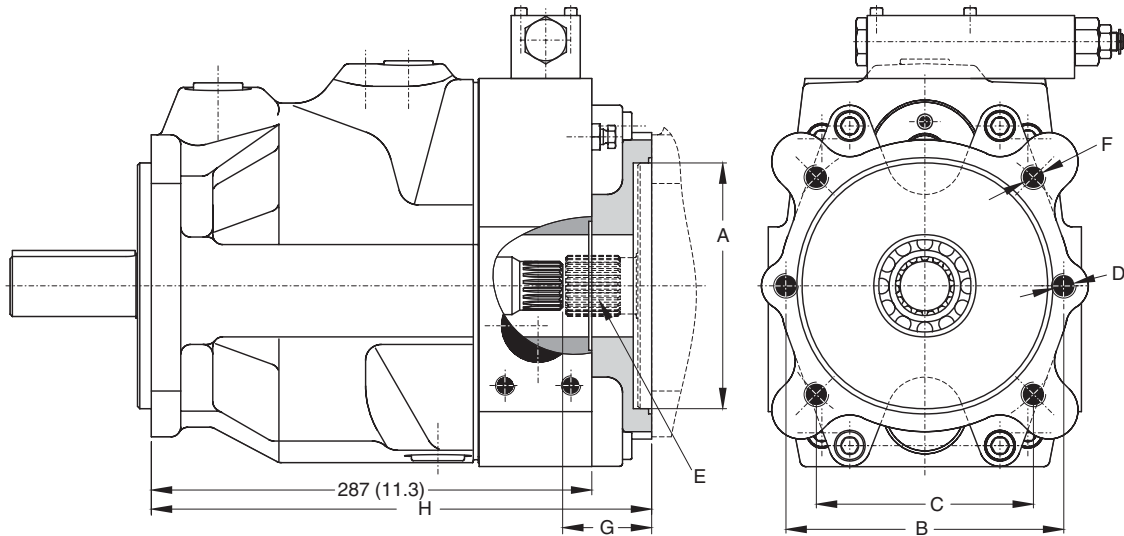


Thru-Shaft Options



Thru-Shaft Load Limitations

The maximum allowable torque of the individual shaft must not be exceeded. For 2-pump combinations there is no problem because the PV series offers 100% thru torque capabilities. For 3-pump combinations or more the limit torque could be reached or exceeded. Therefore it is necessary to calculate the torque factor and compare the sum of each pumps torque factor to the table to make sure it does not exceed the torque limit factor.

Pump	Shaft	Torque Limit Factor
PV063-092	D	77280
	E	72450
	K	67620
	L	83720

Required: Sum of all calculated torque factors must be <torque limit factor.

Torque factor of any pump =
 Pressure (bar) x Displacement (cc/rev)

Code	A	B	C	D	E*	F	G	H
A7	Ø3.25"	4.188"	-	3/8-16	SAE "A" 9T 16/32 DP SPLINE	-	2.28"	12.83"
B3	Ø4.00"	-	3.536"	-	SAE "B" 13T 16/32 DP SPLINE	1/2-13	2.28"	12.83"
B7	Ø4.00"	5.750"	-	1/2-13	SAE "B" 13T 16/32 DP SPLINE	-	2.28"	12.83"
C3	Ø5.00"	-	4.500"	-	SAE "C" 14T 12/24 DP SPLINE	1/2-13	2.28"	12.83"
C7	Ø5.00"	7.125"	-	5/8-11	SAE "C" 14T 12/24 DP SPLINE	-	2.28"	12.83"
D3	Ø6.00"	-	6.364"	-	SAE "D" 13T 8/16 DP SPLINE	5/8-11	3.07"	13.62"
J3	Ø100mm	-	44mm	-	W25 x 1.5 x 15 x 8f SPLINE	M10	2.28"	12.83"
K3	Ø125mm	-	56mm	-	W32 x 1.5 x 20 x 8f SPLINE	M12	2.28"	12.83"
L3	Ø160mm	-	71mm	-	W40 x 1.5 x 25 x 8f SPLINE	M16	2.28"	12.83"
W3	Ø4.00"	-	3.530"	-	SAE "BB" 15T 16/32 DP SPLINE	1/2-13	2.28"	12.83"
W7	Ø4.00"	5.750"	-	1/2-13	SAE "BB" 15T 16/32 DP SPLINE	-	2.28"	12.83"

*Coupling included with pump if ordered from Greenville, TN

Performance Information

Series PV 140/180 Pressure Compensated, Variable Volume, Piston Pumps

Features

- High Strength Cast-Iron Housing for reliable and quiet operation
- Modular Controls for field convertibility
- Large Control Piston for smooth/fast response
- Multiple Pressure Control with valves mounted directly on pump
- Pre-Compression chamber to minimize over-all system noise

Controls

- Pressure Compensation
- Remote Pressure Compensation
- Load Sensing
- Adjustable Maximum Volume Stop
- Electrohydraulic Pressure
- Dual and Tri-Pressure Control
- Low Pressure Standby
- Horsepower Limiting



Specifications

Pressure Ratings: 5000 PSI (350 bar) Continuous
 6000 PSI (420 bar) Peak

Speed Ratings: 750 to 2400 RPM

Inlet Condition: 725 PSI (50 bar) Maximum
 3 In-Hg Vacuum at 1500 RPM
 0 In-Hg Vacuum at 1800 RPM

Case Drain Conditions: 7 PSI (.5 bar) Maximum

Operating Temp. Range: -40°F to 160°F
 (-40°C to 70°C)

