1"	1"	AZ	ZA
OD Tube Porting				
2"	1-1/2"	1-1/2"	GJ	JG
2"	1-1/2"	1-1/4"	GK	KG
2"	1-1/2"	1"	GL	LG
2"	1-1/4"	1-1/4"	GM	MG
2"	1-1/4"	1"	GN	NG
2"	1"	1"	GP	PG
1-1/2"	1-1/2"	1-1/2"	GQ	QG
1-1/2"	1-1/2"	1-1/4"	GR	RG
1-1/2"	1-1/2"	1"	GS	SG
1-1/2"	1-1/4"	1-1/4"	GT	TG
1-1/2"	1-1/4"	1"	GU	UG
1-1/2"	1"	1"	GV	VG
1-1/4"	1-1/4"	1-1/4"	GW	WG
1-1/4"	1-1/4"	1"	GX	XG
1-1/4"	1"	1"	GY	YG
1"	1"	1"	GZ	ZG

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •	CW •	CWW •
SAE Split Flange			
2-1/2"	1-1/2"	CJ	JC
2-1/2"	1-1/4"	CL	LC
2-1/2"	1"	CM	MC
2"	1-1/2"	HB	BH
2"	1-1/4"	HC	CH
2"	1"	HF	FH
1-1/2"	1-1/2"	HL	LH
1-1/2"	1-1/4"	HM	MH
1-1/2"	1"	HN	NH
1-1/4"	1-1/4"	HO	OH
1-1/4"	1"	HP	PH
1"	1"	HQ	QH
2-1/2"	1-1/2"	NR	RN
1-1/4"	1"	RS	SR
OD Tube Porting			
2"	1-1/2"	KB	BK
2"	1-1/4"	KC	CK
2"	1"	KF	FK
1-1/2"	1-1/2"	KL	LK
1-1/2"	1-1/4"	KM	MK
1-1/2"	1"	KN	NK
1-1/4"	1-1/4"	KO	OK
1-1/4"	1"	KP	PK
1"	1"	KQ	QK

(Combined Outlet)

Outlet for front section.

IN •	OUT •	CW •	CWW •
SAE Split Flange (pump)			
2-1/2"	1-1/2"	UC	CU
2-1/2"	1-1/4"	UF	FU
2"	1-1/2"	UN	NU
2"	1-1/4"	UO	OU
1-1/2"	1-1/2"	UP	PU
1-1/2"	1-1/4"	UQ	QU
1-1/4"	1-1/4"	UR	RU
SAE Split Flange (motor)			
2"	2"	AA-Double	
1-1/2"	1-1/2"	BB-Double	
1-1/4"	1-1/4"	CC-Double	
1"	1"	EE-Double	
3/4"	3/4"	FF-Double	
OD Tube Porting (pump)			
2"	1-1/2"	PE	EP
2"	1-1/4"	PM	MP
1-1/2"	1-1/2"	PN	NP
1-1/2"	1-1/4"	PQ	QP
1-1/4"	1-1/4"	PR	RP
OD Tube Porting (motor)			
1-1/2"	1-1/2"	ww-Double	
1-1/4"	1-1/4"	NN-Double	
1"	1"	QQ-Double	
3/4"	3/4"	RR-Double	

Connecting Shaft (10)

For connecting tandem units.

1 Connecting Shaft

Available Assemby Options.

Piggyback

Add-a-pump

Flow Dividers

PGP315 Pump Performance Data

Speed RPM	Output Flow / input power	Gear Widths						
		1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"
900	GPM	2.0	3.2	4.4	5.5	6.7	7.9	9.0
	LPM	8	12	17	21	26	30	34
	HP	5	8	11	13	15	15	15
	kW	4	6	8	10	11	11	11
1200	GPM	2.8	4.4	6.0	7.6	9.2	10.7	12.2
	LPM	11	17	23	29	35	40	46
	HP	7	11	14	18	20	21	20
	kW	5	8	11	13	15	15	15
1500	GPM	3.6	5.6	7.7	9.6	11.6	13.5	15.4
	LPM	14	21	29	36	44	51	58
	HP	9	13	18	22	25	26	25
	kW	7	10	13	16	19	19	19
1800	GPM	4.4	6.8	9.3	11.6	14.0	16.3	18.6
	LPM	17	26	35	44	53	62	70
	HP	11	16	21	27	30	31	30
	kW	8	12	16	20	22	23	23
2100	GPM	5.2	8.1	10.9	13.6	16.4	19.1	21.8
	LPM	20	30	41	51	62	72	83
	HP	12	19	25	31	35	36	35
	kW	9	14	18	23	26	27	26
2400	GPM	6.0	9.3	12.5	15.6	18.8	21.9	25.1
	LPM	23	35	47	59	71	83	95
	HP	14	21	28	35	40	41	40
	kW	11	16	21	26	30	31	30
3000	GPM	7.7	11.7	15.7	19.6	23.7	27.6	31.5
	LPM	29	44	59	74	90	104	119
	HP	18	27	35	44	50	51	51
	kW	13	20	26	33	37	38	38

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120ºF viscosity 150 SU at 100ºF.

Note: Pump output flow is at the maximum rated pressure.

PGM315 Motor Performance Data

Speed RPM	Gear Width									
	1" 3500 psi		1-1/4" 3500 psi		1-1/2" 3300 psi		1-3/4" 2900 psi		2" 2500 psi	
	A	B	A	B	A	B	A	B	A	B
900	7.1	665	8.3	830	9.6	940	10.9	965	12.2	950
	27	75.1	32	93.8	37	106.2	41	109.0	46	107.3
1200	8.8	665	10.5	830	12.2	940	13.8	965	15.5	950
	33	75.1	40	93.8	46	106.2	52	109.0	59	107.3
1500	10.6	660	12.6	825	14.7	935	16.7	955	18.8	945
	40	74.6	48	93.2	56	105.6	63	107.9	71	106.8
1800	12.3	655	14.7	820	17.2	930	19.6	950	22.1	940
	46	74.0	56	92.6	65	105.1	74	107.3	84	106.2
2100	14.0	655	16.8	820	19.7	930	22.5	950	25.4	940
	53	74.0	64	92.6	75	105.1	85	107.3	96	106.2
2400	15.7	640	18.9	800	22.2	910	25.4	930	28.8	920
	59	72.3	72	90.4	84	102.8	96	105.1	109	103.9
3000	19.0	640	23.0	800	27.2	905	31.2	925	35.3	915
	72	72.3	87	90.4	103	102.3	118	104.5	134	103.4

A:	Input Flow GPM/LPM
B:	Output Torque IN-LBS/Nm

Note: In accordance with our policy of continuing product development, we reserve the right to change specifications in the catalog without notice.

PGP330 Pump Performance Data

Speed RPM	Output Flow / input power	Gear Widths 1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"
900	GPM	3.2	5.1	7.0	8.8	10.6	12.4	14.3
	LPM	12	19	26	33	40	47	57
	HP	9	13	17	21	26	28	29
	kW	6	10	13	16	19	21	22
1200	GPM	4.5	7.0	9.5	12.0	14.5	16.9	19.4
	LPM	17	26	36	45	55	64	73
	HP	11	17	23	28	34	37	39
	kW	8	13	17	21	25	28	29
1500	GPM	5.8	8.9	12.1	15.2	18.3	21.4	24.5
	LPM	22	34	46	57	69	81	93
	HP	14	21	28	35	43	46	49
	kW	11	16	21	26	32	34	36
1800	GPM	7.1	10.8	14.7	18.4	22.1	25.9	29.6
	LPM	27	41	55	70	84	98	112
	HP	17	26	34	43	51	55	58
	kW	13	19	25	32	38	41	44
2100	GPM	8.4	12.7	17.2	21.6	26.0	30.3	34.7
	LPM	32	48	65	82	98	115	131
	HP	20	30	40	50	60	65	68
	kW	15	22	30	37	44	48	51
2400	GPM	9.6	14.7	19.8	24.8	29.8	34.8	39.8
	LPM	36	55	75	94	113	132	151
	HP	23	34	45	57	68	74	78
	kW	17	25	34	42	51	55	58
3000	GPM	12.2	18.5	24.9	31.2	37.5	43.8	50.1
	LPM	46	70	94	118	142	166	190
	HP	28	43	57	71	85	92	97
	kW	21	32	42	53	64	69	73

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120°F viscosity 150 SU at 100°F.

Note: Pump output flow is at the maximum rated pressure.

PGM330 Motor Performance Data

Speed RPM	Gear Width 1" 3500 psi		1-1/4" 3500 psi		1-1/2" 3500 psi		1-3/4" 3250 psi		2" 3000 psi	
	A	B	A	B	A	B	A	B	A	B
900	10.1	1010	12.3	1270	14.5	1530	16.7	1665	19.0	1770
	38	114.1	47	143.5	55	172.9	63	188.1	72	200.0
1200	12.8	1005	15.7	1265	18.6	1525	21.4	1660	24.3	1760
	49	113.6	59	142.9	70	172.3	81	187.6	92	198.9
1500	15.6	1000	19.1	1255	22.6	1515	26.1	1650	29.6	1750
	59	113.0	72	141.8	85	171.2	99	186.4	112	197.7
1800	18.4	995	22.5	1250	26.6	1505	30.8	1640	34.9	1740
	69	112.4	85	141.2	101	170.0	116	185.3	132	196.6
2100	21.1	990	25.9	1240	30.7	1495	35.4	1625	40.2	1720
	80	111.9	98	140.1	116	168.9	134	183.6	152	194.3
2400	23.9	985	29.3	1235	34.7	1480	40.1	1605	45.5	1695
	90	111.3	111	139.5	131	167.2	152	181.3	172	191.5
3000	29.2	980	35.9	1230	42.6	1475	49.3	1595	56.0	1685
	110	110.7	136	139.0	161	166.7	186	180.2	212	190.4

A:	Input Flow GPM/LPM
B:	Output Torque IN-LBS/Nm

Note: In accordance with our policy of continuing product development, we reserve the right to change specifications in the catalog without notice.

PGP350 Pump Performance Data

Speed RPM	output	Gear Widths								
	input power	1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/4"	2-1/2"
900	GPM	4.0	6.4	8.8	11.2	13.7	16.1	18.6	21.0	23.4
	LPM	15	24	33	42	52	61	70	79	89
	HP	11	17	22	28	33	36	38	39	40
	kW	8	12	17	21	25	27	28	29	30
1200	GPM	5.6	8.8	12.1	15.4	18.7	21.9	25.2	28.4	31.7
	LPM	21	33	46	58	71	83	95	108	120
	HP	15	22	30	37	44	48	51	52	53
	kW	11	17	22	28	33	36	38	39	39
1500	GPM	7.3	11.3	15.5	19.5	23.6	27.7	31.8	35.9	40.0
	LPM	28	43	59	74	89	105	120	136	151
	HP	18	28	37	46	55	60	63	65	66
	kW	14	21	28	34	41	45	47	49	49
1800	GPM	8.9	13.8	18.8	23.6	28.6	33.5	38.4	43.3	48.3
	LPM	34	52	71	89	108	127	145	164	183
	HP	22	33	44	55	67	72	76	78	79
	kW	17	25	33	41	50	54	57	58	59
2100	GPM	10.6	16.3	22.1	27.8	33.6	39.3	45.1	50.8	56.6
	LPM	40	62	84	105	127	149	171	191	214
	HP	26	39	52	65	78	84	89	91	92
	kW	19	29	39	48	58	63	66	68	69
2400	GPM	12.2	18.8	25.4	31.9	38.5	45.1	51.7	58.2	64.8
	LPM	46	71	96	121	146	171	196	220	245
	HP	30	44	59	74	89	96	101	105	106
	kW	22	33	44	55	66	72	76	78	79

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120°F viscosity 150 SU at 100°F.

Note: Pump output flow is at the maximum rated pressure.

PGM350 Motor Performance Data

Speed RPM	Gear Width													
	1" 3500 psi		1-1/4" 3500 psi		1-1/2" 3300 psi		1-3/4" 2900 psi		2" 2500 psi		2-1/4" 3250 psi		2-1/2" 3000 psi	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
900	13.4	1320	16.0	1670	18.6	2025	21.2	2225	23.8	2350	26.4	2425	28.9	2450
	51	149.1	61	188.7	70	228.8	80	251.4	90	265.5	100	274.0	110	276.8
1200	16.9	1315	20.4	1660	23.8	2015	27.2	2215	30.6	2340	34.0	2410	37.4	2435
	64	148.6	77	187.6	90	227.7	103	250.3	116	264.4	129	272.3	142	275.1
1500	20.5	1300	24.7	1640	28.9	1990	33.	2195	37.4	2315	41.7	2385	45.9	2410
	77	146.9	93	185.3	110	224.8	126	248.0	142	261.6	158	269.5	174	272.3
1800	24.0	1295	29.0	1635	34.1	1980	39.2	2180	44.2	2300	49.3	2375	54.4	2395
	91	146.3	110	184.7	129	223.7	148	246.3	167	259.9	187	268.3	206	270.6
2100	27.5	1285	33.4	1620	39.3	1965	45.2	2165	51.1	2285	57.0	2355	62.9	2380
	104	145.2	126	183.0	149	222.0	171	244.6	193	258.2	216	266.1	238	268.9
2400	31.0	1265	37.7	1600	44.4	1940	51.2	2135	57.9	2255	64.9	2325	71.3	2350
	117	142.9	143	180.8	168	219.2	194	241.2	219	254.8	245	262.7	270	265.5

A: Input Flow GPM/ LPM

B: Output Torque IN-LBS/Nm

Note: In accordance with our policy of continuing product development, we reserve the right to change specifications in the catalog without notice.

PGP365 Pump Performance Data

Speed RPM	output								
	input power	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/4"	2-1/2"
900	GPM	8.0	11.5	14.9	18.4	21.8	25.4	28.8	32.3
	LPM	30	44	57	70	83	96	109	122
	HP	24	31	39	47	55	63	66	67
	kW	18	23	29	35	41	47	49	50
1200	GPM	11.5	16.2	20.8	25.5	30.0	34.7	39.3	44.0
	LPM	44	61	79	96	114	131	149	166
	HP	31	42	52	63	73	84	88	90
	kW	23	31	39	47	5	63	65	67
1500	GPM	15.0	20.9	26.6	32.5	38.2	44.1	49.8	55.6
	LPM	57	79	101	123	145	167	188	211
	HP	39	52	66	79	92	105	110	112
	kW	29	39	49	59	68	78	82	84
1800	GPM	18.5	25.6	32.5	39.5	46.4	53.4	60.3	67.3
	LPM	70	97	123	149	176	202	228	255
	HP	47	63	79	94	110	126	131	135
	kW	35	47	89	70	82	94	98	101
2100	GPM	22.0	30.2	38.3	46.5	54.6	62.8	708	79.0
	LPM	83	114	145	176	207	238	268	299
	HP	55	73	92	110	128	147	153	157
	kW	41	55	68	82	96	110	114	117
2400	GPM	25.6	34.9	44.2	535	62.8	72.1	81.4	90.7
	LPM	97	132	167	203	238	273	308	343
	HP	63	84	105	126	147	168	175	180
	kW	47	63	78	94	110	125	131	134

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120°F viscosity 150 SU at 100°F.

Note: Pump output flow is at the maximum rated pressure.

PGM365 Motor Performance Data

Speed RPM	Gear Width													
	1" 3500 psi		1-1/4" 3500 psi		1-1/2" 3500 psi		1-3/4" 3250 psi		2" 3000 psi		2-1/4" 2750 psi		2-1/2" 2500 psi	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
900	18.4	1865	22.0	2355	25.6	2860	29.2	3370	32.9	3850	36.5	4020	40.1	4125
	70	210.7	83	266.1	97	323.1	111	380.8	124	435.0	138	454.2	152	466.1
1200	23.3	1845	28.1	2330	32.9	2830	37.6	3335	42.4	3810	47.2	3980	52.0	4080
	88	208.5	106	263.3	124	319.7	142	376.8	160	430.5	179	449.7	197	461.0
1500	28.2	1815	34.1	2295	40.1	2780	46.0	3280	52.0	3750	57.9	3915	63.8	4020
	107	205.1	129	259.3	152	314.1	174	370.6	197	423.7	219	442.3	242	454.2
1800	33.1	1805	40.2	2280	47.3	2765	54.4	3265	61.5	3730	68.6	3895	75.7	3995
	125	203.9	152	257.6	179	312.4	206	368.	233	421.4	260	440.1	287	451.4
2100	37.9	1755	46.2	2220	54.4	2690	62.8	3160	71.1	3610	79.3	3770	87.6	3865
	144	198.3	175	250.8	206	303.9	238	357.0	269	407.9	300	426.0	332	436.7
2400	42.8	1705	52.3	2155	61.7	2615	71.2	3055	80.6	3490	90.1	3645	99.5	3740
	162	192.6	198	243.5	234	295.5	269	345.2	305	394.3	341	411.8	377	422.6

A: Input Flow GPM/ LPM

B: Output Torque IN-LBS/Nm

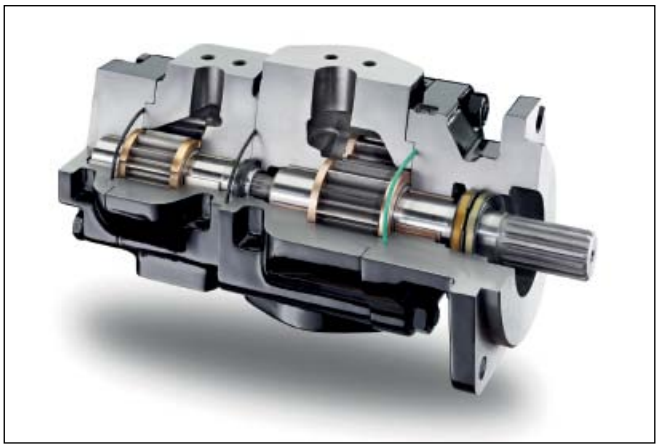
Note: In accordance with our policy of continuing product development, we reserve the right to change specifications in the catalog without notice.

PGP Cast Iron Specifications

600 Series Cast Iron

Features

- Patented interlocking body design
- 12 tooth gears, bronze balance plates
- Tandem, triple and cross-frame pumps available
- Common inlets available for tandem and triple pumps
- Continuous operating pressures up to 310 bar
- Production run-in available to suite OEM application conditions and to provide optimized volumetric efficiencies
- Pressure balanced design for high efficiency
- Reduced system noise levels compared to earlier models
- High power through-drive capability
- Wide range of integral valves for power steering, power brakes, fan drivers and implement hydraulics
- Load sense and solenoid operated unloading



PGP/PGM620 Specification

Pump Displacement	Code	0160	0190	0230	0260	0290	0330	0360	0370	0410	0440	0450	0500	0520
	cm³/rev	16.0	19.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	45.0	50.0	52.0
Max. Continuous Press. PGP 620	bar	275	275	275	275	275	275	250	250	220	210	–	210	210
Max. Continuous Press. PGP 625	bar	–	–	–	–	–	–	280*	–	280*	–	260*	230*	–
Minimum Speed @ Max. outlet press.	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet press.	rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3000	3000

PGP/PGM640 Specification

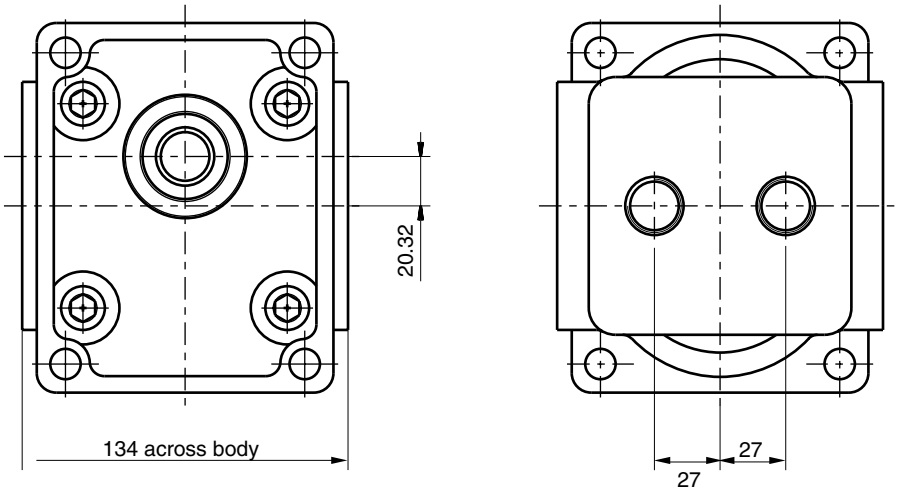
Pump Displ	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm³/rev	30,0	35,0	40,0	45,0	50,0	55,0	60,0	65,0	70,0	75,0	80,0	90,0	100,0
Max. Continuous Pressure	bar	310	310	310	310	310	310	290	265	245	225	210	190	180
Minimum Speed at max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed at = inlet & max. Outlet pressure	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000

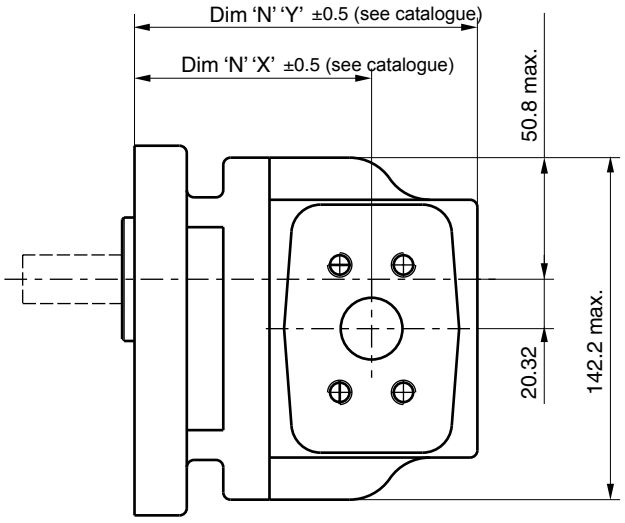
Preferred Model (Single Pump)

Order Code	Model Code	cc/rev	Shaft	Mounting	Seal	Port (Inlet)	Port (Outlet)	Rotation
7029111052	PGP620A0160CD1H3NE6E5B1B1	16	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029111161	PGP620A0160CD1H2NJ7J5B1B1	16	13T, SAE"B" spline	SAE"A" 2 bolts	NBR	Ø20mm Square	Ø15mm Square	CW
7029111298	PGP620A0160CD1H2NT3T2B1B1	16	13T, SAE"B" spline	SAE"A" 2 bolts	NBR	25.4 mm Metric SF	19.0 mm Metric SF	CW
7029111316	PGP620A0160CD1A3VT3T2B1B1	16	13T, SAE"B" spline	SAE"B" 4 bolts	FPM	25.4 mm Metric SF	19.0 mm Metric SF	CW
7029112062	PGP620A0190AD1H3NT3T2B1B1	19	13T, SAE"B" spline	SAE"B" 4 bolts	NBR	25.4 mm Metric SF	19.0 mm Metric SF	CCW
7029111189	PGP620A0190CD1H3NB1B1E6E5	19	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP (rear)	3/4 - 16 BSP (rear)	CW
7029111186	PGP620A0190CD1H3NE6E5B1B1	19	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029112147	PGP620A0190AD1H3NB1B1E6E5	19	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP (rear)	3/4 - 16 BSP (rear)	CCW
7029111168	PGP620A0210CD1H3NE6E5B1B1	21	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029112054	PGP620A0230AD1H3NE6E5B1B1	23	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CCW
7029112115	PGP620A0230AD1H3VT3T2B1B1	23	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	25.4 mm Metric SF	19.0 mm Metric SF	CW
7029111098	PGP620A0230CD1H3NE6E5B1B1	23	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029112187	PGP620A0230AD1H3VT4T3B1B1	23	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	31.8 mm Metric SF	25.4 mm Metric SF	CCW
7029112107	PGP620A0260AD1H3NT4T2B1B1	26	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	31.8 mm Metric SF	19.0 mm Metric SF	CCW
7029111112	PGP620A0260CD1H3NE6E5B1B1	26	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029112192	PGP620A0260AD1H3VT4T3B1B1	26	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	31.8 mm Metric SF	25.4 mm Metric SF	CCW
7029111287	PGP620A0260CD1H3VT4T3B1B1	26	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	31.8 mm Metric SF	25.4 mm Metric SF	CW
7029111066	PGP620A0260CT1D7NE6E5B1B1	26	Ø21.59, Taper Key	Ø50.77 Rectan	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029111304	PGP620A0260CD1H2NB1B1E6E5	26	13T, SAE"B" spline	SAE"A" 2 bolts	NBR	1 - 11 BSP (rear)	3/4 - 16 BSP (rear)	CW
7029111086	PGP620A0290CD1H3NE6E5B1B1	29	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029112052	PGP620A0290AD1H3NE6E5B1B1	29	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CCW
7029111151	PGP620A0290CD1H3NT4T3B1B1	29	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	31.8 mm Metric SF	25.4 mm Metric SF	CW
7029111156	PGP620A0290CD1H2NE6E5B1B1	29	13T, SAE"B" spline	SAE"A" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029111237	PGP620A0290CT1D7NE6E5B1B1	29	Ø21.59, Taper Key	Ø50.77 Rectan	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029111244	PGP620A0290CD1H3VE7E5B1B1	29	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	1-1/4 - 11 BSP	3/4 - 16 BSP	CW
7029111273	PGP620A0290CT1D7NE7E5B1B1	29	Ø21.59, Taper Key	Ø50.77 Rectan	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CW
7029111223	PGP620A0330CM3H3NE6E5B1B1	33	Ø25.4, SAE"B-B" Key	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029112070	PGP620A0330AD1H3NT4T3B1B1	33	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	31.8 mm Metric SF	25.4 mm Metric SF	CCW
7029111001	PGP620A0330CD1H3ND6D5B1B1	33	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 5/16-12 UNF	1 1/16-12 UNF	CW
7029111072	PGP620A0330CT1D7NB1B1E6E5	33	Ø21.59, Taper Key	Ø50.77 Rectan	NBR	1 - 11 BSP (rear)	3/4 - 16 BSP (rear)	CW
7029111087	PGP620A0330CD1H3NT4T3B1B1	33	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	31.8 mm Metric SF	25.4 mm Metric SF	CW
7029111241	PGP620A0330CD1H3NE7E5B1B1	33	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CW
7029112057	PGP620A0330AD1H3NE6E5B1B1	33	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CCW
7029111079	PGP620A0360CD1H3NE8E6B1B1	36	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/2 - 11 BSP	1 - 11 BSP	CW
7029111257	PGP620A0360CD1H3NE6E5B1B1	36	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029111076	PGP620A0370CD1H3ND8D5B1B1	37	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 7/8-12 UNF	1 1/16-12 UNF	CW
7029112046	PGP620A0370AD1H3NE7E5B1B1	37	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CCW
7029111164	PGP620A0370CD1H3NE7E5B1B1	37	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CW
7029111070	PGP620A0370CD1H3NE6E5B1B1	37	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1 - 11 BSP	3/4 - 16 BSP	CW
7029112119	PGP620A0370AD1H3VT5T3B1B1	37	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	38.1 mm Metric SF	25.4 mm Metric SF	CCW
7029111238	PGP620A0410CD1H3WS4S3B1B1	41	13T, SAE"B" spline	SAE"B" 2 bolts	DFPM	1-1/4" SAE SF	1" SAE SF	CW
7029111247	PGP620A0410CD1H3NE7E5B1B1	41	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CW
7029111258	PGP620A0410CD1H2NE8E6B1B1	41	13T, SAE"B" spline	SAE"A" 2 bolts	NBR	1-1/2 - 11 BSP	1 - 11 BSP	CW
7029111270	PGP620A0440CE1H3NT5T3B1B1	44	15T, SAE"B-B" spline	SAE"B" 2 bolts	NBR	38.1 mm Metric SF	25.4 mm Metric SF	CW
7029111049	PGP620A0460CD1H3NS5D6B1B1	46	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/2" SAE SF	1 5/16-12 UNF	CW
7029111243	PGP620A0460CD1H3NE7E6B1B1	46	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	1 - 11 BSP	CW
7029111017	PGP620A0500CT1D7NL3L2B1B1	50	Ø21.59, Taper Key	Ø50.77 Rectan	NBR	Ø27mm Diamond	Ø19mm Diamond	CW
7029111096	PGP620A0500CD1H3NE7E5B1B1	50	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CW
7029111234	PGP620A0500CD1H3VT5T3B1B1	50	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	38.1 mm Metric SF	25.4 mm Metric SF	CW
7029111094	PGP620A0520CD1H3NE7E5B1B1	52	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CW
7029112039	PGP620A0520AD1H3NE7E5B1B1	52	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/4 - 11 BSP	3/4 - 16 BSP	CCW
7029112104	PGP620A0520AD1H3NE8E6B1B1	52	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	1-1/2 - 11 BSP	1 - 11 BSP	CCW

Preferred Model (Single Motor)

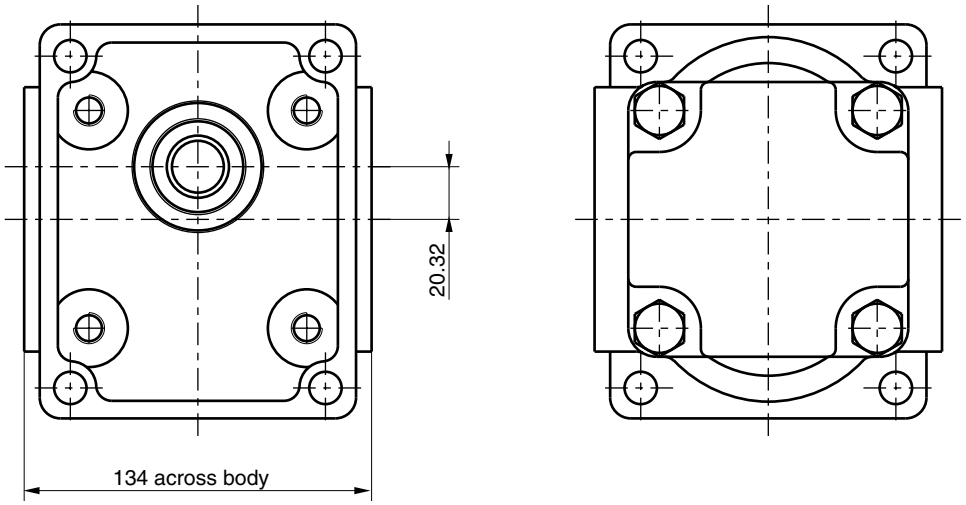
Order Code	Model Code	cc/rev	Shaft	Mounting	Seal	Port (Inlet)	Port (Outlet)	Rotation	Drain
7029219068	PGM620A0190BD1H3VE5E5 B1B1G4	19	13T, SAE"B" spline	SAE"B" 2 bolts	FPM	3/4 - 16 BSP	3/4 - 16 BSP	BI	Rear, 1/4 BSP
7029219153	PGM620A0230BD1H3HE5E5 B1B1G4	23	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	3/4 - 16 BSP	3/4 - 16 BSP	BI	Rear, 1/4 BSP
7029219020	PGM620A0290BD1H3HE5E5 B1B1G4	29	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	3/4 - 16 BSP	3/4 - 16 BSP	BI	Rear, 1/4 BSP
7029219141	PGM620A0290BT1D7NE5E5 B1B1G4	29	Ø21.59, Taper Key	Ø50.77 Rectan	NBR	3/4 - 16 BSP	3/4 - 16 BSP	BI	Rear, 1/4 BSP
7029219118	PGM620A0330BT1D7VE7E7 B1B1G4	33	Ø21.59, Taper Key	Ø50.77 Rectan	FPM	1-1/4 - 11 BSP	1-1/4 - 11 BSP	BI	Rear, 1/4 BSP
7029219002	PGM620A0330BD1H3HE5E5 B1B1G4	33	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	3/4 - 16 BSP	3/4 - 16 BSP	BI	Rear, 1/4 BSP
7029218036	PGM620A0360BT1L3NL2L2 B1B1G4	36	Ø21.59, Taper Key	SAE"B" 2/4 bolts	NBR	Ø19 mm Diamond	Ø19 mm Diamond	BI	Rear, 1/4 BSP
7029219003	PGM620A0370BD1H3HE5E5 B1B1G4	37	13T, SAE"B" spline	SAE"B" 2 bolts	NBR	3/4 - 16 BSP	3/4 - 16 BSP	BI	Rear, 1/4 BSP
7029218006	PGM620A0410BD1L3VE6E6 B1B1G4	41	13T, SAE"B" spline	SAE"B" 2/4 bolts	FPM	1 - 11 BSP	1 - 11 BSP	BI	Rear, 1/4 BSP

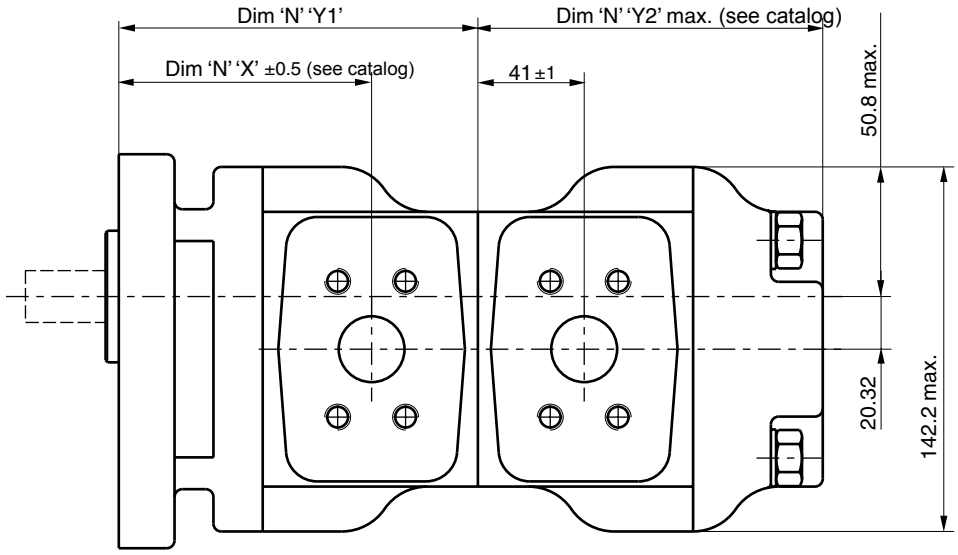




Preferred Model (Tandum Pump)

Order Code	Model Code	cc/rev	Shaft	Mounting	Seal	Port (Inlet)	Port (Outlet)	Rotation
7029121145	PGP620B0210CD1H3NT4T3C-620A0210XB1T3B1B1	21 + 21	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CW
7029121191	PGP620B0210CD1H3WT3T2S-620A0160XT3T2B1B1	21 + 16	13T, SAE"B" Spline	SAE"B" 2 bolts	DFPM	See ordering code	See ordering code	CCW
7029121190	PGP620B0230CD1H3VT4T3S-620A0190XT4T3B1B1	23 + 19	13T, SAE"B" Spline	SAE"B" 2 bolts	FPM	See ordering code	See ordering code	CW
7029122064	PGP620B0290AE1H3NT4T3S-620A0230XT4T3B1B1	29 + 23	15T, SAE"B-B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CCW
7029521109	PGP620B0290CD1H3NE6E5S-511A0040NE5E3B1B1	29 + 4	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CW
7029122073	PGP620B0330AD1H3NT4T3S-620A0190XT3T2B1B1	33 + 19	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CCW
7029121002	PGP620B0370CE1A4MT5T2C-620A0370XB1T2B1B1	37 + 37	15T, SAE"B-B" Spline	SAE"C" 4 bolts	DNBR	See ordering code	See ordering code	CW
7029121082	PGP620B0410CD1H3NS4S2S-620A0370XS4S3B1B1	41 + 37	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CW
7029121166	PGP620B0410CD1H2NE7E5S-620A0330XE7E5B1B1	41 + 33	13T, SAE"B" Spline	SAE"A" 2 bolts	NBR	See ordering code	See ordering code	CW
7029521128	PGP620B0500CD1H2MS4E6S-511A0170XE5E3B1B1	50 + 17	13T, SAE"B" Spline	SAE"A" 2 bolts	DNBR	See ordering code	See ordering code	CW





Ordering code

Heavy-duty cast-iron Pumps and Motors
Series PGP, PGM 620

PG		620[1)]										
Gear Design	Type		Unit	Displace-ment	Rotation	Shaft	Flange	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port [2)]	Rear Pressure Port [2)]

Code	Type
P	Pump
M	Motor

Code	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)

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

Displacement	
Code	ccm
0160	16
0190	19
0230	23
0260	26
0290	29
0330	33
0360*	36*
0370	37
0410*	41*
0440	44
0450**	45**
0500*	50*
0520	52

* PGP, PGM 620 and PGP 625
**PGP 625 only

Code	Rotation
C	Clockwise
A	Counter clock-wise
B	bi-directional

Code	Shaft
D1	13T, 16/32DP, 41.2L, SAE "B" spline
E1	15T, 16/32DP, 46L, SAE "B-B" spline
M3	Ø25.4, 6.3 Key, M8, 46L, SAE "B-B", parallel
T1	Ø21.59, 11.2L, 4.0 Key, M14x1.5, taper 1:8
T2[5)]	Ø25.0, 12L, 5.0 Key, M16x1.5, taper 1:5

[5)] Non standard, on request only

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 Parker Hannifin.

[1)] Available as PGP 625 with 36, 41, 45 and 50 cc/rev only.

[2)] Only coded for the last section.

[3)] Only for motors

Ordering code

Heavy-duty cast-iron Pumps and Motors
Series PGP, PGM 620

			620[1]									4)
Motor Drain Option [3]	Drain Position [3]	Section Connection		Unit	Displacement	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port [2]	Rear Pressure Port [2]		

Code	Section Connection
S	Separate inlets
C	Common inlets

Code	Drain Position
2[5]	Drain on bottom
3[5]	Drain on top
4	Rear drain

[5] Non standard, on request only

Code	Motor Drain Option
B1	no drain
C	9/16-18 UNF thread
G	1/4 BSP thread

Code	Flange
A3	89.8x89.8 - Ø101.6, SAE "B" 4 bolt square
A4	114.5x114.5 - Ø127, SAE "C" 4 bolt square
D7	98.4x128.2 - Ø50.77 rectangular
H2	106.4 - Ø82.55 SAE "A" 2 bolt flange
H3	146.1 - Ø101.6 SAE "B" 2 bolt flange
L3	89.8x89.8 - 101.6 SAE “B” 2/4 bolt flange

Code	Port Options
B1	No ports
D3[5]	3/4 - 16 UNF thread
D4[5]	7/8 - 14 UNF thread
D5[5]	1 1/16 - 12 UN thread
D6[5]*	1 5/16 - 12 UN thread
D7[5]*	1 5/8 - 12 UN thread
D8[5]*	1 7/8 - 12 UN thread
E3	1/2 - 14 BSP thread
E4	5/8 - 14 BSP thread
E5	3/4 - 16 BSP thread
E6*	1 - 11 BSP thread
E7*	1 1/4 - 11 BSP thread
E8*	1 1/2 - 11 BSP thread
J5*	15 mm - Ø35 mm - M6 square
J7*	20 mm - Ø40 mm - M6 square
J8*	18 mm - Ø55 mm - M8 square
J9*	26 mm - Ø55 mm - M8 square
L1*	13 mm-Ø30 mm-M6 diamond
L2*	19 mm-Ø40 mm-M8 diamond
L3*	27 mm-Ø51 mm-M10 diamond

Code	Port Options
S2[5]*	3/4"-3/8-16 UNC SAE Split Flange
S3[5]*	1"-3/8-16 UNC SAE Split Flange
S4[5]*	1 1/4"-7/16-14 UNC SAE Split Flange
S5[5]*	1 1/2"-1/2-13 UNC SAE Split Flange
S6[5]*	2"-1/2-13 UNC SAE Split Flange
T2*	19.0 mm - M10 Metric Split Flange
T3*	25.4 mm - M10 Metric Split Flange
T4*	31.8 mm - M10 Metric Split Flange
T5*	38.1 mm - M12 Metric Split Flange
T6*	50.8 mm - M12 Metric Split Flange

[5] Non standard, on request only

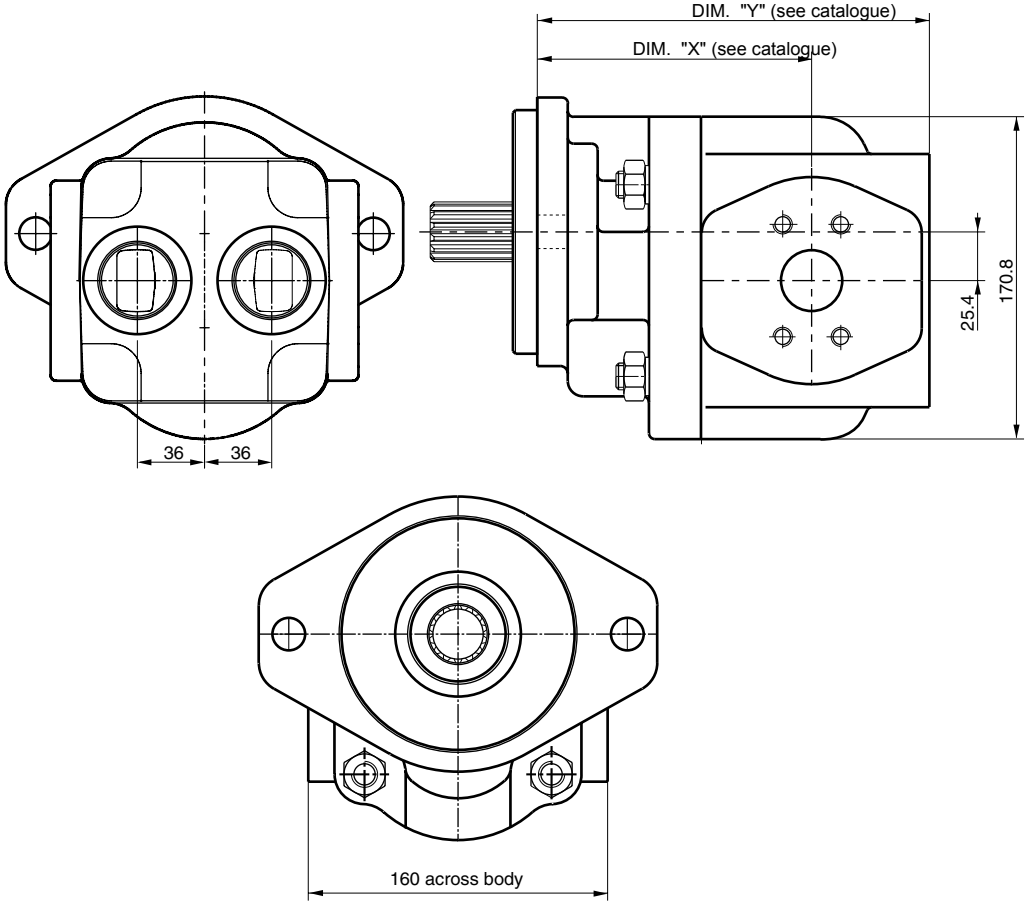
*) Not usable for rear ports

[4] For further "B" triple unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.

PGP640

Preferred Model (Single Pump)

Order Code	Model Code	cc/rev	Shaft	Mounting	Seal	Port (Inlet)	Port (Outlet)	Rotation
7049111062	PGP640A0300CE4K3NE8E7B1B1	30	14T, SAE"C" spline	SAE"C" 2 bolts	NBR	1-1/2 - 11 BSP	1-1/4 - 11 BSP	CW
7049111129	PGP640A0300CE1H3NE8E7B1B1	30	15T, SAE"B-B" spline	SAE"B" 2 bolts	NBR	1-1/2- 11 BSP	1-1/4 - 11 BSP	CW
7049111055	PGP640A0400CD1H3NT4T3B1B1	40	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	31.8 mm Metric SF	25.4mm Metric SF	CW
7049111122	PGP640A0400CD1H3NT5T3B1B1	40	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CW
7049111056	PGP640A0400CE4A4WT4T2B1B1	40	14T, SAE"C" spline	SAE"C" 4 bolts	NBR	31.8 mm Metric SF	19mm Metric SF	CW
7049112020	PGP640A0400AD1H3NT4T3B1B1	40	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	31.8 mm Metric SF	25.4mm Metric SF	CCW
7049112030	PGP640A0400AE4A4NS5S3B1B1	40	14T, SAE"C" spline	SAE"C" 4 bolts	NBR	1-1/2" SAE SF	1" SAE SF	CCW
7049111051	PGP640A0450CE4A4NT5T3B1B1	45	14T, SAE"C" spline	SAE"C" 4 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CW
7049112012	PGP640A0450AE4A4NT5T3B1B1	45	14T, SAE"C" spline	SAE"C" 4 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CCW
7049111052	PGP640A0500CD1H3NT4T2B1B1	50	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	31.8 mm Metric SF	19mm Metric SF	CW
7049111016	PGP640A0500CD1H3NT5T3B1B1	50	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CW
7049112004	PGP640A0500AE4A4NS5S3B1B1	50	14T, SAE"C" spline	SAE"C" 4 bolts	NBR	1-1/2" SAE SF	1" SAE SF	CCW
7049112019	PGP640A0550AD1H3NT5T3B1B1	55	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CCW
7049112027	PGP640A0550AE1H3NT5T3B1B1	55	15T, SAE"B-B" spline	SAE"B" 2 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CCW
7049111050	PGP640A0550CD1H3NT5T3B1B1	55	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CW
7049111059	PGP640A0600CD1H3NT5T3B1B1	60	13T. SAE"B" spline	SAE"B" 2 bolts	NBR	38.1mm Metric SF	25.4mm Metric SF	CW
7049111015	PGP640A0600CE4K3NT6T3B1B1	60	14T, SAE"C" spline	SAE"C" 2 bolts	NBR	50.8mm Metric SF	25.4mm Metric SF	CW
7049111113	PGP640A0600CE1H3VT6T4B1B1	60	15T, SAE"B-B" spline	SAE"B" 2 bolts	FPM	50.8mm Metric SF	31.8mm Metric SF	CW
7049112041	PGP640A0600AE4K3NS6S4B1B1	60	14T, SAE"C" spline	SAE"C" 2 bolts	NBR	2" SAE SF	1-1/4" SAE SF	CCW
7049111013	PGP640A0650CE4A4NT6T5B1B1	65	14T, SAE"C" spline	SAE"C" 4 bolts	NBR	50.8mm Metric SF	38.1mm Metric SF	CW
7049111022	PGP640A0800CE4A4NT6T4B1B1	80	14T, SAE"C" spline	SAE"C" 4 bolts	NBR	50.8mm Metric SF	31.8mm Metric SF	CCW
7049112064	PGP640A1000AE4K3NS6S4B1B1	100	14T, SAE"C" spline	SAE"C" 2 bolts	NBR	2" SAE SF	1-1/4" SAE SF	CCW

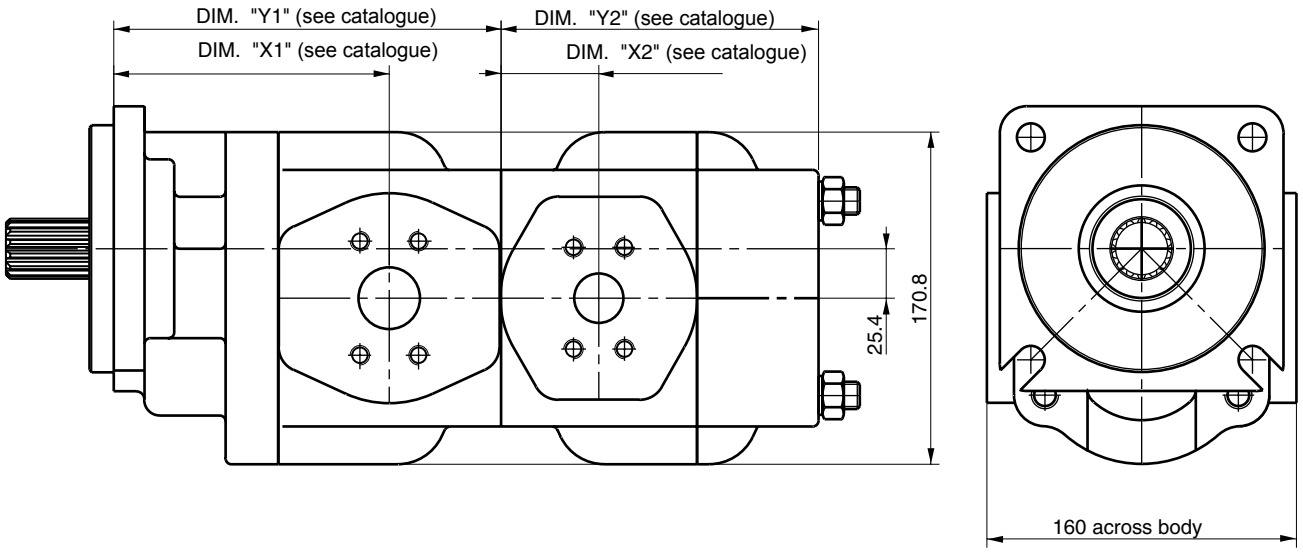


Preferred Model (Single Motor)

Order Code	Model Code	cc/rev	Shaft	Mounting	Seal	Port (Inlet)	Port (Outlet)	Rotation	Drain
7049219008	PGM640B0500BD1A3TE7E 7B1B1B1	50	13T, SAE"B" spline	SAE"B" 4 bolts	PTFE	1-1/4 - 11 BSP	1-1/4 - 11 BSP	BI	no drain
7049219004	PGM640A0500BE4K3TT3T3 B1B1G4	50	14T, SAE"C" spline	SAE"C" 2 bolts	PTFE	25.4mm Metric SF	25.4mm Metric SF	BI	Rear, 1/4 BSP
7049219022	PGM640B0500BE4A4TT4T4 B1B1B1	50	14T, SAE"C" spline	SAE"C" 4 bolts	PTFE	31.8 mm Metric SF	31.8 mm Metric SF	BI	no drain
7049211004	PGM640B0550CE1A3TT4T 4B1B1G4	55	15T, SAE"B-B" spline	SAE"B" 4 bolts	PTFE	31.8 mm Metric SF	19mm Metric SF	CW	Rear, 1/4 BSP
7049219007	PGM640A0600BE4K3TT3T3 B1B1G4	60	14T, SAE"C" spline	SAE"C" 2 bolts	PTFE	25.4mm Metric SF	25.4mm Metric SF	BI	Rear, 1/4 BSP
7049219002	PGM640B0750BE4A4TT4T4 B1B1B1	75	14T, SAE"C" spline	SAE"C" 4 bolts	PTFE	31.8 mm Metric SF	19mm Metric SF	BI	no drain

Preferred Model (Tandum Pump)

Order Code	Model Code	cc/rev	Shaft	Mounting	Seal	Port (Inlet)	Port (Outlet)	Rotation
7049521116	PGP640B0400CD1H3NT5T3S-511A0110XE5E3B1B1	40+11	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CW
7049121027	PGP640B0400CE4A4NE8E7S-640A0400XE8E7B1B1	40+40	14T, SAE"C" Spline	SAE"C" 4 bolts	NBR	See ordering code	See ordering code	CW
7049532024	PGP640B0450AD1H3NT5T3S-511B0190XJ7J5S-511A0110XJ7J5B1B1	45+19+11	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CCW
7049122004	PGP640B0500AE4A4MT6T3C-640A0400XB1T3B1B1	50+40	14T, SAE"C" Spline	SAE"C" 4 bolts	NBR	See ordering code	See ordering code	CCW
7049521050	PGP640B0550CD1H3NS5S3C-511A0230XE5E5B1B1	55+23	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CW
7049521031	PGP640B0550CD1H3NS5S4C-511A0170XB1E3B1B1	55+17	13T, SAE"B" Spline	SAE"B" 2 bolts	NBR	See ordering code	See ordering code	CW
7049532012	PGP640B0550AE1A4NT4T3C-620B0290XE6E6S-620A0190XE6B1B1	55+29+19	15T, SAE"B-B" Spline	SAE"C" 4 bolts	NBR	See ordering code	See ordering code	CW
7049522026	PGP640B0800AE4A4NS6S4C-620A0260XB1S3B1B1	80+26	14T, SAE"C" Spline	SAE"C" 4 bolts	NBR	See ordering code	See ordering code	CCW



Ordering Code

Heavy-duty cast-iron Pumps and Motors
Series PGP, PGM 640

PG		640										
Gear design	Type		Unit	Dis-placement	Rotation	Shaft	Flange	Shaft seal	Side Suction Port	Side Pressure Port	Rear Suction Port [2]	Rear Pressure Port [2]

Code	Type
P	Pump
M	Motor

Code	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)

Displacement	
Code	ccm
0300	30.0
0350	35.0
0400	40.0
0450	45.0
0500	50.0
0550	55.0
0600	60.0
0650	65.0
0700	70.0
0750	75.0
0800	80.0
0900*	90.0
0100	100.0

*) Non standard, on request only

Code	Rotation
C	Clockwise
A	Counter clockwise
B	Bi-directional

Code	Shaft
D1	13T, 16/32DP, 41.2L, SAE ”B” spline
E1	15T, 16/32DP, 46.0L, SAE ”B-B” spline
E4	14T, 12/24DP, 55.6L, SAE ”C” spline
N1	1 1/4" Keyed SAE-C

Code	Shaft Seal
X	No seal
N	NBR
V	FPM
T	PTFE (motors only)

Code	Flange
A3	89.8x89.8 - Ø101.06, SAE "B" 4 bolt square flange
A4	114.5x114.5 - Ø127, SAE "C" 4 bolt square flange
H3	146.1 - Ø101.06 SAE "B" 2 bolt flange
K3	181.0 - Ø127 SAE ”C” 2 bolt flange

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 Parker Hannifin.

[2] Only coded for the last section.
[3] Only for motors

Heavy-duty cast-iron Pumps and Motors
Series PGP, PGM 640

Ordering code

B	1	B	1				640								4)
No rear ports (rear ports on request)				Motor Drain Option 3)	Drain Position 3)	Section Connection		Unit	Displacement	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port 2)	Rear Pressure Port 2)	

Code	Section Connection
S	Separate inlets
C	Common inlets

Code	Drain Position
2	Drain on bottom
3	Drain on top
4	Rear drain

Code	Motor Drain Option
B1	no drain
C	9/16-18 UNF thread
G	1/4 BSP thread

Code	Port Options
B1	No ports
D5[5)]	1 1/16 - 12 UN thread
D6[5)]*	1 5/16 - 12 UN thread
D7[5)]*	1 5/8 - 12 UN thread
D8[5)]*	1 7/8 - 12 UN thread
E4	5/8 - 14 BSP thread
E5	3/4 - 16 BSP thread
E6*	1 - 11 BSP thread
E7*	1 1/4 - 11 BSP thread
E8*	1 1/2 - 11 BSP thread
J8*	18 mm - Ø55 mm - M8 square
J9*	26 mm - Ø55 mm - M8 square
L2*	19 mm-Ø40 mm-M8 diamond
L3*	27 mm-Ø51 mm-M10 diamond

Code	Port Options
S2[5)]*	3/4"-3/8-16 UNC SAE Split Flange
S3[5)]*	1"-3/8-16 UNC SAE Split Flange
S4[5)]*	1 1/4"-7/16-14 UNC SAE Split Flange
S5[5)]*	1 1/2"-1/2-13 UNC SAE Split Flange
S6[5)]*	2"-1/2-13 UNC SAE Split Flange
T2*	19.0 mm - M10 Metric Split Flange
T3*	25.4 mm - M10 Metric Split Flange
T4*	31.8 mm - M10 Metric Split Flange
T5*	38.1 mm - M12 Metric Split Flange
T6*	50.8 mm - M12 Metric Split Flange

5) Non standard, on request only

*) Not usable for rear ports

4) For further "B" triple unit repeat
displacement,
shaft seal between sections,
side suction port,
side pressure port,
rear suction port,
rear pressure port.

Application Market

Market	Applications
Agricultural	Mover, Haypresses, Forwarder, Shredder
Industrial	Hydraulic Power Units
Construction	Loader Backhoe, Wheel Loader, Telehandler
Material Handling	Forklift, Reachstacker, Crane
Mining & Drilling	Drill Rig, Loader, Dump Truck











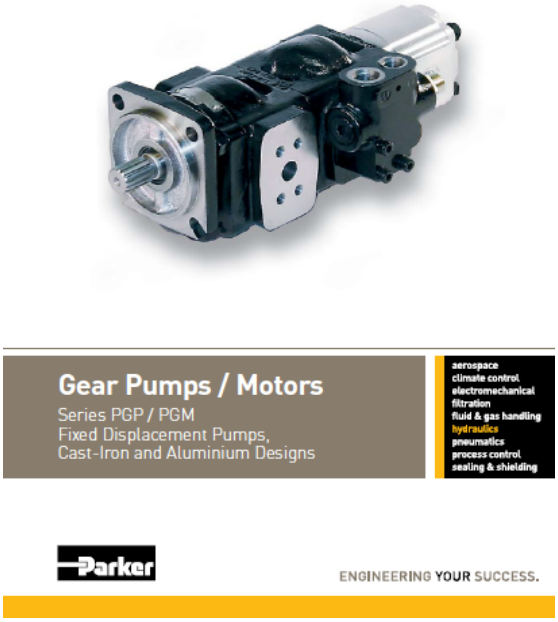





Literature

Ref: Catalog HY09-0300/US
(PGP/M 315, 330, 350, 365)

Ref: Catalogue HY30-3300/UK
(PGP/M 511, 517, 620, 640)



Vane Pumps

1/ Fixed Displacement

ENGINEERING YOUR SUCCESS.

SDV Series

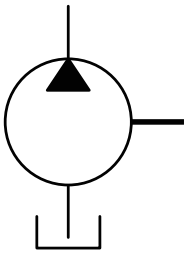
Category

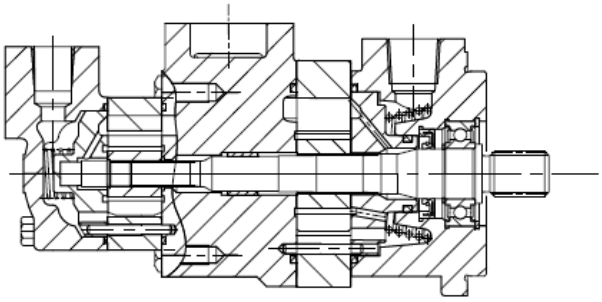
Characteristics

The SDV fixed displacement vane pump range offers a quiet efficient solution in many lower and medium pressure applications.

Numerous shaft options and porting combinations result in easier installations.

Single and double pump combinations, 7 displacements in each series.





Features

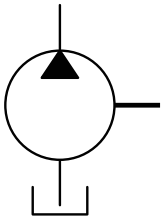
- SDV 10 and SDV 20 Series
- Displacements 3.3 cc/rev - 42.4 cc/rev
- Speed range to 4200 RPM
- Pressure to 175 Bar
- Quiet Operation
- Various shaft and mount options
- Single and double pump options

Series	Size	Displacement (cc/rev)	Max speed (rpm)	Max Pressure Int (bar)	Max Pressure Cont (bar)	Mounting	Shafts
SDV10	1	3.3	4200	175	160	SAE A	3/4" key 5/8" 9T Spl 3/4" 11T Spl
	2	6.6	4200	175	160		
	3	9.8	3900	175	160		
	4	13.1	3000	175	160		
	5	16.4	2400	175	160		
	6	19.5	2100	150	140		
	7	22.8	1800	140	140		
SDV20	6	19.5	3600	175	160	SAE A	3/4" key 5/8" 9T Spl 3/4" 11T Spl
	7	22.8	2700	175	160		
	8	26.5	2400	175	160		
	9	1807	2100	175	160		
	11	36.4	1800	175	160		
	12	39	1800	150	140		
	13	42.4	1800	150	140		
SDV2010	As Above	As selected	Lower limit of selected sizes.	Operation of selected size		SAE B 2-bolt	7/8" key 7/8" 13T Spl
SDV2020	As Above	As selected	Lower limit of selected sizes.	Operation of selected size		SAE B 2-bolt	7/8" key 7/8" 13T Spl

SDV Series

SDV10, SDV20 Series

Category



SDV								

Code	Series
10	SDV10
20	SDV20

Code	Mounting
1	SAE 'A' 2 Bolt

Code	Inlet Port	
	SDV10	SDV20
S	1 5/16"-12 SAE Straight Thread	1 5/8"-12 SAE Straight Thread
P	1" NPTF Thread	1" NPTF Thread
B	1" BSPP Thread	1" BSPP Thread

Code	Displacement
SDV20	
6	19.5 cc/rev
7	22.8 cc/rev
8	26.5 cc/rev
9	29.7 cc/rev
11	36.4 cc/rev
12	39.0 cc/rev
13	42.4 cc/rev
SDV10	
1	3.3 cc/rev
2	6.6 cc/rev
3	9.8 cc/rev
4	13.1 cc/rev
5	16.4 cc/rev
6	19.5 cc/rev
7	22.8 cc/rev

Code	Rotation
L	Counter-Clockwise
	Omit For Clockwise

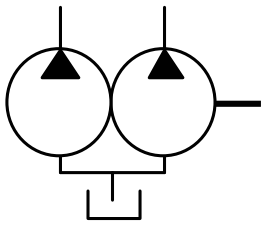
Code	Outlet Port Location (Viewed from cover end)
A	Opposite Inlet Port
B	90° CCW from Inlet
C	In Line with Inlet
D	90° CW from Inlet

Code	Shaft	
	SDV10	SDV20
1	3/4" Parallel Keypad	3/4" Parallel Keypad
11	5/8" 9T Spline Shaft	3/4" 11T Spline Shaft (Long)
38	3/4" 11T Spline Shaft (Short)	3/4" 11T Spline Shaft (Short)
62		5/8" 9T Spline Shaft

Code	Outlet Port	
	SDV10	SDV20
S	3/4"-16 SAE Straight Thread	3/4"-16 SAE Straight Thread
P	1/2"-NPTF Thread	1/2"-NPTF Thread
B	1/2"-BSPP Thread	1/2"-BSPP Thread

SDV Series

SDV2010, SDV2020 Series



SDV

Code	Series
2010	SDV2010
2020	SDV2020

Code	Mounting
1	SAE 'B' 2 Bolt

Code	Inlet Port
F	1-1/2" SAE 61 (2010)
	2" SAE 61 (2020)

Code	Displacement (Shaft/Cover End)
SDV10	
1	3.3 cc/rev
2	6.6 cc/rev
3	9.8 cc/rev
4	13.1 cc/rev
5	16.4 cc/rev
6	19.5 cc/rev
7	22.8 cc/rev
SDV20	
6	19.5 cc/rev
7	22.8 cc/rev
8	26.5 cc/rev
9	29.7 cc/rev
11	36.4 cc/rev
12	39.0 cc/rev
13	42.4 cc/rev

Code	Outlet Port (Shaft End)	Code	Outlet Port (Shaft End)
S	1.0625-12 Straight Thread	B	3/4" BSPP Thread

Code	Outlet Port (Cover End)	Code	Outlet Port (Cover End)
SDV2010		SDV2010	
S	3/4"-16 Straight Thread	B	1/2" BSPP Thread
SDV2020		SDV2020	
S	1.0625-12 Straight Thread	B	3/4" BSPP Thread

Code	Rotation
	Omit for Clockwise
L	Counter-Clockwise

Code	Position of Outlet Port (Viewed from cover end)
SDV2010	
AA	#2 Oulet 135' CCW From Inlet
AB	#2 Outlet 45' CCW From Inlet
AC	#2 Outlet 45' CW From Inlet
AD	#2 Outlet 135' CW From Inlet
Double Pump With #1 Outlet 90° CCW From Inlet	
BA	#2 Outlet 135' CCW From Inlet
BB	#2 Outlet 45' CCW From Inlet
BC	#2 Outlet 45' CW From Inlet
BD	#2 Outlet 135' CW From Inlet
Double Pump With #1 Outlet in Line With Inlet	
CA	#2 Outlet 135' CCW From Inlet
CB	#2 Outlet 45' CCW From Inlet
CC	#2 Outlet 45' CW From Inlet
CD	#2 Outlet 135' CW From Inlet
Double Pump With #1 Outlet 90° CW From Inlet	
DA	#2 Outlet 135' CCW From Inlet
DB	#2 Outlet 45' CCW From Inlet
DC	#2 Outlet 45' CW From Inlet
DD	#2 Outlet 135' CW From Inlet

Code	Position of Outlet Port (Viewed from cover end)
SDV2020	
AA	#2 Oulet opposite From Inlet
AB	#2 Outlet 90' CCW From Inlet
AC	#2 Outlet in line with Inlet
AD	#2 Outlet 90' CW From Inlet
Double Pump With #1 Outlet 90° CCW From Inlet	
BA	#2 Outlet opposite From Inlet
BB	#2 Outlet 90' CCW From Inlet
BC	#2 Outlet in line with Inlet
BD	#2 Outlet 90' CW From Inlet
Double Pump With #1 Outlet in Line With Inlet	
CA	#2 Outlet opposite From Inlet
CB	#2 Outlet 90' CCW From Inlet
CC	#2 Outlet in line with Inlet
CD	#2 Outlet 90' CW From Inlet
Double Pump With #1 Outlet 90° CW From Inlet	
DA	#2 Outlet opposite From Inlet
DB	#2 Outlet 90' CCW From Inlet
DC	#2 Outlet in line with Inlet
DD	#2 Outlet 90' CW From Inlet

Code	Shaft End
1	7/8" Parallel Keyed
11	7/8" 13T Spline

Single Pumps

T7B, T6C, T7D, T7E Series

Characteristics

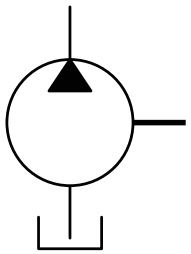
The Parker 'Denison' fixed displacement vane pump range offers a quieter more efficient solution to many high pressure applications.

Designed with versatility in mind, numerous shaft options and porting combinations result in easier installation.

The pumps will operate over a wide speed range with low to high viscosity fluids; and technical advantages in vane design offer high resistance to particle contamination.

Interchangeable cam rings allow multiple displacements within the same pump frame size.

An industrial or mobile type cartridge allows the pump to operate to its optimum in many environments. The cartridge concept simplifies pump maintenance reducing machine down time.



Features

- 5 frame sizes – A, B, C, D, E
- Displacement 5.8cc/rev – 268cc/rev
- Speed to 3600 RPM
- Pressure to 320 Bar
- Quiet operation
- Various shaft and mount options
- Cartridge design
- Wide range of acceptable viscosity

Example Model	Displacement (cc/rev)	Max Pressure (Bar)	Speed (RPM)
	no. of cam ring displacements ( )	Cont / Int	Min/ Max
T7B	5.8 - 31.8 (9)	290 / 320	600 / 3600
	35.0 - 45 (3)	275 / 300	600 / 3000
	50	240 / 280	600 / 3000
T6C	10.8 – 70.3 (10)	240 / 275	600 / 2800
	79.3	240 / 275	600 / 2500
	88.8 - 100 (2)	160 / 210	600 / 2500
T7D	44.0 - 99.2 (7)	250 / 250	600 / 3000
	113.4 - 120.6 (2)	250 / 250	600 / 2800
	137.5	230 / 250	600 / 2500
	145.7*	210 / 240	600 / 2200
	158.0*	160 / 210	600 / 2200
T7E	132.3 - 227.1 (9)	210 / 240	600 / 2200
	268.7	75 / 90	600 / 2000

Data for HF-0, HF-2 for comparisons only * Ten vane technology

Greater Flow

Size A : 5,8 to 40 cc/rev
Size B : 5,8 to 50 cc/rev
Size C : 10,8 to 100 cc/rev
Size D : 44 to 158 cc/rev
Size E : 132,3 to 268,7 cc/rev

Higher Pressure

Size A : up to 300 bar max
Size B : up to 320 bar max (300 bar for multiple pump)
Size C : up to 275 bar max
Size D : up to 280 bar max (250 bar for multiple pump)
Size E : up to 240 bar max

Single pumps : speeds, pressure ratings

Model of pump	Series	Theoretical Displacement Vi	Minimum Speed	Maximum Speed [3]		Maximum Pressure					
				HF-0, HF-1 HF-2	HF-3, HF-4 HF-5	HF-0, HF-2		HF-1, HF-4, HF-5		HF-3	
						Int.	Cont.	Int.	Cont.	Int.	Cont.
		ml/rev.	RPM	RPM	RPM	bar	bar	bar	bar	bar	bar
T6C	003	10,8	600	2800	1800	275	240	210	175	175	140
	005	17,2									
	006	21,3									
	008	26,4									
	010	34,1									
	012	37,1									
	014	46,0									
	017	58,3									
	020	63,8									
	022	70,3									
	025	79,3		2500							
	028	88,8				210	160		160		
	031	100,0									
T7D T7DS	B14	44,0	600	3000	1800	300	250	240	210	175	140
	B17	55,0									
	B20	66,0									
	B22	70,3									
	B24	81,1									
	B28	90,0									
	B31	99,2									
	B35	113,4		2800		280					
	B38	120,6									
	B42	137,5		2500		260	230				
	045[1]	145,7		2200		240	210	210	175		
	050[1]	158,0				210	160		160		
T7E [2] T7ES	042	132,3	600	2200	1800	240	210	210	175	175	140
	045	142,4									
	050	158,5									
	052	164,8									
	054	171,0									
	057	183,3									
	062	196,7									
	066	213,3									
	072	227,1									
	085	268,7		2000		90	75	75	75	75	75

HF-0, HF-2 = Antiwear Petroleum Base
HF-1 = Non Antiwear Petroleum Base
HF-3 = Water in oil Invert Emulsions
HF-4 = Water Glycols Solutions
HF-5 = Synthetic Fluids

[1] Ten vane technology.
[2] For T7E, below 10 bar, please contact Parker.
[3] Please be sure that the inlet velocity is under 1,9 m/sec. (see page 12, start-up & check-up).

For further information, or if the performance characteristics outlined here above do not meet your particular requirements, please consult your local Parker office.

T6C Series

T6C*	-	B22	-	1	R	00	-	B	1	-	**

Series – SAE B 2 bolts
J744 mounting flange

*Rear drive option available, please contact Parker

Displacement*
Volumetric displacement (ml/rev.)

B03 = 10,8	B17 = 58,3
B05 = 17,2	B20 = 63,8
B06 = 21,3	B22 = 70,3
B08 = 26,4	B25 = 79,3
B10 = 34,4	B28 = 88,8
B12 = 37,1	B31 = 100,0
B14 = 46,0	

Type of Shaft Tbc
1 = keyed (SAE B) ø 22,2
2 = keyed (non SAE)
3 = splined (SAE B) 13 teeth
4 = splined (SAE BB) 15 teeth

Modifications

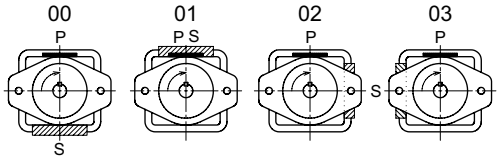
Seal Class
1 = S1 BUNA N – 0.7 bar max. (for mineral oil)
4 = S4 EPDM – 0.7 bar max. (for fire resistant fluids
5 = S5 VITON ® – 0.7 bar max (for mineral oil and fire resistant fluid

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

P = Pressure port
S = Suction port



Preferred Model (Single Pump)

Order Code	Model Code	Order Code	Model Code	Order Code	Model Code
024-25776-0	T6C B03 1R** B1	024-26308-0	T6C B10 3R** B1	024-76142-0	T6C B20 4R** B1
024-45547-0	T6C B03 2R** B1	024-91712-0	T6C B10 4R** B1	024-25785-0	T6C B22 1R** B1
024-31574-0	T6C B03 3R** B1	024-33205-0	T6C B12 1R** B1	024-26200-0	T6C B22 3R** B1
024-25777-0	T6C B05 1R** B1	024-33684-0	T6C B12 3R** B1	024-40259-0	T6C B22 4R** B1
024-25822-0	T6C B05 3R** B1	024-44462-0	T6C B12 4R** B1	024-25829-0	T6C B25 1R** B1
024-33561-0	T6C B05 4R** B1	024-25782-0	T6C B14 1R** B1	024-25787-0	T6C B25 3R** B1
024-25778-0	T6C B06 1R** B1	024-26199-0	T6C B14 3R** B1	024-31575-0	T6C B25 4L** B1
024-33221-0	T6C B06 3R** B1	024-45857-0	T6C B14 4R** B1	024-25788-0	T6C B28 1R** B1
024-40681-0	T6C B06 4R** B1	024-25515-0	T6C B17 1R** B1	024-31990-0	T6C B28 3R** B1
024-25779-0	T6C B08 1R** B1	024-25783-0	T6C B17 3R** B1	024-59567-0	T6C B28 4R** B1
024-31591-0	T6C B08 3R** B1	024-25784-0	T6C B17 4R** B1	024-50670-0	T6C B31 1R** B1
024-40263-0	T6C B08 4R** B1	024-51407-0	T6C B20 1R** B1	024-69280-0	T6C B31 3R** B1
024-25781-0	T6C B10 1R** B1	024-59895-0	T6C B20 3R** B1	024-90191-0	T6C B31 4R** B1

For other Seal Class
S4 EPDM 024-XXXXX-4
S5 VITON 024-XXXXX-5

For other Port Orientation
024-XXXXX-001, 024-XXXXX-002, 024-XXXXX-003, etc
For Chinese Version
024-XXXXX-00S (to put "S" behind)

T7DS Series

T7DS*	-	B42	-	1	R	00	-	A	1	-	00	-	**

T7DS Series - SAE C
2 bolts
J744 mounting flange

*Rear drive option available, please contact Parker

Displacement*

Volumetric displacement (ml/rev.)	
B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Type of Shaft T7DS
1 = keyed (SAE C) ø 31,7
2 = keyed (non SAE)
3 = splined (SAE C) 14 teeth
4 = splined (non SAE)

Modifications

Mounting w/connection variables

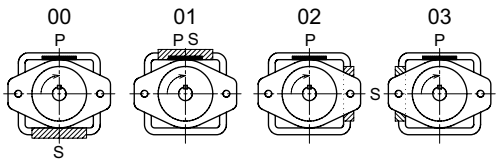
P = 1.1/4" – S = 2"	
T7DS	M0

Seal Class
1 = S1 BUNA N – 0.7 bar max. (for mineral oil)
4 = S4 EPDM – 0.7 bar max. (for fire resistant fluids
5 = S5 VITON ® – 0.7 bar max (for mineral oil and fire resistant fluids

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L - Counter-clockwise



P = Pressure port
S = Suction port

Preferred Model (Single Pump)

Order Code	Model Code	Order Code	Model Code	Order Code	Model Code
024-91385-0	T7DS B14 1R** A1M0	024-76520-0	T7DS B28 1R** A1M0	024-90844-0	T7DS 045 1R** A1M0
054-37179-0	T7DS B14 3R** A1M0	054-36601-0	T7DS B28 3R** A1M0	024-90843-0	T7DS 045 1L** A1M0
024-77856-0	T7DS B17 1R** A1M0	024-90102-0	T7DS B31 1R** A1M0	054-46379-0	T7DS 050 2R** A1M0
054-38336-0	T7DS B17 3R** A1M0	024-90835-0	T7DS B31 3R** A1M0	024-90845-0	T7DS 045 3R** A1M0
024-90687-0	T7DS B20 1R** A1M0	024-76521-0	T7DS B35 1R** A1M0	054-36188-0	T7DS 045 3L** A1M0
024-92590-0	T7DS B20 3R** A1M0	024-90837-0	T7DS B35 3R** A1M0	024-90847-0	T7DS 050 1R** A1M0
024-76333-0	T7DS B22 1R** A1M0	024-90839-0	T7DS B38 1R** A1M0	024-90846-0	T7DS 050 1L** A1M0
054-34092-0	T7DS B22 3R** A1M0	024-90840-0	T7DS B38 3R** A1M0	054-46379-0	T7DS 050 2R** A1M0
024-91339-0	T7DS B24 1R** A1M0	024-76522-0	T7DS B42 1R** A1M0	024-90848-0	T7DS 050 3R** A1M0
024-90851-0	T7DS B24 3R** A1M0	024-90842-0	T7DS B42 3R** A1M0	054-38882-0	T7DS 050 3L** A1M0

For other Seal Class
S4 EPDM 024-XXXXX-4
S5 VITON 024-XXXXX-5

For other Port Orientation
024-XXXXX-001, 024-XXXXX-002, 024-XXXXX-003, etc
For Chinese Version
024-XXXXX-00S (to put "S" behind)

Single Pumps

T7ES Series

T7ES*	-	072	-	1	R	00	-	A	1	-	00	-	**

T7ES Series - SAE C 2 bolts
J744 mounting flange

*Rear drive option available, please contact Parker

Displacement*

Volumetric displacement (ml/rev.)

042 = 132,3	057 = 183,3
045 = 142,4	062 = 196,7
050 = 158,5	066 = 213,3
052 = 164,8	072 = 227,1
054 = 171,0	085 = 268,7

Type of Shaft T7ES

1 = keyed (SAE CC)
2 = keyed (non SAE)
3 = splined (SAE C) 14 teeth
4 = splined (SAE CC) 17 teeth

Direction of rotation (shaft end view)

R = Clockwise
L = Counter-clockwise

Modifications

Mounting w/connection variables

4 bolts SAE flanges J518)

	T7ES Metric thread
	M0
P	1.1/2"
S	3"

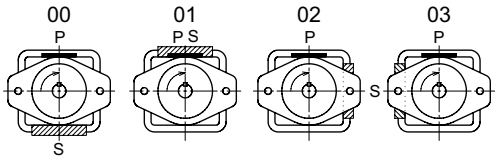
Seal Class

1 = S1 BUNA N – 0.7 bar max. (for mineral oil)
4 = S4 EPDM – 0.7 bar max. (for fire resistant fluids
5 = S5 VITON ® – 0.7 bar max (for mineral oil and fire resistant fluids

Design Letter

Porting Combination

00 = Standard



P = Pressure port
S = Suction port

Preferred Model (Single Pump)

Order Code	Model Code	Order Code	Model Code	Order Code	Model Code
024-93237-0	T7ES 042 1R** A1M0	024-90855-0	T7ES 052 1L** A1M0	054-46970-0	T7ES 062 4R** A1M0
024-93229-0	T7ES 042 3R** A1M0	024-93026-0	T7ES 052 3R** A1M0	024-90861-0	T7ES 066 1R** A1M0
054-36528-0	T7ES 042 4R** A100	024-92300-0	T7ES 054 1R** A1M0	024-90862-0	T7ES 066 3R** A1M0
054-34115-0	T7ES 045 1R** A1M0	054-37225-0	T7ES 054 1L** A1M0	054-35025-0	T7ES 066 4R** A1M0
024-94377-0	T7ES 045 3R** A1M0	054-39133-0	T7ES 054 3R** A1M0	024-90863-0	T7ES 072 1R** A1M0
054-49372-0	T7ES 045 4R** A1M0	024-93162-0	T7ES 057 1R** A1M0	024-90864-0	T7ES 072 3R** A1M0
024-90854-0	T7ES 050 1R** A1M0	054-37907-0	T7ES 057 1L** A1M0	054-48345-0	T7ES 072 4R** A1M0
024-92004-0	T7ES 050 3R** A1M0	024-94006-0	T7ES 057 3R** A1M0	024-94346-0	T7ES 085 1R** A1M0
054-49595-0	T7ES 050 4R** A100	024-90858-0	T7ES 062 1R** A1M0	054-38395-0	T7ES 085 3R** A1M0
024-90856-0	T7ES 052 1R** A1M0	024-90859-0	T7ES 062 3R** A1M0	054-45944-0	T7ES 085 4R** A1M0

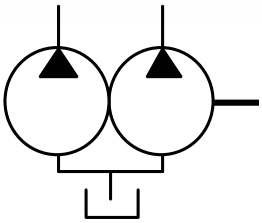
For other Seal Class
S4 EPDM 024-XXXXX-4
S5 VITON 024-XXXXX-5

For other Port Orientation
024-XXXXX-001, 024-XXXXX-002, 024-XXXXX-003, etc
For Chinese Version
024-XXXXX-00S (to put "S" behind)

Double Pumps

T7BB, T67CB, T6CC, T7DBS, T67DC, T7EBS, T67EC, T7EDS, T7EES Series

Characteristics



The Parker 'Denison' fixed displacement vane pump range offers a quieter more efficient solution to many high pressure applications.

Designed with versatility in mind, numerous shaft options and porting combinations result in easier installation.

The pumps will operate over a wide speed range with low to high viscosity fluids; and technical advantages in vane design offer high resistance to particle contamination.

Interchangeable cam rings allow multiple displacements within the same pump frame size.

An industrial or mobile type cartridge allows the pump to operate to its optimum in many environments. The cartridge concept simplifies pump maintenance reducing machine down time.

Multiple cartridges in single housing with common suction minimise installation costs. Flow combinations for Hi-Low or multi-flow systems.

Features

- 5 frame sizes – A, B, C, D, E
- Many combinations of frame sizes
- Displacement 5.8cc/rev – 268cc/rev
- Speed to 3600 RPM
- Pressure to 320 Bar
- Quiet operation
- Various shaft and mount options
- Cartridge design
- Wide range of acceptable viscosity
- Severe duty options available

Example Model	Displacement (cc/rev)	Max Pressure (Bar)	Speed (RPM)
	no. of cam ring displacements ( )	Cont / Int	Min/ Max
T7BB	5.8 - 31.8 (9)	290 / 320	600 / 3600
	35.0 - 45 (3)	275 / 300	600 / 3000
	50	240 / 280	600 / 3000
T6CC	10.8 – 70.3 (10)	240 / 275	600 / 2800
	79.3	240 / 275	600 / 2500
	88.8 - 100 (2)	160 / 210	600 / 2500
T7DD	44.0 - 99.2 (7)	250 / 250	600 / 3000
	113.4 - 120.6 (2)	250 / 250	600 / 2800
	137.5	230 / 250	600 / 2500
	145.7*	210 / 240	600 / 2200
	158.0*	160 / 210	600 / 2200
T7EE	132.3 - 227.1 (9)	210 / 240	600 / 2200
	268.7	75 / 90	600 / 2000

Data for HF-0, HF-2 for comparisons only * Ten vane technology

Double Pumps

T7BBS Series

T7BBS	-	B10	B10	-	1	R	00	-	A	1	01	-	**

T7BBS Series - SAE B 2 bolts
J744 mounting flange

Displacement P1 & P2
Volumetric displacement (ml/rev.)

B02 = 5,8	B09 = 28,0
B03 = 9,8	B10 = 31,8
B04 = 12,8	B11 = 35,0
B05 = 15,9	B12 = 41,0
B06 = 19,8	B14 = 45,0
B07 = 22,5	B15 = 50,0
B08 = 24,9	

Type of Shaft T7BBS
1 = keyed (non SAE)
2 = keyed (SAE B)
3 = splined (SAE B) 13 teeth
4 = splined (SAE BB) 15 teeth

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518)

	T7BBS UNC thread	
	00	01
P1	1"	3/4"
P2	3/4"	
S	2,1/2"	

Seal Class

1 =	S1 BUNA N – 0.7 bar max. (for mineral oil)
4 =	S4 EPDM – 0.7 bar max. (for fire resistant fluids
5 =	S5 VITON ® – 0.7 bar max (for mineral oil and fire resistant fluid

Design Letter

Porting Combination
00 = Standard

T6CC Series

T6CC	W	-	B22	-	B08	1	R	00	C	1	00	-	**

T6CC Series - SAE B 2 bolts
J744 mounting flange

Severe duty shaft option

Displacement P1 & P2
Volumetric displacement (ml/rev.)

B02 = 10,8	B17 = 58,3
B05 = 17,2	B20 = 63,8
B06 = 21,3	B22 = 70,3
B08 = 26,4	B25 = 79,3
B10 = 34,1	B28 = 88,8
B12 = 37,1	B31 = 100,0
B14 = 46,0	

Type of Shaft T6CC
1 = keyed (non SAE)
3 = splined (SAE BB) 15 teeth
5 = splined (SAE B) 13 teeth

Severe duty shaft (T6CCW only)
2 = keyed (SAE BB)

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Modifications

Mounting w/connection variables

P1	= 1" - S = 3"	
	UNC thread	
	00	01
P2	1"	3/4"[1]
P1	= 1" - S = 2,1/2" [2]	
	UNC thread	
	10	11
P2	1"	3/4" [1]

[1] up to 46ml/rev. max.
[2] up to 126ml/rev. max.
Always select the largest cartridge in the front place.

Seal Class

1 =	S1 BUNA N – 0.7 bar max. (for mineral oil)
4 =	S4 EPDM – 0.7 bar max. (for fi e resistant fluids
5 =	S5 VITON ® – 0.7 bar max (for mineral oil and fi e resistant fluids

Design Letter

Porting Combination
00 = Standard

Double Pumps

T67CB

T67CB	W	-	B22	-	B08	-	1	R	00	-	A	1	11	-	**

T67CB Series - SAE B 2 bolts
J744 mounting flange

Severe duty shaft option

Displacement P1
Volumetric displacement (ml/rev.)

B02 = 10,8	B17 = 58,3
B05 = 17,2	B20 = 63,8
B06 = 21,3	B22 = 70,3
B08 = 26,4	B25 = 79,3
B10 = 34,1	B28 = 88,8
B12 = 37,1	B31 = 100,0
B14 = 46,0	

Displacement P2
Volumetric displacement (ml/rev.)

B02 = 5,8	B09 = 28,0
B03 = 9,8	B10 = 31,8
B04 = 12,8	B11 = 35,0
B05 = 15,9	B12 = 41,0
B06 = 19,8	B14 = 45,0
B07 = 22,5	B15 = 50,0
B08 = 24,9	

Severe duty shaft (T67CBW only)
2 = keyed (SAE BB)

Type of Shaft
1 = keyed (non SAE)
3 = splined (SAE BB) 15 teeth
5 = splined (SAE B) 13 teeth

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Porting Combination
00 = Standard

Design Letter

Seal Class

1 =	S1 BUNA N – 0.7 bar max. (for mineral oil)
4 =	S4 EPDM – 0.7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 0,7 bar max (for mineral oil and fire resistant fluid)

Mounting w/connection variables

P1	= 1" - S = 3"	
	UNC thread	
	00	01
P2	1"	3/4" [1]
P1	= 1" - S = 2,1/2" [2]	
	UNC thread	
	10	11
P2	1"	3/4" [1]

[1] up to 46ml/rev. max.
[2] up to 126ml/rev. max.
Always select the largest cartridge in the front place.

Modification

T7DBS Series

T7DBS	-	B42	-	B10	-	1	R	00	-	A	1	00	-	**

T7DBS Series - SAE C 2 bolts
J744 mounting flange

Displacement P1
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Displacement P2
Volumetric displacement (ml/rev.)

B02 = 5,8	B09 = 28,0
B03 = 9,8	B10 = 31,8
B04 = 12,8	B11 = 35,0
B05 = 15,9	B12 = 41,0
B06 = 19,8	B14 = 45,0
B07 = 22,5	B15 = 50,0
B08 = 24,9	

Type of Shaft
1 = keyed (SAE C)
2 = keyed (non SAE)
3 = splined (SAE C) 14 teeth
4 = splined (spec SAE C)

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Porting Combination
00 = Standard

Design Letter

Seal Class

1 =	S1 BUNA N – 0.7 bar max. (for mineral oil)
4 =	S4 EPDM – 0.7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 0,7 bar max (for mineral oil and fire resistant fluids)

Mounting w/connection variables
4 bolts SAE flanges J518)

	UNC thread T7DBS	
	00	01
P1	1,1/4"	1,1/4"
P2	1"	3/4"
S	3"	3"

Modifications

Double Pumps

T67DC Series

T67DC	W	B42	-	B10	1	R	00	-	A	1	00	-	**

T67DC Series - SAE C 2 bolts
J744 mounting flange

Severe duty shaft option

Displacement P1
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Displacement P2
Volumetric displacement (ml/rev.)

B03 = 10,8	B31 = 99,2
B05 = 17,2	B35 = 113,4
B06 = 21,3	B38 = 120,6
B08 = 26,4	B42 = 137,5
B10 = 34,1	045 = 145,7
B12 = 37,1	050 = 158,0
B14 = 46,0	

Type of Shaft

1 = keyed (SAE C)	3 = splined (SAE C) 14 teeth
2 = keyed (non SAE)	4 = splined (spec SAE C)

Type of Shaft - Severe duty (T67DCW only)
5 = keyed (non SAE)

Mounting w/connection variables
4 bolts SAE flanges J518)

	UNC thread T7DBS	
	00	01
P1	1,1/4"	1,1/4"
P2	1"	3/4"
S	3"	3"

Seal Class

1 =	S1 BUNA N – 0.7 bar max. (for mineral oil)
4 =	S4 EPDM – 0.7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 0,7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Modifications

T7DDS Series

T7DDS	-	B42	-	B22	-	1	R	00	-	A	1	00	-	**

T7DDS Series - SAE C 2+4 bolts
J744 mounting flange

Displacement P1 & P2
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Type of Shaft

1 = keyed (SAE C)	3 = splined (SAE C) 14 teeth
2 = keyed (non SAECC)	

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Mounting w/connection variables
4 bolts SAE flanges J518)
P1 & P2 = 1.1/4" - S = 4"

Type	UNC Thread
T7DDS	00

Seal Class

1 =	S1 BUNA N – 0.7 bar max. (for mineral oil)
4 =	S4 EPDM – 0.7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 0,7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Modifications

Double Pumps

T7EBS Series

	T7EBS	-	042	-	B12	-	1	R	00	-	A	1	01	-	**	

T7EBS Series - SAE C 2 bolts
J744 mounting flange

P1

P2

Displacement P1
Volumetric displacement (ml/rev.)

042 = 132,3	057 = 183,3
045 = 142,4	062 = 196,7
050 = 158,5	066 = 213,3
052 = 164,8	072 = 227,1
054 = 171,0	085 = 268,7

Displacement P2
Volumetric displacement (ml/rev.)

B02 = 5,8	B09 = 28,0
B03 = 9,8	B10 = 31,8
B04 = 12,8	B11 = 35,0
B05 = 15,9	B12 = 41,0
B06 = 19,8	B14 = 45,0
B07 = 22,5	B15 = 50,0
B08 = 24,9	

Type of Shaft

1 = keyed (SAECC)	3 = splined (SAE C) 14 teeth
2 = keyed (non SAE)	4 = splined (SAECC)

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518)
UNC thread
T7EBS
Code 01

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

T67EC Series

	T67EC	-	042	-	B12	-	1	R	00	-	A	1	01	-	**	

T67EC Series - SAE C 2 bolts
J744 mounting flange

Displacement P1
Volumetric displacement (ml/rev.)

042 = 132,3	057 = 183,3
045 = 142,4	062 = 196,7
050 = 158,5	066 = 213,3
052 = 164,8	072 = 227,1
054 = 171,0	085 = 268,7

Displacement P2
Volumetric displacement (ml/rev.)

B03 = 10,8	B17 = 58,3
B05 = 17,2	B20 = 63,8
B06 = 21,3	B22 = 70,3
B08 = 26,4	B25 = 79,3
B10 = 34,1	B28 = 88,8
B12 = 37,1	B31 = 100,0
B14 = 46,0	

Type of Shaft

1 = keyed (SAECC)	3 = splined (SAE C) 14 teeth
2 = keyed (non SAE)	4 = splined (SAECC) 17 teeth

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518)
UNC thread

	00	01
P1	1,1/2"	1,1/2"
P2	1"	3/4"
S	3,1/2"	3,1/2"

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Double Pumps

T7EDS Series

	T7EDS	-	042	-	B31	-	1	R	00	-	A	1	00	-	**	

T7EDS Series - SAE C 2 bolts
J744 mounting flange

Displacement P1
Volumetric displacement (ml/rev.)

042 = 132,3	057 = 183,3
045 = 142,4	062 = 196,7
050 = 158,5	066 = 213,3
052 = 164,8	072 = 227,1
054 = 171,0	085 = 268,7

Displacement P2
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 81,1	050 = 158,0

Type of Shaft

1 = keyed (SAE CC)	3 = splined (SAE C) 14 teeth
2 = keyed (non SAE)	4 = splined (SAE CC) 17 teeth

Direction of rotation (shaft end view)
R = Clockwise
L - Counter-clockwise

Porting Combination
00 = Standard

Design Letter

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Mounting w/connection variables
4 bolts SAE flanges J518)

	7EDS
Type	UNC thread
Code	00

Modifications

T7EES Series

	T7EES	-	072	-	050	-	1	R	00	-	A	1	2	00	-	**	

T7EES Series - SAE E 4 bolts
J744 mounting flang

Displacement P1 & P2
Volumetric displacement (ml/rev.)

042 = 132,3	057 = 183,3
045 = 142,4	062 = 196,7
050 = 158,5	066 = 213,3
052 = 164,8	072 = 227,1
054 = 171,0	085 = 268,7

Type of Shaft

1 = keyed (SAE CC)	4 = splined (SAE D & E) 13 teeth
3 = splined (SAE CC) 17 teeth	5 = keyed (SAE D)

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Porting Combination
00 = Standard

Design Letter

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Coupling Adaptor

0 =	None
2 =	SAE B
3 =	SAE BB

*for SAE C, please contact Parker

Mounting w/connection variables
4 bolts SAE flanges J518)

	7EES
Type	UNC thread
Code	00

Modific tions

Triple Pumps

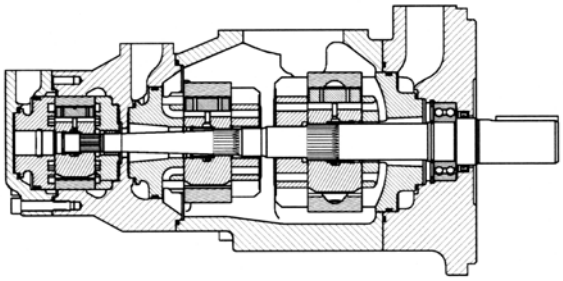
T67DBB, T67DCB, T6DCC, T67DDBS, T6DDCS, T67EDB(S), T6EDC(S) Series

Characteristics

The Parker 'Denison' fixed displacement vane pump range offers a quieter more efficient solution to many high pressure applications.

Designed with versatility in mind, numerous shaft options and porting combinations result in easier installation.

The pumps will operate over a wide speed range with low to high viscosity fluids; and technical advantages in vane design offer high resistance to particle contamination.



Interchangeable cam rings allow multiple displacements within the same pump frame size.

An industrial or mobile type cartridge allows the pump to operate to its optimum in many environments. The cartridge concept simplifies pump maintenance reducing machine down time.

Multiple cartridges in single housing with common suction minimise installation costs. Flow combinations for Hi-Low or multi-flow systems.

Features

- 5 Frame sizes – A, B, C, D, E
- Many combinations of frame sizes
- Displacement 5.8cc/rev – 268cc/rev
- Speed to 3600 RPM
- Pressure to 320 Bar
- Quiet operation
- Various shaft and mount options
- Cartridge design
- Wide range of acceptable viscosity
- Severe duty options available

Model	Displacement (cc/rev)	Max Pressure (Bar)	Speed (RPM)
	no. of cam ring displacements ( )	Cont / Int	Min / Max
T67DBB	5.8 - 31.8 (9)	290/320	600/3600
	35.0 - 45 (3)	275/300	600/3000
	50	240/280	600/3000
T67DCC	10.8 - 70.3 (10)	240/275	600/2800
	79.3	240/275	600/2500
	88.8 - 100 (2)	160/210	600/2500
T7DDC	44.0 - 99.2 (7)	250/250	600/3000
	113.4 - 120.6 (2)	250/250	600/2800
	137.5	230/250	600/2500
	145.7*	210/240	600/2200
	458.0*	160/210	600/2200
T67EDC	132.3 - 227.1 (9)	210/240	600/2200
	268.7	75/90	600/2000

Data for HF-0, HF-2 for comparisons only * Ten vane Technology

Triple Pumps

T7DBB Series

T7DBBS	-	B38	-	B14	-	B08	-	1	-	R	00	-	A	1	-	00	-	**

T7DBBS Series - SAE C 6 bolts
J744 mounting flange

Displacement P1
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Displacement P2 P3
Volumetric displacement (ml/rev.)

B02 = 5,8	B09 = 28,0
B03 = 9,8	B10 = 31,8
B04 = 12,8	B11 = 35,0
B05 = 15,9	B12 = 41,0
B06 = 19,8	B14 = 45,0
B07 = 22,5	B15 = 50,0
B08 = 24,9	

Type of Shaft

1 = keyed (non SAE)	3 = splined 12/24 (SAE CC) 14 teeth
2 = keyed (SAE CC)	4 = splined 12/24 (SAE CC) 17 teeth

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518)
P1 = 1,1/4" - P2=1" - S=4"

	UNC thread
T7DBBS-P3 = 3/4"	01
T7DBBS-P3 = 1"	00

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

T67DCB Series

T67DCB	-	B38	-	B28	-	B08	-	1	-	R	00	-	A	1	-	00	-	**

T67DCB Series - SAE C 2 bolts
J744 mounting flange

Displacement P1
Volumetric displacement (ml/rev.)

B14 = 44,0	B24 = 81,1	B38 = 120,6
B17 = 55,0	B28 = 90,0	B42 = 137,5
B20 = 66,0	B31 = 99,2	045 = 145,7
B22 = 70,3	B35 = 113,4	050 = 158,0

Displacement P2
Volumetric displacement (ml/rev.)

B03 = 10,8	B12 = 37,1	B22 = 70,3
B05 = 17,2	B14 = 46,0	B25 = 79,3
B06 = 21,3	B17 = 58,3	B28 = 88,88
B08 = 26,4	B20 = 63,8	B31 = 100,0
B10 = 34,1		

Displacement P3
Volumetric displacement (ml/rev.)

B02 = 5,8	B07 = 22,5	B12 = 41,0
B03 = 9,8	B08 = 24,9	B14 = 45,0
B04 = 12,8	B09 = 28,0	B15 = 50,0
B05 = 15,9	B10 = 31,8	
B06 = 19,8	B11 = 35,0	

Type of Shaft

1 = keyed (non SAE)	3 = splined 12/24 (SAE CC) 14 teeth
2 = keyed (SAE CC)	4 = splined 12/24 (SAE CC) 17 teeth

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518)
P1 = 1,1/4" - P2=1" - S=4"

	UNC thread
T67DCB-P3 = 3/4"	01
T67DCB-P3 = 1"	00

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Triple Pumps

T67DCC Series

T67DCC	-	B38	-	B28	-	B10	-	1	-	R	00	-	A	1	-	00	-	**

T67DCC Series - SAE C 2 bolts
J744 mounting flange

Displacement P1
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Displacement P2 & P3
Volumetric displacement (ml/rev.)

B03 = 10,8	B12 = 37,1	B22 = 70,3
B05 = 17,2	B14 = 46,0	B25 = 79,3
B06 = 21,3	B17 = 58,3	B28 = 88,88
B08 = 26,4	B20 = 63,8	B31 = 100,0
B10 = 34,1		

Type of Shaft

1 = keyed (non SAE)	3 = splined 12/24 (SAE C)
2 = keyed (SAE CC)	4 = splined 12/24 (SAE CC)

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518)
P1 = 1,1/4" - P2=1" - S=4"

	UNC thread
T67DCC-P3 = 3/4"	01
T67DCC-P3 = 1"	00

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluids)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

T7DDBS Series

T7DDBS	-	050	-	B22	-	B12	-	1	-	R	00	-	A	1	-	00	-	**

T7DDBS Series - SAE C 6 bolts
J744 mounting flange

Displacement P1 & P2
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Displacement P3
Volumetric displacement (ml/rev.)

B02 = 5,8	B09 = 28,0
B03 = 9,8	B10 = 31,8
B04 = 12,8	B11 = 35,0
B05 = 15,9	B12 = 41,0
B06 = 19,8	B14 = 45,0
B07 = 22,5	B15 = 50,0
B08 = 24,9	

Type of Shaft

1 = keyed (SAE C)	3 = splined 12/24 (SAE C) 14 teeth
2 = keyed (SAE CC)	4 = splined 12/24 (SAE C) 17 teeth

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518)
P1 = 1,1/4" - P2=1,1/4" - S=4"

	UNC thread
T7DDB-P3 = 1"	00
T7DDB-P3 = 3/4"	01

Seal Class

1 =	S1 BUNA N – 0,7 bar max. (for mineral oil)
4 =	S4 EPDM – 7 bar max. (for fire resistant fluidsA)
5 =	S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

Triple Pumps

T67DDCS Series

T67DDCS	-	050	-	B35	-	B08	-	1	-	R	00	-	A	1	-	00	-	**

T67DDCS Series - SAE C 6 bolts
J744 mounting flange

Displacement P1 & P2
Volumetric displacement (ml/rev.)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Displacement P3
Volumetric displacement (ml/rev.)