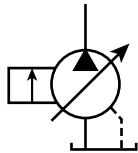
Housing Material: Cast Iron

Filtration: Maintain SAE Class 4 (ISO 16/13)

Mounting: SAE "D" 4-Bolt Flange

Schematic Symbol

(Basic Pump)



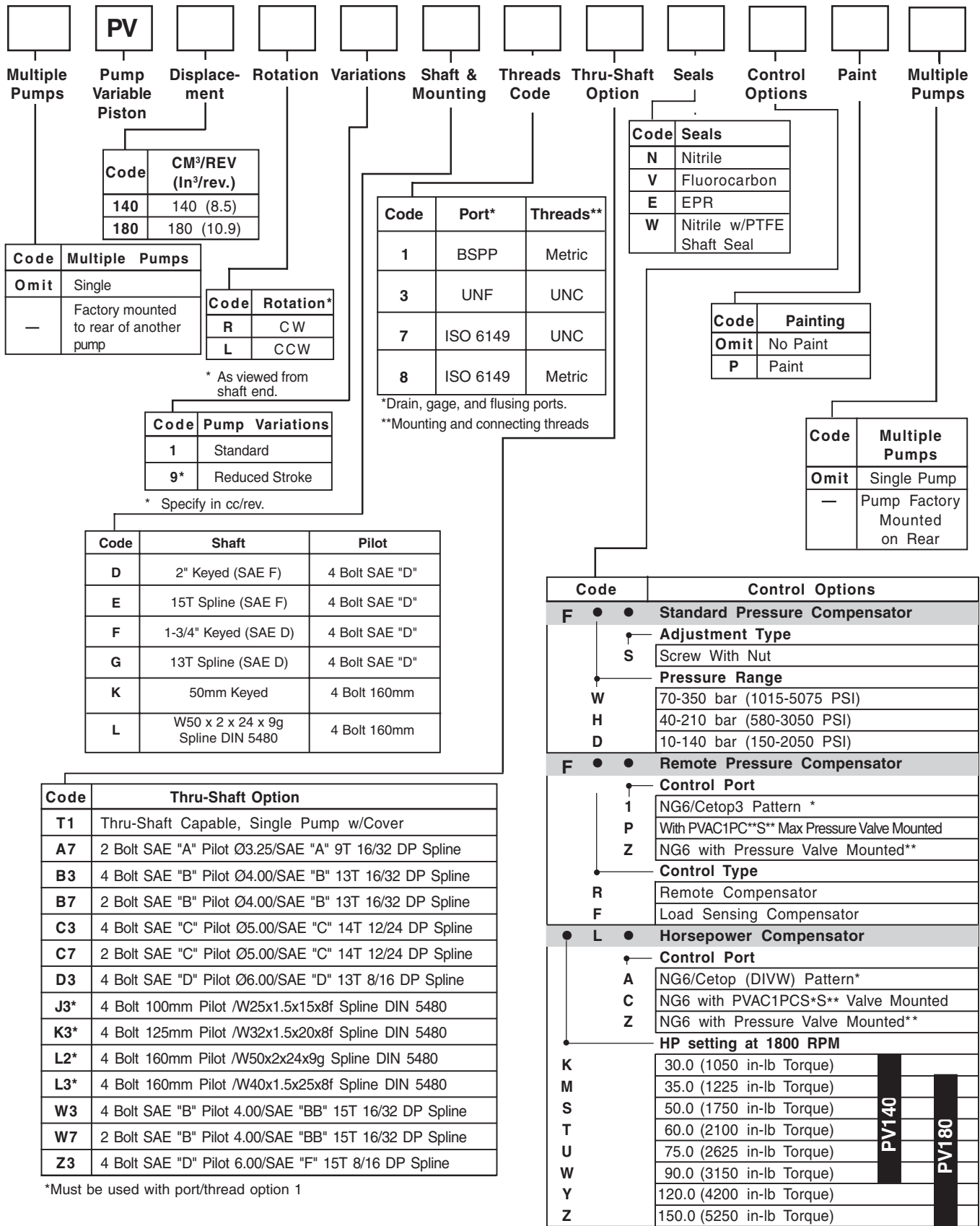
Installation Data

See Installation Information on page 44 of this catalog for specific recommendations pertaining to system cleanliness, fluids, start-up, inlet conditions, shaft alignment, drain line restrictions and other important factors relative to the proper installation and use of these products.

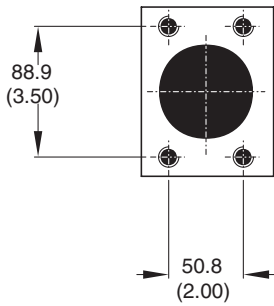
Quick Reference Data Chart

Pump Model	Displacement cc/rev (in ³ /rev)	Pump Delivery @ 7 bar (100 PSI) in LPM (GPM)		*Approx. Noise Levels dB(A) @ Full Flow and 1500 RPM			Input Power At 1800 RPM, Max. Displacement & 343 bar (5000 PSI)	Max Operating Speed (RPM)
		1200 RPM	1800 RPM	70 bar	207 bar	343 bar		
				(1000 PSI)	(3000 PSI)	(5000 PSI)		
PV140	140 (8.59)	168 (44.4)	234 (61.8)	70	74	76	149.4 kw (200.4 hp)	2400
PV180	180 (10.98)	216 (57.1)	324 (85.6)	71	75	77	210.3 kw (282.0 hp)	2200

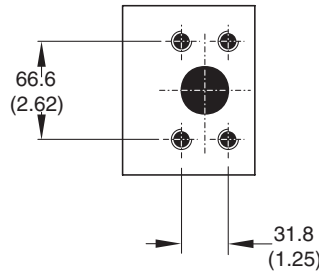
* The noise level values are based on anechoic room measurements at a distance of 1 meter in accordance with DIN 45645.



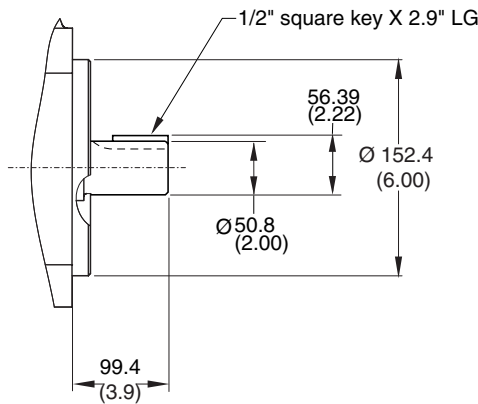
* Maximum pressure adjustment not included, but recommended. (See PVAC Section)
 ** Valve to be mounted at factory must be ordered as a separate line item. Consult factory. See PVAC section for pressure valve options.



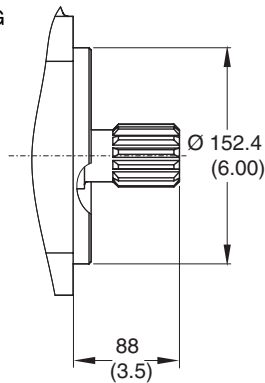
Inlet:
Option 3 & 7
 2-1/2" 4 Bolt Flange
 1/2-13 UNC-2B Threads
Option 1 & 8
 63mm 4 Bolt Flange
 M16 Threads
 Standard Pressure Series
 (Code 61)



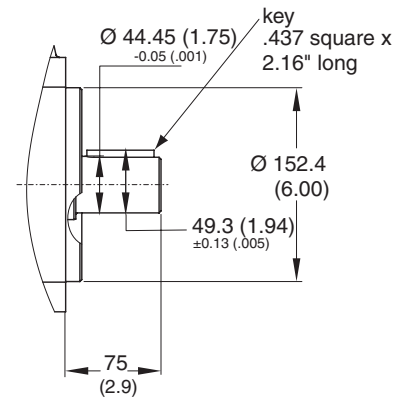
Outlet:
Option 3 & 7
 1-1/4" 4 Bolt Flange
 1/2-13 UNC-2B Threads
Option 1 & 8
 32mm 4 Bolt Flange
 M12 Threads
 High Pressure Series (Code 62)



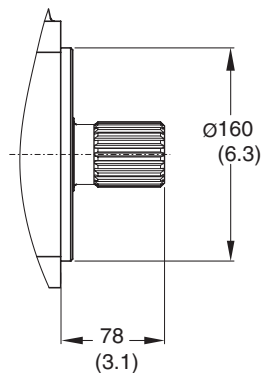
Shaft Option "D"
 (SAE "F")
 Max Torque = 2000 Nm (17,701 In-Lbs)



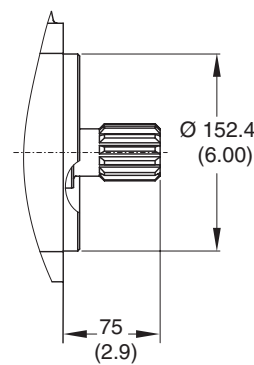
Shaft Option "E"
 (SAE "F")
 15 Teeth, 8/16 Pitch
 30° Involute Spline
 Max Torque = 2680 Nm (23,720 In-Lbs)



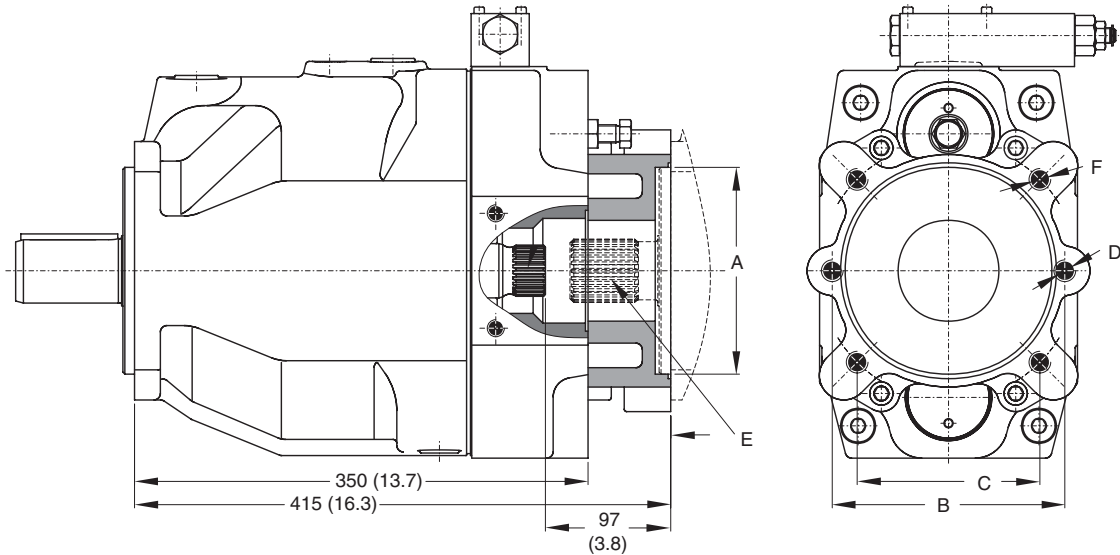
Shaft Option "F"
 (SAE "D")
 Max Torque = 1320 Nm (11,683 In-Lbs)



Shaft Option "L"
 W50mm x 2mm x 24mm x 9g
 DIN 5480
 Max Torque = 2650 Nm (23,454 In-Lbs)



Shaft Option "G"
 (SAE "D")
 13 Teeth 8/16 Pitch
 30° Involute Spline
 Max Torque = 1640 Nm (14,515 In-Lbs)



Thru-Shaft Options

Thru-Shaft Load Limitations

The maximum allowable torque of the individual shaft must not be exceeded. For 2-pump combinations there is no problem because the PV series offers 100% thru torque capabilities. For 3-pump combinations or more the limit torque could be reached or exceeded. Therefore it is necessary to calculate the torque factor and compare the sum of each pumps torque factor to the table to make sure it does not exceed the torque limit factor.