B03 = 10,8	B12 = 37,1	B22 = 70,3
B05 = 17,2	B14 = 46,0	B25 = 79,3
B06 = 21,3	B17 = 58,3	B28 = 88,88
B08 = 26,4	B20 = 63,8	B31 = 100,0
B10 = 34,1		

Type of Shaft
1 = keyed (SAE C)
2 = keyed (SAE CC)
3 = splined 12/24 (SAE C) 14 teeth
4 = splined 12/24 (SAE CC) 17 teeth
5 = keyed (non SAE)

Mounting w/connection variables
4 bolts SAE flanges J518)
P1 & P2 = 1,1/4" - - S=4"

	UNC thread	
P3	1"	v
Code	00	01

Seal Class
1 = S1 BUNA N – 0,7 bar max. (for mineral oil)
4 = S4 EPDM – 7 bar max. (for fire resistant fluids)
5 = S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Modifications

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

T67EDCS Series

T67EDCS	-	062	-	B35	-	B10	-	2	-	R	00	-	A	1	-	00	-	**

T67EDCS Series - SAE E 4 bolts
J744 mounting flange

Displacement P1
Volumetric displacement (ml/rev.)

042 = 132,3	054 = 171,0	066 = 213,3
045 = 142,4	057 = 183,3	072 = 227,1
050 = 158,5	062 = 196,7	085 = 268,7
052 = 164,8		

Displacement P2
Volumetric displacement (ml/rev.)

B14 = 44,0	B24 = 81,1	B38 = 120,6
B17 = 55,0	B28 = 90,0	B42 = 137,5
B20 = 66,0	B31 = 99,2	045 = 145,7
B22 = 70,3	B35 = 113,4	050 = 158,0

Displacement P3
Volumetric displacement (ml/rev.)

B03 = 10,8	B12 = 37,1	B22 = 70,3
B05 = 17,2	B14 = 46,0	B25 = 79,3
B06 = 21,3	B17 = 58,3	B28 = 88,8
B08 = 26,4	B20 = 63,8	B31 = 100,0
B10 = 34,1		

Type of shaft
2 = keyed (SAE D & E)
3 = splined 8/16 (SAE D & E) 13 teeth)

Mounting w/connection variables
4 bolts SAE flanges J518)
P1 & P2 = 1,1/4" - S=4"

	UNC thread
P3 = 1"	00
P3 = 3/4"	01

Seal Class
1 = S1 BUNA N – 0,7 bar max. (for mineral oilt)
4 = S4 EPDM – 7 bar max. (for fire resistant fluids)
5 = S5 VITON ® – 7 bar max (for mineral oil and fire resistant fluids)

Modifications

Design Letter

Porting Combination
00 = Standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise

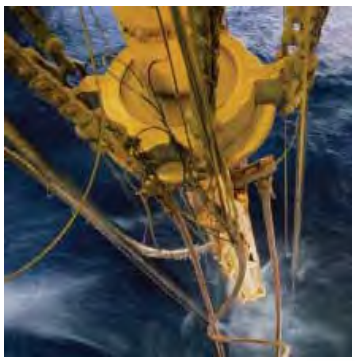
Application Market

Markets	Applications
Industrial	Injection Molding, Die casting Machines, Paper Industry, Presses & Compactor
Construction	Wheel Loader, Fan Drives
Recycling	Shredders, Balers, Compactors, Vaccum Truck Systems, Refuse Trucks - ASL, Rear Loaders
Material Handling	Lift Trucks

Literature

Ref. Catalogue : HY0738-A/CH

Ref. Catalogue : HY13-15900-009/US,EU



LSHT Torqmotors™ and Nichols™ Motors

1/ Fixed Displacement

Parker

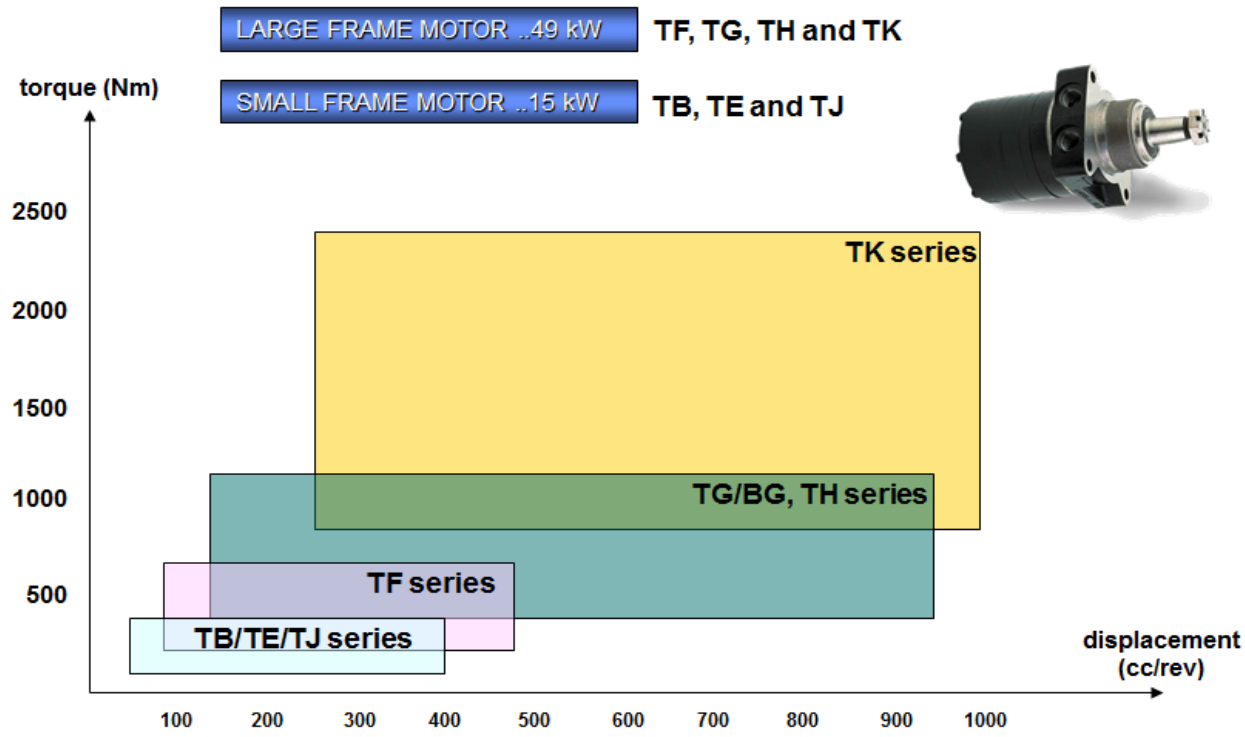
ENGINEERING YOUR SUCCESS.

Torqlink™ Low Speed High

Specifications

Parker full line of high and low speed motors provide power ranging up to 15,000 inch-pounds of torque with speed ranging fron 1/2 rpm to 13,000 rpm. A complete range of sizes is offered in gear, gerotor, vane and piston style operating configurations. Fixed and variable displacement motors are avaible. Parker hydraulic motors deliver excellent performance with high efficiency, true wear compensation and longer sevice life.

Product Lines



Motor Range	Displacement	Max Speed	Max Oil Flow	Max Differential Pressure	Max supply Pressure	Max Torque	Max Performance	
TB	cc/rev	cont rev/min	cont / int l/min	cont / int bar	bar	cont / int Nm	max KW	Max Side load at key
TB 0036	36	932	34 / 34	125 / 165	190	48 / 67	6.6	
TB 0045	41	805	34 / 34	125 / 165	190	64 / 88	7.2	
TB 0050	49	678	34 / 34	125 / 165	190	78 / 107	7.5	
TB 0065	65	511	34 / 34	125 / 165	190	107 / 145	7.8	
TB 0080	82	409	34 / 34	125 / 165	190	135 / 184	7.8	
TB 0100	98	454	45 / 45	125 / 165	190	157 / 217	10.2	
TB 0130	130	430	45 / 57	125 / 165	190	220 / 297	13.4	
TB 0165	163	343	45 / 57	120 / 155	190	273 / 346	12.4	TB 4,900 N
TB 0195	195	287	45 / 57	125 / 145	190	340 / 400	12	
TB 0230	228	246	45 / 57	103 / 138	190	316 / 427	11	
TB 0260	260	216	45 / 57	100 / 131	190	350 / 465	10.5	
TB 0295	293	191	45 / 57	97 / 125	190	383 / 499	10	
TB 0330	328	171	45 / 57	93 / 114	190	413 / 509	9.1	
TB 0365	370	151	45 / 57	86 / 105	190	440 / 540	8.7	
TB 0390	392	143	45 / 57	83 / 100	190	428 / 525	7.8	

Specifications

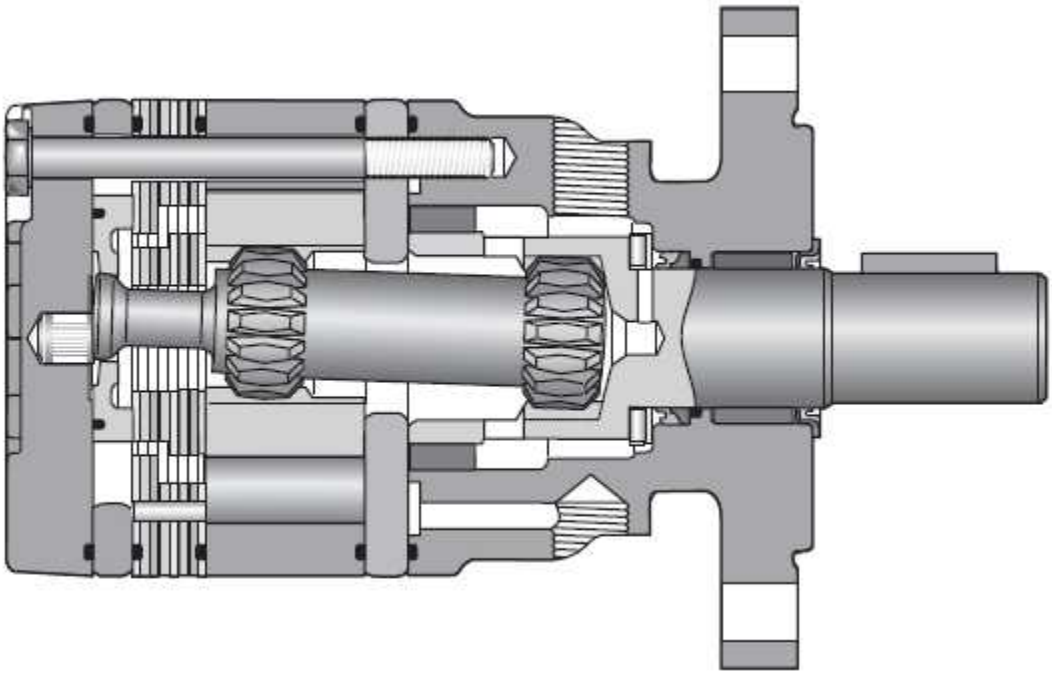
Motor Range	Displacement	Max Speed	Max Oil Flow	Max Differential Pressure	Max supply Pressure	Max Torque	Max Performance	
TE /TJ	cc/rev	cont / int rev/min	cont / int l/min	cont / int bar	bar	cont / int Nm	max KW	Max Side load at key
TE 0036	36	930 / 1160	35 / 42	140 / 190	200	55 / 70	8.5	TE 6,650 N
TE 0045	41	810 / 990	35 / 42	140 / 190	200	70 / 100	10	
TE 0050	50	725 / 935	35 / 45	140 / 175	200	90 / 115	11	
TE 0065	66	705 / 940	45 / 60	140 / 175	200	125 / 160	15	
TE 0080	82	560 / 750	45 / 60	140 / 175	200	160 / 200	15	
TE 0100	98	470 / 630	45 / 60	140 / 175	200	190 / 240	15	
TE 0130	130	350 / 470	45 / 60	140 / 175	200	255 / 320	15	
TE 0165	163	280 / 375	45 / 60	140 / 175	200	310 / 395	15	
TE 0195	196	235 / 315	45 / 60	140 / 175	200	390 / 480	15	
TE 0230	228	265 / 330	60 / 75	120 / 150	200	380 / 480	15	
TE 0260	261	230 / 290	60 / 75	110 / 140	200	400 / 525	15	
TE 0295	293	200 / 255	60 / 75	100 / 130	200	410 / 520	13	
TE 0330	326	185 / 235	60 / 75	100 / 120	200	430 / 530	13	
TE 0365	370	150 / 200	60 / 75	95 / 110	200	467 / 558	11	
TE 0390	392	152 / 190	60 / 75	85 / 100	200	435 / 540	10	
TF	cc/rev	cont / int rev/min	cont / int l/min	cont / int bar	bar	cont / int Nm	max KW	Max Side load at key
TF 0080	81	550 / 730	45 / 60	200 / 280	300	215 / 295	19	TF 16,000 N
TF 0100	100	600 / 750	60 / 75	160 / 240	300	210 / 315	21	
TF 0130	128	470 / 580	60 / 75	140 / 200	300	240 / 350	19	
TF 0140	141	370 / 530	60 / 75	140 / 200	300	250 / 390	18	
TF 0170	169	355 / 440	60 / 75	140 / 200	300	330 / 485	19	
TF 0195	197	300 / 380	60 / 75	140 / 200	300	380 / 560	19	
TF 0240	238	320 / 420	75 / 100	140 / 200	300	460 / 685	24	
TF 0280	280	270 / 350	75 / 100	140 / 200	300	550 / 800	24	
TF 0360	364	200 / 260	75 / 100	130 / 200	300	590 / 910	24	
TF 0405	405	170 / 230	75 / 100	130 / 175	300	650 / 910	21	
TF 0475	477	150 / 200	75 / 100	115 / 140	300	680 / 850	17	
TG, BG, TH	cc/rev	cont / int rev/min	cont / int l/min	cont / int bar	bar	cont / int Nm	max KW	Max Side load at key
TG/BG,TH 0140	140	530 / 710	75 / 100	200 / 280	300	400 / 545	33	TG/BG 16,000 N TH 21,360 N
TG/BG,TH 0170	169	440 / 575	75 / 100	200 / 280	300	485 / 670	33	
TG/BG,TH 0195	195	380 / 510	75 / 100	200 / 280	300	560 / 770	33	
TG/BG,TH 0240	237	320 / 420	75 / 100	200 / 280	300	685 / 945	32	
TG/BG,TH 0280	280	270 / 350	75 / 100	200 / 280	300	800 / 1100	31	
TG/BG,TH 0335	337	225 / 290	75 / 100	200 / 280	300	980 / 1350	30	
TG/BG,TH 0405	405	185 / 245	75 / 100	170 / 240	300	960 / 1350	27	
TG/BG,TH 0475	476	160 / 240	75 / 115	140 / 200	300	960 / 1400	28	
TG/BG,TH 0530	529	140 / 215	75 / 115	140 / 170	300	1050 / 1280	23	
TG/BG,TH 0625	624	120 / 185	75 / 115	120 / 160	300	1040 / 1360	20	
TG/BG,TH 0785	786	95 / 145	75 / 115	100 / 140	300	1150 / 1490	17	
TG/BG,TH 0960	958	78 / 119	75 / 115	70 / 100	300	925 / 1390	12	
TK	cc/rev	cont / int rev/min	cont / int l/min	cont / int bar	bar	cont / int Nm	max KW	Max Side load at key
TK 0250	251	520	114 / 133	240 / 310	330	815 / 1040	49	TK 26,245 N
TK 0315	315	410	114 / 133	240 / 310	330	1030 / 1315	47	
TK 0400	400	370	114 / 151	205 / 275	290	1150 / 1525	49	
TK 0500	500	300	114 / 151	205 / 275	290	1440 / 1915	48	
TK 0630	629	240	114 / 151	205 / 225	240	1620 / 1715	34	
TK 0800	800	275	151 / 227	190 / 205	240	1915 / 2300	44	
TK 1000	1000	220	151 / 227	175 / 190	220	2410 / 2660	35	

Intermittent operation rating applies to 10% of every minute

Technical Information

This light to medium duty motor incorporates all the features of heavey duty motors. Design features include a high pressure shaft seal so external drains are never required, roller vane technology for automatic wear compensation, and full flow internal cooling and flushing. This is a very economical motor for most light to medium duty applicatons.

15 Displacements		(2.2–24.0 in³/rev) 36...390 cm³/rev
Maximum Pressure	Cont (to 1800 psi) ...125 bar	Int (to 2400 psi) ...165 bar
Maximum Oil Flow		(to 15 gpm) ...57 lpm
Maximum Speed		(932 rpm) 932 rpm
Maximum Torque	Cont (3897 lb in) 440 Nm	Int (4783 lb in) 540 Nm
Maximum Side Load at Key		(to 1100 lb) ... 4900 N



TB Series

Ordering Information

TB	XXXX	XX	XX	0	XXXX

Series

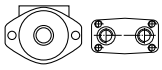
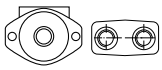
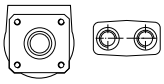
Displacement

Code	cc/rev	cu in³/rev
0036	36	2.2
0045	41	2.5
0050	49	3.0
0065	65	4.0
0080	82	5.0
0100	98	6.0
0130	130	8.0
0165	163	10.0
0195	195	11.9
0230	228	13.9
0260	260	15.9
0295	293	17.9
0330	328	20.0
0365	370	22.6
0390	392	24.0

Options

Code	Options
AAAB	No Paint
AAAA	Black Paint

Code	Rotation
0	Standard 

Code	Mounting/Ports
AM	SAE "A" 2 Bolt, 5/16-18 UNC Manifold 
AS	SAE "A" 2 Bolt, 7/8-14 SAE 
FS	4 Bolt 7/8-14 SAE 

Code	Shaft
09	1" Straight w/0.38 Crosshole 
10 21	1" Keyed Standard 
11	1" 6B Spline 
13	Long 1" Keyed 
25	1" Tapered 
26	25mm Keyed w/8mm Key 

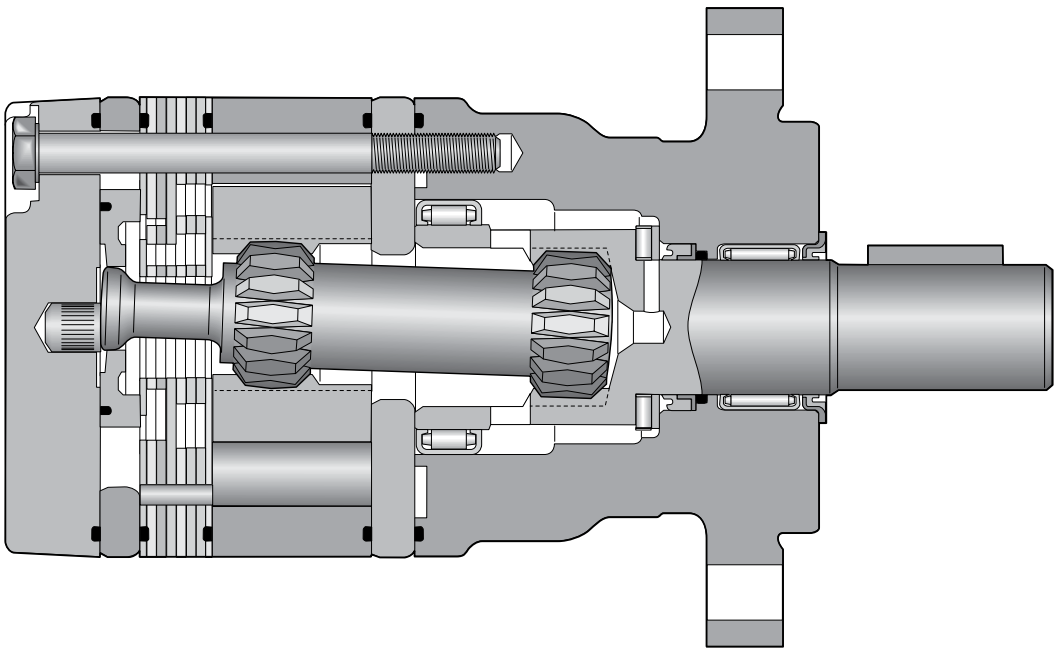
Seal Kit – Standard	SK000090
Seal Kit – Viton	SK000091
High Temp Commutator Seal	032861

Technical Information

An improved medium duty low speed, high torque motor

This medium duty motor has higher pressure ratings than the TB motor, for applications requiring higher torque. Robust roller bearings withstand higher side loads and are suitable for chain and sprocket shaft connections. It uses high pressure shaft seals, robust roller bearings and high fl w shaft seal cooling.

15 Displacements		(2.2–24.0 in^3/rev) 36...390 cm^3/rev
Maximum Pressure	Cont (to 2030 psi) ...140 bar	Int (to 2750 psi) ...190 bar
Maximum Oil Flow		(to 20 gpm) ...75 lpm
Maximum Speed		(1000 rpm) 1000 rpm
Maximum Torque	Cont (4139 lb in) 467 Nm	Int (5728 lb in) 648 Nm
Maximum Side Load at Key		(to 1500 lb) ... 6650 N



TE Series

Ordering Information

TE	XXXX	XX	XX	0	XXXX

Series

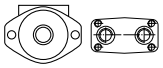
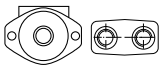
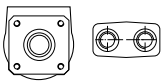
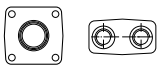
Displacement

Code	cc/rev	cu in³/rev
0036	36	2.2
0045	41	2.5
0050	49	3.0
0065	65	4.0
0080	82	5.0
0100	98	6.0
0130	130	8.0
0165	163	10.0
0195	195	11.9
0230	228	13.9
0260	260	15.9
0295	293	17.9
0330	328	20.0
0365	370	22.6
0390	392	24.0

Options

Code	Options
AAAB	No Paint
AAAA	Black Paint

Code	Rotation
0	Standard 

Code	Mounting/Ports
AM	SAE "A" 2 Bolt, 5/16-18 UNC Manifold 
AS	SAE "A" 2 Bolt, 7/8-14 SAE 
FS	4 Bolt 7/8-14 SAE 
US	Wheel Mount, 7/8-14 SAE 

Code	Shaft
09	1" Straight w/0.38 Crosshole 
10 21	1" Keyed Standard 
11	1" 6B Spline 
13	Long 1" Keyed 
25	1" Tapered 
26	25mm Keyed w/8mm Key 

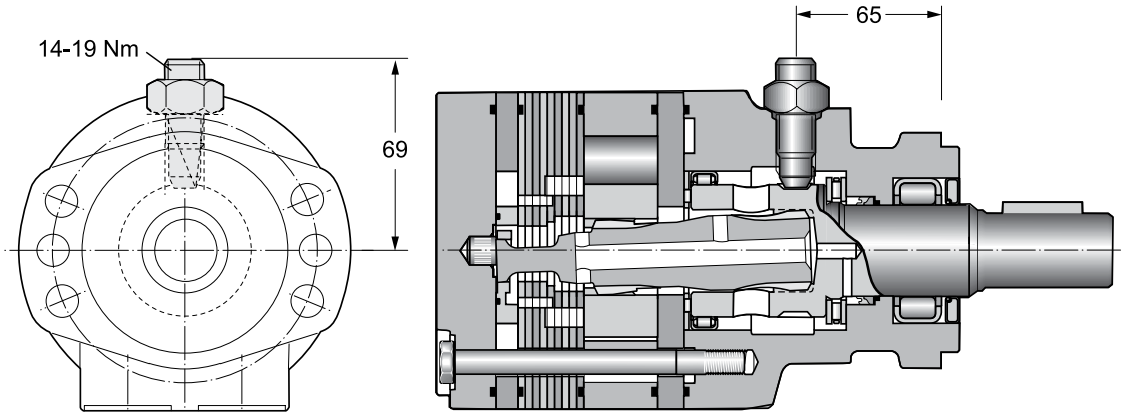
Seal Kit – Standard	SK000090
Seal Kit – Viton	SK000091
High Temp Commutator Seal	032861

Small Frame Options

Small Frame Speed Sensor

An economical sensor for speed readout

This rugged, weather resistant design is ideal for industrial and mobile applications. Applications include salt/sand/fertilizer spreader drives, conveyer drives and injection molder compression drives. The sensor is hall-effect type, which when externally powered outputs 30 square wave digital pulses per coupling shaft revolution. The connector is a user friendly universally available 4 pin polarized M12 connector allowing for simplified field service. The integrated design does not effect the side load capacity or perfomance of the torque motor.



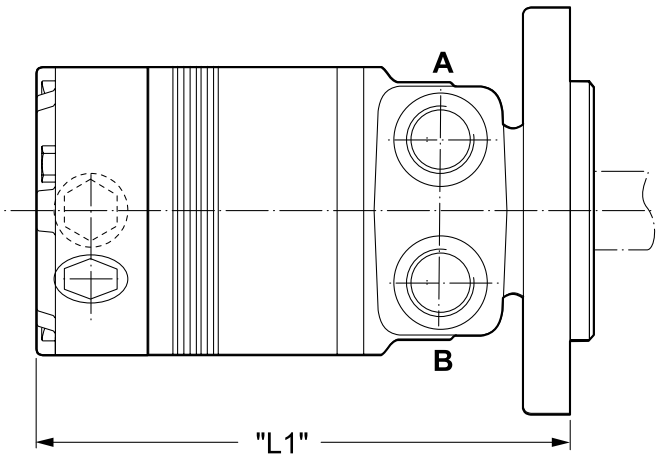
Maximum operating pressure 172 bar (2500 psi).

US equivalents for metric specifications are shown in ( ).
* Option code FSAA is with a single black coat of paint

Small Frame Internal Relief Valve

LSHT Torqmotors™ and Nichols™ Motors

This integrated internal relief valve is used for fixed pressure settings.



Options		Pressure bar (psi)
BBCM	Operating pressure	83 (1200)
BBCK		120 (1740)
BBCN		140 (2030)

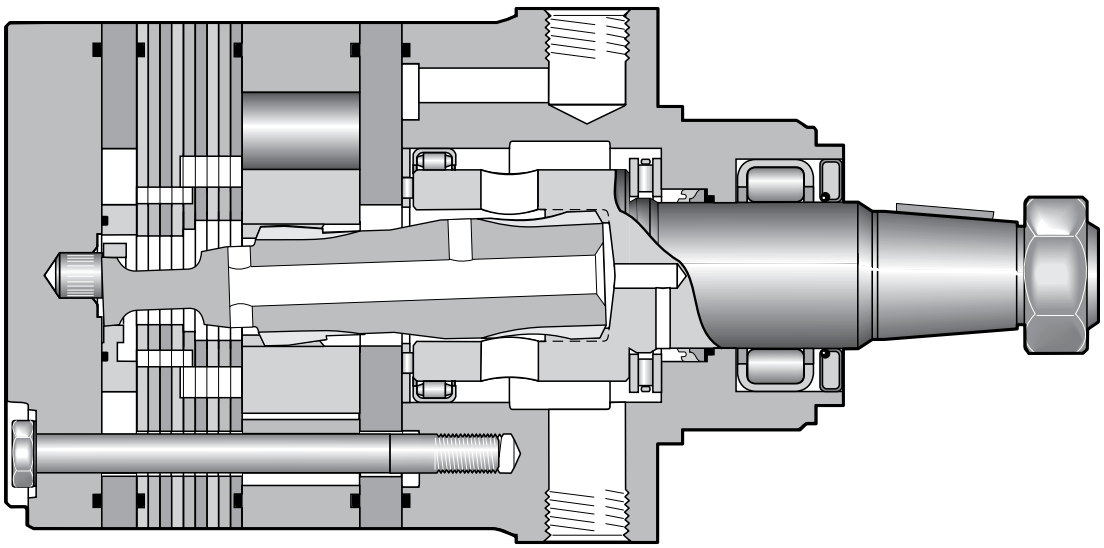
Other options are available, please contact Parker.

Technical Information

A tough motor for tough applications

Sturdy construction throughout makes Parker's TF Series motors suitable for the most severe applications. The powertrain uses patented 60:40 spline geometry for strength. All splines are constantly flushed with cool fluid for durability. Roller vanes and sealed commutation assure high volumetric efficiency, smooth low speed operation and extended life.

11 Displacements		(4.9 - 29.1 in^3/rev) 81...477 cm^3/rev
Maximum Pressure	Cont (to 3000 psi) ...207 bar	Int (to 4000 psi) ...276 bar
Maximum Oil Flow		(to 25 gpm) ...95 lpm
Maximum Speed		(749 rpm) 749 rpm
Maximum Torque	Cont (6027 lb in) 681 Nm	Int (8106 lb in) 916 Nm
Maximum Side Load at Key		(to 3597 lb) ... 16000 N



TF Series

Ordering Information

TF	XXXX	XX	XX	0	XXXX

Series

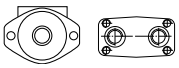
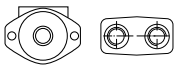
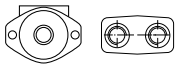
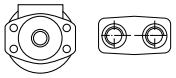
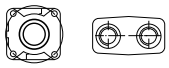
Displacement

Code	cc/rev	cu in³/rev
0080	81	4.9
0100	100	6.1
0130	128	7.8
0140	141	8.6
0170	169	10.3
0195	197	11.9
0240	238	14.5
0280	280	17.1
0360	364	22.2
0405	405	24.7
0475	477	29.1

Options

Code	Options
AAAB	No Paint
AAAA	Black Paint

Code	Rotation
0	Standard 

Code	Mounting/Ports
AM	SAE "A" 2 Bolt, 5/16 UNC Manifold 
AS	SAE "A" 2 Bolt, 7/8-14 SAE 
BS	SAE "B" 2 Bolt 7/8-14 SAE 
MS	Magneto, 7/8-14 SAE 
US	Wheel Mount, 7/8-14 SAE 

Code	Shaft
01*	1" 6B Spline 
02*	1" Keyed 
03	1 1/4" Keyed 
05	1 1/4 14 Tooth Spline 
06	19 Tooth Spline 
07	15 Tooth Spline 
08	1 1/4 Tooth Spline 

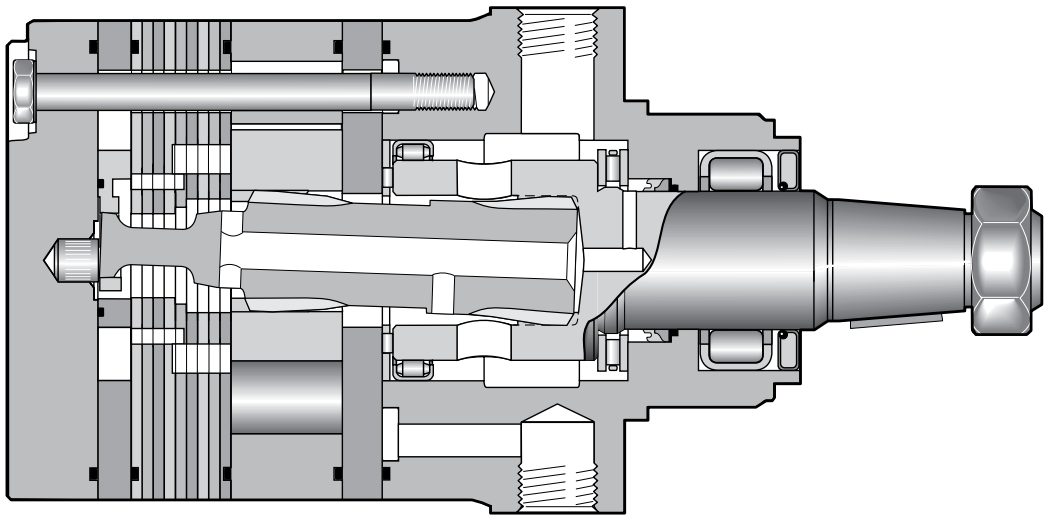
Seal Kit Standard SK000092
Seal Kit Viton SK000093
High Temp Commutator Seal 032861
*Coupling shaft ø 1 inch Max. torque cont./int. = 450/550 Nm

TG Series

Technical Information

Exceptional strength and durability in a high performance motor
The heart of Parker's TG Series powertrain, the Torqlink, is an extra heavy duty part includes patented 60:40 spline geometry. Rugged construction throughout allows the transmission of over 13,000 lb-in of torque. The entire powertrain is continually washed in cool, high flow fluid to assure long life.
Roller vanes and sealed commutator maintain high efficiency and provide smooth low speed performance.

13 Displacements		(8.6 - 58.5 in^3/rev) 141...959 cm^3/rev
Maximum Pressure	Cont (to 3000 psi) ...207 bar	Int (to 4000 psi) ...276 bar
Maximum Oil Flow		(to 30 gpm) ...114 lpm
Maximum Speed		(660 rpm) 660 rpm
Maximum Torque	Cont (9239 lb in) 1044 Nm	Int (12636 lb in) 1428 Nm
Maximum Side Load at Key		(to 3597 lb) ... 16000 N



TG Series

Ordering Information

TG	XXXX	XX	XX	0	XXXX

Series

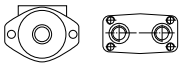
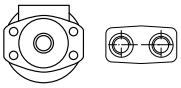
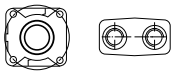
Displacement

Code	cc/rev	cu in³/rev
0140	141	8.6
0170	169	10.3
0195	195	11.9
0240	238	14.5
0280	280	17.1
0310	310	18.9
0335	337	20.6
0405	405	24.7
0475	477	29.1
0530	528	32.3
0625	623	38.0
0785	786	48.0
0960	959	58.5

Options

Code	Options
AAAB	No Paint
AAAA	Black Paint

Code	Rotation
0	Standard 

Code	Mounting/Ports
AM	SAE "A" 2 Bolt, 5/16-18 UNC Manifold 
AS	SAE "A" 2 Bolt, 7/8-14 SAE 
MS	4 Bolt 7/8-14 SAE 
US	Wheel, Front Brake Nose, 7/8-18 SAE 

Code	Shaft
01*	1" 6B Spline 
03	1 1/4" Keyed 
05	1 1/4" 14 Tooth 
06	19 Tooth Spline 
08	1 1/4" Taper 
19	1 3/8" Taper 

Seal Kit Strandard	SK000092
Seal Kit Viton	SK000093
High Temp Commutator Seal	032861

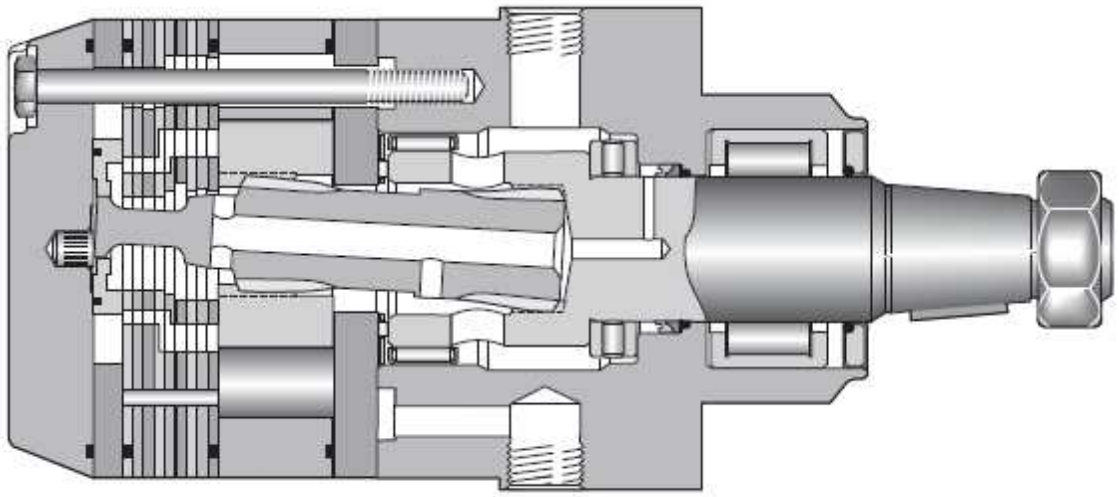
*Coupling shaft ø 1 inch Max. torque cont./int. = 450/550 Nm

Technical Information

A Rugged Motor for Heavy Duty, High Side Load Applications

This motor was designed for tough applications. A stout drive link with unique 60:40 spline geometry will transmit over 13,000 lb-in of torque. The 1-1/2" output shaft can support 7000 pounds of radial load. Efficiency is assured by the use of roller vanes and seal commutator. Durability is maintained by continually washing the power splines and shaft seal in cooling fluid.

13 Displacements		(8.6 - 58.5 in^3/rev) 141...959 cm^3/rev
Maximum Pressure	Cont (to 3000 psi) ...207 bar	Int (to 4000 psi) ...276 bar
Maximum Oil Flow		(to 30 gpm) ...114 lpm
Maximum Speed		(660 rpm) 660 rpm
Maximum Torque	Cont (8772 lb in) 991 Nm	Int (11876 lb in) 1342 Nm
Maximum Side Load at Key		(to 4800 lb) ... 21360 N



Ordering Information

TH	XXXX	XX	XX	0	XXXX

Series

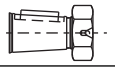
Displacement

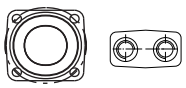
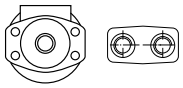
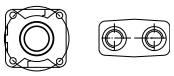
Code	cc/rev	cu in³/rev
0140	141	8.6
0170	169	10.3
0195	195	11.9
0240	238	14.5
0280	280	17.1
0310	310	18.9
0335	337	20.6
0405	405	24.7
0475	477	29.1
0530	528	32.3
0625	623	38.0
0785	786	48.0
0960	959	58.5

Options

Code	Options
AAAB	No Paint
AAAA	Black Paint

Code	Rotation
0	Standard 

Code	Shaft
31	1 1/2" J501 Taper 
32	1 1/2" Keyed 
36	1 1/2" 17 Tooth 

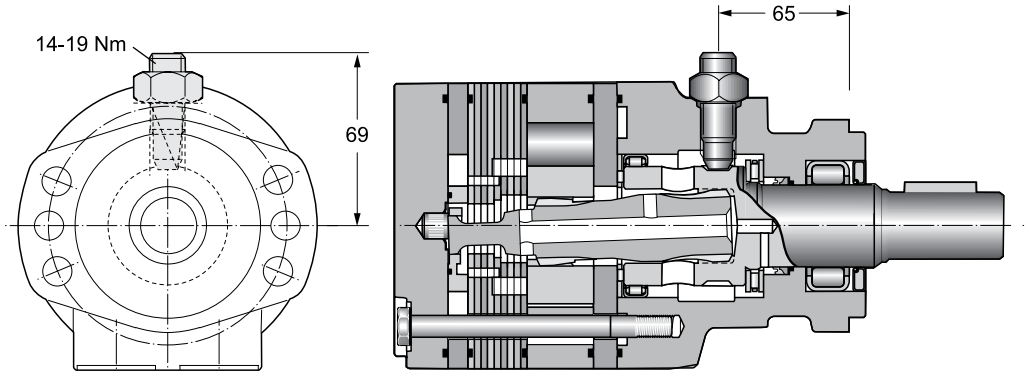
Code	Mounting/Ports
PS	SAE "B" 4 Bolt, 7/8-14 SAE 
MS	4 Bolt 7/8-14 SAE 
US	Wheel, Front Brake Nose, 7/8-18 SAE 

Seal Kit Strandard	SK000092
Seal Kit Viton	SK000093
High Temp Commutator Seal	032861

Speed Sensor

An Economical sensor for speed readout

This rugged, weather resistant design is ideal for industrial and mobile applications. Applications include salt/sand/fertiliser spreader drives, conveyer and injection molder compression drives. The sensor is a hall effect type which when externally powered outputs 30 square wave digital pulses per coupling shaft revolution. The connector is a user friendly universally available 4 pin polarised M12 connector allowing for simplified field service. The integrated design does not effect the side load capacity or performance of the torque motor.

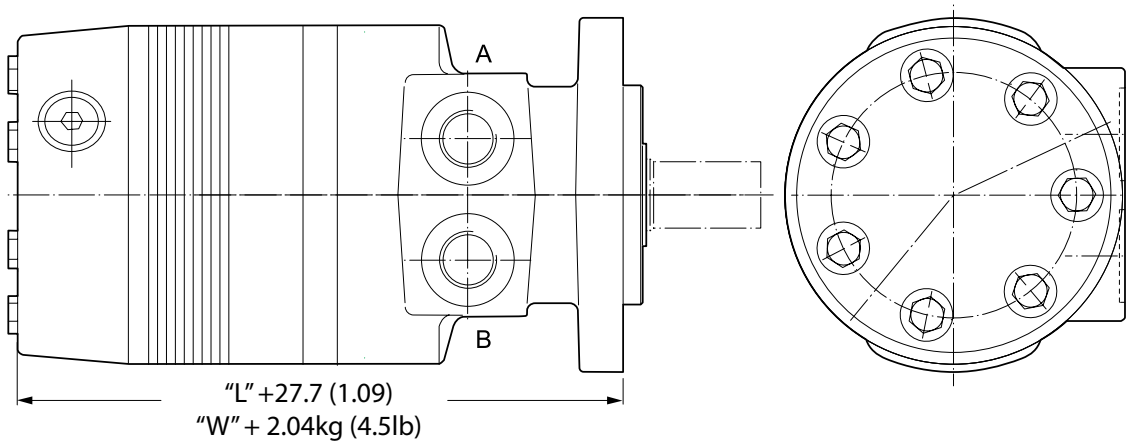


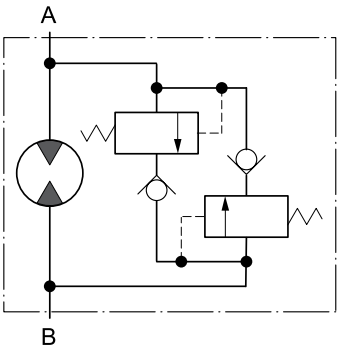
Maximum operating pressure 172 bar (2500 psi).

Internal relief valve

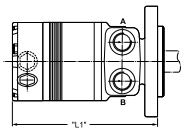
Code: BBBA*, BBBB*, BBBC*, BBBD* or BBBG*

This integrated internal relief valve is used for fixed pressure settings.





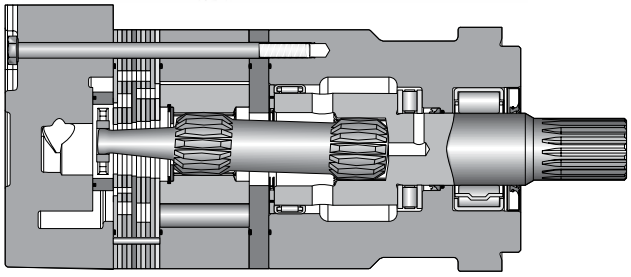
Ordering system

Options		Pressure bar (psi)
*	 Opening pressure	69 (1000)
*		138 (2000)
*		207 (3000)
*		276 (4000)
*		103 (1500)

Technical Information

Exceptional strength and durability in a high performance motor

The heart of Parker's TK Series powertrain, the torque link, is an extra heavy duty part that includes patented 60:40 spline geometry. Rugged construction throughout allows the transmission of over 23,000 lb-in of torque. The entire powertrain is continually washed in cool, high flow fluid to assure long life. Roller vanes and sealed commutator maintain high efficiency and provide smooth low speed performance.



7 Displacements		(15.3 to 61.1 in^3/rev) 250...1000 cm^3/rev
Maximum Pressure	Cont (to 3000 psi) ...241 bar	Int (to 4000 psi) ...310 bar
Maximum Oil Flow		(to 60 gpm) ...227 lpm
Maximum Speed		(523 rpm) 523 rpm
Maximum Torque	Cont (21360 lb in) 2413 Nm	Int (23540 lb in) 2660 Nm
Maximum Side Load at Key		(to 5900 lb) ... 26245 N

TK	XXXX	X5	XX	0	XXXX

Series

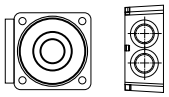
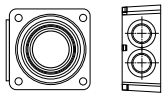
Displacement

Code	cc/rev	cu in^3/rev
0250	250	15.3
0315	315	19.2
0400	400	24.4
0500	500	30.5
0630	630	38.4
0800	800	48.8
1000	1000	61.0

Options

Code	Options
AAAB	No Paint
AAAA	Black Paint

Code	Rear Port Rotation
0	Standard 

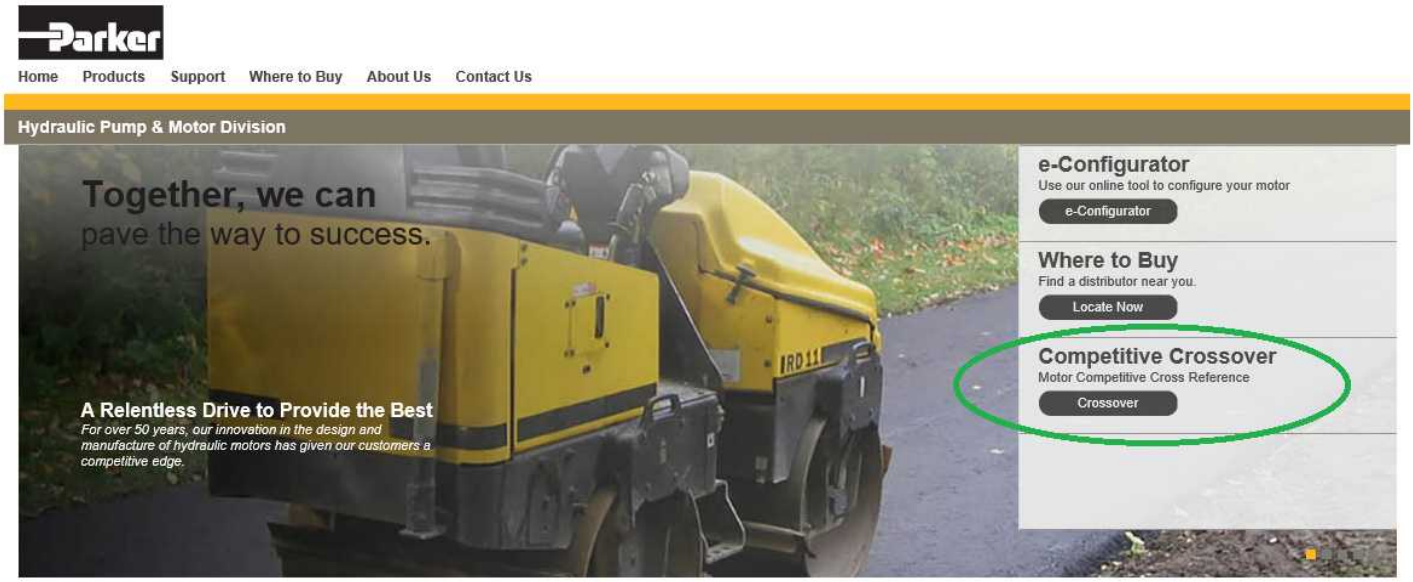
Code	Mounting/Ports
K5	Standard SAE CC, 1 5/16-12 SAE Rear Radical 
T5	Wheel Mount, 1 5/16-12 SAE Rear Radical 

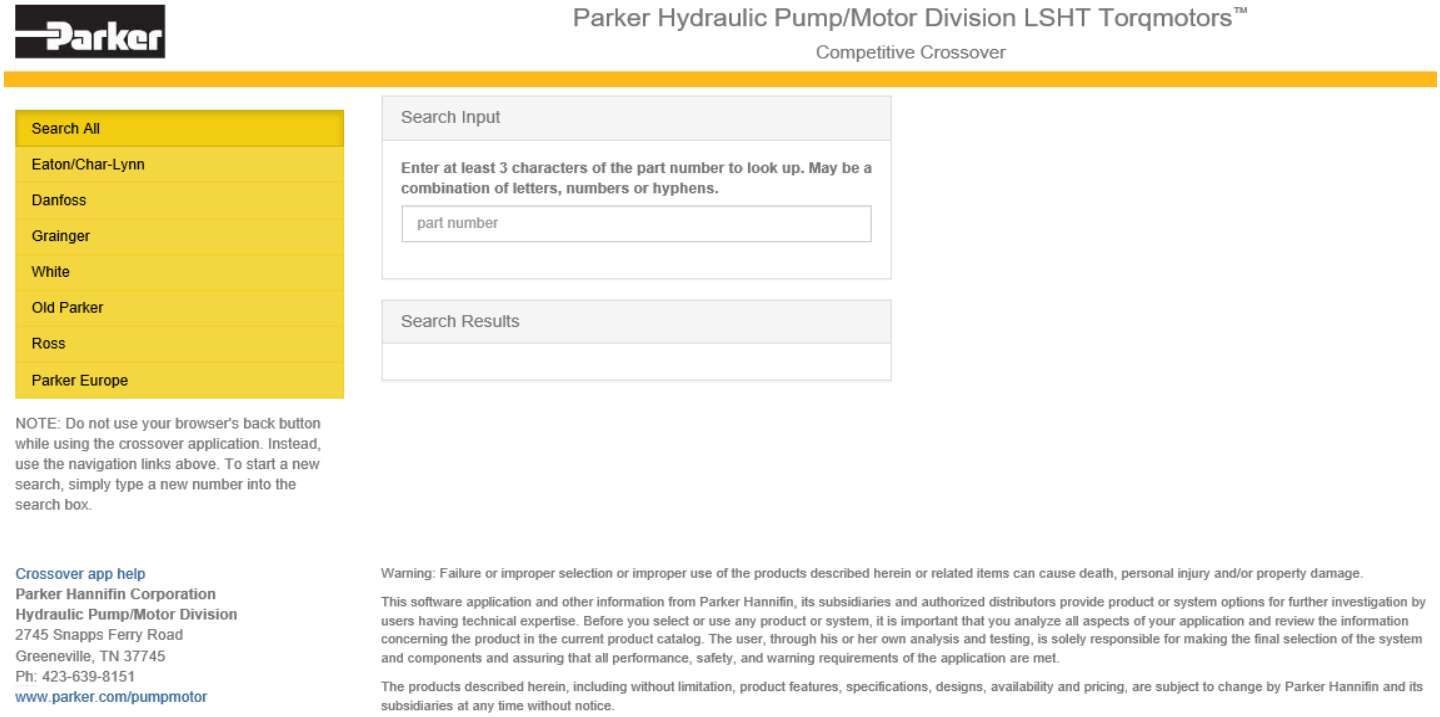
Code	Shaft
32	1 1/2" Keyed 
36	1 1/2" 17 Tooth 12/24 Spline 
63	1 3/4" Tapered 
64	40mm Keyed 

Seal Kit SK000167

Competitive Crossover

Visit this link: http://bit.ly/2f4Z1y0





Application Market

Market	Applications
Agricultural	Harvester, Bale Wrappers, Grass cutter, Mower, Conveyors,
Marine & Offshore	Slewing, Winches, Cranes, Hoists
Construction	Rotating Pulverizer, Loaders, Concrete Trailers, Mini-Skid Steers, Tailgate Spreader, Dump/Spreader
Material Handling	Aerial Lift (Utility Trucks), Sorting graps, Wood Shredder, Walking-Floor Trailer
Mining & Drilling	Drill rig, Screener
















Ref. Catalogue : HY13-15900-009/US,EU

Axial Piston Pumps and Motors

1/ Fixed Displacement

Parker

ENGINEERING YOUR SUCCESS.