Required: Sum of all calculated torque factors must be <torque limit factor.

Torque factor of any pump =
 Pressure (bar) x Displacement (cc/rev)

Code	A	B	C	D	E*	F
A7	Ø3.25"	4.188"	-	3/8-16	SAE "A" 9T 16/32 DPSPLINE	-
B3	Ø4.00"	-	3.536"	-	SAE "B" 13T 16/32 DP SPLINE	1/2-13
B7	Ø4.00"	5.750"	-	1/2-13	SAE "B" 13T 16/32 DP SPLINE	-
C3	Ø5.00"	-	4.508"	-	SAE "C" 14T 12/24 DP SPLINE	1/2-13
D3	Ø6.00"	-	6.364"	-	SAE "CC" 13T 8/16 DP SPLINE	5/8-11
J3	Ø100mm	-	44mm	-	W25 x 1.5 x 15 x 8f SPLINE	M10
K3	Ø125mm	-	56mm	-	W32 x 1.5 x 20 x 8f SPLINE	M12
L2	Ø160mm	-	71mm	-	W50 x 2 x 24 x 9g SPLINE	M12
L3	Ø160mm	-	71mm	-	W40 x 1.5 x 25 x 8f SPLINE	M17
W3	Ø4.00"	-	3.536"	-	SAE "BB" 15T 16/32 DP SPLINE	1/2-13
W7	Ø4.00"	5.750"	-	1/2-13	SAE "BB" 15T 16/32 DP SPLINE	-
Z3	Ø6.00"	-	6.364"	-	SAE "F" 15T 8/16 DP SPLINE	5/8-11

Pump	Shaft	Torque Limit Factor
PV140-180	D	118400
	E	158760
	F	78750
	G	97650
	K	113400
	L	157500

*Coupling included when ordered from Greeneville, TN

Performance Information

Series PV270 Pressure Compensated, Variable Volume, Piston Pumps

Features

- High Strength Cast-Iron Housing for reliable and quiet operation
- Modular Controls for field convertibility
- Large Control Piston for smooth/fast response
- Multiple Pressure Control with valves mounted directly on pump
- Pre-Compression chamber to minimize over-all system noise.

Controls

- Pressure Compensation
- Remote Pressure Compensation
- Load Sensing
- Adjustable Maximum Volume Control
- Electrohydraulic Pressure Control
- Dual and Tri-Pressure
- Low Pressure Standby
- Horsepower Limiting



Specifications

Pressure Ratings: 5000 PSI (350 bar) Continuous
 6000 PSI (420 bar) Peak

Speed Ratings: 750 to 1800 RPM

Inlet Condition: 725 PSI (50 bar) Maximum
 3 In-Hg Vacuum at 1500 RPM
 0 In-Hg Vacuum at 1800 RPM

Case Drain Conditions: 7 PSI (.5 bar) Maximum

Operating Temp. Range: -40°F to 160°F
 (-40°C to 70°C)

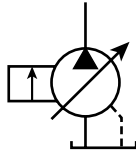
Housing Material: Cast Iron

Filtration: Maintain SAE Class 4 (ISO 16/13)

Mounting: SAE "E" 4-Bolt Flange

Schematic Symbol

(Basic Pump)



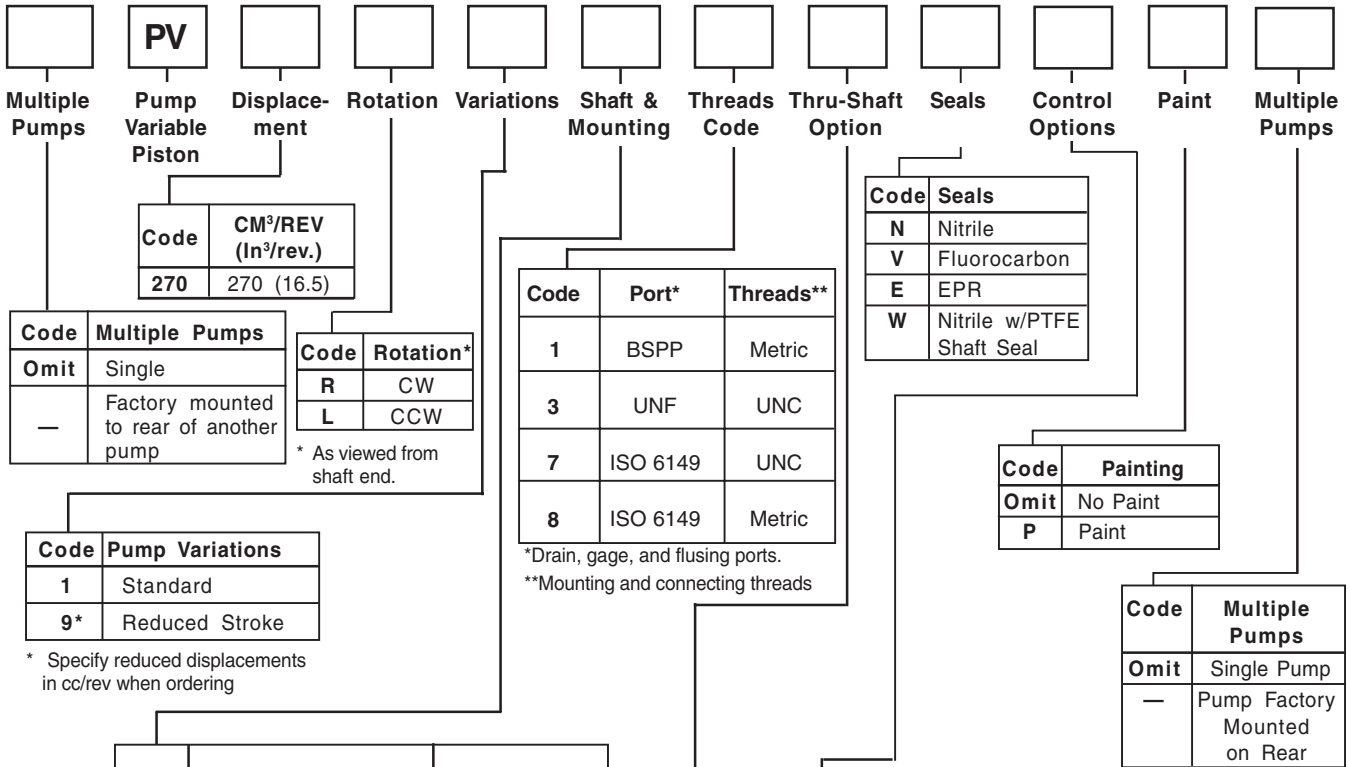
Installation Data

See Installation Information on page 44 of this catalog for specific recommendations pertaining to system cleanliness, fluids, start-up, inlet conditions, shaft alignment, drain line restrictions and other important factors relative to the proper installation and use of these products.

Quick Reference Data Chart

Pump Model	Displacement cc/rev (in ³ /rev)	Pump Delivery @ 7 bar (100 PSI) in LPM (GPM)		*Approx. Noise Levels dB(A) @ Full Flow and 1500 RPM			Input Power At 1800 RPM, Max. Displacement & 343 bar (5000 PSI)	Max Operating Speed (RPM)
		1200 RPM	1800 RPM	70 bar (1000 PSI)	207 bar (3000 PSI)	343 bar (5000 PSI)		
PV270	270 (16.5)	324 (85.6)	486 (128.4)	77	79	81	298 kw (400 hp)	1800

* The noise level values are based on anechoic room measurements at a distance of 1 meter in accordance with DIN 45645.



Code	Multiple Pumps
Omit	Single
—	Factory mounted to rear of another pump

Code	Rotation*
R	CW
L	CCW

* As viewed from shaft end.

Code	Pump Variations
1	Standard
9*	Reduced Stroke

* Specify reduced displacements in cc/rev when ordering

Code	Shaft	Pilot
D	2" SAE Keyed	4 Bolt SAE "E"
E	15T Spline (SAE "F")	4 Bolt SAE "E"
K	65mm Keyed	4 Bolt 200mm
L	W60 x 2 x 28x 9g Spline DIN 5480	4 Bolt 200mm

Code	Thru-Shaft Option
T1	Thru-Shaft Capable/ Single Pump w/Cover
A7	2 Bolt SAE "A" Pilot Ø3.25/SAE "A" 9T 16/32 DP Spline
B3	4 Bolt SAE "B" Pilot Ø4.00/SAE "B" 13T 16/32 DP Spline
B7	2 Bolt SAE "B" Pilot Ø4.00/SAE "B" 13T 16/32 DP Spline
C3	4 Bolt SAE "C" Pilot Ø5.00/SAE "C" 14T 12/24 DP Spline
C7	2 Bolt SAE "C" Pilot Ø5.00/SAE "C" 14T 12/24 DP Spline
D3	4 Bolt SAE "D" Pilot Ø6.00/SAE "D" 13T 8/16 DP Spline
D7	2 Bolt SAE "D" Pilot Ø6.00/SAE "D" 13T 8/16 DP Spline
E3	4 Bolt SAE "E" Pilot Ø6.50/SAE "F" 15T 8/16 DP Spline
J3*	4 Bolt 100mm Pilot /W25x1.5x15x8f Spline DIN 5480
K3*	4 Bolt 125mm Pilot /W32x1.5x20x8f Spline DIN 5480
L2*	4 Bolt 160mm Pilot /W50x2x24x9g Spline DIN 5480
L3*	4 Bolt 160mm Pilot /W40x1.5x25x8f Spline DIN 5480
M3*	4 Bolt 200mm Pilot /W60x2x28x9f Spline DIN 5480
W3	4 Bolt SAE "B" Pilot 4.00/SAE "BB" 15T 16/32 DP Spline
W7	2 Bolt SAE "B" Pilot 4.00/SAE "BB" 15T 16/32 DP Spline
Z3	4 Bolt SAE "D" Pilot 6.00/SAE "F" 15T 8/16 DP Spline
Z7	2 Bolt SAE "D" Pilot 6.00/SAE "F" 15T 8/16 DP Spline

*Must be used with port/thread option 1

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

*Drain, gage, and flusing ports.