Axial Piston F11 Series

- Pressures up to 420 bar
- High overall efficiency (low losses)
- Accept high external shaft loads
- Good resistance to vibrations and temperature shocks
- Proven reliability
- Easy to service
- CETOP, ISO and SAE versions available

Frame size* F11	-05	-6	-10	-12	-14	-19
Displacement (cc/rev)	4.9	6.0	9.8	12.5	14.3	19
Max cont pressure (bar)	350	350	350	350	350	350
Max operating speed (rpm)	12,800	11,200	10,200	9,400	9,000	8100
Weight (kg)	5	7.5	7.5	8.3	8.3	11

* Use F12 for medium range displacement

CETOP MOUNT

Frame Size	Displacement	Order Code	Mount Dimension	Shaft Type	Description
F11-005	4.9 cc/rev	3707249	80mm	18mm keyed	F11-005-MB-CV-K-000-000-0
F11-006	6.0cc/rev	3703667	80mm	18mm keyed	F11-005-RB-CN-K-000-000-0
F11-010	9.8 cc/rev	3706030	100mm	20mm keyed	F11-010-MB-CV-K-000-000-0
F11-012	12.5 cc/rev	3787141	100mm	20mm keyed	F11-012-HB-CV-K-000-000-P
F11-014	14.3 cc/rev	3786585	100mm	25mm keyed	F11-014-HB-CV-K-000-000-P
F11-019	19.0 cc/rev	3703516	112mm	25mm keyed	F11-019-MB-CN-K-000-000-0

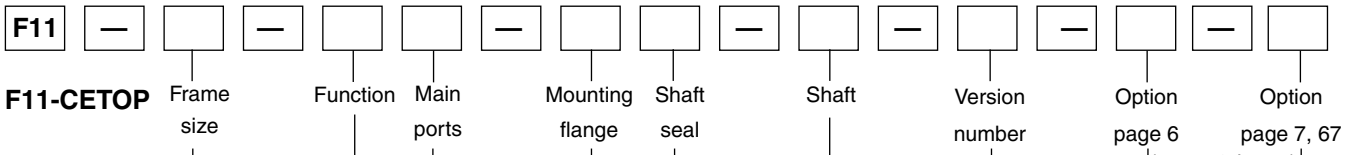
ISO MOUNT

Frame Size	Displacement	Order Code	Mount Dimension	Shaft Type	Description
F11-010	9.8 cc/rev	3785712	80mm	20mm key	F11-010-MB-IV-K-000-000-0
F11-010	9.8 cc/rev	3785239	80mm	Spline Din 5480	F11-010-MB-IV-D-000-000-0
F11-012	12.5 cc/rev	3787067	80mm	20mm key	F11-012-HB-IV-K-000-000-P
F11-014	14.3 cc/rev	3787340	80mm	Spline Din 5480	F11-014-HB-IV-D-000-000-P

SAE MOUNT

Frame Size	Displacement	Order Code	Mount Dimension	Shaft Type	Description
F11-006	6 cc/rev	3784783	SAE B, 2 Bolt	20mm Key	F11-006-MU-SV-K-000-000-0
F11-010	9.8 cc/rev	3788026	SAE B, 2 Bolt	20mm Key	F11-010-MU-SV-K-000-000-0
F11-012	12.5 cc/rev	3786605	SAE B, 2 Bolt	SAE B , Spline	F11-012-HU-SV-S-000-000-P
F11-014	14.3 cc/rev	3787420	SAE B, 2 Bolt	SAE B , Spline	F11-014-HU-SV-S-000-000-P
F11-019	19.0 cc/rev	3708433	SAE B, 2 Bolt	SAE B, Spline	F11-019-RU-SV-S-000-000-0
F11-019	19.0 cc/rev	3707031	SAE B, 2 Bolt	SAE B , Spline	F11-019-MU-SV-S-000-000-0

Ordering codes



Frame size	
Code	Displacem. (cm^3/rev)
005	4.9
006	6.0
010	9.8
012	12.5
014	14.3
019	19.0

Version number
(assigned for special versions)

Frame size		5	6	10	12	14	19
Code	Function						
M	Motor	x	x	x	-	-	x
Q	Motor, low noise	x	-	x	x	x	x
S	Motor, high speed	-	-	(x)	(x)	(x)	(x)
H	Motor, high pressure	(x)	-	(x)	-	-	(x)
R	Pump, clockwise rot'n	(x)	-	(x)	(x)	(x)	(x)
L	Pump, counter clockw.	(x)	-	(x)	(x)	(x)	(x)

For other versions, contact Parker Hannifin

Frame size		5	6	10	12	14	19
Code	Option						
0000	Standard	x	x	x	x	x	x
MUVR	Make up/Anti cavitation valve clockwise rotation	-	-	(x)	(x)	(x)	(x)
MUVL	Make up/Anti cavitation valve counter clockwise rotation	-	-	(x)	(x)	(x)	(x)

Frame size		5	6	10	12	14	19
Code	Shaft*						
K	Metric key	x	x	x	x	x	x
J	Metric key	(x)	(x)	(x)	(x)	-	-
P	Metric key	-	-	-	-	(x)	-
A	Spline, DIN 5480	-	(x)	(x)	(x)	-	-
D	Spline, DIN 5480	x	x	x	x	x	x
S	Spline, SAE	(x)	-	-	-	-	-
V	Tapered shaft	-	(x)	(x)	(x)	(x)	(x)

*See also dimensional drawings (see catalogue)

Frame size		5	6	10	12	14	19
Code	Main ports						
B	BSP threads	x	x	x	x	x	x
U	SAE, UN threads	(x)	(x)	(x)	(x)	(x)	(x)

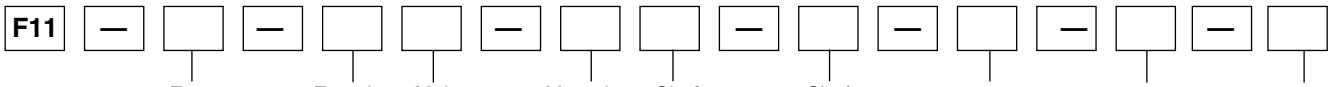
Frame size		5	6	10	12	14	19
Code	Mounting flange						
C	CETOP flange	x	x	x	x	x	x
W	Saw motor flange	-	(x)	(x)	(x)	(x)	(x)

Frame size		5	6	10	12	14	19
Code	Shaft seal						
N	NBR, low pressure	(x)	(x)	(x)	-	-	(x)
V	FPM, high pressure, high temperature	x	x	x	x	x	x
S	PTFE, high speed	-	(x)	(x)	(x)	(x)	(x)

x: Available (x): Optional – : Not available

Frame size		5	6	10	12	14	19
Code	Option						
00	Standard	x	x	x	x	x	x
P_	Prepared for speed sensor	-	(x)	(x)	(x)	(x)	(x)
B_	Power Boost and Prepared for speed sensor	-	(x)	(x)	(x)	(x)	(x)
_T	Painted Black	(x)	(x)	(x)	(x)	(x)	(x)

Ordering codes



Frame size	
Code	Displacem. (cm^3/rev)
006	6.0
010	9.8
012	12.5
014	14.3
019	19.0

Version number
(assigned for special versions)

Frame size		6	10	12	14	19
Code	Function					
M	Motor	x	x	-	-	x
Q	Motor, low noise	-	x	x	x	x
S	Motor, high speed	-	(x)	(x)	(x)	(x)
H	Motor, high pressure	-	(x)	-	-	(x)
R	Pump, clockwise rot'n	-	(x)	(x)	(x)	(x)
L	Pump, counter clockw.	-	(x)	(x)	(x)	(x)

For other versions, contact Parker Hannifin

Frame size		6	10	12	14	19
Code	Option					
0000	Standard	x	x	x	x	x
MUVR	Make up/Anti cavitation valve clockwise rotation	-	(x)	(x)	(x)	(x)
MUVL	Make up/Anti cavitation valve counter clockwise rotation	-	(x)	(x)	(x)	(x)

Frame size		6	10	12	14	19
Code	Shaft*					
T	SAE key	-	-	-	x	x
S	SAE spline	x	x	x	x	x
K	Metric key	x	x	x	x	x
J	Metric key	(x)	(x)	(x)	-	-
P	Metric key	-	-	-	(x)	-
V	Tapered shaft	(x)	(x)	(x)	(x)	(x)

*See also dimensional drawings (see catalogue)

Frame size		6	10	12	14	19
Code	Main ports					
U	SAE, UN threads	x	x	x	x	x
B	BSP threads	(x)	(x)	(x)	(x)	(x)

Frame size		6	10	12	14	19
Code	Shaft seal					
N	NBR, low pressure	(x)	(x)	-	-	(x)
V	FPM, high pressure, high temperature	x	x	x	x	x
S	PTFE, high speed	(x)	(x)	(x)	(x)	(x)

Frame size		6	10	12	14	19
Code	Mounting flange					
S	SAE flange	x	x	x	x	x

x: Available (x): Optional – : Not available

Frame size		6	10	12	14	19
Code	Option					
00	Standard	x	x	x	x	x
P_	Prepared for speed sensor	(x)	(x)	(x)	(x)	(x)
B_	Power Boost and Prepared for speed sensor	(x)	(x)	(x)	(x)	(x)
_T	Painted Black	(x)	(x)	(x)	(x)	(x)

Axial Piston F12 Series

- Pressures up to 480 bar
- High power capability
- High overall efficiency
- Small envelope size
- ISO, SAE and cartridge versions available
- Proven reliability
- Easy to service

Material Specifications

Frame size F12	30	40	60	80	90	110	125	150	250
Displacement (cm3/rev)	30.0	40.0	59.8	80.4	93.0	110.1	125.0	150.0	242.0
Max cont pressure (bar)	420	420	420	420	350	420	420	350	350
Max operating speed (rpm)	6700	6100	5300	4800	4600	4400	4200	3200	2700
Weight (kg)	12	16.5	21	26	26	36	36	70	77

ISO MOUNT

Frame Size	Displacement	Order Code	Mount Dimension	Shaft Type	Description
F12-030	30.0 cc/rev	3799844	100mm	30mm key	F12-030-MF-IV-K-000-0000-00
F12-030	30.0 cc/rev	3799843	100mm	Spline Din 5480	F12-030-MF-IV-D-000-0000-00
F12-040	40.0 cc/rev	3799526	125mm	30mm key	F12-040-MF-IV-K-000-0000-00
F12-040	40.0 cc/rev	3799525	125mm	Spline Din 5480	F12-040-MF-IV-D-000-0000-00
F12-060	59.8 cc/rev	3799989	125mm	35mm key	F12-060-MF-IV-K-000-0000-00
F12-060	59.8 cc/rev	3799988	125mm	Spline Din 5480	F12-060-MF-IV-D-000-0000-00
F12-080	80.4 cc/rev	3780772	140mm	40mm key	F12-080-MF-IV-K-000-0000-00
F12-080	80.4 cc/rev	3780767	140mm	Spline Din 5480	F12-080-MF-IV-D-000-0000-00
F12-090	93.0 cc/rev	3785609	140mm	40mm key	F12-090-MF-IV-K-000-0000-00
F12-090	93.0 cc/rev	3786986	140mm	Spline Din 5480	F12-090-MF-IV-D-000-0000-00
F12-110	110.1 cc/rev	3781534	160mm	45mm key	F12-110-MF-IV-K-000-0000-00
F12-110	110.1 cc/rev	3781530	160mm	Spline Din 5480	F12-110-MF-IV-D-000-0000-00
F12-125	125.0 cc/rev	3785717	160mm	45mm key	F12-125-MF-IV-K-000-0000-00
F12-125	125.0 cc/rev	3786589	160mm	Spline Din 5480	F12-125-MF-IV-D-000-0000-00
F12-150 F12-152	150.0 cc/rev 149.8 cc/rev	3787731 3720451	200mm 200mm	Spline Din 5480 Spline Din 5480	F12-150-MF-CV-D-000-0000-00 F12-152-SF- IV- K-000-0000-00

Ordering codes

F12 — ☐ — ☐ ☐ ☐ — ☐ ☐ — ☐ — ☐ — ☐ — ☐

F12-ISO

Frame size | Function | Main ports | Mounting flange | Shaft seal | Shaft | Version number | Option page 6, 61 (see catalogue) | Option page 7, 67 (see catalogue)

Frame size	
Code	Displacem. (cm^3/rev)
030	30.0
040	40.0
060	59.8
080	80.4
090	93.0
110	110.1
125	125.0
152	149.8
162	163.1
182	179.8

Version number
(assigned for special versions)

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Function										
M	Motor	x	x	x	x	x	x	x	x	x	x
S	Motor, high speed	(x)	(x)	(x)	-	-	-	-	(x)	(x)	(x)
R	Pump, clockwise rotation	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-	-
L	Pump, counter clockwise rot'n	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-	-

For other versions, contact Parker Hannifin

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Shaft*										
D	DIN Spline, Standard	x	x	x	x	x	x	x	x	x	x
A	DIN Spline, Optional	-	(x)	-	-	-	-	-	-	-	-
Z	DIN Spline, Optional	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
K	Metric key, Standard	x	x	x	x	x	x	x	x	x	x
J	Metric key, Optional	-	(x)	-	-	-	-	-	-	-	-
H	DIN Spline, Optional	-	-	-	-	-	-	-	(x)	(x)	(x)
G	Metric key, Optional	-	-	-	-	-	-	-	(x)	(x)	(x)
P	Metric key, Optional	(x)	-	-	-	-	-	-	(x)	(x)	(x)
V	Tapered shaft	(x)	(x)	(x)	-	-	(x)	(x)	-	-	-

*See also dimensional drawings (see catalogue)

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Main ports										
F	SAE 6000 psi flange	x	x	x	x	x	x	x	x	x	x
D	SAE 6000 psi Horizontal	-	-	-	-	-	-	-	(x)	(x)	(x)
A	SAE 6000 psi Axial	-	-	-	-	-	-	-	(x)	(x)	(x)
K	SAE 6000 psi Rear	-	-	-	-	-	-	-	(x)	(x)	(x)
M	SAE 6000 psi Side	-	-	-	-	-	-	-	(x)	(x)	(x)

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Option										
0000	Standard	x	x	x	x	x	x	x	x	x	x
L130	Flushing valve 1.3 mm orifice	(x)	(x)	(x)	(x)	(x)	-[1]	-[1]	-	-	-
MUVR	Make up/Anti cavitation valve clockwise rotation	(x)	-	-	-	-	-	-	-	-	-
MUVL	Make up/Anti cavitation valve counter clockwise rotation	(x)	-	-	-	-	-	-	-	-	-
P__R[2]	Pressure relief valve clockwise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-
P__L[2]	Pressure relief valve counter clockwise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Mounting flange										
I	ISO flange	x	x	x	x	x	x	x	x	x	x
F	ISO 200 flange	-	-	-	-	-	-	-	x	x	x

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Option										
00	Standard	x	x	x	x	x	x	x	x	x	x
P_	Prepared for speed sensor	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
B_	Power Boost and Prepared for speed sensor	(x)	-	-	-	-	-	-	-	-	-
_T	Painted Black	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Shaft seal										
N	NBR, low pressure	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
V	FPM, high pressure, high temperature	x	x	x	x	x	x	x	x	x	x
S	PTFE, high speed	(x)	-	-	-	-	-	-	-	-	-

x: Available (x): Optional – : Not available

1) F12-110 and -125: Accessory valve block (see catalogue)

2) Pressure setting (see catalogue)

Axial Piston F12 Series

- Pressures up to 480 bar
- High power capability
- High overall efficiency
- Small envelope size
- ISO, SAE and cartridge versions available
- Proven reliability
- Easy to service

Material Specifications

Frame size F12	30	40	60	80	90	110	125	150	250
Displacement (cm3/rev)	30.0	40.0	59.8	80.4	93.0	110.1	125.0	150.0	242.0
Max cont pressure (bar)	420	420	420	420	350	420	420	350	350
Max operating speed (rpm)	6700	6100	5300	4800	4600	4400	4200	3200	2700
Weight (kg)	12	16.5	21	26	26	36	36	70	77

SAE MOUNT

Frame Size	Displacement	Order Code	Shaft Type	Mounting	Description
F12-030	30.0 cc/rev	3788947	SAE B-B (1") Key	SAE B, 2 Bolt	F12-030-MS-TV-T-000-0000-P
F12-030	30.0 cc/rev	3799616	SAE-B , Spline	SAE B, 2 Bolt	F12-030-MS-TV-S-000-0000-00
F12-030	30.0 cc/rev	3799852	SAE B-B (1") Key	SAE B-4 Bolt	F12-030-MS-SV-T-000-0000-00
F12-030	30.0 cc/rev	3799855	SAE B , Spline	SAE B-4 Bolt	F12-030-MS-SV-S-000-0000-00
F12-040	40.0 cc/rev	3799881	SAE C (.1.250") Key	SAE B, 2 Bolt	F12-040-MS-TV-T-000-0000-00
F12-040	40.0 cc/rev	3789033	SAE C , Spline	SAE B, 2 Bolt	F12-040-MS-TV-S-000-0000-P
F12-040	40.0 cc/rev	3799533	SAE C (1.250") Key	SAE C, 4 Bolt	F12-040-MS-SV-T-000-0000-00
F12-040	40.0 cc/rev	3799532	SAE C , Spline	SAE C, 4 Bolt	F12-040-MS-SV-S-000-0000-00
F12-060	59.8 cc/rev	3799882	SAE C (1.250") Key	SAE B, 2 Bolt	F12-060-MS-TV-T-000-0000-00
F12-060	59.8 cc/rev	3788092	SAE C , Spline	SAE B, 2 Bolt	F12-060-MS-TV-S-000-0000-P
F12-060	59.8 cc/rev	3799999	SAE C (.1.250") Key	SAE C, 4 Bolt	F12-060-MS-SV-T-000-0000-00
F12-060	59.8 cc/rev	3799998	SAE C , Spline	SAE C, 4 Bolt	F12-060-MS-SV-S-000-0000-00
F12-080	80.4 cc/rev	3780784	SAE C-C (1.50") Key	SAE C, 4 Bolt	F12-080-MS-SV-T-000-0000-00
F12-080	80.4 cc/rev	3780783	SAE C-C , Spline	SAE C, 4 Bolt	F12-080-MS-SV-S-000-0000-00
F12-090	93.0 cc/rev	3786810	SAE C-C , Spline	SAE C, 4 Bolt	F12-090-MS-SV-S-000-0000-P
F12-110	110.1 cc/rev	3781542	SAE D , Spline	SAE D, 4 Bolt	F12-110-MS-SV-S-000-0000-00
F12-125	125.0 cc/rev	3785504	SAE D (1.75") Key	SAE D, 4 Bolt	F12-125-MS-SV-S-000-0000-00
F12-150	150.0 cc/rev	3787725	SAE D , Spline	SAE D, 4 Bolt	F12-150-MS-SV-S-000-0000-00
F12-152	149.7 cc/rev	3720410	SAE D , Spline	SAE D, 4 Bolt	F12-152-SF-SV-S-000-0000-00
F12-162	163.1 cc/rev	3720412	SAE D , Spline	SAE D, 4 Bolt	F12-162-SF-SV-S-000-0000-00
F12-182	179.8 cc/rev	3720333	SAE D , Spline	SAE D, 4 Bolt	F12-182-SF-SV-S-000-0000-00
F12-250	242.0 cc/rev	3787187	SAE D , Spline	SAE D, 4 Bolt	F12-250-QF-SV-D-000-0000-00
F12-250	242.0 cc/rev	3787181	DIN 5480	SAE D, 4 Bolt	F12-250-QF-SV-D-000-0000-00

Ordering codes

F12 — [ ] — [ ] [ ] [ ] — [ ] [ ] — [ ] — [ ] — [ ] [ ] — [ ]

F12-SAE

Frame size | Function | Main ports | Mounting flange | Shaft seal | Shaft | Version number | Option page 6, 61 | Option page 7, 67 (see catalogue)

Frame size	
Code	Displacem. (cm^3/rev)
030	30.0
040	40.0
060	59.8
080	80.4
090	93.0
110	110.1
125	125.0
152	149.8
162	163.1
182	179.8
250	242.0

Version number
(assigned for special versions)

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Shaft*											
T	SAE key, Standard	x	x	x	x	x	x	x	x	x	x	x
R	SAE key, Optional	-	-	-	(x)	(x)	-	-	-	-	-	-
S	SAE Spline, Optional	x	x	x	x	x	x	x	x	x	x	x
F	SAE Spline, Optional	-	-	-	(x)	(x)	-	-	(x)	(x)	(x)	(x)
U	SAE Spline, Optional	-	-	-	(x)	(x)	-	-	-	-	-	-
K	Metric key, Standard	-	-	-	-	-	-	-	-	-	-	x
D	Spline DIN 5480	-	-	-	-	-	-	-	-	-	-	(x)
V	Tapered shaft	(x)	(x)	(x)	-	-	(x)	(x)	-	-	-	-

*See also dimensional drawings (see catalogue)

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Function											
M	Motor	x	x	x	x	x	x	x	x	x	x	-
S	Motor, high speed	(x)	(x)	(x)	-	-	-	-	(x)	(x)	(x)	-
Q	Motor	-	-	-	-	-	-	-	-	-	-	x
R	Pump, clockwise rotation	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-	-	(x)
L	Pump, counter clockwise rot'n	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-	-	(x)

For other versions, contact Parker Hannifin

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Main ports											
S	SAE 6000 psi flange	x	x	x	x	x	x	x	-	-	-	-
U	SAE UN threads 4)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-	-	-
F	SAE 6000 psi flange 2)	-	-	-	-	-	-	-	x	x	x	x
D	SAE 6000 psi Horizontal 2)	-	-	-	-	-	-	-	(x)	(x)	(x)	-
A	SAE 6000 psi Axial 2)	-	-	-	-	-	-	-	(x)	(x)	(x)	-
K	SAE 6000 psi Rear 2)	-	-	-	-	-	-	-	(x)	(x)	(x)	-
M	SAE 6000 psi Side 2)	-	-	-	-	-	-	-	(x)	(x)	(x)	-

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Option											
0000	Standard	x	x	x	x	x	x	x	x	x	x	x
L130	Flushing valve 1.3 mm orifice	(x)	(x)	(x)	(x)	(x)	-1)	-1)	-	-	-	-
MUVR	Make up/Anti cavitation valve clock-wise rotation	(x)	-	-	-	-	-	-	-	-	-	-
MUVL	Make up/Anti cavitation valve counter clockwise rotation	(x)	-	-	-	-	-	-	-	-	-	-
P__R 3)	Pressure relief valve clockwise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-	-
P__L 3)	Pressure relief valve counter clock-wise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Mounting flange											
S	SAE 4 bolt	x	x	x	x	x	x	x	x	x	x	x
R	SAE 4 bolt	-	-	-	(x)	(x)	-	-	-	-	-	-
T	SAE 2 bolt	x	x	x	-	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Option											
00	Standard	x	x	x	x	x	x	x	x	x	x	x
P_	Prepared for speed sensor	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
B_	Power Boost and Prepared for speed sensor	(x)	-	-	-	-	-	-	-	-	-	-
_T	Painted Black	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Shaft seal											
N	NBR, low pressure	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-
V	FPM, high pressure, high temperature	x	x	x	x	x	x	x	x	x	x	x
S	PTFE, high speed	(x)	-	-	-	-	-	-	-	-	-	-

x: Available (x): Optional – : Not available

1) F12-110 and -125: Accessory valve block (see catalogue)
2) Metric threads
3) Pressure setting (see catalogue)
4) Not in combination with any valve options

F11/F12 Spare Parts

VALVE PLATES

Frame Size	Displacement	Part Number	Design Detail	Weight (kg)
F11-005	4.9 cc/rev	3703652	Valve Plate- Left Hand (Type L)	0.1
F11-005	4.9 cc/rev	3703653	Valve Plate- Right Hand (Type R)	0.1
F11-005	4.9 cc/rev	3707105	Valve Plate- Motor H	0.1
F11-010	9.8 cc/rev	3703590	Valve Plate- Left Hand (Type L)	0.1
F11-010	9.8 cc/rev	3703591	Valve Plate- Right Hand (Type R)	0.1
F11-010	9.8 cc/rev	3707104	Valve Plate- Motor H	0.1
F11-012	12.5 cc/rev	3783095	Valve Plate- Left Hand (Type L)	0.1
F11-012	12.5 cc/rev	3783094	Valve Plate- Right Hand (Type R)	0.1
F11-012	12.5 cc/rev	3782850	Valve Plate- Motor H	0.1
F11-014	14.3 cc/rev	3783095	Valve Plate- Left Hand (Type L)	0.1
F11-014	14.3 cc/rev	3783094	Valve Plate- Right Hand (Type R)	0.1
F11-014	14.3 cc/rev	3782850	Valve Plate- Motor H	0.1
F11-019	19.0 cc/rev	3703440	Valve Plate- Left Hand (Type L)	0.1
F11-019	19.0 cc/rev	3703441	Valve Plate- Right Hand (Type R)	0.1
F11-019	19.0 cc/rev	3706330	Valve Plate- Motor H	0.1
F12-030	30.0 cc/rev	3792037	Valve Plate- Left Hand (Type L)	0.2
F12-030	30.0 cc/rev	3791912	Valve Plate- Right Hand (Type R)	0.2
F12-030	30.0 cc/rev	3782447	Cylinder Barrel (Pump)	0.2
F12-030	30.0 cc/rev	3791911	Valve Plate- Motor M	0.2
F12-040	40.0 cc/rev	3791573	Valve Plate- Left Hand (Type L)	0.2
F12-040	40.0 cc/rev	3791572	Valve Plate- Right Hand (Type R)	0.2
F12-040	40.0 cc/rev	3782497	Cylinder Barrel (Pump)	1.5
F12-040	40.0 cc/rev	3793456	Valve Plate- Motor M	0.2
F12-060	59.8 cc/rev	3709859	Valve Plate- Left Hand (Type L)	0.2
F12-060	59.8 cc/rev	3709858	Valve Plate- Right Hand (Type R)	0.2
F12-060	59.8 cc/rev	3781278	Cylinder Barrel (Pump)	1.8
F12-060	59.8 cc/rev	3791799	Valve Plate- Motor M	0.2
F12-080	80.4 cc/rev	3709709	Valve Plate- Left Hand (Type L)	0.2
F12-080	80.4 cc/rev	3709708	Valve Plate- Right Hand (Type R)	0.2
F12-080	80.4 cc/rev	3782530	Cylinder Barrel (Pump)	TBA
F12-080	80.4 cc/rev	3792773	Valve Plate- Motor M	0.2
F12-110	110.1 cc/rev	3791577	Valve Plate- Left Hand (Type L)	1.5
F12-110	110.1 cc/rev	3791576	Valve Plate- Right Hand (Type R)	0.5
F12-110	110.1 cc/rev	3782462	Cylinder Barrel (Pump)	2.5
F12-110	110.1 cc/rev	3794369	Valve Plate- Motor M	0.5

SPARE PARTS KITS

Order Code	Frame size	Description	Contain	Weight (kg)
3797031	F11-005	Type N	Valveplate, Cylinder barrel, pistons and N seals	0.5
3797032	F11-010	Type N	Valveplate, Cylinder barrel, pistons and N seals	0.7
3780159	F11-010	Type S	Valveplate, Cylinder barrel, pistons and S seals	0.7
3797033	F11-019	Type N	Valveplate, Cylinder barrel, pistons and N seals	1
3780160	F11-019	Type S	Valveplate, Cylinder barrel, pistons and S seals	1
3787797	F12-030	Type M	Valveplate, Cylinder barrel and pistons	1.5
3787798	F12-040	Type M	Valveplate, Cylinder barrel and pistons	1.8
3787799	F12-060	Type M	Valveplate, Cylinder barrel and pistons	2.5
3787800	F12-080	Type M	Valveplate, Cylinder barrel and pistons	2.8
3787801	F12-090	Type M	Valveplate, Cylinder barrel and pistons	2.8
3787802	F12-110	Type M	Valveplate, Cylinder barrel,needle bearings and pistons	3.5
3787803	F12-125	Type M	Valveplate, Cylinder barrel,needle bearings and pistons	3.5
3787745	F12-150	Type M	Valveplate, Cylinder barrel,needle bearings and pistons	5.7

Application Market

Markets	Applications
Forestry	Saw Drives, Feller Bunchers, Skidder, Forwarder, Cranes, Mowers / Cutters
Industrial	Aircraft Test Stands
Marine	Deck Cranes, Constant Tension Winches, Hatch Covers
Oil & Gas	Nitrogen Pumpers, Frac Trucks, Coil Tubing
Construction	Skid Steer, Off-Highway Trucks, Fan Drives, Cranes, Dust Collector, Excavator
Mining	Drill Rigs, Top Drives, Loaders, Subsurface Loaders, Tunneling Equipment
Material Handling	Conveyor Drives, Truck Mounted Cranes, Mixers
Recycling	Shredders, Vaccum Truck Systems
Military	Fan Drives

Ref. Catalogue : HY30-8249/UK

Pumps

2/Variable Displacement

ENGINEERING YOUR SUCCESS.

Quick View

Variable Pump Product line

High

Premier (420 bar) - *80, 110, 140, 200, 260*

C Series *(420 bar)- 81, 136*

PV+ (350 bar) – *16,23, 46, 92, 180, 270, 360*

Gold Cup (350 bar) - *100, 120, 180, 230, 400, 500*

P2/P3 (320 bar) - *60, 75, 105, 145*

Medium

P1/PD (280 bar) - *18, 28, 45, 60, 75, 100, 140,*

PVP (250 bar) - *16, 23, 33, 41, 48*

Low

PAVC (210 bar) - *33, 38, 65, 100*

10 150 300 450 600

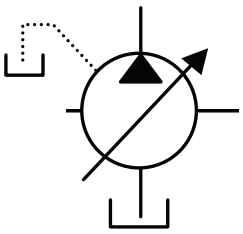
Variable Axial Piston Pumps

Features

- High Strength Cast-Iron Housing
- Built-In Supercharger Ensures High Speed Capability - 3000 RPM (2600 RPM PAVC100)
- Sealed Shaft Bearing
- Two Piece Design for Ease of Service
- Cartridge Type Controls - Field Changeable
- Replaceable Bronze Clad Port Plate
- Airbleed Standard for Quick Priming
- Hydrodynamic Cylinder Barrel Bearing
- Thru-Shaft (PAVC100 Only)
- Full Pressure Rating on Most Water Glycol Fluids
- Pump Case and Shaft Seal are Subjected to Inlet Pressure Only
- Filter and/or Cool Drain Line 7 bar (100 PSI) Maximum

Controls

- Pressure Compensation
- Load Sensing
- Power (Torque) Limiting
- Power and Load Sensing
- Remote Pressure Compensation
- Adjustable Maximum Volume Stop
- Low Pressure



Quick Reference Data Chart

Pump Model	Displacement CM^3/REV (IN^3/REV)	Pump Delivery @ 21 bar (300 PSI) in LPM (GPM)		*Approx. Noise Levels dB(A) @ Full Flow 1800 RPM (1200 RPM)				Input Power At 1800 RPM, Maximum Displacement & 207 bar (3000 PSI)	Operating Speed RPM (Maximum)	Pressure bar (PSI) Continuous (Maximum)
				34 bar	69 bar	138 bar	207 bar			
		1200 RPM	1800 RPM	(500 PSI)	(1000 PSI)	(2000 PSI)	(3000 PSI)			
PAVC33	33 (2.0)	39.4 (10.4)	59.0 (15.6)	75 (69)	76 (72)	78 (75)	79 (77)	21.3 kw (28.5 hp)	3000	207 (3000)
PAVC38	38 (2.3)	45.0 (11.9)	67.8 (17.9)	75 (69)	76 (72)	78 (75)	79 (77)	24.6 kw (33.0 hp)	3000	207 (3000)
PAVC65	65 (4.0)	78.7 (20.8)	118.1 (31.2)	77 (75)	78 (76)	80 (78)	81 (79)	43.1 kw (57.8 hp)	3000	207 (3000)
PAVC100	100 (6.1)	119.6 (31.6)	179.8 (47.5)	83 (77)	82 (78)	82 (79)	85 (80)	71.2 kw (95.5 hp)	2600	207 (3000)

*

Preferred Models

Model	Description
PAVC33R4226	33cc/rev, R/H rotation, rear ported, pressure comp
PAVC332R4226	33cc/rev, R/H rotation, side ported, pressure comp
PAVC38R4216	38cc/rev, R/H rotation, rear ported, pressure comp
PAVC38L4216	38cc/rev, L/H rotation, rear ported, pressure comp
PAVC38R42A16	38cc/rev, R/H rotation, rear ported, load sensing
PAVC65R4213	65cc/rev, R/H rotation, rear ported, pressure comp
PAVC65R42A13	65cc/rev, R/H rotation, rear ported, load sensing
PAVC65BL4A13	65cc/rev, L/H rotation, rear ported, load sensing
PAVC100R4222	100cc/rev, R/H rotation, rear ported, pressure comp
PAVC10032R4222	100cc/rev, R/H rotation, top/bottom ported, pressure comp
PAVC10032R42A22	100cc/rev, R/H rotation, top/bottom ported, load sensing

PAVC33-100 Conversion Parts & Spares

*Please read footnote regarding series

Seal Kits PAVC33-100

Order Code	Description
SKPAVC3326/3816	PAVC33-38 Nitrile
SKPAVC6513	PAVC65 Nitrile
SKPAVC10022	PAVC100 Nitrile

Rotating Group Kits PAVC33-100

Order Code	Description
RRKPAVC33R26	PAVC33, RH Rotation
RRKPAVC33L26	PAVC33, LH Rotation
RRKPAVC38R16	PAVC38, RH Rotation
RRKPAVC38L16	PAVC38, LH Rotation
RRKPAVC65R13	PAVC65, RH Rotation
RRKPAVC65R13	PAVC65, RH Rotation
RRKPAVC100R22	PAVC100, RH Rotation

Shaft Ass'y PAVC33-100

Order Code	Description	
787057 + 22X19	PAVC33-38 Shaft Ass'y, SAE'B' STR, 7/8" Keyed	Omit
787059	PAVC33-38 Shaft Ass'y, SAE'B' 13T, Splined	B
787601 + 22X19	PAVC33-38 (Option 9) Shaft Ass'y, SAE'B' STR, 7/8" Keyed	Omit
787602	PAVC33-38 (Option 9) Shaft Ass'y, SAE'B' 13T, Splined	B
787598	PAVC65 Shaft Ass'y, SAE'C' STR, 1 1/4", Keyed	Omit
787599	PAVC65 Shaft Ass'y, SAE'C' 14T, Splined	B
787577	PAVC65 (Option 9) Shaft Ass'y, SAE'C' STR, 1 1/4" Keyed	Omit
787514	PAVC65 (Option 9) Shaft Ass'y, SAE'C' 14T, Splined	B
787592 + 22X31	PAVC100 Shaft Ass'y, SAE'C' STR, 1 1/4" Keyed	Omit
787593	PAVC100 Shaft Ass'y, SAE'C' 14T Splined	B
787594 + 22X45	PAVC100 Shaft Ass'y, SAE'C-C' STR, 1 1/2" Keyed	C
787595	PAVC100 Shaft Ass'y, SAE'C-C' 17T, Splined	D
787613 + 22X31	PAVC100 (Option 9) Shaft Ass'y, SAE'C' STR, 1 1/4" Keyed	Omit
787572	PAVC100 (Option 9) Shaft Ass'y, SAE'C' 14T Splined	B
787573 + 22X45	PAVC100 (Option 9) Shaft Ass'y, SAE'C-C' STR, 1 1/2" Keyed	C
787574	PAVC100 (Option 9) Shaft Ass'y, SAE'C-C' 17T, Splined	D

Through-drive Adapter Kit (Only for PAVC100)

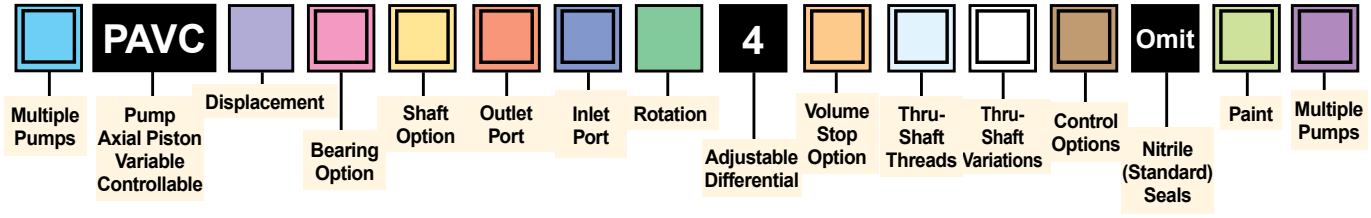
Order Code	Description	
786925	ADAPTER KIT SAE 'A-A' Pilot, 9T 20/40 pitch coupling	6A3
786926	ADAPTER KIT SAE 'A' Pilot, 9T 16/32 pitch coupling	6A4
787076	ADAPTER KIT SAE 'B' Pilot, 13T 16/32 pitch coupling	6B3
787077	ADAPTER KIT SAE 'B' Pilot, 15T 16/32 pitch coupling	6B4
787078	ADAPTER KIT SAE 'C' Pilot, 14T 12/24 pitch coupling	6C3

Port Plate PAVC33-100

Order Code	Description
786427	PAVC33-38, RH Rotation
786428	PAVC33-38, LH Rotation
786881	PAVC65, RH Rotation
786666	PAVC65, LH Rotation
786678	PAVC100, RH Rotation
786680	PAVC100, LH Rotation

* The above part numbers are taken from series pumps mentioned below.

Including PAVC 33 Series 26, PAVC38 Series 16, PAVC65 Series 13 PAVC100 Series 22



Code	Multiple Pumps
Omit	Single Pump
—	Factory Mounted to Rear of Another Pump

Code	Displacement in³/rev (cm³/rev)
33	2.0 (33)
38	2.3 (38)
65	4.0 (65)
100	6.1 (100)

Code	Bearing Option
Omit	Single Piece Shaft
9*	Dual Bearing

* For applications where side loading may be experienced. Max. side load = 113.4 kg (250 lbs).

Typical Applications:
Belt/chain drive
Universal joint drive
Massive couplings
Foot mount installations

Code	Shaft Option	
	Size 33/38	Size 65/100
Omit	7/8" Keyed SAE B	1¼" Keyed SAE C
B	13T Spline SAE B	14T Spline SAE C
C*	—	1½" Keyed SAE CC
D*	—	17T Spline SAE CC

* Size 100 only

Code	Outlet Port		
	Outlet	Location	Type
Omit	Str. Thread	Top	SAE/Inch
3*	Flange	Top	SAE/Inch

* Size 100 only

Code	Inlet Port			
	33/38 Inlet	65 Inlet	100 Inlet	Type
Omit	Str. Thd., Rear	Str. Thd., Rear	Flange, Rear	SAE/Inch Threads
2	Flange, Side	Flange, Top	Flange, Top/Bottom	SAE/Inch Threads

Code	Rotation*
R	Right CW
L	Left CCW

* Viewed from shaft end.

Code	Volume Stop Options
Omit	Volume Stop Plugged
2	Maximum Volume Stop
5*	Max. Volume Stop with O-ring

* Not available with Thru-Shaft option on Size 100.

Code	Thru-Shaft Threads*
Omit	No Thru-Shaft
6	Thru-Shaft, UNC

* Available on Size 100 only.

Code	Thru-Shaft Variations
Omit	No Thru-Shaft Option
A3	Thru-Shaft, SAE AA Pilot, 9 Tooth 20/40 Pitch Spline Coupling, PAVC 100 Only
A4	Thru-Shaft, SAE A Pilot, 9 Tooth 16/32 Pitch Spline Coupling, PAVC 100 Only
*B3	Thru-Shaft, SAE B Pilot, 13 Tooth 16/32 Pitch Spline Coupling, PAVC 100 Only
*B4	Thru-Shaft, SAE B Pilot, 15 Tooth 16/32 Pitch Spline Coupling, PAVC 100 Only
*C3	Thru-Shaft, SAE C Pilot, 14 Tooth 12/24 Pitch Spline Coupling, PAVC 100 Only

Inlet port option "2" or "8" (top/bottom) must be used with all Thru-Shaft pumps.

* Use SAE C-C shaft on thru-shaft pump variation when combined input torque of front and rear pumps exceeds 565 N•m (5000 In-Lbs).

Code	Control Option
Omit	Standard Pressure Compensated Setting Pressure 41-207 bar (600-3000 PSI)
A	Pressure & Flow (Load Sensing)
*C	Pressure, Flow & Power
*H	Pressure Comp. & Power
**†M	Remote Pressure
**†ME	Remote Pressure
†AM	Remote Pressure & Flow
*†CM	Remote Pressure, Flow & Power
*†HM	Remote Pressure & Power

* Power controlled pumps (H, C, HM or CM) must have maximum input power limit specifications at a particular drive speed (RPM) and compensator pressure setting (PSI) included with order. Power controlled pumps that do not have input power limit specifications, will be set at default setting (22.5 HP @ 1800 RPM and 3000 PSI) "H" & "C" (60 HP @ 1800 RPM and 3000 PSI) "HM" & "CM"

** "M" may be remotely controlled; "ME" requires external pilot

† Pumps with M, ME, AM, CM or HM controls will be set to compensate at 207 bar (3000 PSI) unless Chart #1 specifies otherwise.

Code	Painting
Omit	No Paint
P	Paint

Code	Multiple Pumps
Omit	Single Pump
—	Pump Factory Mounted on Rear

Chart #1

Item	Setting
RPM	—
PSI	—
HP	—
GPM	—

Ordering Notes

Unless otherwise specified, pump is shipped at maximum GPM (1800 RPM) and set to 69 bar (1000 PSI) [See † Exceptions].

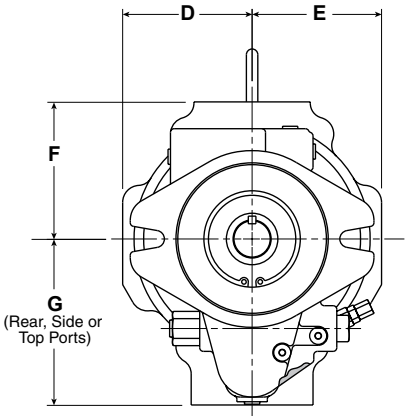
When factory settings are required, the items shown in Chart #1 must be included with order.

□ = Omit if not required or to select standard option coded "omit".

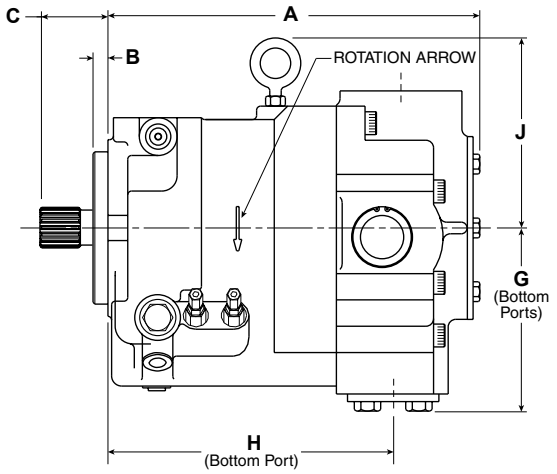
Piston Pumps (Mobile & Industrial)

PAVC Medium Pressure/Super Charged Piston Pumps

Front View



Side View

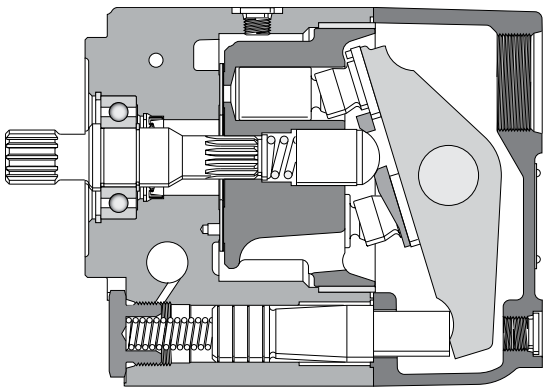


Dimensions, inch (mm)

Dim.	PAVC33/38		PAVC65		PAVC100	
	Rear Ported	Side Ported	Rear Ported	Top Ported	Rear Ported	Top/Bottom Ported
A	7.25 (184.15)	7.32 (185.93)	8.82 (224.03)	8.82 (224.02)	11.95 (303.53)	12.21 (310.13)
B	0.37 (9.39)	0.37 (9.37)	0.49 (12.45)	0.49 (12.44)	0.49 (12.44)	0.49 (12.44)
C	2.31 (58.67)	2.31 (58.67)	2.19 (55.63)	2.19 (55.62)	2.19 (55.62)	2.19 (55.62)
D	3.31 (84.07)	4.17 (105.92)	4.00 (101.60)	4.00 (101.60)	4.25 (107.95)	4.25 (107.94)
E	3.31 (84.07)	3.53 (89.66)	4.00 (101.60)	4.00 (101.60)	4.25 (107.95)	4.25 (107.94)
F	2.50 (63.50)	2.50 (63.50)	3.50 (88.90	3.38 (85.85)	4.62 (117.34)	4.50 (114.30)
G	3.81 (96.77)	4.12 (104.65)	4.56 (115.82)	4.56 (115.82)	5.57 (141.47)	6.25 (159.25)
H	—	—	—	—	—	9.37 (237.99)
J	—	—	—	—	6.24 (158.49)	6.24 (159.49)

Benefits/Features

- **High strength cast-iron housing**
- **Built-in supercharger ensures high speed capability - 3000 RPM (2600 RPM PAVC100)**
- **Sealed shaft bearing**
- **Two-piece design for ease of service**
- **Cartridge type controls fiel changeable**
- **Replaceable bronze clad port plate**
- **Airbleed standard for quick priming**
- **Hydrodynamic cylinder barrel bearing**
- **Thru-shaft (PAVC100 only)**
- **Full pressure rating on most water glycol fluid**
- **Pump case and shaft seal are subjected to inlet pressure only**
- **Filter and/or cool drain line 100 PSI (7 BAR) maximum**



PAVC Mobile Application Market

Market	Applications
Forestry	Agricultural Applications
Oil & Gas	Nitrogen Pumpers, Cementers, Coil Tubing
Construction	Fan Drives
Utility	Cranes, Salt, Steel Mill
Harsh Environment	Salt & Sand Trucks

PAVC Industrial Application Market

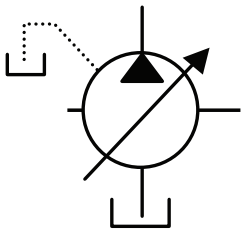
Markets	Applications
Industrial	Power Units, Industrial Molding
Oil & Gas	Oil Lift Pumps, Suitable for non mineral oil, Water Glycol
Material Handling	Conveyor Drives

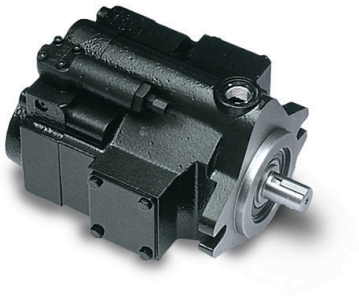
Literature

Ref. Catalogue : HY28-2662-CD/US

Industrial Piston Pumps

Characteristics





- High speed capability
- High strength cast-iron housing
- 100% of power available at through shaft
- Low noise levels – promote more comfortable operating environment
- Suitable for high water content fluid operation

Features

- Continuous Pressure – up to 248 bar
- Through-shaft Capability
- Adjustable Maximum Volume Stop
- 4 Control Types for sizes 16, 23/33 cc/rev
- 5 Control Types for 41/48 cc/rev

PVP Series Piston Pumps

	PVP16	PVP23	PVP33	PVP41	PVP48
Max. Displacement	16 cc/rev	23 cc/rev	33 cc/rev	41 cc/rev	48 cc/rev
Speed Rating:	600 – 3000 RPM	600 – 3000 RPM	600 – 3000 RPM	600 – 2800 RPM	600 – 2400 RPM
Cont. Outlet Press:	248 bar	248 bar	248 bar	248 bar	248 bar
Min. Inlet Press:*	0.17 bar	0.17 bar	0.17 bar	0.17 bar	0.17 bar
Max. Inlet Press:	1.72 bar	1.72 bar	1.72 bar	1.72 bar	1.72 bar
Input Power:**	13.1 kW	19.7 kW	27.2 kW	33.2 kW	40.3 kW

* @ 1800 RPM, Maximum.
** @ 1800 RPM, Maximum. Displacement and 248 bar

Preferred Models

Model	Description
PVP1636L2	16cc/rev, L/H rotation, rear ported
PVP1636R2	16cc/rev, R/H rotation, rear ported
PVP16362R26T	16cc/rev, R/H rotation, side ported
PVP2336R2	23cc/rev, R/H rotation, rear ported
PVP23362R2	23cc/rev, R/H rotation, side ported
PVP3336R2	33cc/rev, R/H rotation, rear ported
PVP33362L2	33cc/rev, L/H rotation, side ported
PVP33362R2	33cc/rev, R/H rotation, side ported
PVP4836C2L2	48cc/rev, L/H rotation, side ported
PVP4836CR2	48cc/rev, R/H rotation, rear ported
PVP4836C2R	48cc/rev, R/H rotation, side ported

Industrial Piston Pumps

PVP16-40 Conversion Parts & Spares

*Please read footnote regarding series

Compensators PVP - 16-40

Order Code	Description
787027-36	PVP 16-48 Comp Flow & Press 'A'
787028-36	PVP 16-48 Comp Remote Press 'M'
787010-36	PVP 16-48 Comp Std Press 'Omit'

Horse power block Ass PVP 16-40

Order Code	Description
787501	PVP 16 'H' and 'C'
788055	PVP 23-33 'H' & 'C'
787823	PVP 41-48 'H' & 'C'

Shafts PVP 16-40

Order Code	Description	
787432	PVP 16 Shaft SAE A STR, 3/4" Keyed	omit
787433	PVP 16 Shaft SAE A STR Thru, 3/4" - Keyed	omit
787434	PVP 16 Shaft SAE A SPL, 9 Tooth	'B'
787435	PVP 16 Shaft SAE A SPL Thru, 9 Tooth	'B'
787436	PVP 16 Shaft SAE A SPL, 11 Tooth	'C'
787437	PVP 16 Shaft SAE A SPL Thru, 11 Tooth	'C'
787359	PVP 23-33 Shaft SAE B STR, 7/8" Keyed	omit
787360	PVP 23-33 Shaft SAE B STR Thru, 7/8" Keyed	omit
787361	PVP 23-33 Shaft SAE B SPL, 13 Tooth	'B'
787362	PVP 23-33 Shaft SAE B SPL Thru, 13 Tooth	'B'
787363	PVP 23-33 Shaft SAE BB STR, 1" Keyed	omit
787364	PVP 23-33 Shaft SAE BB STR Thru, 1" Keyed	'B'
787365	PVP 23-33 Shaft SAE BB SPL, 15 Tooth	'B'
787366	PVP 23-33 Shaft SAE BB SPL Thru, 15 Tooth	'B'
787747	PVP 41-48 Shaft SAE B STR, 7/8" Keyed	omit
787748	PVP 41-48 Shaft SAE B SPL, 7/8" Keyed	'B'
787745	PVP 41-48 Shaft SAE BB STR, 1"Keyed	'C'
787746	PVP 41-48 Shaft SAE BB SPL, 1"Keyed	'D'

Servo Piston PVP 16-40

Order Code	Description
787943	PVP 16 CC
788052	PVP 23 CC
787939	PVP 33 CC
787782	PVP 41 CC
787770	PVP 48 CC

Port Plates PVP 16-40

Order Code	Description
787374	PVP 16 RH Rotation
787375	PVP 16 LH Rotation
787125	PVP 23-33 RH Rotation
787126	PVP 23-33 LH Rotation
787789	PVP 41-48 RH Rotation
787790	PVP 41-48 LH Rotation

* The above part numbers are taken from series pumps mentioned below.
Including PVP 16 Series 12, PVP 23/33 SERIES 20, PVP 41/48 SERIES 10,

Industrial Piston Pumps

PVP16-48 Conversion Parts & Spares

* Please read footnote regarding series

Seal Kits PVP 16-48

Order Code	Description
SKPVP1611	PVP 16 Nitrile
SKPVP16V11	PVP 16 Viton
SKPVP23/3320	PVP 23/33 Nitrile
SKPVP23/33V20	PVP 23/33 Viton
SKPVP41/4810	PVP 41/48 Nitrile
SKPVP41/48V10	PVP 41/48 Viton

Rotating Group PVP 16-48

Order Code	Description
RRKPVP16R12	PVP 16 RH Rotation
RRKPVP16L12	PVP 16 LH Rotation
RRKPVP23/33R20	PVP 23/33 RH Rotation
RRKPVP23/33L20	PVP 23/33 LH Rotation
RRKPVP41/48R11	PVP 41/48 RH Rotation
RRKPVP41/48L11	PVP 41/48 LH Rotation

* The above part numbers are taken from series pumps mentioned below.
Including PVP 16 Series 12, PVP 23/33 SERIES 20, PVP 41/48 SERIES 10

Through-drive PVP 16-48

Order Code	Description	
787244	PVP16 A Pilot 9T Spl	6A4
787236	PVP23/33 A Pilot 9T Spl	6A4
787392	PVP23/33 A Pilot 11T Spl	6A5
787239	PVP23/33 B Pilot 13 T Spl	6B3
787240	PVP23/33 B Pilot 15 T Spl	6B4
787236	PVP41/48 A Pilot 9T Spl	6A4
787392	PVP41/48 A Pilot 11T 5pl	6A5
787239	PVP41/48 B Pilot 13T Spl	6B3
787240	PVP41/48 B Pilot 15T Spl	6B4

PVP Series

Industrial Piston Pumps

Size	
Code	Displacement
16	16 cc/rev
23	23 cc/rev
33	33 cc/rev
41	41 cc/rev
48	48 cc/rev

Code	Pressure Range
36	18-248 Bar

Code	Shaft	Pilot	Pump
Omit	3/4" Keyed x 1.75 Long	SAE 'A'	16 Only
Omit	7/8" Keyed x 2.31 Long	SAE 'B'	All except 16
B	9T Spline (SAE 'A')	SAE 'A'	16 Only
	13T Spline (SAE 'B')	SAE 'B'	All except 16
C	11T 11/62 DP Spline	SAE 'A'	16 Only
C	1" Keyed x 1.88" Long (SAE 'BB')	SAE 'B'	All except 16
D	15T Spine (SAE 'BB')	SAE 'B'	All except 16

Code	Port Location	Port Type	Pump
Omit	Rear – Straight Thread	SAE	All
2	Side – Flange (Inch Thds.)	SAE	All

Code	Rotation
R	CW
L	CCW

Paint	
Omit	Not Painted
P	Painted

Seals Seals	
Omit	Buna N
V	Fluroelastomer

Code	Control Options	Pump
Omit	Press. Compensated	All
M	Remote Pressure (Int.)	All
A	Pressure & Flow	All
C	Press, Flow & Power	All
H	Horsepower Limiting	All

Code	Thru -Shaft Option	Pump
Omit	No Thru-Shaft	All
T	Thru with Cover	16 Only
A4	SAE "A" Pilot 9T Spline	All except 16
A5	SAE "A" Pilot 11T Spline	All except 16
B3	SAE "B" Pilot 13T Spline	All except 16
B4	SAE "B" Pilot 15T Spline	All except 16

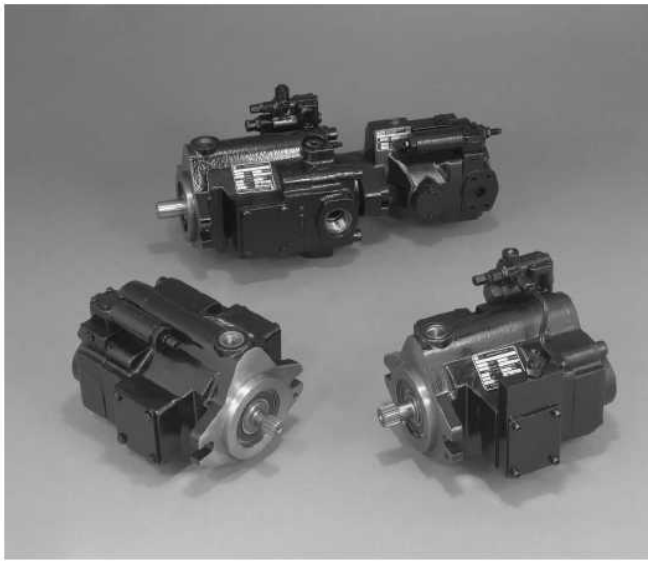
Code	Thru-Shaft Threads
Omit	No Thru-Shaft
6	UNC

Code	Volume Stop
Omit	No Volume Stop
2	Adj. Max. Volume Stop

Markets	Applications
Industrial	Power Units, Industrial Molding, Press
Oil & Gas	Oil Lift Pumps
Power Gen	Turbine Start
Material Handling	Conveyor Drives

Literature

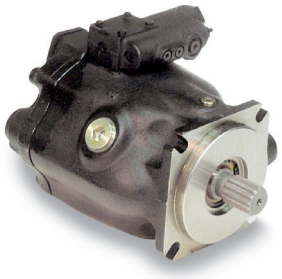
Ref. Catalogue : HY28-2662-CD/US



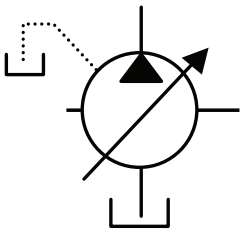
P1/PD Series for open circuits

18 cc/rev, 28 cc/rev, 45 cc /rev, 60 cc/rev, 75 cc/rev, 100 cc/rev, 140 cc/rev

Characteristics:



- Variable displacement, axial, piston, P1 and PD pumps have been designed to meet the specific demands of mobile and indust ial applications.
- Range expanded to cover 7 displacements – 18 cc/rev to 140 cc/rev.
- Mobile version P1, designed with an emphasis on speed capability achieves max RPM – 3600.
- Industrial version PD with reduced speed capability is designed for quieter operation.
- For open loop applications operating to 280 bar continuous pressure.
- Various port location options and full power through drive capability are other features offered by this range of pumps.



Features:

- P1 – Mobile version – High Speed
- PD – Industrial version – Low noise
- Continuous pressure to 280 Bar
- Intermittent pressure to 320 Bar
- Peak pressure 350 bar
- Through drive capable
- Boosted inlet speeds to 3600 RPM
- Max & Min Volume Stop
- Wide variety of control options

Series pump model			P1 018	P1 028	P1 045	P1 060	P1 075	P1 100	P1 140
Displacement	maximum	cc/rev	18	28	45	60	75	100	140
Outlet pressure	continuous	bar	280						
	*intermittent	bar	320						
	peak	bar	350						
Speed (mobile version) P1	max. boosted inlet	rpm	3600	3400	3100	2800	2700	2500	2400
	max. 1.0 bar absolute	rpm	3300	3200	2800	2500	2400	2100	2100
	max. 0.8 bar absolute	rpm	2900	2900	2400	2200	2100	1900	1800
	minimum	rpm	600						
Mounting	Flange	SAE	A - 2 bolt	B - 2 bolt	B - 2 bolt	C - 2 bolt or C - 4 bolt		C - 4 bolt	D - 4 bolt
	Keyed shaft	SAE	3/4"	1"	1"	1 1/4"	1 1/4"	1 1/2"	1 3/4"
	Splined shaft	SAE	3/4" 11T	1" 15T	1" 15T	1 1/4" 14T	1 1/4" 14T	1 1/2" 17T	1 3/4" 13T
	Splined shaft option	SAE	5/8" 9T	7/8" 13T	7/8" 13T			1 1/4" 14T	
Weight	End port	kg	13.4	17.7	23	29	30	51	66
	Side port	kg	14.2	18.1	24	30	31	53	67
	Thru drive	kg			27	34	35	55	82

*Intermittent pressure is defined as less than 10% of ope ation time, not exceeding 6 successive seconds.

P1-PD Series

Preferred Model (Industrial)

Model Code	Description
PD018PS02SRS5BC00E1200000	18 cc/rev, R/H rotation, End ported, Pressure Comp, Key Shaft
PD018PS02SRS5BC00R1200000	18 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
PD028PS02SRS5BC00R1200000	28 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
PD028PS02SRS5BC00E1200000	28 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
PD045PS02SRS5BC00R1000000	45 cc/rev, R/H rotation, Side Ported, Pressure Comp, Key Shaft
PD045PS02SRS5BL00R1000000	45 cc/rev, R/H rotation, Side Ported, Load Sense, Key Shaft
PD060PS02SRS5BC00S1000000	60 cc/rev, R/H rotation, Side Ported, Pressure Comp, Key Shaft
PD060PS02SRS5BL00S1000000	60 cc/rev, R/H rotation, Side Ported, Load Sense, Key Shaft
PD075PC02SRS5AC00S1000000	75 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
PD075PC02SRS5AL00S1000000	75 cc/rev, R/H rotation, Side ported, Load Sense, Key Shaft
PD100PS02SRS5BC00S1000000	100 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
PD100PS02SRS5BL00S1000000	100 cc/rev, R/H rotation, Side ported, Load Sense, Key Shaft
PD140PS02SRS5BC00S1000000	140 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
PD140PS02SRS5BL00S1000000	140 cc/rev, R/H rotation, Side ported, Load Sense, Key Shaft

Preferred Model (Mobile/Universal)

Model Code	Description
P1018PS02SRM5BC00E1200000	18 cc/rev, R/H rotation, End ported, Pressure Comp, Key Shaft, No paint
P1018PS02SRM5BC00R1200000	18 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft, No paint
P1018PS01SRM5BC00E120PB00	18 cc/rev, R/H rotation, End ported, Pressure Comp, Splined Shaft, Painted Black
P1018PS01SLM5BC00E1200000	18 cc/rev, L/H rotation, End ported, Pressure Comp, Splined Shaft, No paint
P1028PS02SRM5BC00E1200000	28 cc/rev, R/H rotation, End ported, Pressure Comp, Key Shaft, No paint
P1028PS02SRM5BC00R1200000	28 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft, No paint
P1028PS01SLM5BC00E1200000	28 cc/rev, L/H rotation, End ported, Pressure Comp, Splined Shaft, No paint
P1028PS08SRM5BC00R100PB00	28 cc/rev, R/H rotation, Side ported, Pressure Comp, Splined Shaft, Painted Black
P1028PS08SRM5BL00R120PB00	28 cc/rev, R/H rotation, Side ported, Load Sensing, Splined Shaft, Painted Black
P1045PS02SRM5BC00E1200000	45 cc/rev, R/H rotation, End ported, Pressure Comp, Key Shaft
P1045PS02SRM5BC00R1000000	45 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
P1045PS01SRM5BC00R1000000	45 cc/rev, R/H rotation, Side ported, Pressure Comp, Splined Shaft
P1045PS01SRM5BL00R1000000	45 cc/rev, R/H rotation, Side ported, Load Sense, Splined Shaft
P1045PS01SLM5BL00R1000000	45 cc/rev, L/H rotation, Side ported, Load Sense, Splined Shaft
P1045PS01SRU5AL00R1000000	45 cc/rev, R/H rotation, Side ported, Load Sense, Key Shaft, Universal
P1075PS02SRM5AC00S1000000	75 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
P1075PC01SRM5AC00S1000000	75 cc/rev, R/H rotation, Side ported, Pressure Comp, Splined Shaft
P1075PC01SRM5AL00S1000000	75 cc/rev, R/H rotation, Side ported, Load Sense, Splined Shaft
P1075PC01SLM5AL00S0000000	75 cc/rev, L/H rotation, Side ported, Load Sense, Splined Shaft
P1100PS02SRM5BC00S1000000	100 cc/rev, R/H rotation, Side Ported, Pressure Comp, Key Shaft
P1100PS01SRM5BC00S1000000	100 cc/rev, R/H rotation, Side Ported, Pressure Comp, Splined Shaft
P1100PS01SRM5BL00S1000000	100 cc/rev, R/H rotation, Side Ported, Load Sense, Splined Shaft
P1100PS01SLM5BL00S1000000	100 cc/rev, L/H rotation, Side Ported, Load Sense, Splined Shaft
P1100PS02SRU5BC00S1000000	100 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft, Universal
P1140PS02SRM5BC00S1000000	140 cc/rev, R/H rotation, Side ported, Pressure Comp, Key Shaft
P1140PS01SRM5BC00S1000000	140 cc/rev, R/H rotation, Side ported, Pressure Comp, Splined Shaft
P1140PS01SRM5BL00S1000000	140 cc/rev, R/H rotation, Side ported, Load Sense, Splined Shaft
P1140PS01SLM5BL00S1000000	140 cc/rev, L/H rotation, Side ported, Load Sense, Splined Shaft
P1140PS02SRU5BC00S1000000	140 cc/erv, R/H rotation, Side ported, Pressure Comp, Key Shaft, Universal

Seal Kits and Parts Kits

Seal Kits	018	028	045	060	075	100	140
	S2E-18709-5K	S2E-19118-5K	S2E-19066-5K	S2E-18697-5K	S2E-18004-5K	S2E-18460-5K	S2E-18158-5K

Note: Seal kits contain all the seals required for any pump configuration.

Rotating Group Kits	018	028	045	060	075	100	140
CW Mobile P1	S2E-18710-0K	S2E-19119-0K	S2E-19067-0K	S2E-18698-0K	S2E-18032-0K	S2E-18485-0K	S2E-18489-0K
CW Mobile P1 with Ripple Chamber	S2E-19205-0K	S2E-19209-0K	S2E-19235-0K	**	**	**	**
CCW Mobile P1	S2E-18711-0K	S2E-19120-0K	S2E-19068-0K	S2E-18699-0K	S2E-18033-0K	S2E-18486-0K	S2E-18490-0K
CCW Mobile P1 w/ Ripple Chamber	S2E-19206-0K	S2E-19210-0K	S2E-19236-0K	**	**	**	**
CW Industrial PD	S2E-18712-0K	S2E-19121-0K	S2E-19069-0K	S2E-18700-0K	S2E-18483-0K	S2E-18487-0K	S2E-18491-0K
CW Industrial PD w/ Ripple Chamber	S2E-19207-0K	S2E-19211-0K	S2E-19126-0K	**	**	**	**
CCW Industrial PD	S2E-18713-0K	S2E-19122-0K	S2E-19070-0K	S2E-18701-0K	S2E-18484-0K	S2E-18488-0k	S2E-18492-0K
CCW Industrial PD w/ Ripple Chamber	S2E-19208-0K	S2E-19212-0K	S2E-19127-0K	**	**	**	**

Rotating Group Kit includes barrel s/a, pistons, retainer, washer, pins, port plate

Torque Limiter Control Kits	045	060	075	100	140
Torque Limiter Kit for AMT Control	S2E-19102-5	S2E-19033-5	S2E-18720-5	S2E-18888-5	S2E-18963-5
Torque Limiter Kit for ALT Control	See Note		**	**	**
Torque Limiter Kit for L0T	**	**	S2E-18721-5	S2E-18759-5	S2E-18739-5

Torque Limiter Kits includes cartridge assembly, tubing and fittings.

Note: AM control can be converted to an AL control with conversion kit S2E-19117-0.
European customers will receive a solid spool in this kit. US customer will receive a set screw to plug orifice in spool.

Minimum and Maximum Volume Stop

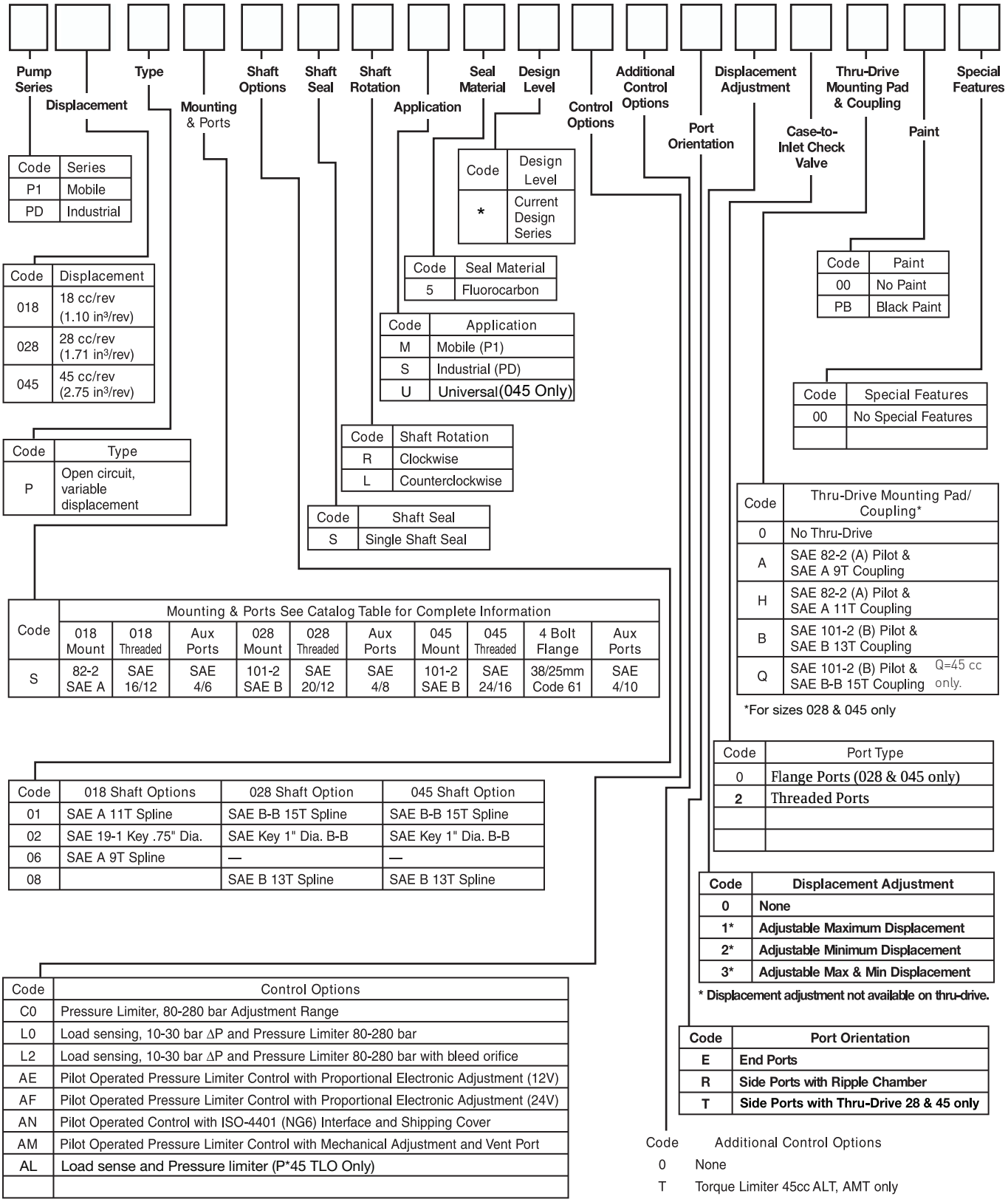
Item #	Qty	018	028	045	060 075 100 140	Description5
KIT		S2E-19203-5	S2E-19204-5	S2E-19114-5	S2E-18987-5K / S2E-18988-5K	Adjustable Volume Stop
KIT		S2E-19608-5	S2E-19609-5	Use Above Kit		Adjustable Minimum Volume Stop

Maximum and minimum volume stops use the same components except where noted.

Thru Drive Pad Coupling #70	Thru Drive Couplings							O-ring
	018	028	045	060	075	100	140	
SAE A, 9 Tooth	S2E-19538-0	S2E-19364-0	03E-94942-0	03E-93278-0	03E-93278-0	03E-94274-0	03E-93947-0	695-00237-0
SAE A, 11 Tooth	S2E-19726-0	S2E-19391-0	03E-94943-0	03E-94724-0	03E-94724-0	03E-94657-0	**	695-00237-0
SAE B, 13 Tooth	**	S2E-19365-0	03E-94945-0	03E-93277-0	03E-93277-0	03E-94273-0	03E-93946-0	695-00243-0
SAE BB, 15 Tooth	**	S2E-19409-0	03E-94361-0	03E-93279-0	03E-93279-0	03E-94272-0	03E-93945-0	695-00243-0
SAE C, 14 Tooth	**	**	**	03E-93276-0	03E-93276-0	03E-94271-0	03E-93944-0	695-00251-0
SAE CC, 17 Tooth	**	**	**	**	**	03E-94270-0	03E-93943-0	695-00251-0
SAE D&E, 13 Tooth	**	**	**	**	**	**	03E-93942-0	695-00259-0

P1-PD Series

P1/ PD Series - 18cc, 28cc, 45cc Ordering Information



Code	Series
P1	Mobile
PD	Industrial

Code	Displacement
018	18 cc/rev (1.10 in³/rev)
028	28 cc/rev (1.71 in³/rev)
045	45 cc/rev (2.75 in³/rev)

Code	Type
P	Open circuit, variable displacement

Code	Design Level
*	Current Design Series

Code	Seal Material
5	Fluorocarbon

Code	Application
M	Mobile (P1)
S	Industrial (PD)
U	Universal(045 Only)

Code	Shaft Rotation
R	Clockwise
L	Counterclockwise

Code	Shaft Seal
S	Single Shaft Seal

Code	Mounting & Ports See Catalog Table for Complete Information									
	018 Mount	018 Threaded	Aux Ports	028 Mount	028 Threaded	Aux Ports	045 Mount	045 Threaded	4 Bolt Flange	Aux Ports
S	82-2 SAE A	SAE 16/12	SAE 4/6	101-2 SAE B	SAE 20/12	SAE 4/8	101-2 SAE B	SAE 24/16	38/25mm Code 61	SAE 4/10

Code	018 Shaft Options	028 Shaft Option	045 Shaft Option
01	SAE A 11T Spline	SAE B-B 15T Spline	SAE B-B 15T Spline
02	SAE 19-1 Key .75" Dia.	SAE Key 1" Dia. B-B	SAE Key 1" Dia. B-B
06	SAE A 9T Spline	—	—
08		SAE B 13T Spline	SAE B 13T Spline

Code	Control Options
C0	Pressure Limiter, 80-280 bar Adjustment Range
L0	Load sensing, 10-30 bar ΔP and Pressure Limiter 80-280 bar
L2	Load sensing, 10-30 bar ΔP and Pressure Limiter 80-280 bar with bleed orifice
AE	Pilot Operated Pressure Limiter Control with Proportional Electronic Adjustment (12V)
AF	Pilot Operated Pressure Limiter Control with Proportional Electronic Adjustment (24V)
AN	Pilot Operated Control with ISO-4401 (NG6) Interface and Shipping Cover
AM	Pilot Operated Pressure Limiter Control with Mechanical Adjustment and Vent Port
AL	Load sense and Pressure limiter (P*45 TLO Only)

Code — Additional Control Options

0 — None

T — Torque Limiter 45cc ALT, AMT only

Code	Port Orientation
E	End Ports
R	Side Ports with Ripple Chamber
T	Side Ports with Thru-Drive 28 & 45 only

Code	Displacement Adjustment
0	None
1*	Adjustable Maximum Displacement
2*	Adjustable Minimum Displacement
3*	Adjustable Max & Min Displacement

* Displacement adjustment not available on thru-drive.

Code	Port Type
0	Flange Ports (028 & 045 only)
2	Threaded Ports

Code	Thru-Drive Mounting Pad/ Coupling*	
0	No Thru-Drive	
A	SAE 82-2 (A) Pilot & SAE A 9T Coupling	
H	SAE 82-2 (A) Pilot & SAE A 11T Coupling	
B	SAE 101-2 (B) Pilot & SAE B 13T Coupling	
Q	SAE 101-2 (B) Pilot & SAE B-B 15T Coupling	Q=45 cc only.

*For sizes 028 & 045 only

Code	Paint
00	No Paint
PB	Black Paint

Code	Special Features
00	No Special Features

P1/ PD Series - 60cc, 75cc, 100cc, 140cc Ordering Information

Code	Series
P1	Mobile
PD	Industrial

Code	Displacement
060	60 cc/rev (3.66 in³/rev)
075	75 cc/rev (4.58 in³/rev)
100	100 cc/rev (6.41 in³/rev)
140	140 cc/rev (8,85 in³/rev)

Code	Type
P	Open circuit, variable displacement

Code	Shaft Rotation
R	Clockwise
L	Counterclockwise

Code	Shaft Seal
S	Single Shaft Seal

Code	Application
M	Mobile (P1)
S	Industrial (PD)
U	Universal

Code	Seal Material
5	Fluorocarbon

Code	Design Level
*	Current Design Series

Code	Mounting & Ports See Catalog Table for Complete Information											
	060 Mount	Flange Ports mm	Aux Ports	075 Mount	Flange Ports mm	Aux Ports	100 Mount	Flange Ports mm	Aux Ports	140 Mount	Flange Ports mm	Aux Ports
S	SAE mounting with SAE ports											
	127-4 (C)	50/25 Code 61	SAE 4/10	127-4 (C)	50/25 Code 61	SAE 4/10	127-4 (C)	63/32 Code 61/62	SAE 4/12	152-4 (D)	63/32 Code 61/62	SAE 4/16
C*	*SAE C 2 bolt mtg w/ SAE ports											
	127-2 (C)	50/25 Code 61	SAE 4/10	127-2 (C)	50/25 Code 61	SAE 4/10	N/A	N/A	N/A	N/A	N/A	N/A

* 60cc/r and 75cc/r only

Code	060 Shaft Options	075 Shaft Options	100 Shaft Options	140 Shaft Options
01	SAE C 14T Spline	SAE C 14T Spline	SAE C-C 17T Spline	SAE D 13T Spline
02	SAE C 32-1 Key	SAE C 32-1 Key	SAE C-C 38-1 Key	SAE D 44-1 Key
06	–	–	SAE C 14T Spline	–

Code	Control Options
C0	Pressure Limiter, 80-280 bar Adjustment Range
L0	Load sensing 10 30 bar ΔP and Pressure Limiter 80 280 bar
L2	Load sensing, 10-30 bar ΔP and Pressure Limiter 80-280 bar with bleed orifice
AE	Pilot Operated Pressure Limiter Control with Proportional Electronic Adjustment (12V)
AF	Pilot Operated Pressure Limiter Control with Proportional Electronic Adjustment (24V)
AN *	Pilot Operated Control with ISO-4401 (NG6) Interface and Shipping Cover
AM	Pilot Operated Pressure Limiter Control with Mechanical Adjustment and Vent Port
AL	Load sense and pressure limiter (only with "T" Torque Limiter option)

** Not functional control as such*

Code	Thru-Drive Mounting Pad/Coupling	# Teeth
0	None (only valid for end or side ported)	–
A	SAE 82-2 (A) & 16 (A) Coupling	9T
H	SAE 82-2 (A) & 19 (–) Coupling	11T
B	SAE 101-2 (B) & 22 (B) Coupling	13T
Q	SAE 101-2 (B) & 25 (B-B) Coupling	15T
C	SAE 127-4 (C) & 32 (C) Coupling	14T
N*	SAE 127-4 (C) & 38 (C-C) Coupling	17T
D**	SAE 152-4 (D) & 44 (D) Coupling	13T
J	SAE 101-2 (B) rotated 45 degrees, 22 (B) coupling	13T
K	SAE 101-2 (B) rotated 45 degrees, 25 (B-B) coupling	15T

* Available on 100 thru 140 models.
** Available on 140 models.

Code	Paint
00	No Paint
PB	Black Paint

Code	Special Features
00	No Special Features

Code	Mechanical Displacement Adjustment
0	None
1*	Adjustable Maximum Displacement
2*	Adjustable Minimum Displacement
	Adjustable Max & Min Displacement

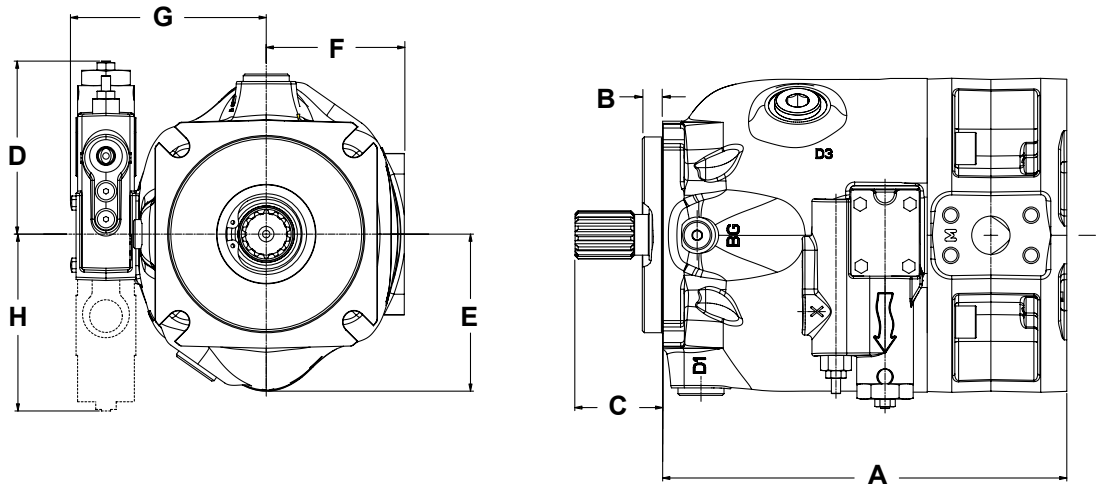
*** Displacement adjustment not available on thru-drive.**

Code	Port Orientation
E	End Ports
S	Side Ports
T	Side Ports with Thru-Drive

Code	Additional Control Options
0	None
T	Torque limiter AMT All Sizes
T	Torque limiter LOT 75,100,140
T	Torque limiter ALT 045 and 060 only

P1-PD Series

Piston Pumps (Mobile & Industrial)
P1/PD Medium Pressure Mobile Piston Pumps



Dimensions, inch (mm)

Series	A	B	C Max.	D	E	F	G	H Max.
P1/PD018	6.46 (164.2)	0.24 (6.2)	1.29 (32.8)	4.72 (120)	2.97 (75.5)	2.60 (66)	4.24 (107.7)	4.80 (122)
P1/PD028	9.25 (235.5)	0.37 (9.5)	1.84 (46.8)	4.72 (120)	3.21 (81.5)	2.93 (74.5)	4.48 (113.8)	4.80 (122)
P1/PD045	9.00 (228.7)	0.37 (9.5)	1.84 (46.8)	4.72 (120)	3.63 (92.3)	2.92 (74.2)	4.75 (120.7)	4.80 (122)
P1/PD060	(9.96 (253.0)	0.50 (12.7)	2.24 (56.8)	4.72 (120)	3.98 (101.2)	3.23 (82)	4.88 (123.9)	4.80 (122)
P1/PD075	10.37 (263.5)	0.50 (12.7)	2.24 (56.8)	4.72 (120)	4.09 (103.8)	3.54 (90)	5.03 (127.7)	4.80 (122)
P1/PD100	13.37 (339.6)	0.50 (12.7)	2.47 (62.8)	4.72 (120)	4.61 (117.1)	3.98 (101)	5.66 (143.7)	4.80 (122)
P1/PD140	14.34 (364.3)	0.50 (12.7)	2.97 (75.5)	4.72 (120)	5.24 (133)	4.45 (113)	6.13 (155.7)	4.80 (122)

Benefits/Features

- **Compact overall package size**
- **Quiet operation**
- **Low flow ripple to further reduce noise**
- **Elastomer seals that eliminate gaskets and external leakage**
- **High operating efficiency for lower power consumption and reduced heat generation**
- **Simple hydraulic controls with “no-leak” adjustments**
- **SAE and ISO standard mounting flanges and ports**
- **Long life, tapered-roller shaft bearings**
- **Long life, low friction, hydrostatically balanced cam bearings**
- **Full power through-drive capability**
- **End or side inlet and outlet ports**
- **Case drain ports for horizontal or vertical, shaft-up mounting**
- **Optional minimum and maximum displacement adjustments**
- **Optional case-to-inlet check valve to extend shaft seal life**
- **Easy to service**

P1/PD

P1 Mobile Application Market

Markets	Applications
Forestry	Feller Bunchers, Knuckle Boom Loader, Skidder, Forwarder, Cranes
Oil & Gas	Nitrogen Pumpers, Cementers, Coil Tubing
Construction	ADTs, Fan Drives
Mining	Drill Rigs, Top Drives, Loaders, Dump Trucks, Tunneling Equipment
Power Gen	Lube Oil Skids
Recycling	Shredders, Balers, Compactors, Vacuum Truck Systems, Refuse Trucks - ASL, Rear Loaders
Military	Fan Drives
Utility	Cranes, Digger Derricks, Man Lifts, Cable Placers, Fan Drives, Horizontal Directional Drills












P1-PD Series

PD Industrial Application Market

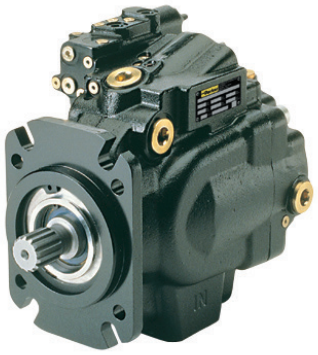
Markets	Applications
Industrial	Power Units, Industrial Molding, Press
Oil & Gas	Oil Lift Pumps
Power Gen	Turbine Start
Material Handling	Conveyor Drives

Literature

Ref. Catalogue HY28-1559-01/PT

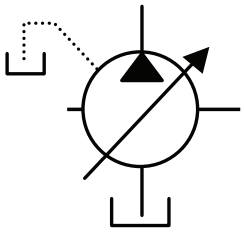
P2 Series

Characteristics



- Low noise levels – rigid housing design and reduced pressure ripple
- Compact design and unique port layout
- High self priming speed extends service life
- Modular controls allow for future control variations

Features



- Continuous Pressure – up to 320 bar
- Through-shaft Capability
- Adjustable Maximum Volume Stop
- 8 Control Options
- 4 Capacities from 60 cc/rev to 145 cc/rev

	P2060	P2075	P2105	P2145
Max. Displacement	60 cc/rev	75 cc/rev	105 cc/rev	145 cc/rev
Speed:*	2800 RPM	2500 RPM	2300 RPM	2200 RPM
Cont. Outlet Press:	320 bar	320 bar	320 bar	320 bar
Min. Inlet Press.**	0.8 bar	0.8 bar	0.8 bar	0.8 bar
Max. Inlet Press.**	10 bar	10 bar	10 bar	10 bar
Max. Case Drain Press:	0.5 bar	0.5 bar	0.5 bar	0.5 bar

* Self-priming speed @ 1 bar (absolute)
** @ Max Speed

Preferred Models	Description
P2060L00C1C25LA20N00T1A1P	60cc/rev LH, Load Sense, 'C' 4 bolt Flange 'C' spline
P2060R00C1C25LA20N00T1A1P	60cc/rev RH, Load Sense, 'C' bolt flange C' spline
P2075L00C1C25LA20N00T1A1P	75cc/rev LH, Load Sense, 'C Flange 'C' spline
P2075R00C1C25LA20N00T1A1P	75cc/rev RH, Load Sense, 'C Flange 'C' spline
P2105L00C1C25LA20N00T1A1P	105cc/rev LH, Load Sense, 'C Flange 'C' spline
P2105R00C1C25LA20N00T1A1P	105cc/rev RH, Load Sense, 'C Flange 'C' spline
P2145L00C1C25LA20N00T1A1P	145cc/rev LH, Load Sense, 'C Flange 'C' spline
P2145R00C1C25LA20N00T1A1P	145cc/rev RH, Load Sense, 'C Flange 'C' spline
P2145R00D1D25LA20N00T1A1P	145cc/rev RH, Load Sense, 'D Flange 'D' spline
P2145L00D1D25LA20N00T1A1P	145cc/rev LH, Load Sense, 'D Flange 'D' spline

P2 Pump Compensator Options

Compensator Option	Pump Size^^	Order Code
Press. Comp. (Pmax) – PA	75-145	P2-075-0806-07N
Press. Comp. (Pmax) – PA	60	P2-060-0806-07N
Remote Press. Comp. – RA	75-145	P2-075-0806-05N
Remote Press. Comp. – RA	60	P2-060-0806-05N
Load Sense Without Bleed – LA	75-145	P2-075-0806-01N
Load Sense Comp LA Without Bleed	60	P2-060-0806-01N
Torque/LS/Pmax – 20-60% Without Bleed – TA With Bleed – TB	All	P2-000-0803N
Torque/LS/Pmax – 50-90% Without Bleed – TC With Bleed – TD	P2060	P2-000-0803N plus P2-060-5022
	P2075	P2-000-0803N plus P2-075-5022
	P2105	P2-000-0803N plus P2-105-0229-20
	P2145	P2-000-0803N plus P2-145-0229-20

^^ Option not available if pump is not shown

P2 Pump Shaft Options

Shaft Option	Pump Size^^	Order Code
SAE 'C' Keyed – C5	P2060	P2-060-0225-46
	P2075	P2-075-0225-46
	P2105	P2-105-0225-46
	P2145	P2-145-0225-146
SAE 'C' Keyed – C6	P2075	P2-075-0225-48
	P2105	P2-105-0225-48
	P2145	P2-145-0225-148
SAE 'D' Spline – D1	P2105	P2-105-0225-40
	P2145	P2-145-0225-140
SAE 'D' Spline – D3	P2145	P2-145-0225-150

^^ Option not available if pump is not shown

P2 Pump Through Drive Kits

Thru-Drive Kits	Pump Size^^	Order Code
SAE "A" – 2 Bolt, 9T Spline – A1	P2060	P2-060-0215-01N
	P2075	P2-075-0215-01N
	P2105	P2-105-0215-01N
	P2145	P2-145-0215-01N
SAE "B" – 2 Bolt, 'B' Spline – B1	P2060	P2-060-0216-01N
	P2075	P2-075-0216-01N
	P2105	P2-105-0216-01N
	P2145	P2-145-0216-01N
SAE "B" – 2 Bolt, 'BB' Spline – B2	P2060	P2-060-0217-01N
	P2075	P2-075-0217-01N
	P2105	P2-105-0217-01N
	P2145	P2-145-0217-01N
SAE "C" – 2 Bolt, 'C' Spline – C1	P2060	P2-060-0218-01N
	P2075	P2-075-0218-01N
	P2105	P2-105-0218-01N
	P2145	P2-145-0218-01N
SAE "C" – 2 Bolt, 'CC' Spline – C2	P2145	P2-145-0219-01N
SAE "C" – 4 Bolt, 'C' Spline – C3	P2060	P2-060-0218-01N
	P2075	P2-075-0218-01N
	P2105	P2-105-0218-01N
	P2145	P2-145-0218-01N
SAE "C" – 4 Bolt, 'CC' Spline – C4	P2145	P2-145-0219-01N
SAE "D" – 4 Bolt, 'D' Spline – D3	P2145	P2-145-0220-01N

^^ Option not available if pump is not shown

P2 Piston Pump Spares

P2 Seal Kits

	Seal Kit – Buna N
P2060	SKP2060N12
P2075	SKP2/P3075N11
P2105	P2-105-0224N
P2145	P2-140-0230N

P2 Series

Piston Pump Code Out

P2 | | | | | | | | | | | | | |

Size	
Code	Displacement
060	60 cc/rev
075	75 cc/rev
105	105 cc/rev
145	145 cc/rev

Code	Rotation
R	CW
L	CCW

Code	Percent of Max. Displacement
00	100% Stroke, Std Factory Setting
xx	Range is 70 to 99 (70 to 99%)

Code	Shaft Options	060	075	105	145
C1	SAE 'C' Spline	X	X	X	X
C5	SAE 'C' Keyed	X	X	X	N/A
C6	SAE 'CC' Keyed	N/A	X	X	N/A
D1	SAE 'D' Spline	N/A	N/A	X	X
D3	SAE 'D' Keyed	N/A	N/A	N/A	X

Mounting Flange				
Code	060	075	105	145
C	SAE 'C' 4-Bolt	SAE 'C' 2/4-Bolt	SAE 'C' 2/4-Bolt	SAE 'C' 2-Bolt
D	N/A	N/A	N/A	SAE 'D' 4-Bolt

Code	Pressure Setting
25	Factory max. setting in bar times 10 (100 to 320 bar range)

Code	Control Options
PA	Std Setting for Non-torque Control Pumps
RA	Remote/Pmax – 100 to 320 Bar
LA	Load Sensing (2 Spool)/pmax without bleed orifi e
LB	Load Sensing (2 Spool)/pmax with bleed orifi e
TA	Torque/LS/Pmax without bleed orifi e (2 Spool) Torque Range 20 to 60% of Max Rated Torque
TB	Torque/LS/Pmax with bleed orifi e (2 Spool) Torque Range 20 to 60% of Max Rated Torque
TC	Torque/LS/Pmax without bleed orifi e (2 Spool) Torque Range 50 to 90% of Max Rated Torque
TD	Torque/LS/Pmax with bleed orifi e (2 Spool) Torque Range 50 to 90% of Max Rated Torque

Code	Paint Option
P	Parker Black
U	No Paint

Code	Multiple Pump Option
1	Single Pump
2	Front Pump of Multiple Pump Combination
3	Middle Pump of Multiple Pump Combination
4	Rear Pump of Multiple Pump Combination

Code	Port Location
A	Side – Inline Flanges – UNC

Through Drive		
Code	Control Options	Pump
S1	No Thru-Shaft	All
T1	Thru with Cover	All
A1	SAE "A" – 2 Bolt 9T Spline	All
B1	SAE "B" – 2 Bolt 'B' Spline	All
B2	SAE "B" – 2 Bolt 'BB' Spline	All
C1	SAE "C" – 2 Bolt 'C' Spline	All
C2	SAE "C" – 2 Bolt 'CC' Spline	145 Only
C3	SAE "C" – 4 Bolt 'C' Spline	All
C4	SAE "C" – 4 Bolt 'CC' Spline	145 Only
D3	SAE "O" – 4 Bolt 'D' Spline	145 Only

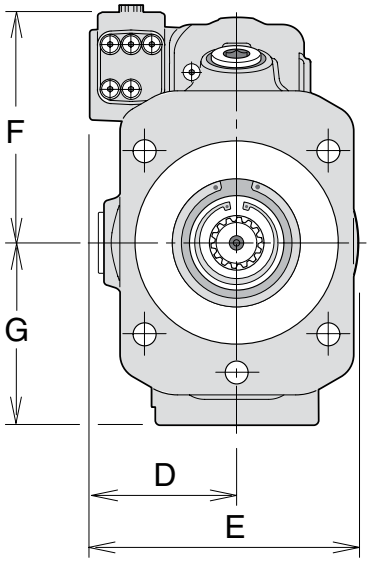
Code	Torque Control Setting in %
00	Std Setting for Non-torque Control Pumps
XX	20 to 90% of Max. Rated Torque

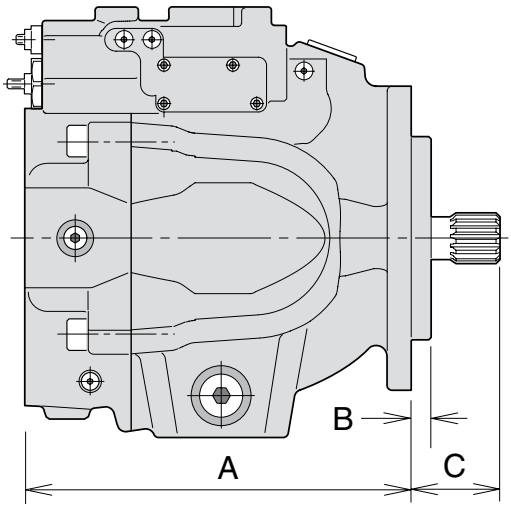
Code	Seals
N	Nitrile – Single Shaft
D	Nitrile – Double Shaft 'Wet Flange'
V	Fluorocarbon – Single Shaft Seal
T	Fluorocarbon – Double Shaft – 'Wet Flange'

Code	Differential Pressure Setting
20	Recommended Initial Factory Setting
XX	Presure Setting in Bar Range 10 to 35 Bar

Piston Pumps (Mobile & Industrial)

P2 High Pressure/High Speed Piston Pumps





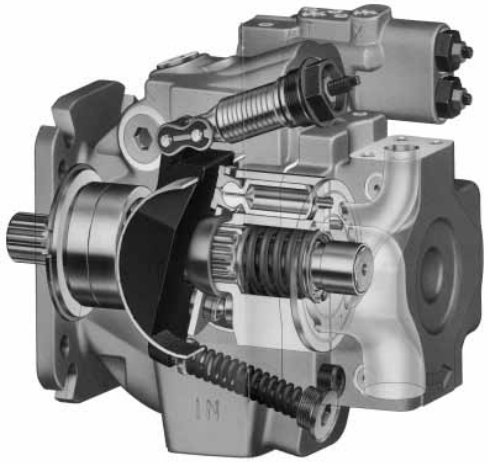
Dimensions, inch (mm)

Series	A Max*	B Max.	C Max.	D	E Max.	F	G
P2060	11.8 (299)	0.49 (12.5)	2.19 (55.6)	3.62 (92)	6.74 (171.3)	5.55 (141)	4.49 (114)
P2075	12.9 (327.5)	0.49 (12.5)	2.44 (62.0)	4.41 (112)	7.63 (193.8)	5.71 (145)	4.84 (123)
P2105	14.1 (358)	0.49 (12.5)	2.98 (75.7)	4.41 (112)	8.35 (212.0)	6.89 (175)	—
P2145	14.7 (375)	0.50 (12.7)	2.98 (75.7)	4.65 (118)	8.86 (225.0)	7.13 (181)	6.46 (164)

* With thru-shaft option

Benefits/Features

- **Compact**
- **Low noise level**
- **Sealed shaft bearing**
- **Service friendly**
- **Reliable**
- **Long-lasting**
- **Flexible**
- **Easy to install**
- **High self-priming speed**



Markets	Applications
Forestry	Feller Bunchers, Knuckle Boom Loader, Skidder, Forwarder
Construction	Wheel Loader, Dozers, Off-Highway Trucks,
Mining	Drill Rigs, Loaders
Material Handling	Truck Mounted Cranes, Lift Trucks, Reachstacker
Recycling	Shredders, Balers, Compactors











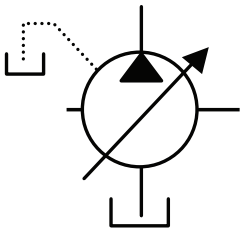

Literature

Ref. Catalogue HY28-1559-01/PT

PV Plus Series

Characteristics

- Continuous Pressure – up to 350 bar
- Through shaft Capability
- Low Outlet Flow Pulsation
- 7 Standard Control Options



Feature

- Low noise levels
- Fast response
- Compact design
- Service friendly
- High self priming speed
- Through drive for 100% of nominal
- Modular controls

	PV016/020/023/028	PV032/040/046	PV063/080/092	PV140/180	PV270	PV360
Max. Displacement	16/20/23 cc/rev	32/40/46 cc/rev	63/80/92 cc/rev	140/180 cc/rev	270 cc/rev	360 cc/rev
Speed Rating:	3000 RPM	2800 RPM	2800/2500/ 2300 RPM	2400/2200 RPM	1800 RPM	1750 RPM
Cont. Outlet Press:	350 bar	350 bar	350 bar	350 bar	350 bar	350 bar
Min. Inlet Press.	0.8 bar	0.8 bar	0.8 bar	0.8 bar	0.8 bar	0.8 bar
Max. Inlet Press.	16 bar	16 bar	16 bar	16 bar	16 bar	16 bar
Input Power*:	15.5/19.5/ 22.5/ 27.5 kW	31/39/45 kW	6.1/78/7804 kW	138/175 kW	263 kW	350 kW

* 1500 RPM and 350 bar.