**Mounting and connecting threads

Code	Seals
N	Nitrile
V	Fluorocarbon
E	EPR
W	Nitrile w/PTFE Shaft Seal

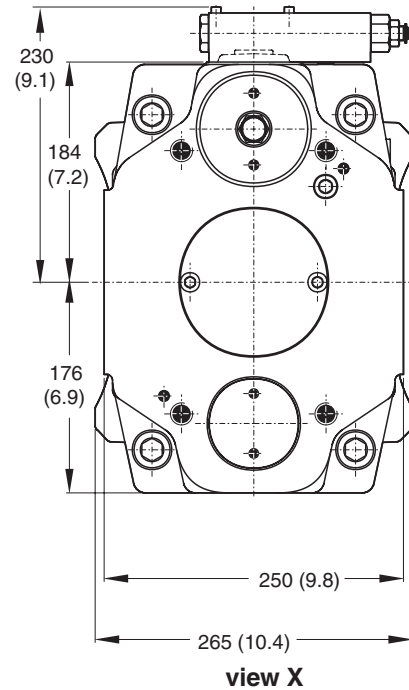
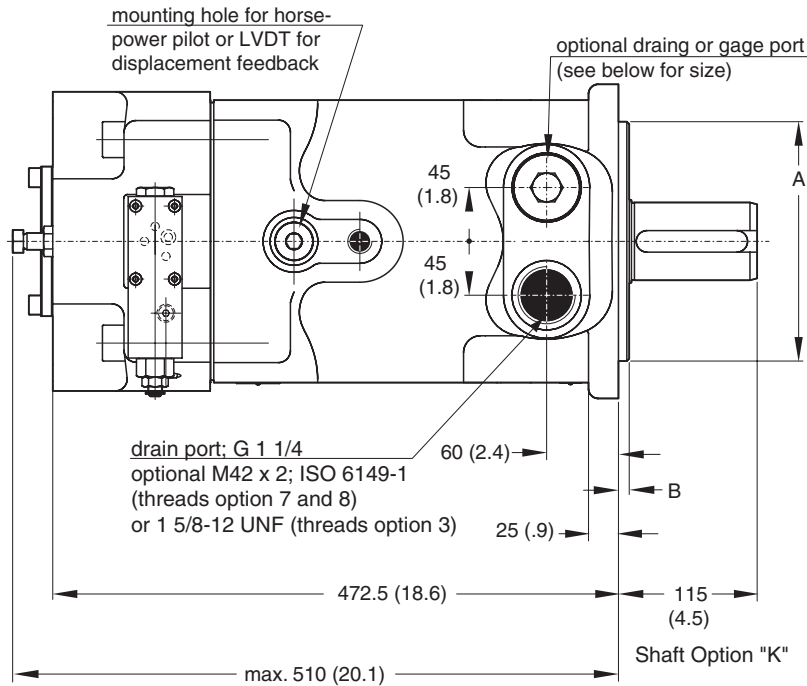
Code	Painting
Omit	No Paint
P	Paint

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

Code	Control Options
F	Standard Pressure Compensator
•	Adjustment Type
S	Screw With Nut
•	Pressure Range
W	70-350 bar (1000-5075 PSI)
H	40-210 bar (600-3050 PSI)
D	10-140 bar (150-2050 PSI)
F	Remote Pressure Compensator
•	Control Port
1	NG6/Cetop3 Pattern*
P	With PVAC1PC**S** Max Pressure Valve Mounted
Z	NG6 with Pressure Valve Mounted**
•	Control Type
R	Remote Compensator
F	Load Sensing Compensator
•	Horsepower Compensator Control
•	Control Port
A	NG6/Cetop3 (DIVW) Pattern*
C	NG6 with PVAC1PCS*S** Valve Mounted
Z	NG6 with Pressure Valve Mounted**
•	HP setting at 1800 RPM
T	60.0 (2100 in-lb Torque)
U	75.0 (2625 in-lb Torque)
W	90.0 (3150 in-lb Torque)
Y	120.0 (4200 in-lb Torque)
Z	150.0 (5250 in-lb Torque)
2	175.0 (6125 in-lb Torque)
3	200.0 (7000 in-lb Torque)

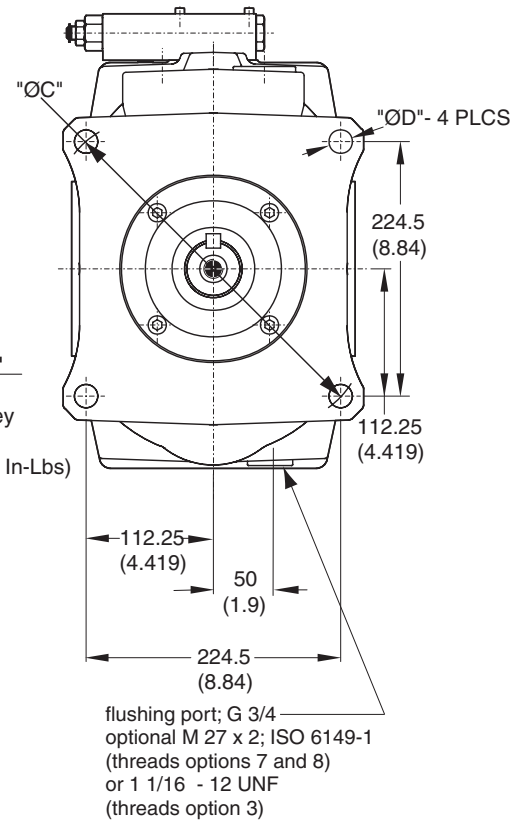
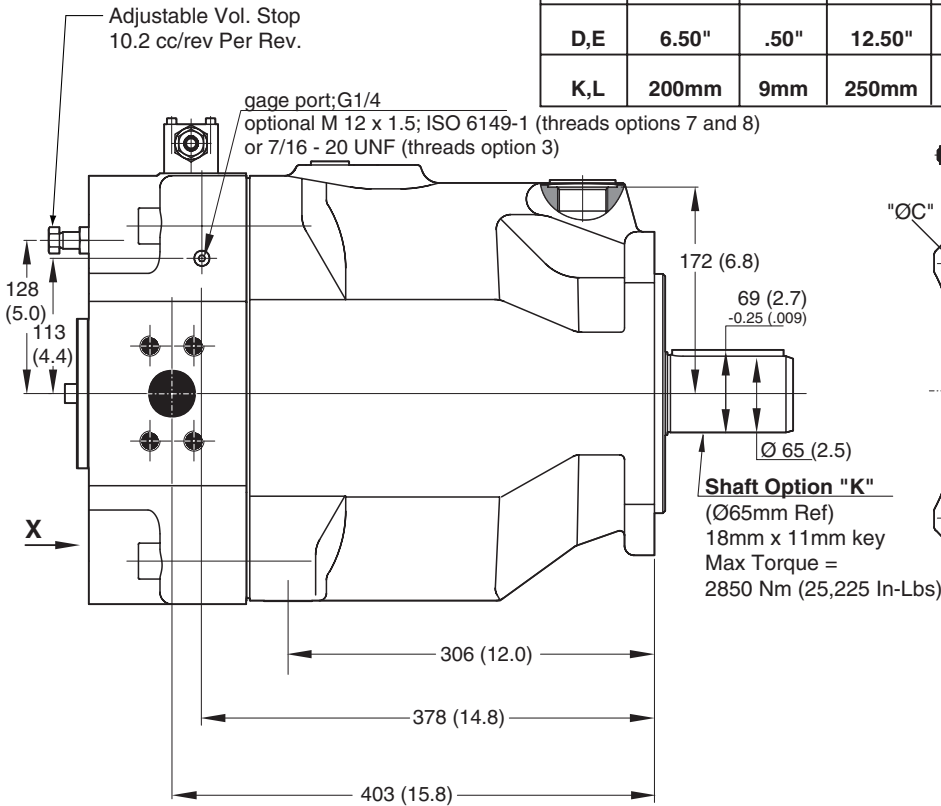
* Maximum pressure adjustment not included, but recommended. (See PVAC Section)

** Valve to be mounted at factory must be ordered as a separate line item. Consult factory. See PVAC section for pressure valve options.



Shown with standard pressure compensator

Code	A	B	ØC	ØD
D,E	6.50"	.50"	12.50"	.81"
K,L	200mm	9mm	250mm	22mm



Variable Volume Piston Pumps General PV Series

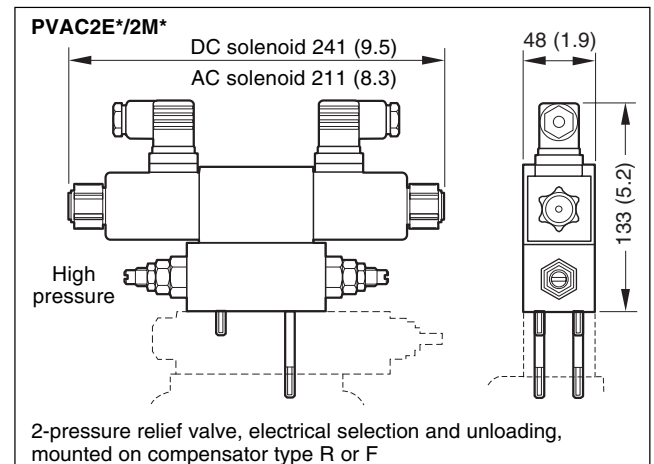
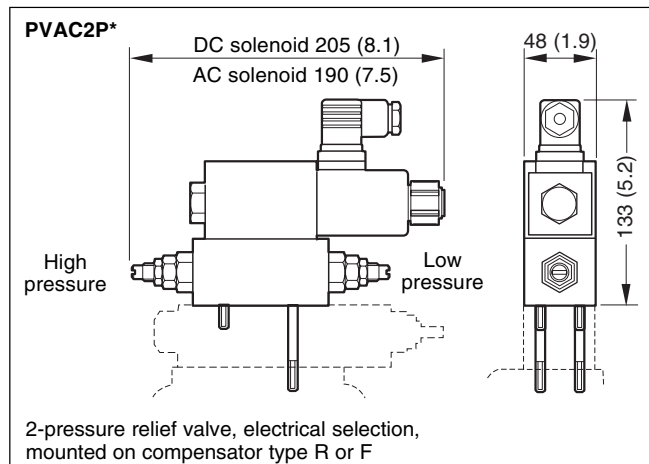
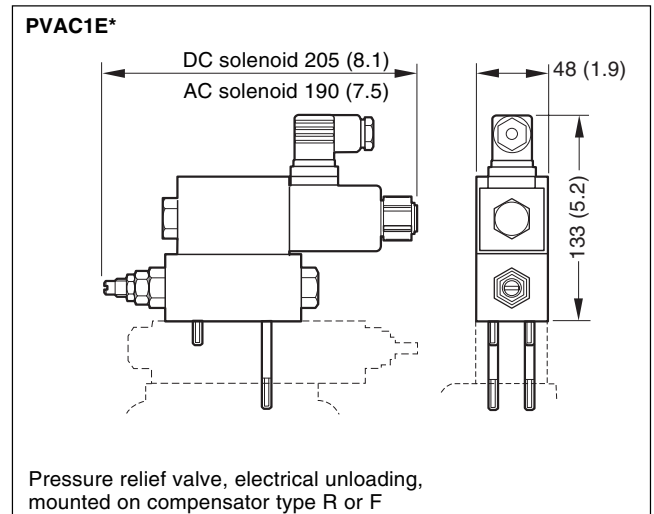
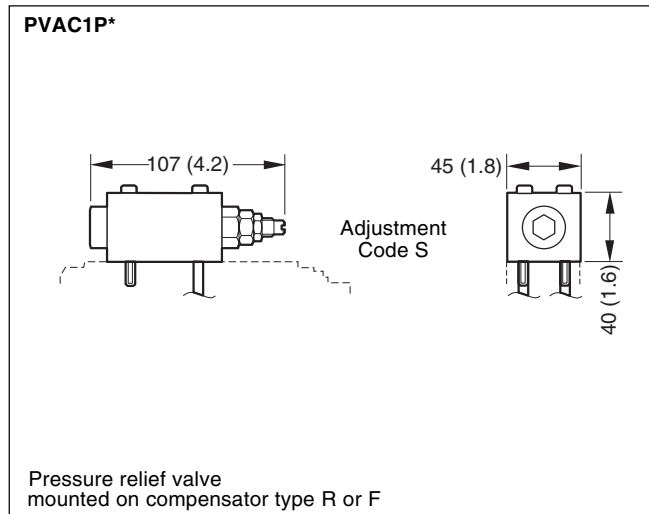
Control Options