Model	Description	
PV016R1K1T1NMMC	16cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV028
PV020R1K1T1NMMC	20cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV028
PV023R1K1T1NMMC	23cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV028
PV028R1K1T1NMMC	28cc/rev, RH press. Comp. Keyed shaft metric flang	
PV032R1K1T1NMMC	32cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV046
PV040R1K1T1NMMC	40cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV046
PV046R1K1T1NMMC	46cc/rev, RH press. Comp. Keyed shaft metric flang	
PV063R1K1T1NMMC	63cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV092
PV080R1K1T1NMMC	80cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV092
PV092R1K1T1NMMC	92cc/rev, RH press. Comp. Keyed shaft metric flang	
PV140R1K1T1NMMC	140cc/rev, RH press. Comp. Keyed shaft metric flang	Can be Converted from PV180
PV180R1K1T1NMMC	180cc/rev, RH press. Comp. Keyed shaft metric flang	
PV270R1K1T1NMMC	270cc/rev, RH press. Comp. Keyed shaft metric flang	

Piston Pump Options

Description	Through Drive Kit*	Coupling*
PV016-028 to SAE A Pilot & Coupling 9T	MK-PVBG1AMN42	MK-PVBG1K1142
PV016-028 to SAE B Pilot & Coupling 13T	MK-PVBG1BMN42	MK-PVBG1K1342
PV016-028 to PV016-028	MK-PVBG1JMN42	MK-PVBG1K0142
PV032-046 to SAE A Pilot & Coupling 9T	MK-PVBG2AMN40	MK-PVBG2K1140
PV032-046 to SAE B Pilot & Coupling 13T	MK-PVBG2BMN42	MK-PVBG2K1340
PV032-046 to PV016-028	MK-PVBG2JMN40	MK-PVBG2K0140
PV032-046 to PV032-046	MK-PVBG2KMN40	MK-PVBG2K0240
PV063-092 to SAE A Pilot & Coupling 9T	MK-PVBG3AMN41	MK-PVBG3K1141
PV063-092 to SAE B Pilot & Coupling 13T	MK-PVBG3BMN41	MK-PVBG3K1341
PV063-092 to SAE C Pilot & Coupling 14T	MK-PVBG3CMN41	MK-PVBG3K1541
PV063-092 to PV016-023	MK-PVBG3JMN41	MK-PVBG3K0141
PV063-092 to PV032-046	MK-PVBG3KMN41	MK-PVBG3K0241
PV063-092 to PV063-092	MK-PVBG3LMN41	MK-PVBG3K0341
PV140-180 to SAE A Pilot & Coupling 9T	MK-PVBG4AMN40	MK-PVBG4K1140
PV140-180 to SAE B Pilot & Coupling 13T	MK-PVBG4BMN40	MK-PVBG4K1340
PV140-180 to SAE C Pilot & Coupling 14T	MK-PVBG4CMN40	MK-PVBG4K1540
PV140-180 TO PV016-028	MK-PVBG4JMN40	MK-PVBG4K0140
PV140-180 TO PV032-046	MK-PVBG4KMN40	MK-PVBG4K0240
PV140-180 TO PV063-092	MK-PVBG4LMN40	MK-PVBG4K0340
PV140-180 TO PV140-180	MK-PVBG4LMN40	MK-PVBG4K0440
PV270 to PV032-046	MK-PVBG5KMN40	MK-PVBG5K0240
PV270 to PV063-092	MK-PVBG5LMN40	MK-PVBG5K0340
PV270 to PV140-180	MK-PVBG5LMN40	MK-PVBG5K0440
PV270 to PV270	MK-PVBG5MMN40	MK-PVBG5K0540

Compensator Options* Series 45 and up only

	PV016-046	PV063-092	PV140-360
Pressure Compensated – MMC	PVCMAMCN1	PVCMCMCN1	PVCMEMCN1
Pressure & Flow Comp. – MFC	PVCMAFCN1	PVCMCFCN1	PVCMEFCN1
Pressure & Flow Comp. c/w Top Interface NG6/D03 – MF1	PVCMAF1N1	PVCMCF1N1	PVCMEF1N1
Remote Press Comp. – MRC	PVCMARCN1	PVCMCRCN1	PVCMERCN1
Remote Press Comp. cc/w Top Interface NG6/D03 – MR1	PVCMAR1N1	PVCMCR1N1	PCVMER1N1

* More Compensator Options Available on Request. Contact Parker.

PV Plus Piston Pump Spares

Seal Kits A

	PV016-023	PV032-046	PV063-092	PV140-180	PV270
Seal Kit Buna N	SK-PVBG1N145	SK-PVBG2N145	SK-PVBG3N143	SK-PVBG4N144	SK-PVBG5N146
Seal Kit Viton	SK-PVBG1V145	SK-PVBG2V145	SK-PVBG2V143	SK-PVBG4V144	SK-PVBG5V146

PVplus 016-046cc Model Ordering Code

Code	Displacement in³/rev (cc/rev)
016	.98 (16)
020	1.2 (20)
023	1.4 (23)
028	1.7 (28)
032	1.9 (32)
040	2.4 (40)
046	2.8 (46)

Code	Rotation*
R	CW
L	CCW

*As viewed from shaft end.

Code	Pump Variations
1	Standard
9*	Customized Displacement and/or Pressure Setting

*Specify in cc/rev and/or bar.

Code	Shaft & Mounting			
	PV016/020/023		PV032/040/046	
	Shaft	Pilot	Shaft	Pilot
D	1" Keyed (SAE BB)	4 Bolt SAE B	1¼" Keyed (SAE C)	4 Bolt SAE C
E	15T Spline (SAE BB)	4 Bolt SAE B	14T Spline (SAE C)	4 Bolt SAE C
K	25mm Keyed	4 Bolt 100mm	32mm Keyed	4 Bolt 125mm
L	W25 x 1.5 x 15 x 8f Spline DIN 5480	4-Bolt 100mm	W32 x 1.5 x 20 x 8f Spline DIN 5480	4 Bolt 125mm

Code	Threads Code	
	Port*	Threads**
1	BSPP	Metric
3	UNF	UNC
7	ISO 6149	UNC
8	ISO 6149	Metric

*Drain, gage, and flushing ports.
** Mounting and connecting threads

Code	Thru-Drive Option (1st Digit)
T	Single Pump Prepared for Thru-Drive
	With Adapter for Second Pump
Y[1]	SAE AA, ∅2.00in (∅50.8mm)
A	SAE A, ∅3.25in (∅82.55mm)
B	SAE B, ∅4.00in (∅101.6mm)
C[2]	SAE C, ∅5.00in (∅127mm)
G	Metric, ∅2.48in (∅63mm)
H	Metric, ∅3.15in (∅80mm)
J	Metric, ∅3.94in (∅100mm)
K[2]	Metric, ∅4.92in (∅125mm)

1 Only for PV016 thru PV023
2 Only for PV032 and larger
* Only for PV032 and larger

Code	Coupling Code
1	Single pump, no coupling
H	with coupling 25 x 1.5 x 15, DIN 5480
J	with coupling 32 x 1.5 x 20, DIN 5480
Y	with coupling SAE A 9T-16/32 DP
A	with coupling SAE - 11T-16/32 DP
B	with coupling SAE B 13T-16/32 DP
C	with coupling SAE B-B 15T-16/32 DP
D	with coupling SAE C 14T-12/24 DP

Code	Seals
N	Nitrile
V	Fluorocarbon
W	Nitrile w/PTFE Shaft Seal
P	FPM w/PTFE Shaft Seal

Code			Control Options	
			Standard Pressure Compensator	
0	0	1	No Compensator	
1	0	0	With Cover Plate, No Control Function	
M	M		Standard pressure control, integrated pilot valve	
M	R		Remote pressure control, integrated pilot valve	
M	F		Load Sensing (flow) control, integrated pilot valve	
M	T		Two spool LS control	
•	•	•	**Remote/Load Sense Compensator**	
		C	Standard version[1]	
		1	NG6 interface top side for pilot valves	
		W	With unloading function, 24VDC solenoid[1]	
		K	Prop.-pilot valve type PVACRE..35 mounted	
		Z	Without integrated pilot valve, NG6 interface, for mounting of accessory code PVAC	
		P	MT1 with mounted pilot valve PVAC1P[2]	
•	•	•	**Horsepower Compensator Control**	
			Nominal Horsepower at 1500 RPM	
B			3 kW (19.5 Nm Torque)	PV016/020/023
C			4 kW (26 Nm Torque)	PV016/020/023
D			5.5 kW (36 Nm Torque)	PV016/020/023
E			7.5 kW (49 Nm Torque)	PV016/020/023
G			11 kW (71 Nm Torque)	PV016/020/023
H			15 kW (97 Nm Torque)	PV016/020/023
K			18.5 kW (120 Nm Torque)	PV016/020/023
M			22 kW (142 Nm Torque)	PV032/040/046
S			30 kW (195 Nm Torque)	PV032/040/046
			Function	
	L		Horsepower Compensator	
	C		Horsepower Compensator & Load Sensing	
			Variation	
		C	Standard Version	
		1	NG 6 interface top side	
		W	With unloading function, 24 VDC solenoid	
		K	Pro-pilot valve type PVARCE....35 mounted	
		Z	Without integrated pilot valve, NG6 interface, for mounting of accessory code PAVC*[4]	
		B	Without integrated pilot valve, without NG6 interface[4]	
•	•	•	**Electro Hydraulic Control Options**	
F	P	V	Proportional displacement control, no pressure compensation	
U	P		Proportional displacement control, with pressure compensation	

1 Not for MT
2 Only for MT

NOTES:

Compensator differential Δp is to be adjusted:
Remote pressure comp., horsepower comp. 15 ± 1 bar
Load-sensing comp. (not horsepower comp.) 10 ± 1 bar
(Codes MF* and LS part of MT*)
Consult catalog on CD for electrohydraulic control options.
Items in red are standard.

PVplus 063-360cc Model Ordering Code

PV									
Pump Variable Piston	Displace-ment	Rotation	Variations	Shaft & Mounting	Threads Code	Thru-Drive Option	Coupling Code	Seals	Control Options

Code	Displacement in³/rev (cc/rev)
063	3.8 (63)
080	4.8 (80)
092	5.6 (92)
140	8.5 (140)
180	10.9 (180)
270	16.5 (270)
360	22.0 (360)

Code	Rotation*
R	CW
L	CCW

*As viewed from shaft end.

Code	Pump Variations
1	Standard
9*	Customized Displacement and/or Pressure Setting

*Specify in cc/rev and/or bar.

Code	Shaft & Mounting					
	PV063/ 080/092		PV140/ 180		PV270	
	Shaft	Pilot	Shaft	Pilot	Shaft	Pilot
D	1¾" Keyed (SAE D)	4 Bolt SAE D	2" Keyed SAE F	4 Bolt SAE D	2" SAE Keyed	4 Bolt SAE E
E	13T Spline (SAE D)	4 Bolt SAE D	15T Spline SAE F	4 Bolt SAE D	15T Spline SAE F	4 Bolt SAE E
F			1¾" Keyed SAE D	4 Bolt SAE D		
G			13T Spline SAE D	4 Bolt SAE D		
K	40mm Keyed	4 Bolt 160 mm	50mm Keyed	4 Bolt 160 mm	65mm Keyed	4 Bolt 200 mm
L	W40 x 1.5 x 25 x8f Spline DIN 5480	4 Bolt 160 mm	W50 x 2 x 24 x 9g Spline DIN 5480	4 Bolt 160 mm	W60 x 2 x 28 x 9g Spline DIN 5480	4 Bolt 200 mm

Code	Threads Code	
	Port*	Threads**
1	BSPP	Metric
3	UNF	UNC
4***	BSPP-M14	Metric
7	ISO 6149	UNC
8	ISO 6149	Metric

* Drain, gage, and flushing ports.
** Mounting and connecting threads
*** Only for PV063-PV180; pressure port 1¼" with 4xM14 instead of 4xM12

Code	Thru-Drive Option (1st Digit)
T	Single Pump Prepared for Thru-Drive
	With Adapter for Second Pump
A	SAE A, ∅3.25in (∅82.55mm)
B	SAE B, ∅4.00in (∅101.6mm)
C	SAE C, ∅5.00in (∅127mm)
D[1]	SAE D, ∅6.00in (∅152.4) mm
E[2]	SAE E, ∅6.50in (∅165.1mm)
G[3]	Metric, ∅2.48in (∅63mm)
H	Metric, ∅3.15in (∅80mm)
J	Metric, ∅3.94in (∅100mm)
K	Metric, ∅4.92in (∅125mm)
L[1]	Metric, ∅6.30in (∅160mm)
M[2]	Metric, ∅7.87in (∅200mm)

1 Only for PV063 and larger
2 Only for PV270
3 Only up to PV092

Code	Coupling Code
1	Single pump, no coupling
H	with coupling 25 x 1.5 x 15, DIN 5480
J	with coupling 32 x 1.5 x 20, DIN 5480
K	with coupling 40 x 1.5 x 25, DIN 5480
L	with coupling 50 x 2 x 24, DIN 5480
Y	with coupling SAE A 9T-16/32 DP
A	with coupling SAE - 11T-16/32 DP
B	with coupling SAE B 13T-16/32 DP
C	with coupling SAE B-B 15T-16/32 DP
D	with coupling SAE C 14T-12/24 DP
E	with coupling SAE C - C
F	with coupling SAE D, E
G	with coupling SAE F

Code	Seals
N	Nitrile
V	Fluorocarbon
W	Nitrile w/PTFE Shaft Seal
P	FPM w/PTFE Shaft Seal

Consult catalog on CD for electrohydraulic control options.

Code			Control Options
•	•	•	**Standard Pressure Compensator**
0	0	1	No Compensator
1	0	0	With Coverplate, No Control Function
M	M		Standard pressure control, integrated pilot valve
M	R		Remote pressure control, integrated pilot valve
M	F		Load Sensing (flow) control, integrated pilot valve
M	T		Two spool LS control
•	•	•	**Remote/Load Sense Compensator**
		C	Standard version[1]
		1	NG6 interface top side for pilot valves
		W	With unloading function, 24VDC solenoid[1]
		K	Prop.-pilot valve type PVACRE..35 mounted
		Z	Without integrated pilot valve, NG6 interface, for mounting of accessory code PVAC
		P	MT1 with mounted pilot valve PVAC1P[2]
•	•	•	**Horsepower Compensator Control**
			Input Horsepower at 1500 RPM
G			11 kW (71 Nm Torque)
H			15 kW (97 Nm Torque)
K			18.5 kW (120 Nm Torque)
M			22 kW (142 Nm Torque)
S			30 kW (195 Nm Torque)
T			37 kW (240 Nm Torque)
U			45 kW (290 Nm Torque)
W			55 kW (355 Nm Torque)
Y			75 kW (485 Nm Torque)
Z			90 kW (585 Nm Torque)
2			110 kW (715 Nm Torque)
3			132 kW (850 Nm Torque)
4			160 kW (850 Nm Torque)
5			180 kW (850 Nm Torque)
6			200 kW (850 Nm Torque)
			Function
	L		Horsepower Compensator
	C		Horsepower Compensator & Load Sensing
			Variation
		C	Standard Version
		1	NG 6 interface top side
		W	With unloading function, 24 VDC solenoid
		K	Pro-pilot valve type PVARCE....35 mounted
		Z	Without integrated pilot valve, NG6 interface, for mounting of accessory code PAVC*[4)]
		B	Without integrated pilot valve, without NG6 interface[4)]
•	•	•	**Electro Hydraulic Control Options**
F	D	V	Proportional displacement control, no pressure
U	D		Proportional displacement control, with pressure compensation

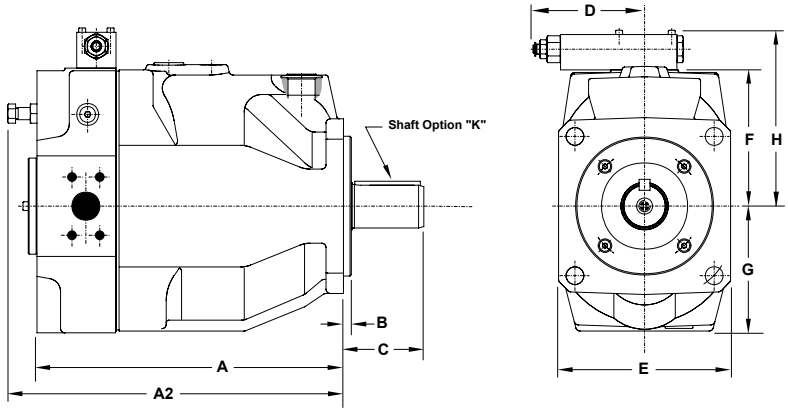
PV063/080/092 · PV140 · PV180 · PV270 · PV360

Items in red are standard.

1 Not for MT
2 Only for MT
3 Accessories not included. Please specify on order with full model code.
4 Control variation Z and B without pressure compensator

PVplus High Pressure Industrial

Piston Pumps (Industrial)

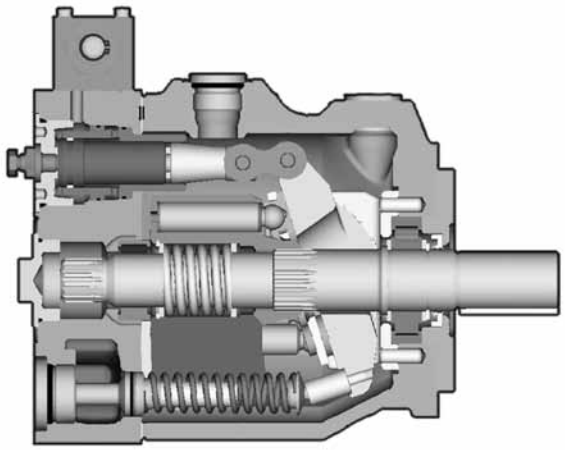


Dimensions, inch (mm)

Model	A	A2 Max.	B	C	D Max.	E	F	G	H
PV016/020/023	77.8 (195)	83.5 (212)	0.37 (9)	2.0 (52)	0.49 (12.44)	5.2 (132)	3.7 (94)	3.1 (80)	5.5 (140)
PV032/040/046	89 (227)	96 (245)	0.50 (9)	2.7 (68)	2.19 (55.62)	6.1 (156)	4.2 (107)	3.6 (92)	6.0 (153)
PV063/080/092	112.9 (287)	120.5 (306)	0.50 (9)	3.6 (92)	4.25 (107.95)	8.0 (204)	5.3 (135)	4.6 (118)	7.1 (181)
PV140/180	138 (350)	152 (385)	0.50 (9)	3.6 (92)	4.25 (107.95)	7.8 (200)	6.2 (158)	5.7 (145)	8.0 (204)
PV270	186 (472.5)	201 (510)	0.50 (9)	4.5 (115)	—	10.4 (265)	7.2 (184)	6.9 (176)	9.1 (230)
PV360	187.7 (477)	201 (510)	0.50 (9)	4.5 (115)	—	98.4 (250)	7.2 (184)	6.9 (176)	9.1 (230)

Benefits/Features

- **High strength cast-iron housing for high reliability and quiet operation**
- **Modular controls for field co - vertibility**
- **Large control piston for fast response**
- **Thru-shaft option with 100% thru torque capability**
- **Multiple pressure control with valves mounted directly on pump**
- **Pre-compression chamber to minimize over-all system noise**
- **High self-priming speed and cold start capability**

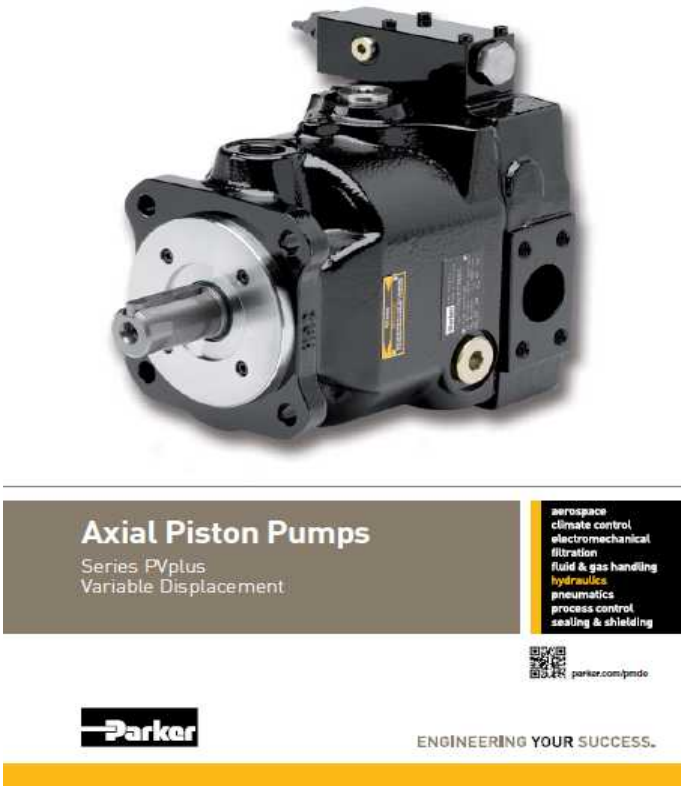


PV Plus Series

Markets	Applications
Industrial	Presses, Shears, Injection Molding, Aircraft Test Stands, Test Equipment, Simulators
Oil & Gas	Nitrogen Pumpers, Cementers, Coil Tubing, Oil Lift Pumps
Construction	Wheel Loader
Mining	Drill Rigs, Tunneling Equipment
Material Handling	Conveyor Drives, Apron Feeders, Rail Car Tippers, Mixers
Recycling	Shredders, Balers, Compactors

Literature

Ref. Catalogue HY30-3245/UK



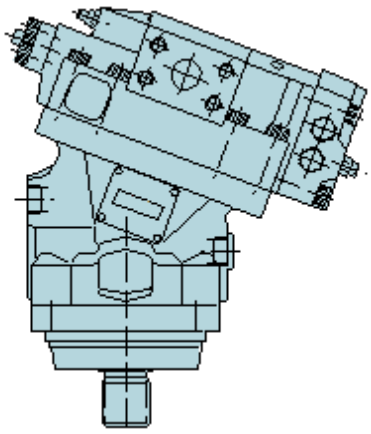
Our variable motor program

V12-60 -80

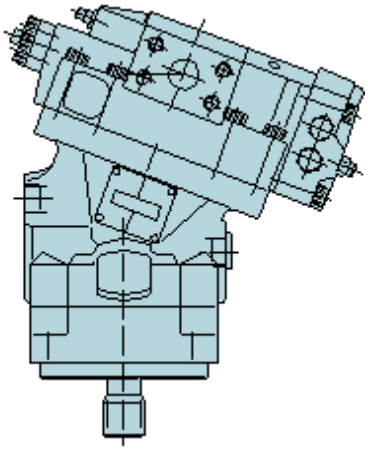
V14-110 -160

Available motors

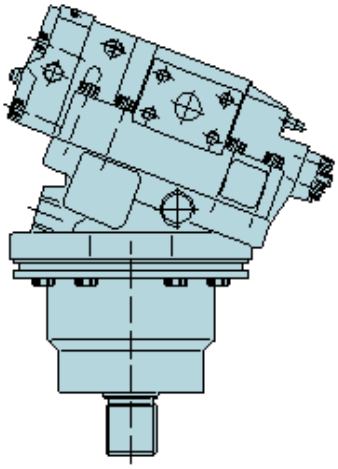
Model	Frame size	Version	
V12	60	ISO	
V12	60	Cartridge	
V12	60	SAE	
V12	80	ISO	
V12	80	Cartridge	
V12	80	SAE	
V14	110	ISO	
V14	110	Cartridge	
V14	110	SAE	
V14	160	ISO	
V14	160	SAE	



ISO



SAE



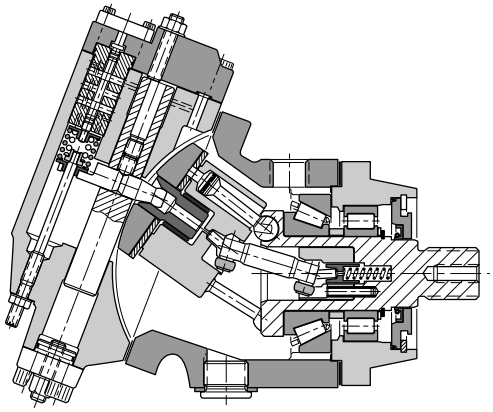
Cartridge

V12 Bent Axis Series

- Very high operating speeds
- Displacement ratio 5:1
- Pressures up to 480 bar
- Very high power capability
- High starting torque
- Low weight
- High overall efficiency
- Axial or side ports
- Controls available for most needs
- ISO, SAE and cartridge versions

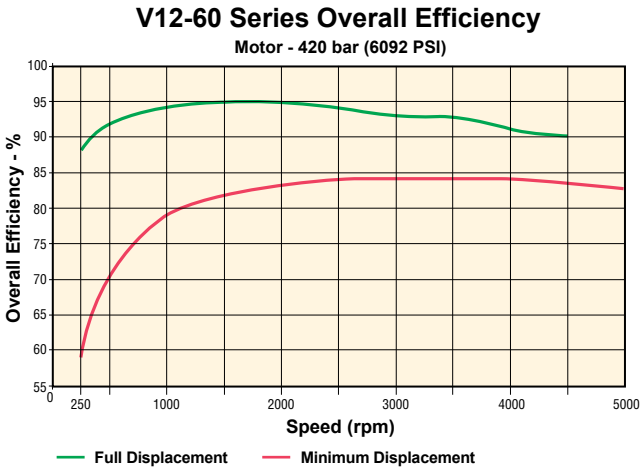
Frame size V12	60	80
Displacement max at 35° (cm3/rev)	60	80
Displacement min at 6.5° (cm3/rev)	12	16
Max cont pressure (bar)	420	420
Max cont. operating speed (rpm)	5600	5000
Corner power cont (kW)	235	280
Weight (kg)	28	33

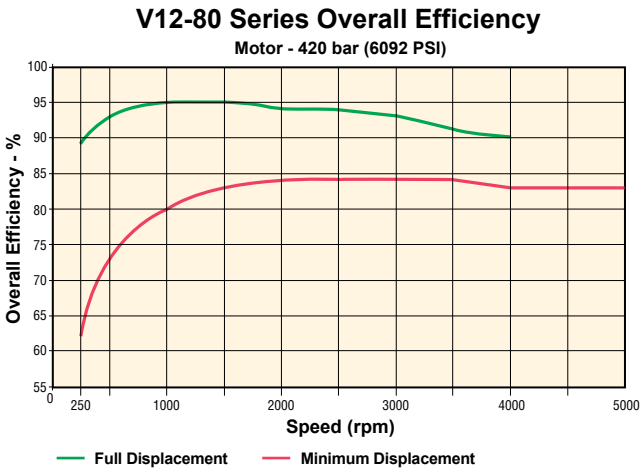
Performance Characteristics



Benefits/Features

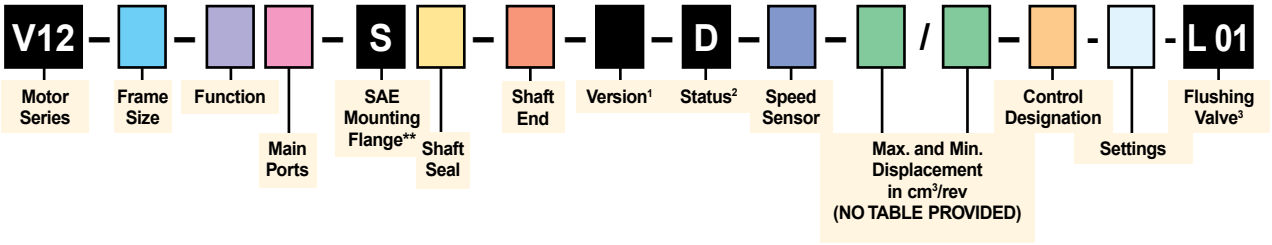
- **Tolerates very high speeds due to low weight pistons with laminated piston rings and a compact design of the rotating parts**
- **High output power; the overall efficien y remains high through-out the entire displacement range**
- **The 9-piston design provides high start-up torque and smooth motor operation**
- **Wide displacement ratio (5:1)**
- **Broad range of controls and accessory valves for most applications**
- **Small envelope size and a high power-to-weight ratio**
- **ISO, cartridge and SAE versions**
- **Low noise levels due to a very compact and sturdy design with smooth fluid pass ges**
- **Positive piston locking, strong synchronizing shaft, heavy-duty bearings and small number of parts add up to a compact and robust motor with long service life and proven reliability.**





V12 Bent Axis Series

Ordering Code



Code	Frame Size
60	3.66 in³/rev (60 cm³/rev)
80	4.88 in³/rev (80 cm³/rev)

Code	Function
M	Motor; normal end cap position (EO, EP, HO & HP only)
T	Motor; normal end cap position (AC & AH only)

Code	Main Ports*
S	SAE Flange; UN Threads, Side Ports
U	SAE Flange; UN Threads, Rear Ports

Code	Shaft Seal	60	80
V	PPS	x	x

Code	Shaft End***	60	80
S	Spline (SAE J498b)	x	x

Code	Speed Sensor
0	No Sensor
P	Prepared for Speed Sensor

Code	Control	60	80
AC I 01 I	Pressure Compensator, internal pilot pressure, internal servo supply	x	x
AC E 01 I	Pressure Compensator, external pilot pressure, internal servo supply	(x)	(x)
AH I 01 I	Pressure Compensator, hydraulic override internal pilot pressure, internal servo supply	x	x
AH E 01 I	Pressure compensator, hydraulic override, external pilot pressure, internal servo supply	(x)	(x)
EOL 01 I	Electrohydraulic, two-position, 12 VDC, internal servo supply	x	x
EOL 01 E	Electrohydraulic, two-position, 12 VDC, external servo supply	(x)	(x)
EOH 01 I	Electrohydraulic, two-position, 24 VDC, internal servo supply	x	x
EPL 01 I	Electrohydraulic, proportional, 12 VDC, internal servo supply	x	x
EPL 01 E	Electrohydraulic, proportional, 12 VDC, external servo supply	(x)	(x)
EPH 01 I	Electrohydraulic, proportional, 24 VDC, internal servo supply	x	x
EPH 01 E	Electrohydraulic, proportional, 24 VDC, external servo supply	(x)	(x)
HOS 01 I	Hydraulic, two-position, standard version, internal servo supply	x	x
HOS 01 E	Hydraulic, two-position, standard version, external servo supply	(x)	(x)
HPS 01 I	Hydraulic, proportional, standard version, internal servo supply	x	x
HPS 01 E	Hydraulic, proportional, standard version, external servo supply	(x)	(x)

x = standard; (x) = option

* Main ports also available with metric threads. See CD.
** Cartridge and ISO options available. See CD.
*** DIN shaft ends also available. See CD.
[1] Factory issued for special versions
[2] Control pressure setting; max and min displacement screws sealed
[3] Integrated flushing valve with standard nozzle. See CD for options.

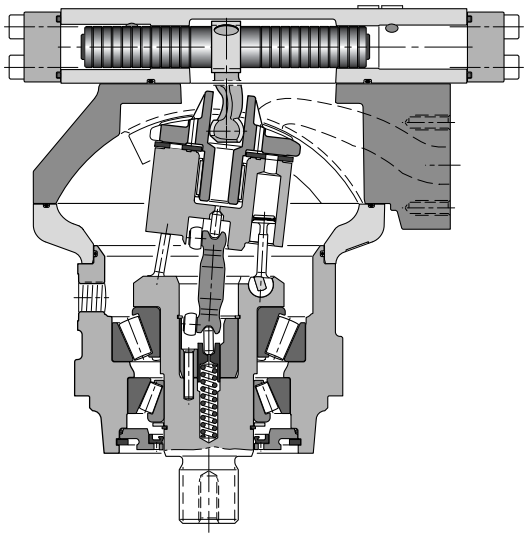
Settings
AC, AH: Threshold Pressure: **2175.57**, **2900.76**, or **3625.94** PSI (**150**, **200** or **250** bar) Modulating Pressure: **217.56**, **362.59**, **725.19** PSI (**015**, **025** or **050** bar)
EO, EP: Threshold Current: **400** mA (12 VDC), **200** mA (24 VDC) Modulating Current: **000** (EO), **600** mA (EP 12 VDC), **300** mA (EP 24 VDC)
HO, HP: Threshold Pressure: **145.14** PSI (**010** bar) Modulating Pressure: **000** (HO), **217.56** or **362.59** PSI (HP) (**000** (HO), **015** or **025** bar (HP))

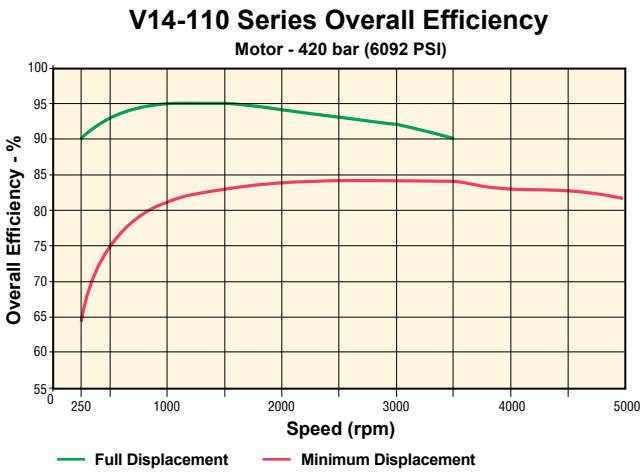
V14 Bent Axis Series

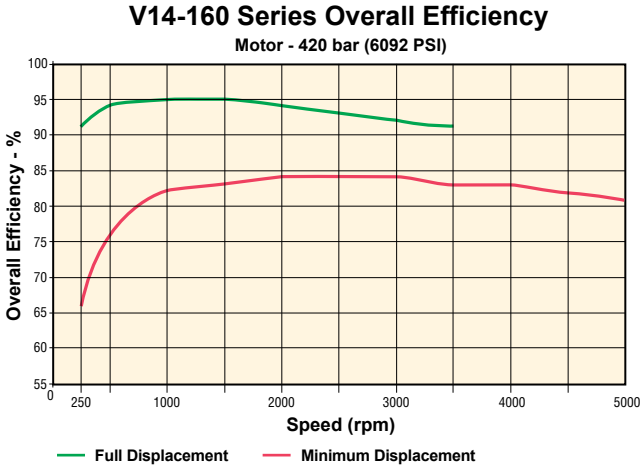
- Operating pressures up to 480 bar
- High speeds thanks to low weight pistons with laminated piston rings and a very compact design of the rotating parts
- High over all efficiency throughout the entire displacement range
- 9 pistons provide high start-up torque and smooth operation
- Wide displacement range – 5:1
- Small envelope size and high power-to-weight ratio
- Low noise levels due to the compact, sturdy design and smooth fluid passages
- Positive piston locking, strong synchronizing shaft, heavy-duty bearings and a small number of parts add up to a very robust motor with long service life and proven reliability

Frame size V14	110	160
Displacement max at 35° (cm3/rev)	110	160
Displacement min at 6.5° (cm3/rev)	22	32
Max cont pressure (bar)	420	420
Max cont. operating speed (rpm)	5700	5000
Corner power cont (kW)	440	560
Weight (kg)	54	68

Performance Characteristics







Applications

- **Excavators**
- **Forestry machines**
- **Mining and drilling machines**
- **Wheel loaders**
- **Winch drives**

Optional equipment

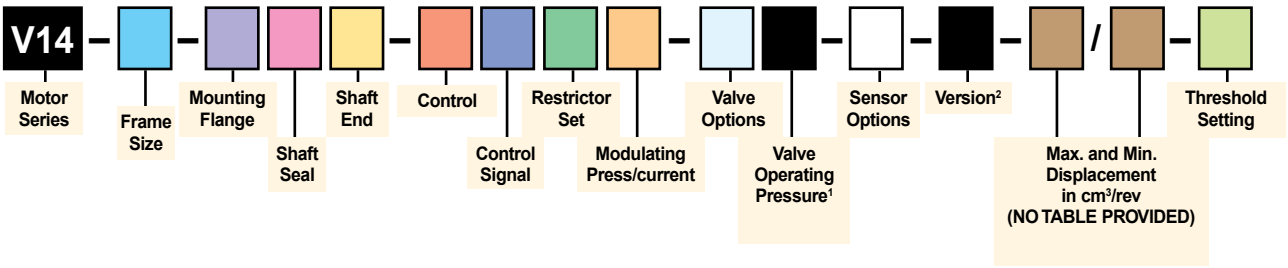
- **Integrated sensors for speed and displacement**
- **Integrated flushing an pressure relief valves**

Additional benefits

- **Improved speed capability**
- **Improved control performance**
- **Reduced number of parts**
- **Stronger shaft bearing support.**

V14 Bent Axis Series

Ordering Code



Code	Frame Size
110	6.71 in³/rev (110 cm³/rev)
160	9.76 in³/rev (160 cm³/rev)

Code	Mounting Flange
S	SAE version
I	ISO version
C*	Cartridge version

* 110 only

Code	Shaft Seal
V	FPM (High Temperature Fluorocarbon)

Code	Shaft End
S	SAE (SAE Version)
C	DIN (ISO Version)
D	DIN (ISO Version)

Code	Control
AC	Presure Compensator
AD	Press. Compensator with electrohydraulic override and brake defeat valve
AH	Pressure Compensator with hydraulic override
EO	Electrohydraulic, two-position
EP	Electrohydraulic, proportional
HO	Hydraulic, two-position
HP	Hydraulic, proportional

Code	Control Signal
E	External Pressure (AC, AH, HO, HP)
I	Internal Pressure (AC, AD, AH)
H	24 VDC (AD ,EO, EP)
L	12 VDC (AD, EO, EP)
C	Pressure Cut Off (EP, HP)

[1] Pressure Relief Valve opening pressure (bar)
Alternately: Flushing Valve restrictor
[2] Factory issued for special versions

Code	Control Restrictor Set (orifice dia. in mm)
1	0.7
2	0.8
3	1.0 (standard)
4	1.2

Code	Control Modulating Pressure/Current
N	AC: 0 bar EP: Non-selectable current
A	217.56 PSI (15 bar) (AC, HP)
B	362.59 PSI (25 bar) (AC, HP)
C	725.19 PSI (50 bar) (AC)

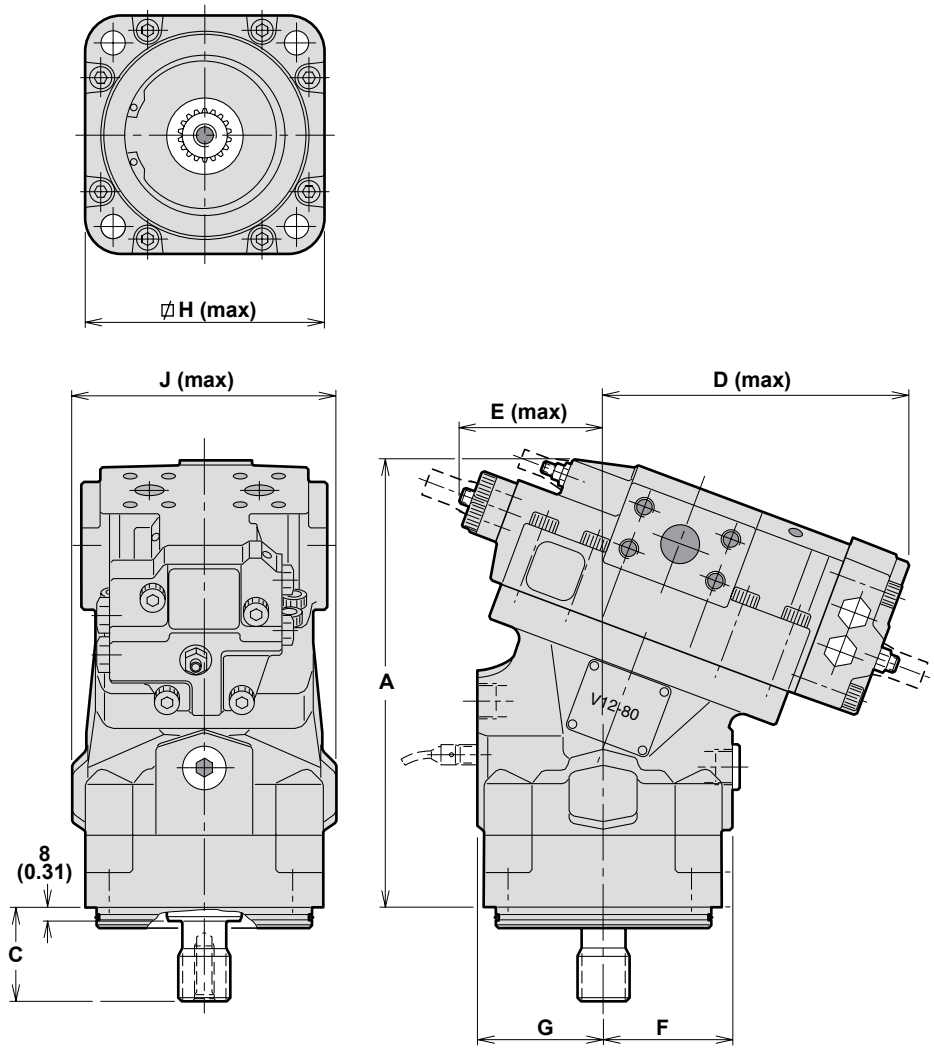
Code	Valve Options
N	None
L	Flushing Valve
P	Pressure Relief Valve

Code	Sensor Options
N	None
C	Prepared for Setting Piston Position and Shaft Speed Sensors (EP, HP)
D	Setting Piston Position and Shaft Speed Sensors (EP, HP)
L	Setting Piston Position Sensor (EP, HP)
P	Prepared for Speed Sensor
S	Speed Sensor
T	Prepared for Setting Piston Position Sensor

Code	Threshold Setting
***	Select pressure between 1450.38-5076.32 PSI (100-350 bar) (AC, AD, AH only)
400	400 mA - 12 VDC (EO, EP only)
200	200 mA - 24 VDC (EO, EP only)
10	145.14 PSI (10 bar) (HO, HP only)

Motors (Mobile)

V12 Small Frame Variable Displacement Bent-Axis Motors

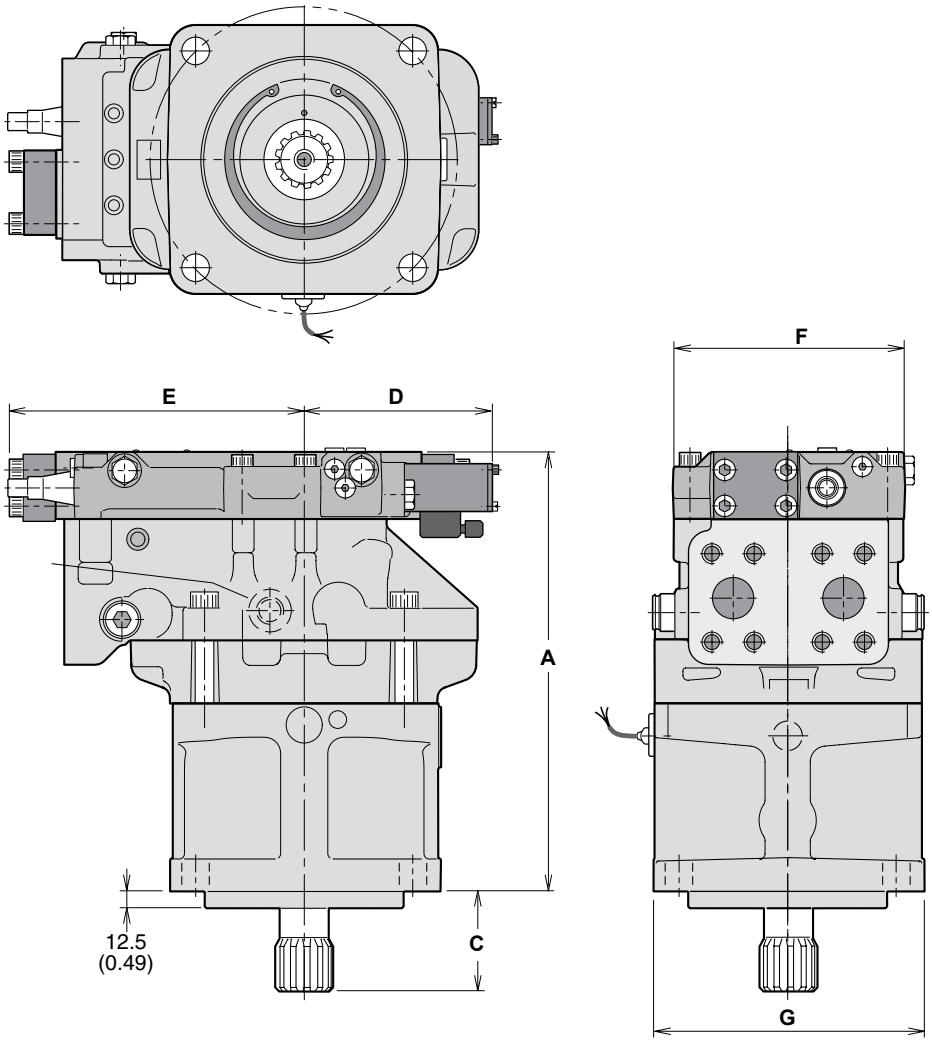


Dimensions, inch (mm)

Series	A	C max	D max	E max	F	G	H max	J max
V12-60	10.51 (267)	2.19 (55.6)	7.40 (188)	3.43 (87)	3.03 (77)	2.99 (76)	5.87 (149)	6.26 (159)
V12-80	11.02 (280)	2.19 (55.6)	7.60 (193)	3.54 (90)	3.15 (80)	3.07 (78)	5.87 (149)	6.50 (165)

Motors (Mobile)

V14 Large Frame Variable Displacement Bent-Axis Motors



Dimensions, inch (mm)

Series	A	C	D	E	F	G
V14-110	11.54 (293)	2.93 (74.5)	5.91 (150)	8.19 (208)	6.85 (174)	8.03 (204)
V14-160	12.91 (328)	2.95 (75)	5.47 (139)	8.62 (219)	6.85 (174)	7.87 (200)

Application Market

V12/V14 Motors Application Market

Markets	Applications
Forestry	Feller Bunchers, Skidder, Forwarder, Cranes
Marine	Deck Cranes, Constant Tension Winches
Construction	Wheel Loader, Cranes, Excavator
Mining	Drill Rigs, Top Drives, Loaders, Subsurface Loaders, Tunneling Equipment
Power Gen	Turbine Start
Material handling	Conveyor Drives, Truck Mounted Cranes, Mixers
Recycling	Shredders
Military	Fan Drives





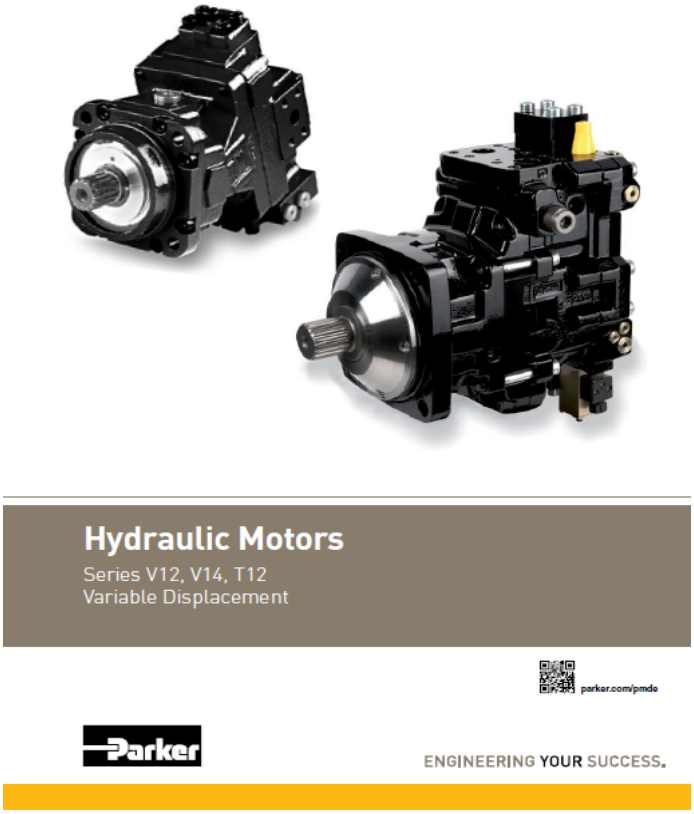


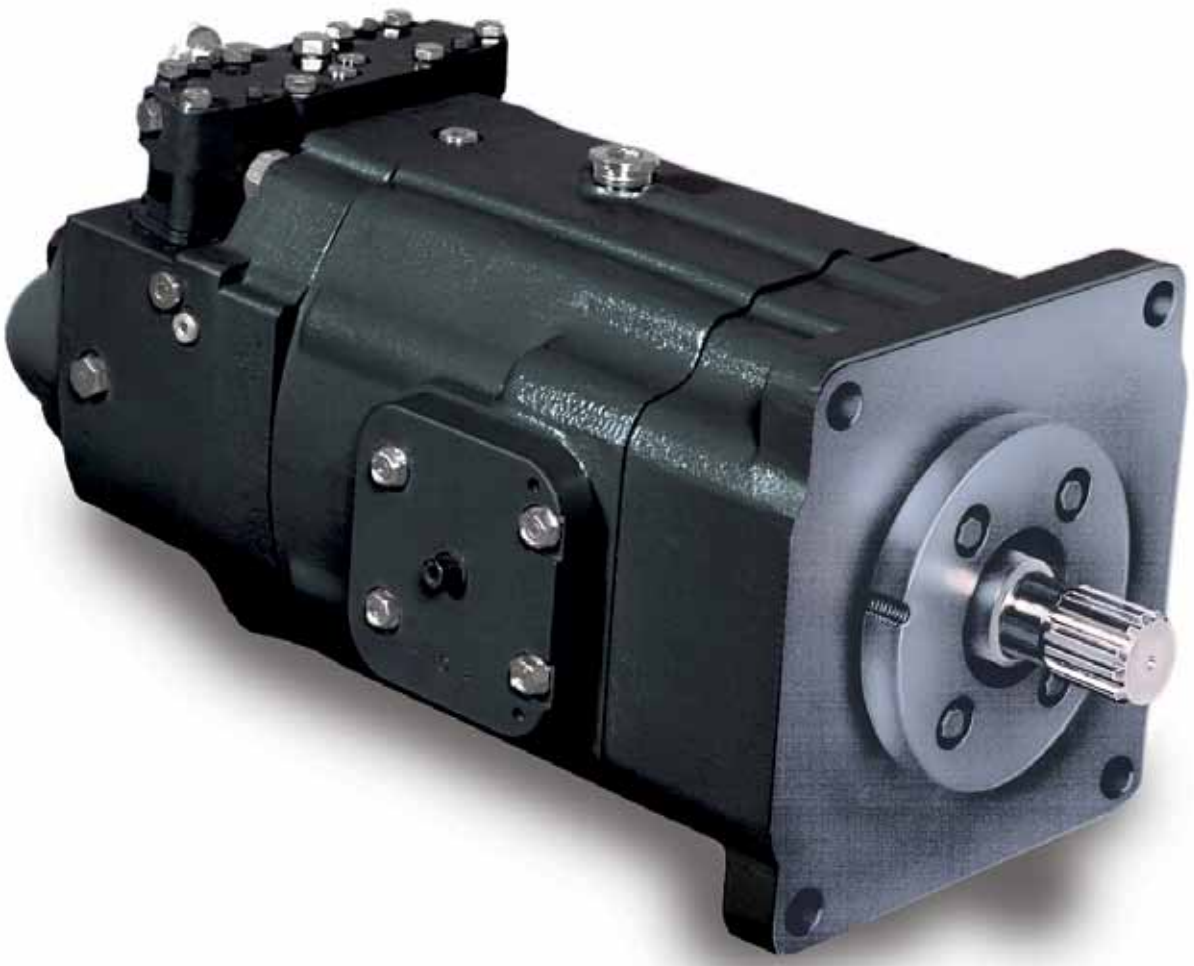




Literature

Ref. Catalogue HY30-8223/UK



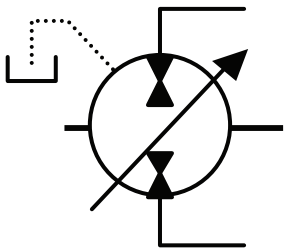


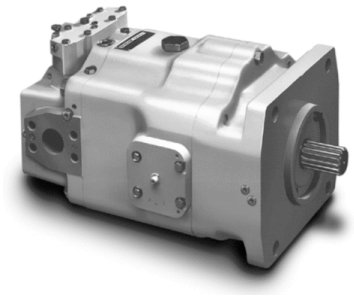
Transmission

2/Variable Displacement

ENGINEERING YOUR SUCCESS.

P6 – 98 cc/rev, P7 – 119 cc/rev, P8 – 131 cc/rev, P11 – 180 cc/rev, P14 – 229 cc/rev, P24 – 403 cc/rev, P30 – 500 cc/rev



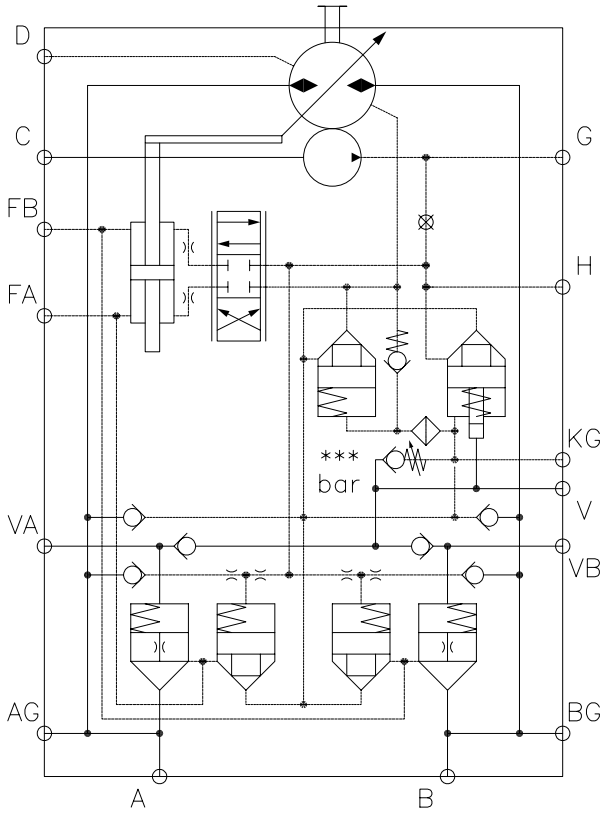


Characteristics

DENISON Goldcup series package pumps contain within them all the circuit elements shown in the hydraulics schematic.

These include the rotary servo actuator, servo pressure relief valve, replenishing relief valve, and pressure compensator override controls. The pump can also incorporate the shuttle valve to strip hot oil from the transmission loop.

Goldcup series controls include rotary servo, hydraulic stroker, electric stroker, torque limiter and PQ control.



Features

- 7 Displacement 98cc/rev – 500 cc/rev
- Pressure to 420 Bar
- Speed to 3000 RPM
- Low noise levels
- Wide variety of control options
- Displacement Indicator
- Full Power through drive
- Hot Oil Shuttle option
- System Flexibility

Please Note: Code out Overleaf

Maximum Pressure[1]

Size	Intermittent	Continuous	Case	Maximum speed[2]	Weight	Mounting	Shaft/
P6	420 bar	345 bar	5.20	3000	70	SAE-C - 2 bolts	1 ¼" Key or 14T
P7	420 bar	345 bar	5.20	3000	70	SAE-C - 2 bolts	1 ¼" Key or 14T
P8	310 bar	250 bar	5.20	2100	70	SAE-C - 2 bolts	1 ¼" Key or 14T
P11	420 bar	345 bar	5.20	2400	136	SAE-E - 4 bolts	1 3/4" Key or 13T
P14	420 bar	345 bar	5.20	2400	136	SAE-E - 4 bolts	1 3/4" Key or 13T
P24	345 bar	345 bar	5.20	2100	295	SAE-F - 4 bolts	2" Key or 15T
P30	345 bar	345 bar	5.20	1800	304	SAE-F - 4 bolts	2" Key or 15T

Hydrostatic Pumps Goldcup Series

Goldcup Model Code

P14_	-	2	R	1	C	-	8	A	2	-	A	0	0	-	0	0	0	-	M2

Model	cc/rev
P6P, P6S, P6L, P6D	96cc
P7P, P7S, P7L, P7D	119cc
P8P, P8S, P8L, P8D	131cc
P11P, P11S, P11L, P11D	180cc
P14P, P14S, P14L, P14D	229cc
P24P, P24S, P24L, P24D	403cc
P30P, P30S, P30L, P30D	501cc

P = Variable, Closed Circuit
S = Variable, Medium Torque Thru-Drive & Shuttle Package, Closed Circuit
L = Variable, High Torque Thru-Drive & Shuttle Package, Closed Circuit
D = Variable, Open & Closed Circuit (P6, 7 & 8 Only)

Shaft/Seal (SAE)
2 – Keyed shaft Mech Seal
3 – Spline shaft Mech Seal
7 - Keyed Double Lip Seal
8 - Splined Double Lip Seal

Rotation	
R	CW
L	CCW

Seal Material	
1	Buna Nitrile
5	Viton

Design
A,B,C,D,E – Refer to catalog

Primary Control	Secondary Control
4A Rotary Servo	2 - Max volume stops & displacement indicator
8A Hydraulic Stroker	
9A Electro-hydraulic	4 - Torque Limiter

Control Location	
A	Port A Side
B	Port B Side

Control Options		
4A	None	00
8A	5-24 Bar	00
	5-30 Bar	01
	7-26 Bar	02
9A	24VDC	00
	12VDC	01

Internal Pump	
0	17.5 cc/rev (P6, 7, 8) 35 cc/rev (P11, P14) 46 cc/rev (P24, 30)
X	None

External Drive	
0	None
A	SAE A
B	SAE B
C	SAE C

External Pump Mount	
0	Pump not mounted
1	Pump mounted

Modific tions

Standard Model

Sizes 6,7,8	Sizes 11,14
P*P-****-4A2-*00-000	P*P-****-4A2-*00-000
P*P-****-8A2-*00-000	P*P-****-8A2-*00-000
P*P-****-9A2-*00-000	P*P-****-9A2-*00-000

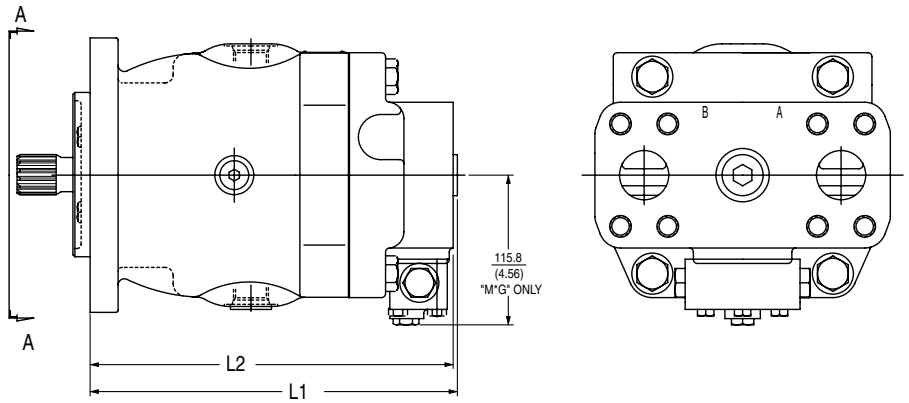
Seal Kits

Model	Mod	Seal Type	Shaft Type	Rotation	Complete Seal Kit	Shaft Seal Kit	Control Seal Kit
6, 7, 8	C&A	Buna N	2 & 3	R&L	S23-17026-0K	S13-44302-0	S23-17000-0
11,14	A & C				S23-17032-0K	S23-05992-0	
24, 30	D,E & B				S23-11514-0K	S23-11516-0	

Mobile & Industrial

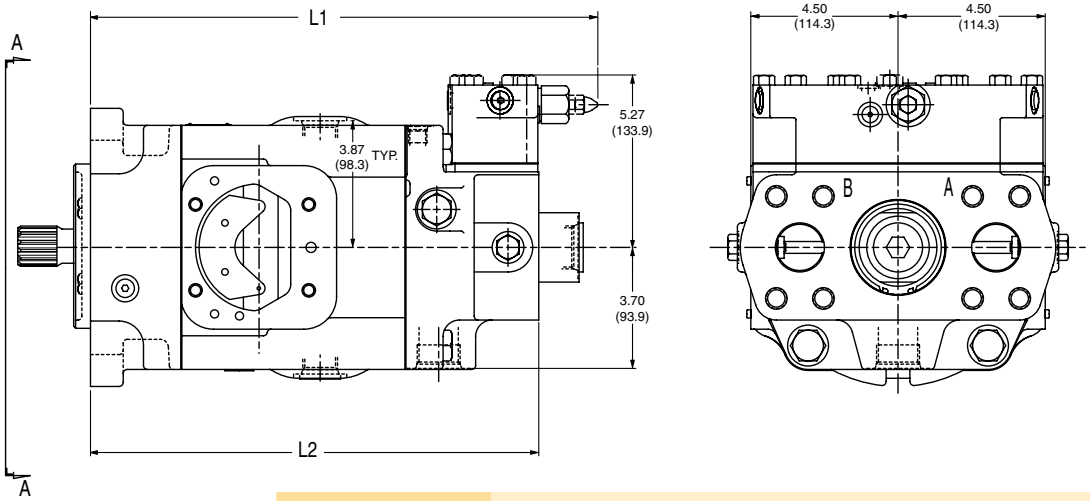
Gold Cup Open & Closed Circuit Pumps & Motors for Hydrostatic Transmissions

M6
M7
M8
M*F Shown



Mounting	L1	L2
SAE127-2 (SAE-C)	11.19 (284.2)	11.06 (280.9)
SAE 152-4 (SAE-D)	11.59 (294.3)	11.46 (291.1)

P6
P7
P8
P*P Shown

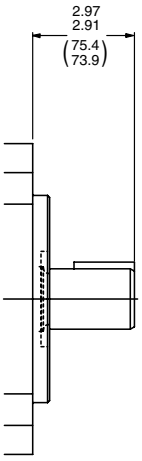


Mounting	L1	L2
SAE127-2 (SAE-C)	15.51 (393.9)	13.70 (348.0)
SAE 152-4 (SAE-D)	16.85 (427.9)	15.04 (382.1)

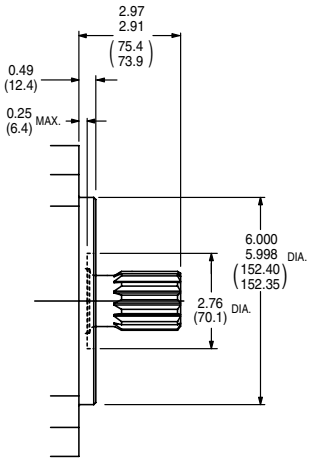
Mobile & Industrial

Gold Cup Open & Closed Circuit Pumps & Motors for Hydrostatic Transmissions

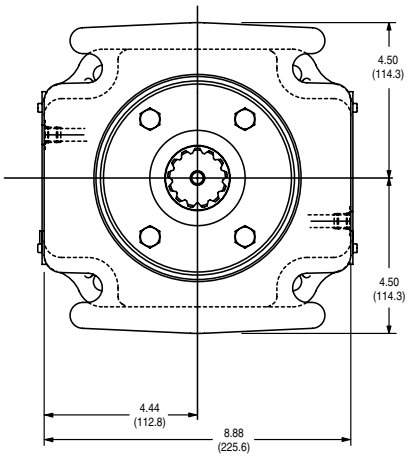
Size 6, 7 and 8 Flange and Shaft Detail



Shaft Code 04
SAE D Keyed

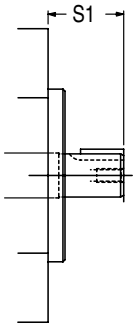


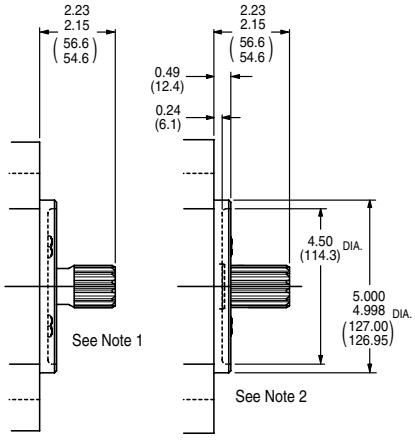
Shaft Code 05
SAE D Spline



VIEW A-A
FOR SAE 152-4
("D" 4-BOLT)

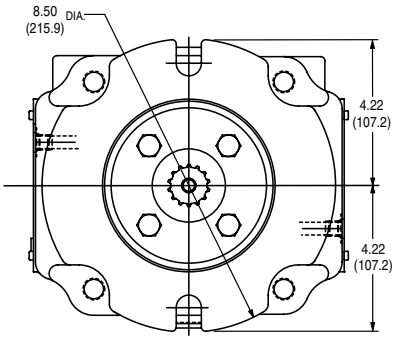
Code	S1
02, 07	2.23 (56.6) 2.15 (54.6)
09, 10	3.36 (85.3) 3.28 (83.3)





Shaft Codes
02, 07, 09, 10
SAE C Keyed

Shaft Codes 03 or 08
SAE C Spline



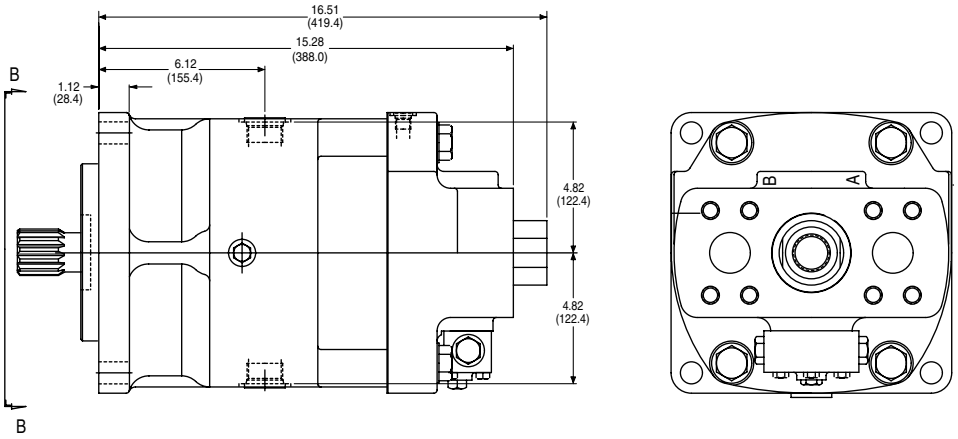
VIEW A-A
FOR SAE 127-2
("C" 2-BOLT)

NOTES
1 Spline length for M*F, M*G, M*H, M*V, P*S, P*X, P*D, P*P, P*V & P*F.
2 Spline length for M*R, M*L, M*M, M*N, P*L, P*R.

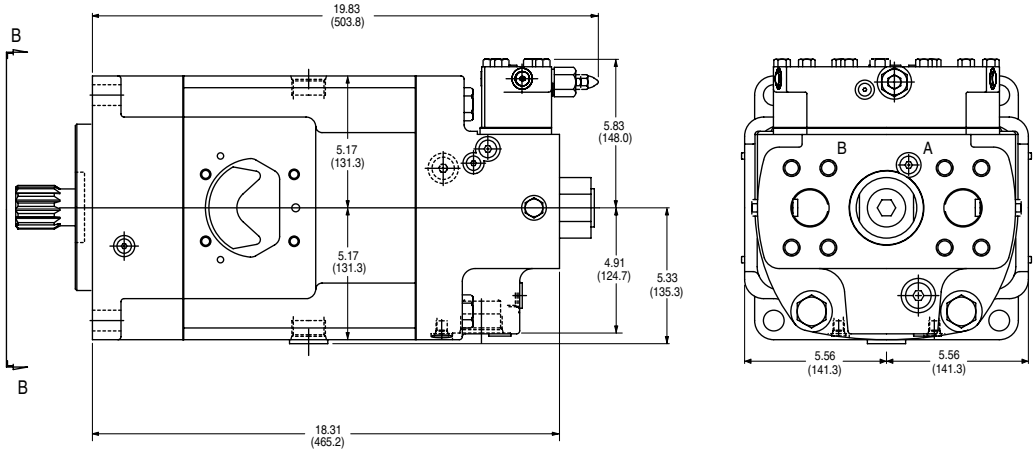
Mobile & Industrial

Gold Cup Open & Closed Circuit Pumps & Motors for Hydrostatic Transmissions

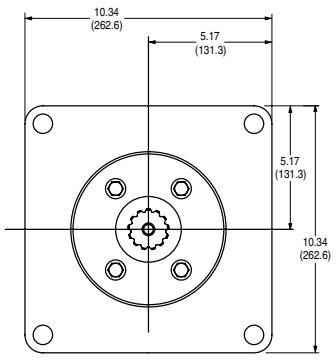
M11
M14
M*F Shown



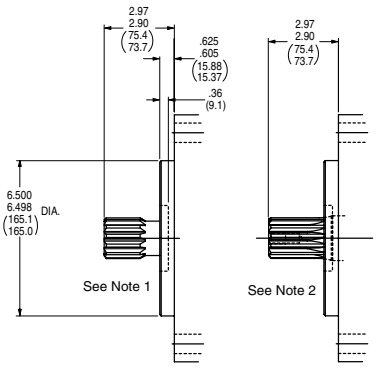
P11
P14
P*P Shown



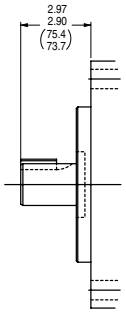
Size 11 and 14 Flange and Shaft Detail



VIEW B-B



Shaft Code 03 or 08
SAE E Spline



Shaft Code
02, 07, 09*, 10*
SAE E Keyed

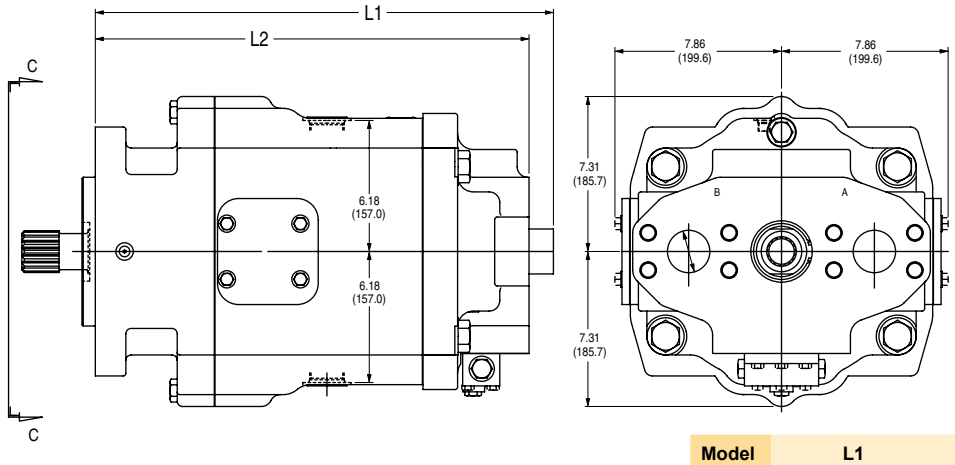
* For Codes 09 and 10, add 1" (25.4mm) to shaft length.

NOTES
1 Spline length for M*F, M*G, M*H, M*V, P*S, P*X, P*D, P*P, P*V & P*F.
2 Spline length for M*R, M*L, M*M, M*N, P*L, P*R.

Mobile & Industrial

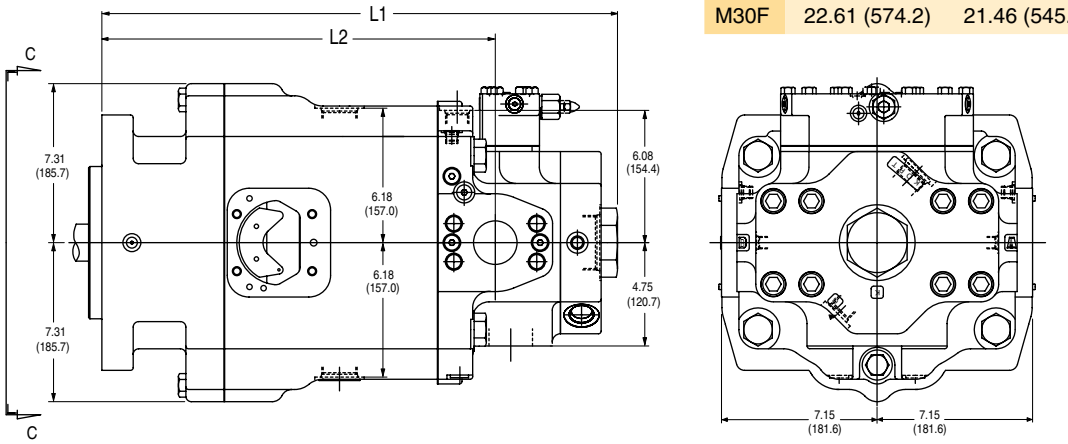
Gold Cup Open & Closed Circuit Pumps & Motors for Hydrostatic Transmissions

M24
M30
M*F Shown



Model	L1	L2
M24F	21.61 (548.8)	20.46 (519.6)
M30F	22.61 (574.2)	21.46 (545.0)

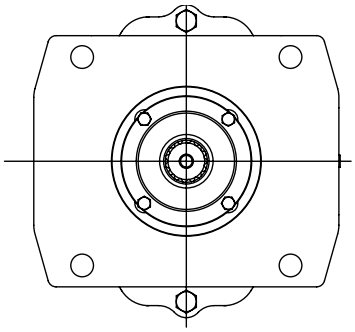
P24
P30
P*P Shown



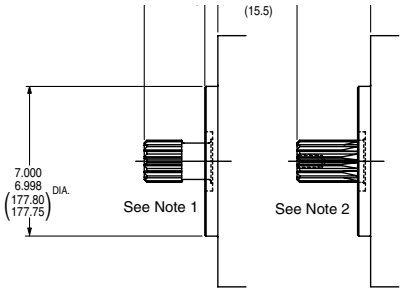
Model	L1	L2
P24P	23.70 (602.1)	18.08 (459.4)
P30P	24.70 (627.5)	19.08 (484.7)

Size 24 and 30 Flange and Shaft Detail

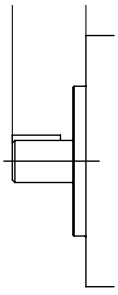
NOTES
1 Spline length for M*F, M*G, M*H, M*V, P*S, P*X, P*D, P*P, P*V & P*F.
2 Spline length for M*R, M*L, M*M, M*N, P*L, P*R.



VIEW C-C



Shaft Code 03 or 08
SAE F Spline



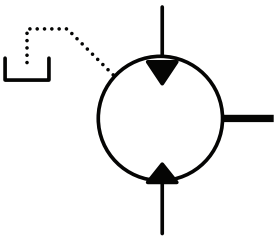
Shaft Code 02, 07, 09, 10
SAE F Keyed

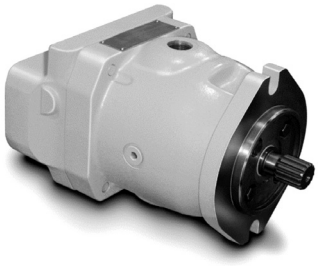
Code	S1
02, 07	3.47 (88.1) 3.41 (86.6)
09, 10	5.35 (135.9) 5.29 (134.4)

Hydrostatic Motors Goldcup Series

Fix / Variable Displacement Motors

M6 -98 cc/rev, M7 -119 cc/rev,
M11-180 cc/rev, M14 -229 cc/rev,
M24 -403 cc/rev, M30 -500 cc/rev





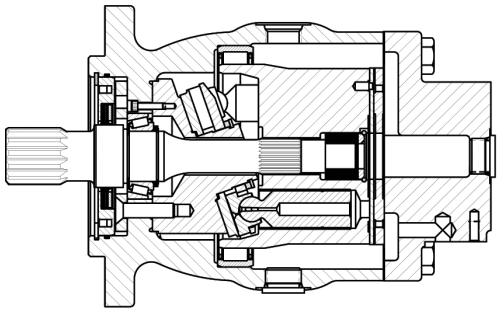
Function:

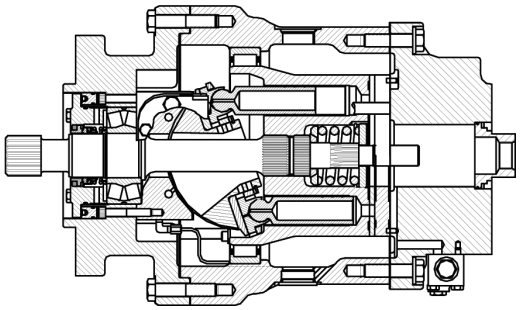
- Goldcup fixed and variable transmission motors are suitable for the most demanding applications.
- Mounts and shaft options are standard SAE.
- Controls on variable motors include 2 speed or proportional hydraulic stroker with secondary reverse compensator an option.
- M6 / M7 fixed motors are available with cam options to reduce the displacement of standard motors.
- Both types of motor can be fitted with hot oil shuttle with or without orifices to limit the oil taken from the transmission loop.

Features:

- 6 displacements 98cc/rev – 500 cc/rev
- Pressure to 420 Bar
- Speed to 3600 RPM
- Fixed and variable
- Low noise levels
- Wide variety of control options
- Hot Oil Shuttle option
- System Flexibility

Please Note: Code out Overleaf

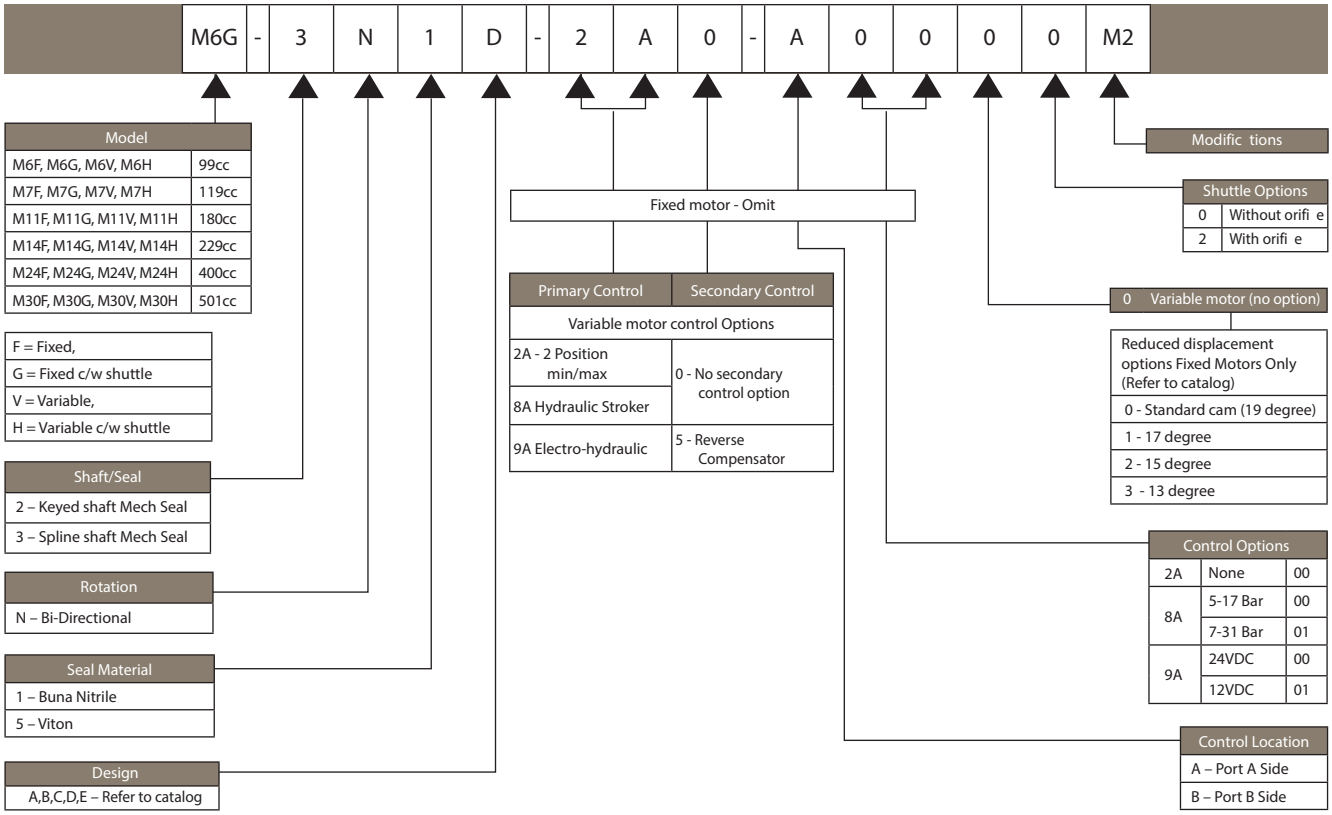




Size	Maximum Displacment	Torque	Maximum Pressure (bar)			Maximum Speed (rpm)	
	(ml / rev)	(N.m / bar)	Intermittent	Continuous	Case	100% displacement	50% displacement
M6	98.3	1.57	420	345	5.20	3000	3600
M7	118.8	1.89					
M11	180.3	2.87	420	345	5.20	2400	2800
M14	229.5	3.62					
M24	403.2	6.23	345	345	5.20	2100	2100
M30	501.5	7.97	345			1800	1800

Hydrostatic Motors Goldcup Series

Goldcup Model Code



Standard Model

Sizes 6,7	Sizes 11,14
M*F-*N1D	M*V-*N1*-**0-*
M*G-*N1D-0*	M*H-*N1*-**0-***
M*V-*N1*-**0-*	
M*H-*N1*-**0-***	

Seal Kits

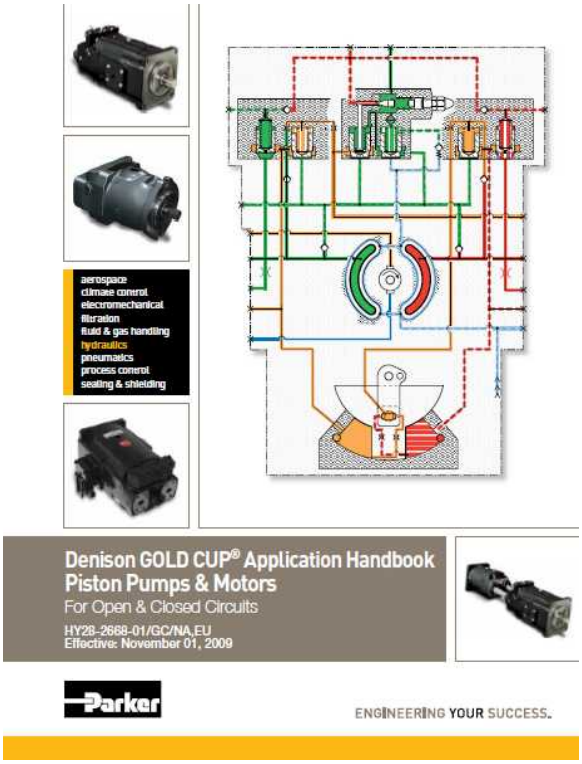
Model	Mod	Unit Type	Seal Type	Shaft Type	Rotation	Complete Seal Kit	Shaft Seal Kit	Control Seal Kit
6,7	A,C	Fixed	Buna N	2 & 3	R&L	S23-00133-0	S13-44302-0	
6,7	D	Fixed				S23-03237-0	620-82066-0	
6,7	A,C	Variable				S23-17743-0K	S13-44302-0	S23-17000-0
11,14	A	Fixed				S23-00143-0K	S23-05992-0	
11,14	A	Variable				S23-17746-0K	S23-05992-0	S23-17000-0
24, 30	D & A	Fixed				S23-15128-0	S23-11516-0	
24, 30	D & A	Variable				S23-05994-0K	S23-11516-0	S23-17000-0

Application Market

Markets	Applications
Marine	Deck Cranes, Constant Tension Winches, Steering Gear, Fin Stablizers,
Oil & Gas	Nitrogen Pumpers, Frac Trucks, Cementers, Coil Tubing
Mining	Drill Rigs, Top Drives, Bucket Reclaimers
Power Gen	Turbine Start
Material Handling	Mixers, Dewatering, Conveyor Drives, Shredders

Ref. Catalogue : HY28-2667-01/GC/NA,EU

Application Hanbook : HY28-2668-01/GC/NA,EU



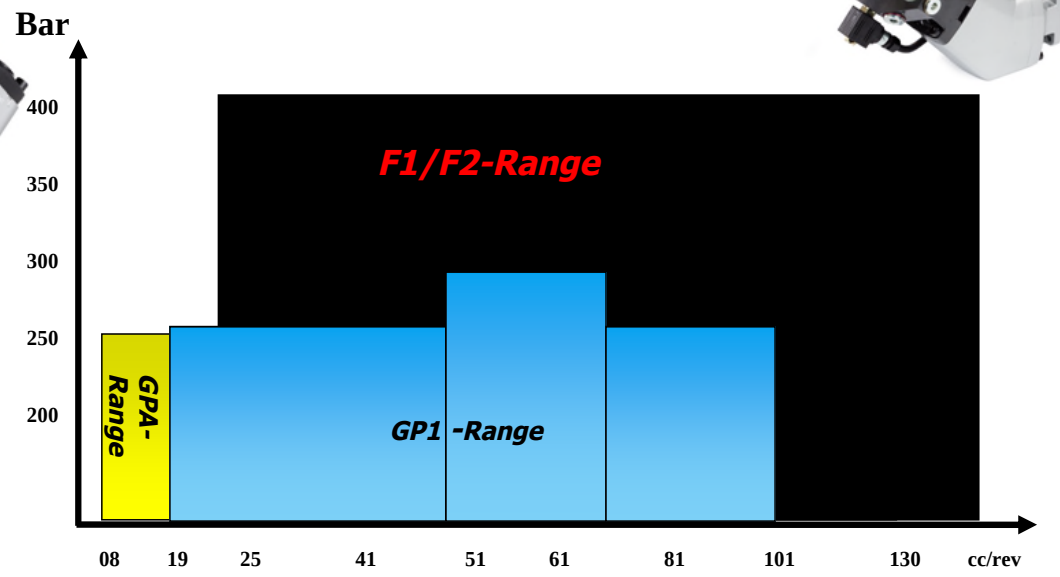
Pumps and Motors

3/Truck Pumps and Motors

Parker

ENGINEERING YOUR SUCCESS.

Product Program – Fixed Displacement



GPA and GP1 Pumps

Light/medium duty pumps

Parker's truck gear pumps are ideal for operators of light trucks for their hydraulic power needs.

The GPA/GP1 series gear pumps are available to suit most applications. They are light and compact, and can be installed in either rear or or side mount configuration thanks to their unique dual port layout.

The smaller GPA series is built with an extruded aluminum houising for minimum weight.

The larger GP1 pumps are built with compact cast iron housings for strength.

The gear pumps complement our heavy duty piston pumps and vane pumps.

The performance and characteristics are ideal for many light and/or intermittent applications, including the famous Parker reliability, and they are engineered with a long, trouble-free service life.

Features

• Compact and light weight - easy to install even on small vehicles

• Quiet operation - low noise emissions are important in sensitive areas

• Robust and reliable - means a long, trouble-free service life

• Built for high rpm's - less sensitive to over-speeding

• Bi-directional - easy to install
• Side or rear mount - use the ports on the side or at the rear, whichever is most suitable for the application.

GPA and GP1 Pumps

Specifications

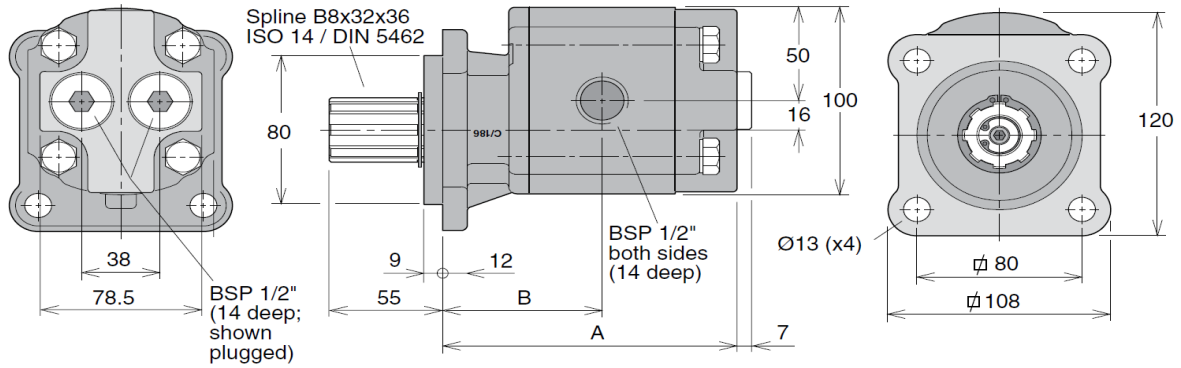
Series GPA (aluminium body; 3- and 4-bolt)

Frame Size	**012**
Displacement $[cm^3/rev]$	12
Max Continuous Pressure [bar]	250
Max Intermittent Pressure [bar]	270
Max Peak Pressure [bar]	290
Speed [rpm] (at max continous pressure)	
Min	500
Max	2000
Weight [kg]	4.8

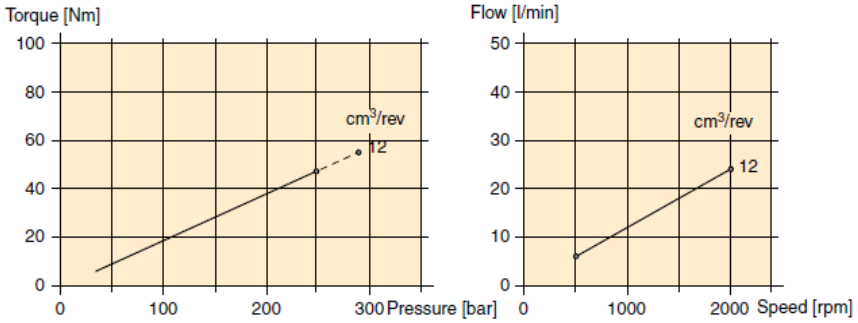
Series GP1 (cast iron body; 3- and 4-bolt)

Frame Size	**023**	**029**	**041**	**046**	**050**	**060**	**080**	**100**
Displacement $[cm^3/rev]$	23	29	41	46	50	60	80	100
Max Continuous Pressure [bar]	250	240	210	200	300	280	200	170
Max Intermittent Pressure [bar]	300	290	260	250	310	290	210	180
Max Peak Pressure [bar]	300	290	260	250	320	300	220	190
Speed [rpm] (at max continous pressure)								
Min	500	500	500	500	500	500	500	500
Max	2000	2000	2000	2000	2000	1800	1600	1400
Weight [kg]	607	7.1	7.8	8.1	12.5	13.0	14.0	15.0

GPA-012 4-Bolt



Frame size	012
Dim. "A"	123
Dim. "B"	72

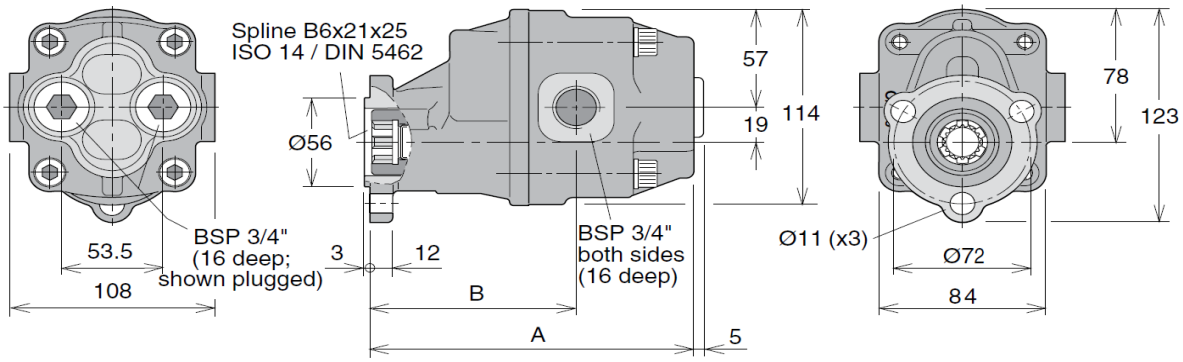


Diagrams reflect theoretical values
Direction of rotation: Bi-directional
Input pressure: 0.7 to 3.0 bar (absolute)

Fluid temperature: -25 °C to +80 °C
Recommended viscosity: 12 to 100 mm²/s (cSt)
Max viscocity: 750 mm²/s (cSt)

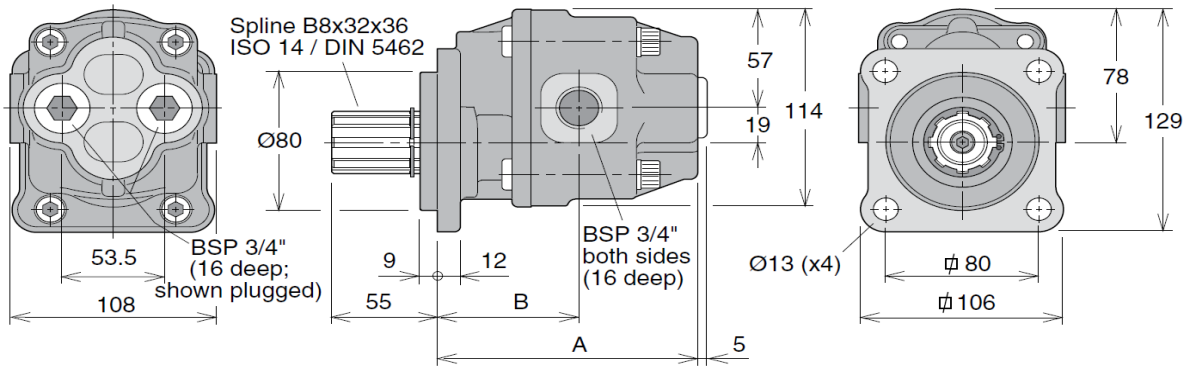
GPA and GP1 Pumps

GP1-023/-029/-041/-046 3-bolt

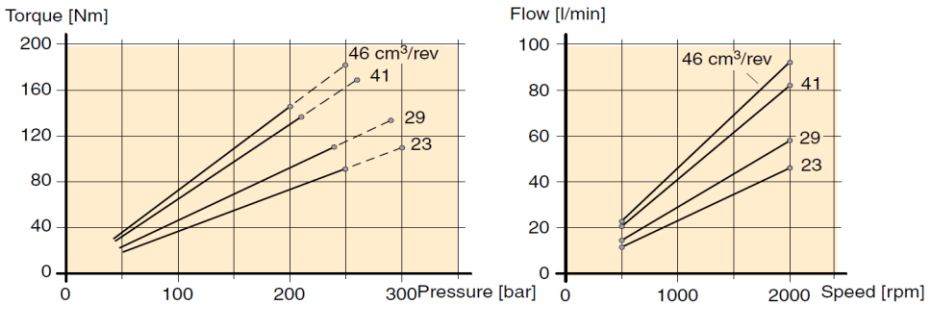


Frame size	023	029	041	046
Dim. "A"	166	171	188	196
Dim. "B"	102	109	115	119

GP1-023/-029/-041/-046 4-bolt



Frame size	023	029	041	046
Dim. "A"	131	136	153	161
Dim. "B"	67	74	80	84



Diagrams reflect theoretical values
Direction of rotation: Bi-directional
Input pressure: 0.7 to 3.0 bar (absolute)

Fluid temperature: -25 °C to +80 °C
Recommended viscosity: 12 to 100 mm²/s (cSt)
Max viscocity: 750 mm²/s (cSt)

GPA and GP1 Pumps

Ordering code

Example: **GPA- 008 - 4**

A Aluminium body
1 Cast iron body

Frame size
A = 008, 011, 014, 016 or 019
1 = 023, 029, 041, 046, 050, 060 or 080

4 4 bolt flange

Standard versions

Aluminium 4 bolt

Designation	Ordering no.
GPA-008-4	334 9113 940
GPA-011-4	334 9113 941
GPA-014-4	334 9113 942
GPA-016-4	334 9113 943
GPA-019-4	334 9113 944

Cast iron 4 bolt

Designation	Ordering no.
GP1-023-4	702 9113 913
GP1-029-4	702 9113 914
GP1-041-4	702 9113 916
GP1-046-4	702 9113 917
GP1-050-4	704 9113 911
GP1-060-4	704 9113 912
GP1-080-4	704 9113 914

NOTE: The pump **does not** include a suction fitting; it must be ordered separately.

F1 Pumps

Series F1 is a further development of our well known 'truck pump', the F1. The F1 offers many additional values for operators of cargo cranes, hook loaders, skip loaders, forest cranes, concrete mixers and similar truck applications.

Series F1 is a very efficient and straight forward pump design with unsurpassed reliability.
Its small envelope

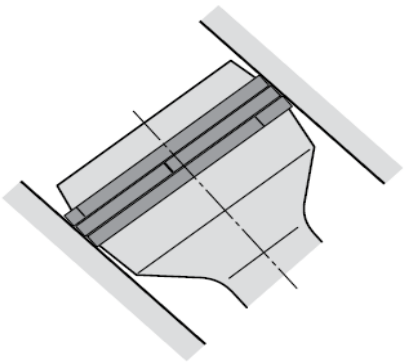
Its small envelope size gives a simple and inexpensive installation.

Features of the F1 are:

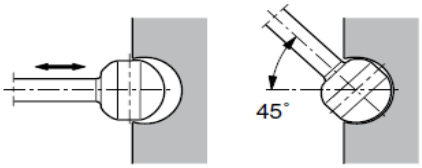
- High selfpriming speeds
- Operating pressures up to 400 bar
- High overall efficiency
- Low noise level
- Small installation dimensions
- Low weight

... thanks to:

- 45° bent-axis angle
- Optimal inlet port geometry in the end cap
- Single housing design
- Spherical pistons - high speeds
- Laminated piston rings - low leakage
- Positive synchronisation with timing gear
- Installation above the reservoir level possible
- Tolerates low temperatures and high temperature shocks
- Shaft end and mounting flange meet the ISO standard for all sizes



F1 piston with laminated piston ring.



F1 piston-to-shaft locking.

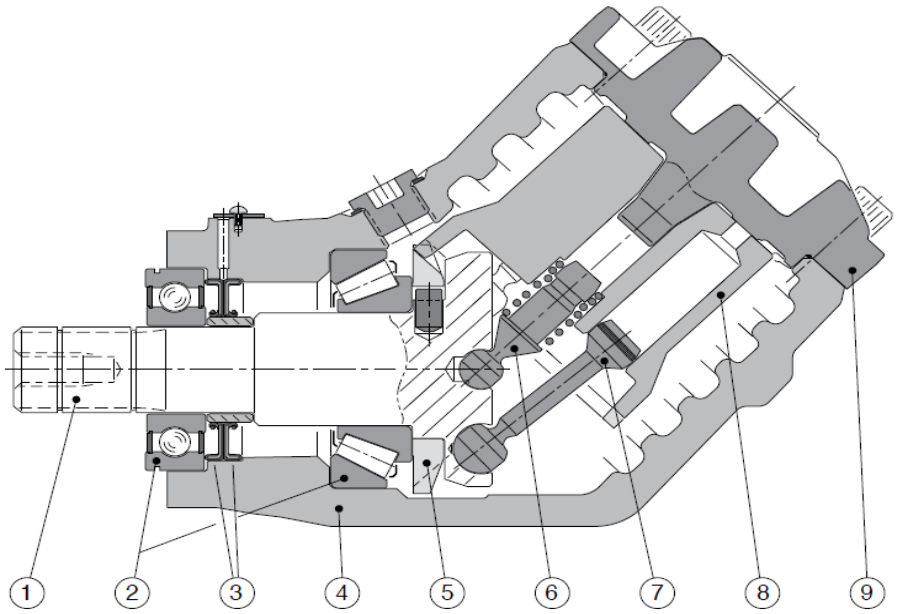
F1 Pumps

Frame size F1-	25	41	51	61	81	101
Displacement [cm³/rev]	25.6	40.9	51.1	59.5	81.6	102.9
Max flow 1) [l/min]						
at 350 bar	67	98	112	131	163 3)	185 3)
at 400 bar	56	86	97	113	143	160
Max operating pressure [bar]						
continuous	350	350	350	350	350	350
intermittent	400	400	400	400	400	400
Shaft speed [rpm]						
- short circuited pump (low press.)	2700	2700	2700	2700	2300	2300
- max speed at 350 bar 2)	2600	2400	2200	2200	2000 3)	1800 3)
at 400 bar 2)	2200	2100	1900	1900	1750	1550 3)
Torque 1) [Nm]						
at 350 bar	142	227	284	331	453	572
at 400 bar	163	260	324	378	518	653
Input power [kW]						
- continuous	31	46	52	61	76	86
- intermittent 4)	39	57	66	76	95	108
Weight [kg]	8.5	8.5	8.5	8.5	12.5	12.5

1) Theoretical Values
2) Valid at an inlet pressure of 1.0 bar (abs.) when operating on mineral oil at a viscosity of 30 mm 2/s (cSt).
3) Valid with 21/2" inlet (suction) line.
With 2" suction line: F1-81 – max 1400 rpm (Q ≈120 l/min);
F1-101 – max 1000 rpm (Q≈120 l/min).
4) Max 6 seconds in any one minute.

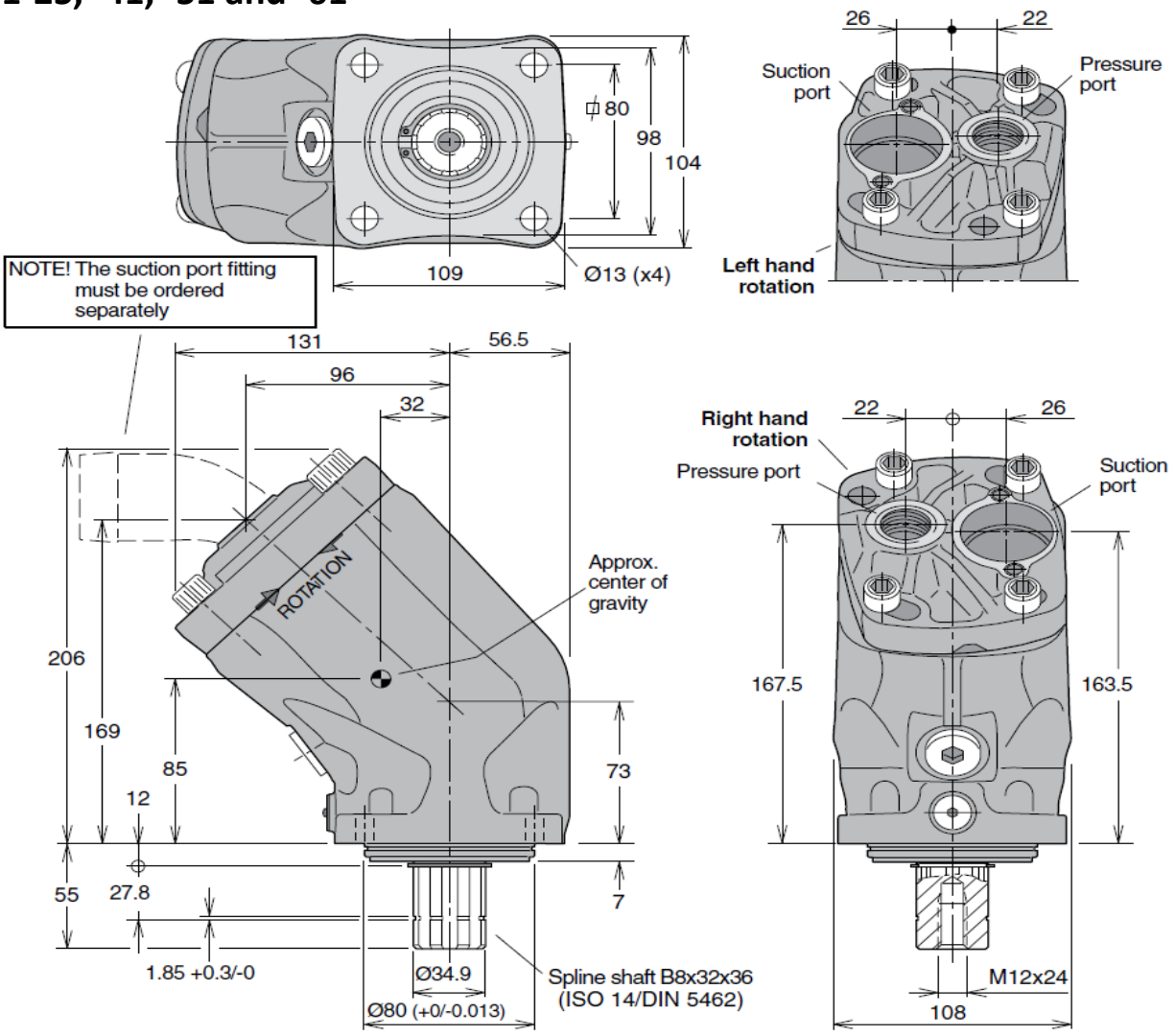
NOTE: For noise level information, contact Parker Hannifin

Pump cross section



1. Input shaft
2. Bearings
3. Shaft seals
4. Housing
5. Timing gear
6. Barrel support
7. Piston with piston ring
8. Cylinder barrel
9. End cap

F1-25, -41, -51 and -61



Ordering code

Example **F1 - 81 - R**

F1 frame size
25, 41, 51, 61, 81, or 101

Shaft rotation
R Right hand
L Left hand

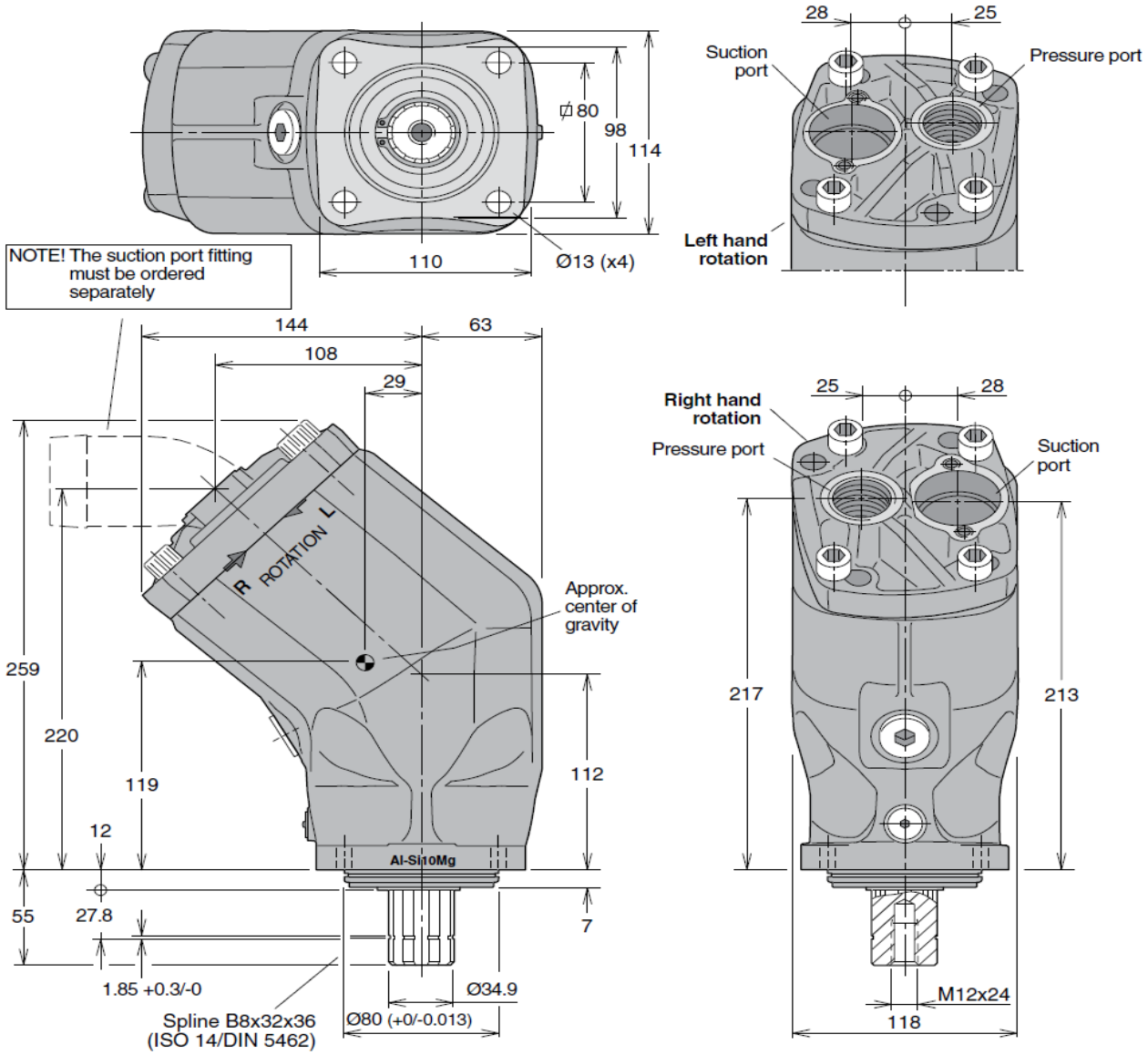
NOTE: The pump does not include a suction fitting; it must be ordered separately.

Standard versions

Designation	Ordering no.
F1-25-R	378 1024
F1-25-L	378 1025
F1-41-R	378 1040
F1-41-L	378 1041
F1-51-R	378 1050
F1-51-L	378 1051
F1-61-R	378 1060
F1-61-L	378 1061

Seal Kit	3780868

F1-81 and -101



Port size

F1 frame size Pressure port

F1 frame size	Pressure port [1)]
-25	3/4"
-41	3/4"
-51	3/4"
-61	3/4"
-81	1"
-101	1"

1) BSP thread (fitting not included)

Standard versions

Designation	Ordering no.
F1-81-R	378 1080
F1-81-L	378 1081
F1-101-R	378 1100
F1-101-L	378 1101

F1 Motors

Features:

- Laminated piston rings - low leakage
- Positive synchronisation with timing gear
- Operating pressure up to 250 bar
- Tolerates low temperatures and high temperature shocks
- Shaft end and mounting flange meet the ISO standard for all sizes
- Tolerates high acceleration

F1 Motors

Motor frame size F1-	25-M	41-M	51-M	61-M	81-M	101-M	121-M
Displacement [cm³/rev]	25.6	40.9	51.1	59.5	81.6	102.9	118,5
Max operating pressure [bar]							
continuous	250	250	250	250	250	250	250
intermittent	350	350	350	350	350	350	350
Max Shaft speed [rpm]							
- continuous	2 300	2 000	1 800	1 700	1 500	1 400	1300
- intermittent	3 000	2 700	2 400	2 200	2 000	1 800	1700
Torque (theor.) [Nm]							
at 200 bar	81	130	162	189	259	327	376
at 350 bar	142	227	284	331	453	572	658
Max output power [kW]							
- continuous	20	27	31	34	41	48	51
- intermittent	26	37	41	44	54	62	67
Weight [kg]	8.5	8.5	8.5	8.5	12.5	12.5	12.5

Port size

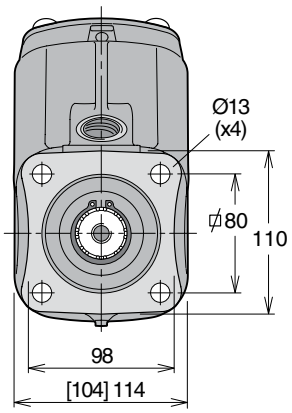
F1 - 81 - M

F1 Motor frame size
25, 41, 51, 61, 81, 101 or 121

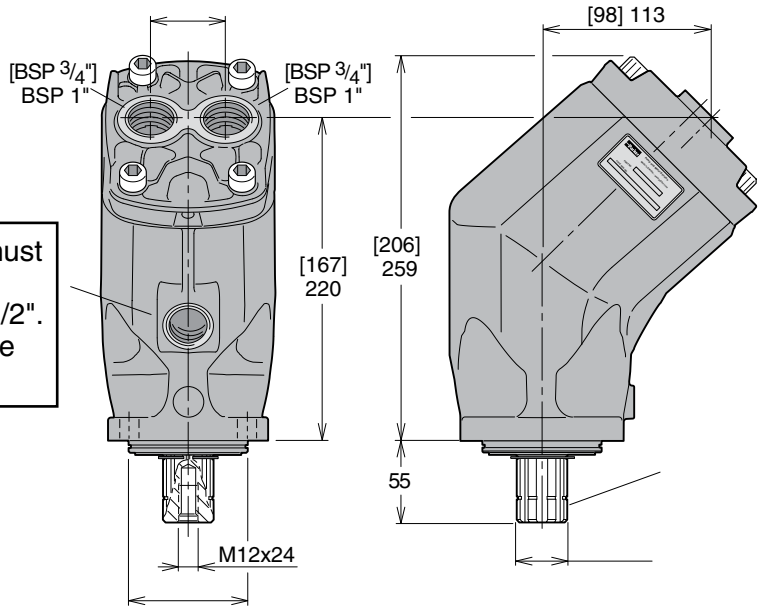
F1 motor frame size	Port size
F1-25/41/51/61	3/4"
-81/101/121	1"

Standard versions

Designation	Ordering no.
F1-25-M	378 1724
F1-41-M	378 1740
F1-51-M	378 1750
F1-61-M	378 1760
F1-81-M	378 1780
F1-101-M	378 1800
F1-121-M	378 4120



NOTE: - Dimensions, in mm, are valid for all frame sizes, except those in brackets [ ] which are valid for F1-25/-41/-51/-61-M only.



Note ! Drain line must be mounted. Connection BSP 1/2". Maximum drain line pressure is 3 bar

F2 Twin-flow pumps

Series F2 is a further development of the twin-flow version of series F1, the very first bent-axis truck pump on the market to feature two entirely independent flows.

With a suitable build-up of the hydraulic system, the main advantage with a twin-flow pump is that three different flows can be provided at the same engine speed.

The twin-flow pump makes it possible to further optimise the hydraulic system and offers:
- Less energy consumption
- Reduced risk of system overheating
- Lower weight
- Easier installation
- Standardised system solutions

The twin-flow pump makes it possible to operate two work functions that are independent of each other which leads to higher speed and an increased operating precision.

Another requirement can be a large and a small flow, or two equal flows. All of these alternatives are possible with the twin-flow pump.

The pump can be utilised to provide one flow at high system pressure, and, as soon as the pressure has decreased sufficiently, add the flow from the other circuit.

This eliminates the risk of exceeding the PTO power rating and, at the same time, provide an optimal driving

Typical twin-flow applications

- Large truck loaders
- Forestry cranes
- Hook loaders/lift dumpers
- Tipper/crane combinations
- Refuse collecting vehicles

The pump shaft end/mounting flange meets the ISC standard and suits PTO direct mounting.

F2 Twin-flow pumps

Specifications

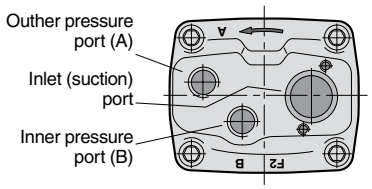
Frame size F2-	42/42	53/53	55/28	70/35	70/70
Displacement [cm³/rev]					
Port A	43	54	55	69	68
Port B	41	52	28	36	68
Max operating pressure [bar]					
continuous	350	350	350	350	300
intermittent	400	400	400	400	350
Max Shaft speed [rpm]					
(unloaded pump; low pressure)	2550	2550	2550	2550	2550
Max selfpriming speed [rpm]					
Ports A[1)2)] and B[1)2)] pressurised	1800	1800	1800	1800	1650
Port A[2)] unloaded, pressure in port B	2100	2100	2100	2100	2100
Input power [kW]					
Max intermittent[3)]	100	126	100	126	131
Max continuous	88	110	88	110	112
Weight [kg]	19	19	19	19	19

1) Valid with $2^1/_2$" inlet (suction) line;
with 2" inlet line: 53/53 and 70/35 max 1 100 rpm
42/42 and 55/28 max 1400 rpm. (q≈120 l/min)

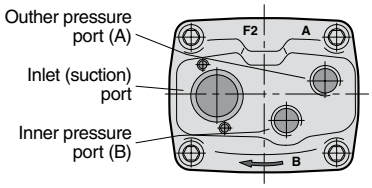
2) Measured at 1.0 bar abs. inlet pressure.
Please note: A lower inlet pressure affects pump performance.

3) Max 6 seconds in any one minute.

'Left hand' and 'right hand' end caps



End cap for right hand rotating pump



End cap for left hand rotating pump

Flow vs. shaft speed (theoretical)

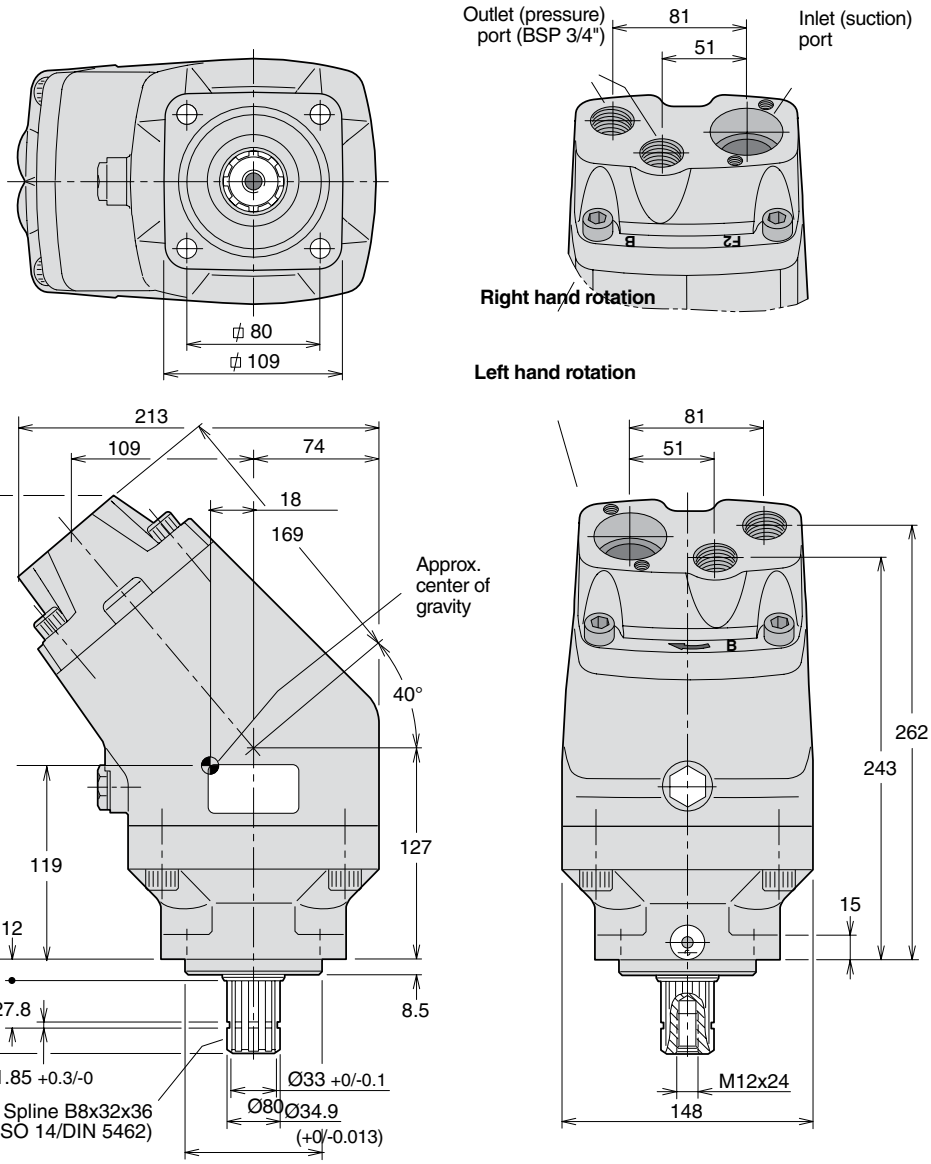
Pump speed [rpm]	800	1000	1200	1400	1600	1800	1900	2000	2100
F2-53/53 flow [l/min]									
Port A	43	54	65	76	86	97	-	-	-
Port B	42	52	62	73	83	94	99	104	109
Total (ports A + B)	85	106	127	149	169	191	-	-	-
	Note:42/42 values is 80% of 53/53 values 70/70 values is 130% of 53/53 values								
F2-70/35 flow [l/min]									
Port A	55	69	83	97	110	124	-	-	-
Port B	29	36	43	50	58	65	68	72	76
Total (ports A + B)	84	105	126	147	168	189	-	-	-
	Note: 55/28 values is 80% of 70/35 values								

Shaft torque vs. pressure (theoretical)

Pressure [bar]	150	200	250	300	350
F2-53/53 torque [Nm]					
Port A	129	171	214	257	300
Port B	124	165	206	248	289
Total (ports A + B)	253	336	420	505	589
	Note:42/42 values is 80% of 53/53 values 70/70 values is 130% of 53/53 values				
F2-70/35 torque [Nm]					
Port A	164	219	274	329	383
Port B	86	114	143	171	200
Total (ports A + B)	250	333	417	500	583
	Note: 55/28 values is 80% of 70/35 values				

NOTE: The pump does not include a suction fitting; it must be ordered separately.

F2 Twin-flow pumps



Ordering code

Example: **F2 - 53/53 - L**

Frame size [cm³/rev]
42/42
53/53
55/28
70/35
70/70
Direction of rotation
L Left hand
R Right hand

Standard versions

Designation	Ordering no.
F2-42/42-R	378 4042
F2-42/42-L	378 4043
F2-53/53-R	378 1453
F2-53/53-L	378 1454
F2-55/28-R	378 4128
F2-55/28-L	378 4129
F2-70/35-R	378 1470
F2-70/35-L	378 1471
F2-70/70-R	378 4070
F2-70/70-L	378 4071

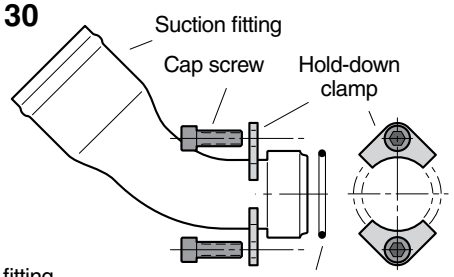
NOTE:
- Before start-up, tighten the inspection port plug to 70–100 Nm.
- To change the direction of rotation, **the end cap must be replaced.**

NOTE: The pump **does not** include a suction fitting; it must be ordered separately.

Suction fittings

for series F1, F2 and T1 pumps also VP1-095, -110 and -130

A 'suction fitting' consists of a straight, 45°, 90° or 135° suction fitting, clamps, cap screws and O-ring.

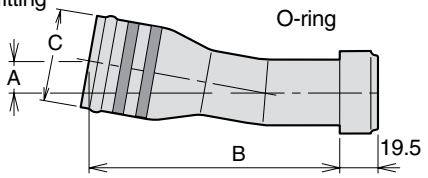


Suctions fittings for VP1-045/075

'Straight' suction fittings for F1, F2, T1, VP1-095/-110/-130

Ordering no.	A mm	B mm	C dia. mm *(in.)*
378 0635[1)]	0	85	38 *(1 1/2")*
378 0636[2)]	17	136	50 *(2")*
378 0637[3)]	25	145	63 *(2 1/2")*
378 3523[3)]	32	174	75 *(3")*

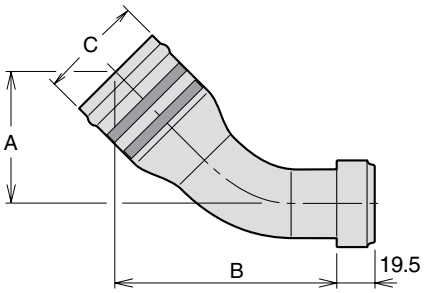
'Straight' fitting



45° suction fittings for F1, F2, T1, VP1-095/-110/-130

Ordering no.	A mm	B mm	C dia. mm *(in.)*
378 1234[1)]	60	104	32 *(1 1/4")*
378 0633[1)]	60	104	38 *(1 1/2")*
378 0364[2)]	67	110	50 *(2")*
378 0634[3)]	75	117	63 *(2 1/2")*
378 3367[3)]	95	138	75 *(3")*
378 1062	67	110	40
378 0975	67	110	45
378 0965	67	110	48

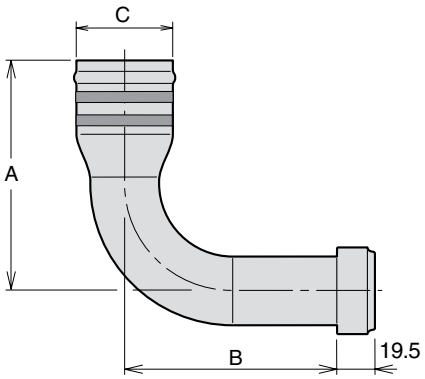
45° fitting



90° suction fittings for F1, F2, T1, VP1-095/-110/-130

Ordering no.	A mm	B mm	C dia. mm *(in.)*
378 0978[1)]	126	83	38 *(1 1/2")*
378 0979[2)]	135	83	50 *(2")*
378 1980[3)]	147	83	63 *(2 1/2")*
378 0976	135	83	45
378 8690[3)]	185	83	75 *(3")*

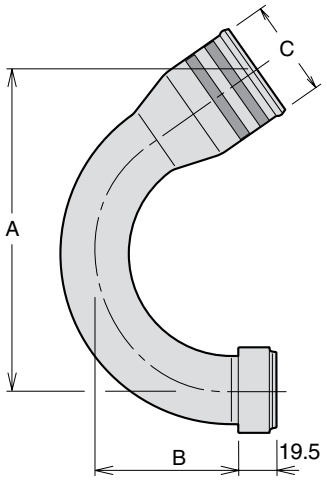
90° fitting



145° suction fitting for F1, F2, T1, VP1-095/-110/-130

Ordering no.	A mm	B mm	C dia. mm *(in.)*
378 1867	165	73	50 *(2")*

145° fitting



1) Recommended for frame size F1-25.
2) Recommended for frame size F1-41,-51,-61,-81, -101.
3) (3 clamps and 3 screws)

Spare parts

Additional Hold-down-clamp kit consists of:
hold-down-clamp cap screw and O-ring
Ordering no. 378 1321

Additional Hold-down-clamp kit for mounting on BPV
Ordering no. 378 2439

NOTE: A suction fitting *must be ordered separately* (not included with the pump).

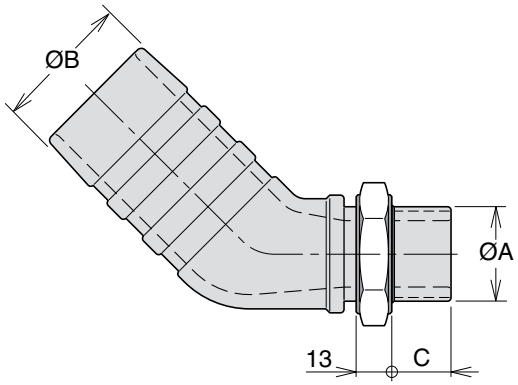
Suction fittings

Suitable suction adapters for F1 with BSP port treads

45° adapter

Ordering no.	A mm	B mm	C dia. mm *(in.)*
00509035016	1"	2"	18
00509035116	$1^1/_4$"	2"	18
00509021916	$1^1/_4$"	$2^1/_2$"	18

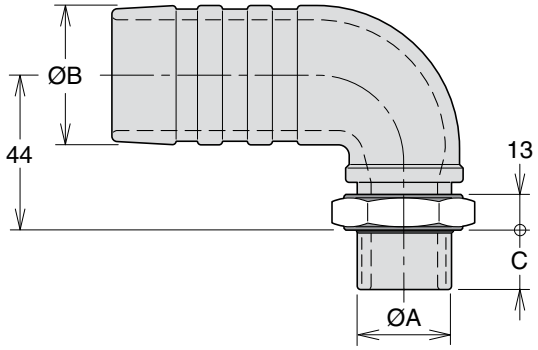
* BSP threads



90° adapter

Ordering no.	A mm	B mm	C dia. mm *(in.)*
00509034516	1"	2"	18
00509034616	$1^1/_4$"	2"	18

* BSP threads

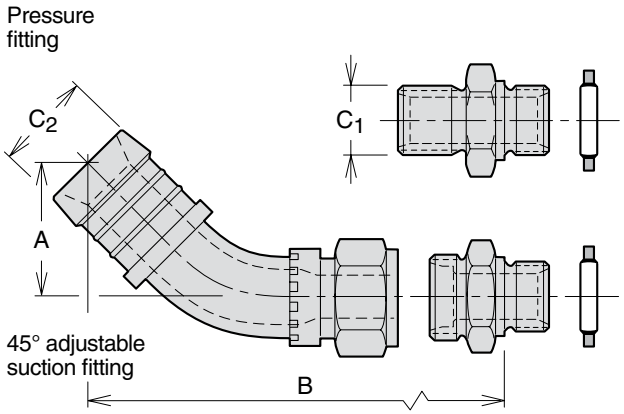


Fitting kits for VP1-045 and -075 pumps

Kits with 45° suction fitting

Pump size.	Ordering no.	C_1	ØC_2	A	B
VP1-045/075	**379 9563**	BSP $^3/_4$"	2"	71	154
VP1-045/075*	**379 9562**	BSP 1"	$2^1/_2$"	64	147

* Above 100 l/min



NOTE: A suction fitting *must be ordered separately* (not included with the pump).

GPA/GP1, F1/F2 Truck Pumps & Motors Application Market

Markets	Applications
Forestry	Knuckle Boom Loader, Cranes, Mowers / Cutters
Construction	Off-Highway Trucks, Fan Drives, Hookloader, Tipper
Mining	Dump Trucks
Material Handling	Truck Mounted Cranes, Lift Trucks, Tow truck, Small Crane
Recycling	Vaccum Truck Systems, Refuse Trucks - ASL, Rear Loaders
Military	Fan Drives



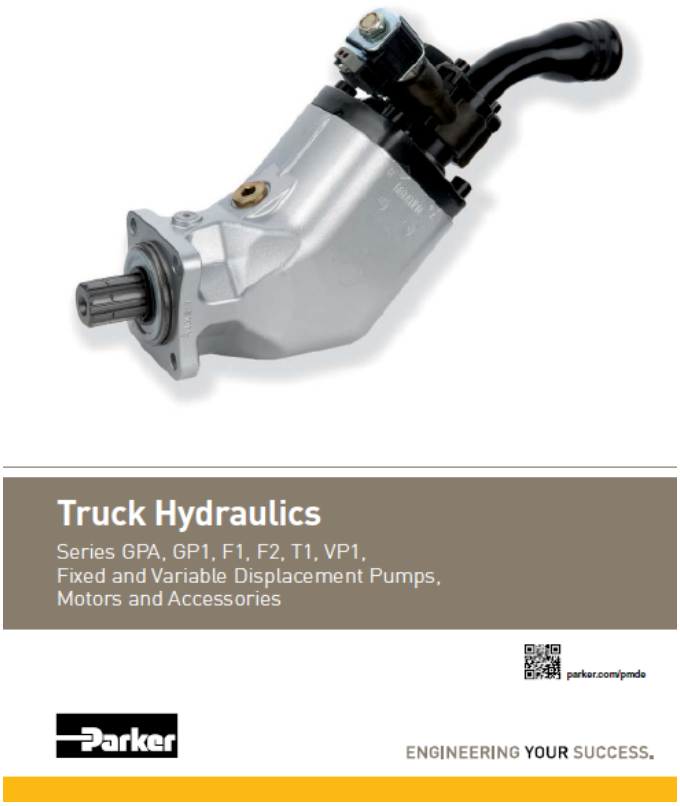






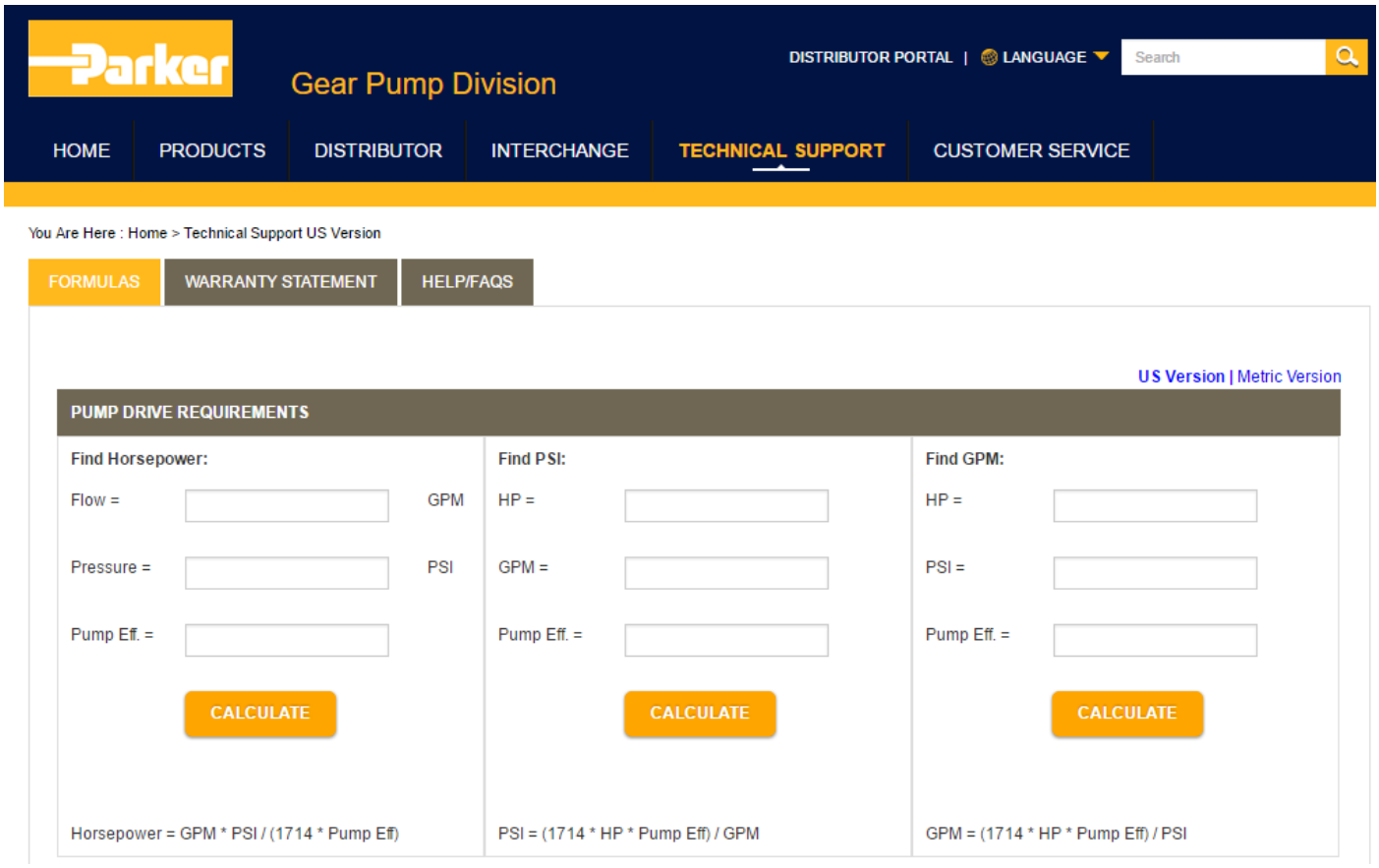


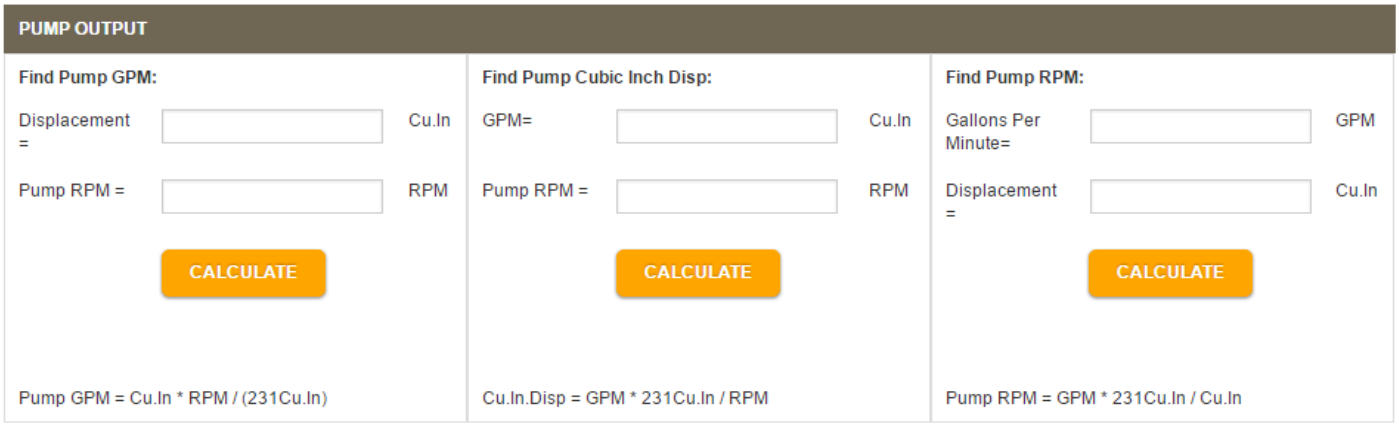

Ref. Catalogue : HY30-8200/UK

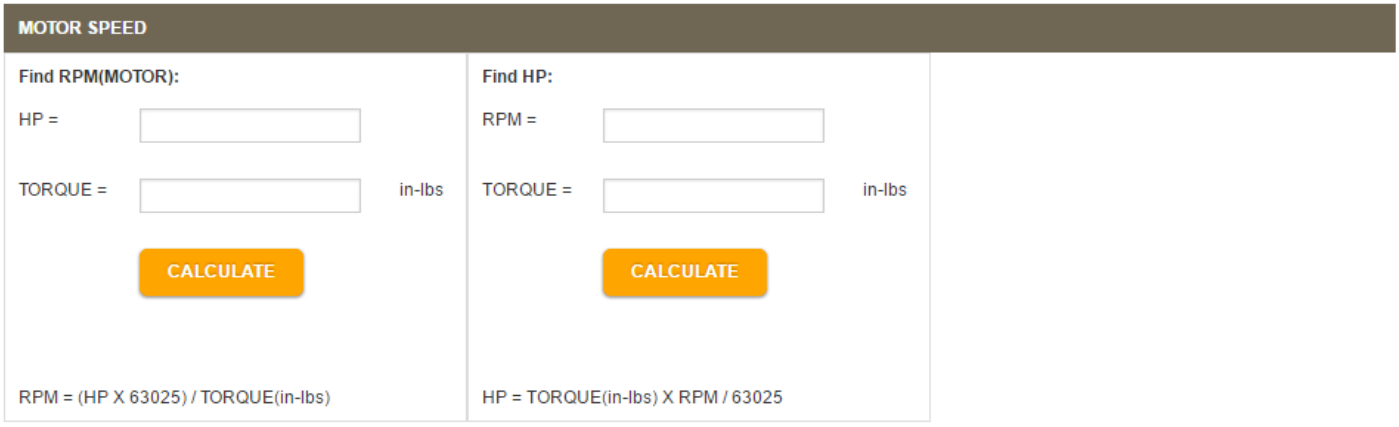


Sizing

Link : http://www.parkergearpump.com/TechnicalSupportUS.aspx







Useful Formula

Basic formulas for hydraulic motors

Flow (q)

$$q = \frac{D \times n}{1000 \times \eta_v} \text{ [l/min]}$$

Torque (M)

$$M = \frac{D \times \Delta p \times \eta_{hm}}{63} \text{ [Nm]}$$

Power (P)

$$P = \frac{q \times \Delta p \times \eta_t}{600} \text{ [kW]}$$

D - displacement [cm^3/rev]
n - shaft speed [rpm]
η_v - volumetric efficiency
Δp - differential pressure [bar] (between inlet and outlet)
η_{hm} - mechanical efficiency
η_t - overall efficiency ($\eta_t = \eta_v \times \eta_{hm}$)

Basic formulas for hydraulic pumps

Flow (q)

$$q = \frac{D \times n \times \eta_v}{1000} \text{ [l/min]}$$

Torque (M)

$$M = \frac{D \times \Delta p}{63 \times \eta_{hm}} \text{ [Nm]}$$

Power (P)

$$P = \frac{q \times \Delta p}{600 \times \eta_t} \text{ [kW]}$$

D - displacement [cm^3/rev]
n - shaft speed [rpm]
η_v - volumetric efficiency
Δp - differential pressure [bar] (between inlet and outlet)
η_{hm} - mechanical efficiency
η_t - overall efficiency ($\eta_t = \eta_v \times \eta_{hm}$)

Conversion factors

1 kg	2.20 lb
1 N	0.225 lbf
1 Nm	0.738 lbf ft
1 bar	14.5 psi
1 l	0.264 US gallon
1 cm^3	0.061 cu in
1 mm	0.039 in
1°C	$^5/_9$(°F-32)
1 kW	1.34 hp

Conversion factors

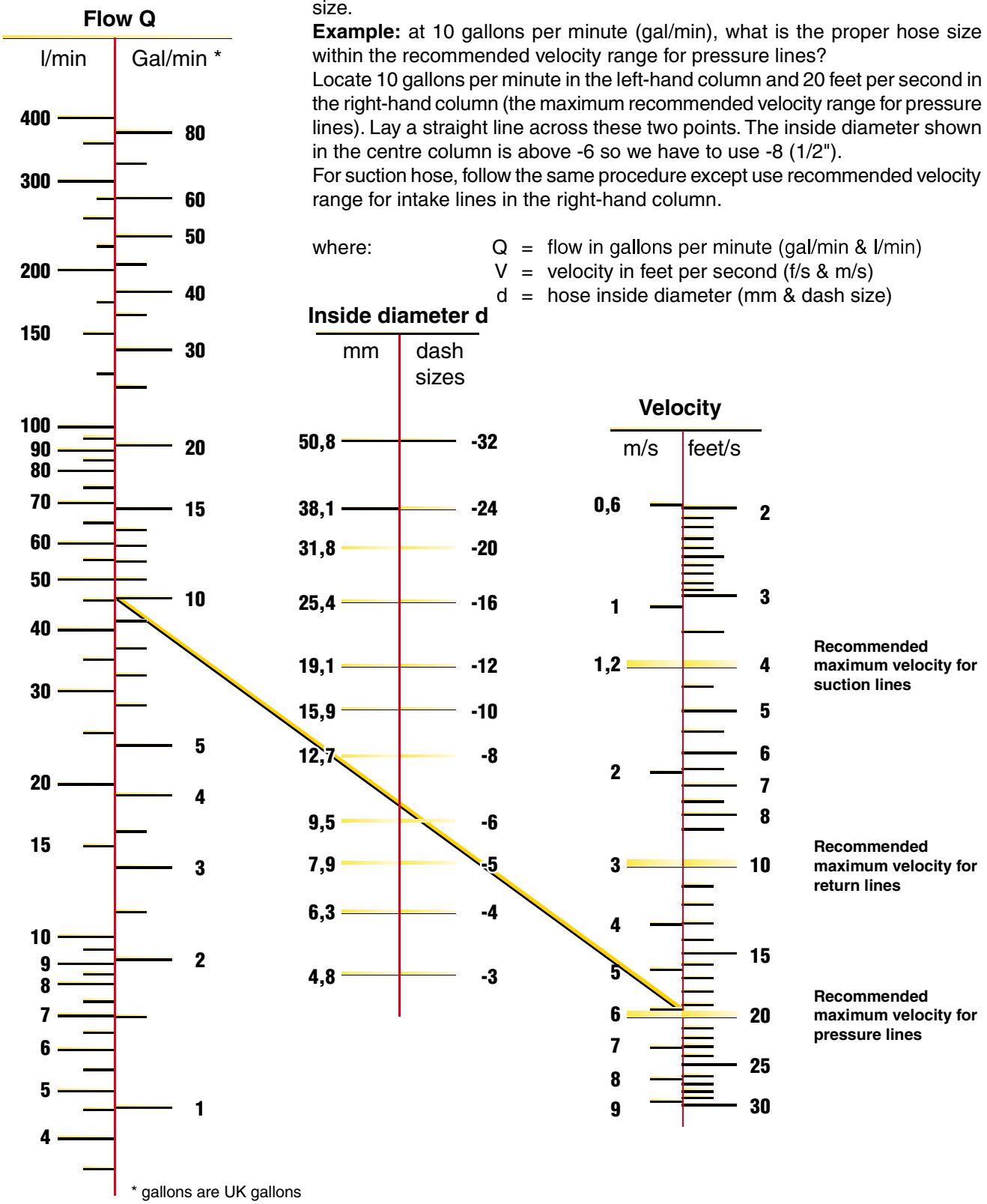
1 lb	0.454 kg
1 lbf	4.448 N
1 lbf ft	1.356 Nm
1 psi	0.068948 bar
1 US gallon	3.785 l
1 cu in	16.387 cm^3
1 in	25.4 mm
1 °F	$^9/_5$°C + 32
1 hp	0.7457 kW

Flow Capacity Chart

Flow Capacity Nomogram

Flow Capacities of Parker Hose at Recommended Flow Velocities
The chart below is provided as an aid in the determination of the correct hose size.
Example: at 10 gallons per minute (gal/min), what is the proper hose size within the recommended velocity range for pressure lines?
Locate 10 gallons per minute in the left-hand column and 20 feet per second in the right-hand column (the maximum recommended velocity range for pressure lines). Lay a straight line across these two points. The inside diameter shown in the centre column is above -6 so we have to use -8 (1/2").
For suction hose, follow the same procedure except use recommended velocity range for intake lines in the right-hand column.

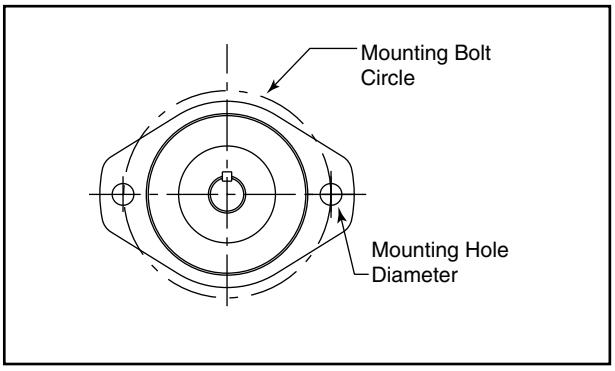
where:
Q = flow in gallons per minute (gal/min & l/min)
V = velocity in feet per second (f/s & m/s)
d = hose inside diameter (mm & dash size)



* gallons are UK gallons
Conversion factor: gal/min x 4,546 = l/min
feet/s x 0,3048 = m/s

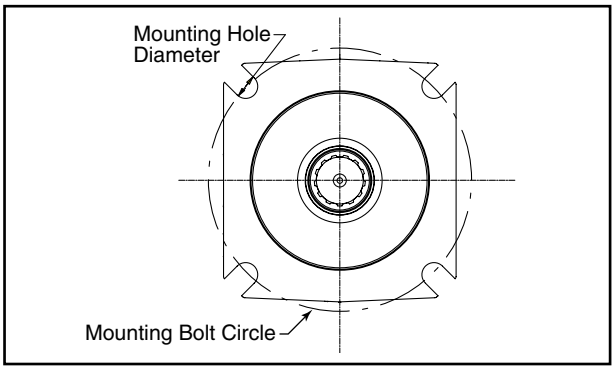
* Recommended velocities are according to hydraulic fluids of maximum viscosity 315 S.S.U. at 38°C working at roomtemperature within 18° and 68°C.

SAE Flanges and Shafts



NFPA Standard Two-Bolt Pump/Motor Mounting Flanges

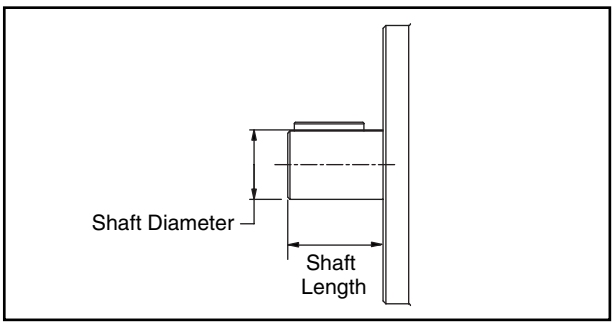
Flange Code	SAE No.	SAE hp Rating[1]	Mtg. Bolt Circle	Mtg. Hole Dia.	Pilot Dia.	Pilot Ht.
50-2	N/A	N/A	3¼	13/32	1	¼
82-2	A	10	4 3/16	7/16	3¼	¼
101-2	B	25	5¾	9/16	4	⅜
127/2	C	50	7⅛	11/16	5	½
152-2	D	100	9	13/16	6	½
165-2	E	200	12½	1 1/16	6½	⅝
177-2	F	300	13 25/32	1 1/16	7	⅝



NFPA Standard Four-Bolt Pump/Motor Mounting Flanges

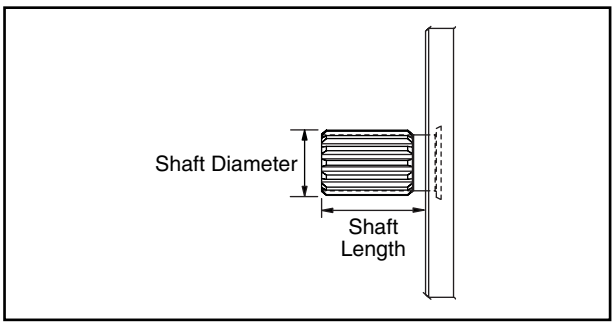
Flange Code	SAE No.	SAE hp Rating[1]	Mtg. Bolt Circle	Mtg. Hole Dia.	Pilot Dia.	Pilot Ht.
101-4	B	25	5	9/16	4	⅜
127-4	C	50	6⅜	11/16	5	½
152-4	D	100	9	13/16	6	½
165-4	E	200	12½	1 1/16	6½	⅝
177-4	F	300	13 25/32	1 1/16	7	⅝

[1] 1750 rpm electric motor



NFPA Standard Straight Shafts without Thread

Shaft Code	SAE Ref.[2]	Shaft Dia.	Short Shaft Length	Long Shaft Length	Key Width
13-1	N/A	½	¾	N/A	⅛
16-1	A	⅝	15/16	2	5/32
22-1	B	⅞	1 5/16	2½	¼
25-1	B-B	1	1½	2¾	¼
32-1	C	1¼	1⅞	3	5/16
38-1	C-C	1½	2⅛	3¼	⅜
44-1	D, E	1¾	2⅝	3⅝	7/16



NFPA Standard 30° Involute Spline Shafts

Shaft Code	SAE Ref.[2]	Shaft Dia.	Shaft Length	Spline Specifications
13-4	N/A	½	¾	9T, 20/40 DP
16-4	A	⅝	15/16	9T, 16/32 DP
22-4	B	⅞	1 5/16	13T, 16/32 DP
25-4	B-B	1	1½	15T, 16/32 DP
32-4	C	1¼	1⅞	14T, 12/24 DP
38-4	C-C	1½	2⅛	17T, 12/24 DP
44-4	D, E	1¾	2⅝	13T, 8/16 DP
50-4	N/A	2	3⅛	15T, 8/16 DP

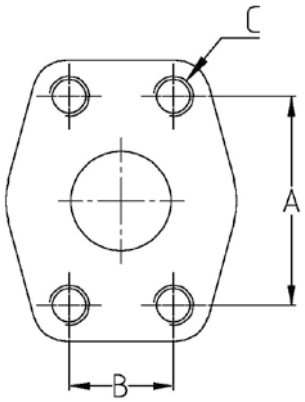
[2] Indicates matching SAE front flange for each shaft diameter.

4-Bolt SAE Port Sizes

4-Bolt Split Flange

A 4-bolt split flange is used to attach the flange fittings to their ports.

– Standard Code 61
  for 3000 to 5000 psi max.,depending on size
– High Pressure Code 62
  for 6000 psi max. regardless of size



port dimensions

CODE 61 - SAE 3000 psi

Flange	Size	A (mm)	B (mm)	C (inch)	C (metr.)
1/2"	-8	38.1	17.5	5/16-18	M8x1,25
3/4"	-12	47.6	22.3	3/8-16	M10x1,5
1"	-16	52.4	26.2	3/8-16	M10x1,5
1-1/4"	-20	58.7	30.2	7/16-14	M10x1,5
1-1/2"	-24	69.9	35.7	1/2-13	M12x1,75
2"	-32	77.8	42.8	1/2-13	M12x1,75*

CODE 62 - SAE 6000 psi

Flange	Size	A (mm)	B (mm)	C (inch)	C (metr.)
1/2"	-8	40.5	18.2	5/16-18	M8x1,25
3/4"	-12	50.8	23.8	3/8-16	M10x1,5
1"	-16	57.2	27.8	7/16-14	M12x1,75
1-1/4"	-20	66.7	31.8	1/2-13	M12x1,75*
1-1/2"	-24	79.4	36.5	5/8-11	M16x2
2"	-32	96.8	44.4	3/4-10	M20x2,5

*M14x2 still used in the market but no longer in accordance with ISO6162

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