PVAC		C	S		S			*																											
Variable Piston Pump Accessory	Accessory Valves	Compensator	Porting	Seals	Adjustment Type	Solenoid Voltage	Solenoid Connector	Design Series																											
		<table border="1"> <tr><th>Code</th><th>Compensator</th></tr> <tr><td>C</td><td>Single Comp.</td></tr> </table>	Code	Compensator	C	Single Comp.	<table border="1"> <tr><th>Code</th><th>Threads</th><th>Porting</th></tr> <tr><td>S</td><td>English</td><td>SAE</td></tr> <tr><td>M</td><td>Metric</td><td>Metric</td></tr> </table>	Code	Threads	Porting	S	English	SAE	M	Metric	Metric		<table border="1"> <tr><th>Code</th><th>Adjustment Type</th></tr> <tr><td>S</td><td>Screw with jam nut</td></tr> </table>	Code	Adjustment Type	S	Screw with jam nut		<table border="1"> <tr><th>Code</th><th>Solenoid Connector</th></tr> <tr><td>Omit</td><td>Function "1P"</td></tr> <tr><td>C</td><td>Conduit Box</td></tr> <tr><td>P</td><td>Hirschmann w/plug</td></tr> <tr><td>W</td><td>Hirschmann w/o plug</td></tr> </table>	Code	Solenoid Connector	Omit	Function "1P"	C	Conduit Box	P	Hirschmann w/plug	W	Hirschmann w/o plug	Required when Ordering
Code	Compensator																																		
C	Single Comp.																																		
Code	Threads	Porting																																	
S	English	SAE																																	
M	Metric	Metric																																	
Code	Adjustment Type																																		
S	Screw with jam nut																																		
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Omit	Function "1P"																																		
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P	Hirschmann w/plug																																		
W	Hirschmann w/o plug																																		
<table border="1"> <tr><th>Code</th><th>Accessory Valves</th></tr> <tr><td>1P</td><td>Max. Pressure Limit</td></tr> <tr><td>2P</td><td>Two Pressure with DCV</td></tr> <tr><td>1E</td><td>One Pressure and Vent with DCV</td></tr> <tr><td>2E</td><td>2 pressure + low pressure stand-by electrical selection (energize for L.P. stand-by)</td></tr> <tr><td>2M</td><td>2 pressure + low pressure stand-by electrical selection (deenergize for L.P. stand-by)</td></tr> </table>	Code	Accessory Valves	1P	Max. Pressure Limit	2P	Two Pressure with DCV	1E	One Pressure and Vent with DCV	2E	2 pressure + low pressure stand-by electrical selection (energize for L.P. stand-by)	2M	2 pressure + low pressure stand-by electrical selection (deenergize for L.P. stand-by)			<table border="1"> <tr><th>Code</th><th>Seals</th></tr> <tr><td>N</td><td>Nitrile</td></tr> <tr><td>V</td><td>Fluoroelastomers*</td></tr> </table>	Code	Seals	N	Nitrile	V	Fluoroelastomers*		<table border="1"> <tr><th>Code</th><th>Solenoid Voltage</th></tr> <tr><td>Omit</td><td>Function "1P"</td></tr> <tr><td>Y</td><td>110V/50Hz - 120V/60Hz</td></tr> <tr><td>T</td><td>220V/50Hz - 240V/60Hz</td></tr> <tr><td>J</td><td>24V DC</td></tr> </table>	Code	Solenoid Voltage	Omit	Function "1P"	Y	110V/50Hz - 120V/60Hz	T	220V/50Hz - 240V/60Hz	J	24V DC		
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2P	Two Pressure with DCV																																		
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Omit	Function "1P"																																		
Y	110V/50Hz - 120V/60Hz																																		
T	220V/50Hz - 240V/60Hz																																		
J	24V DC																																		

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Is available under various registered trademarks, including **VITON** (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

NOTE: Valves will include bolts for mounting.

Dimensions



Variable Volume Piston Pumps Parker PV plus vs. Parker PV

Direct Comparison

Cross reference ordering codes Parker series PV and Parker series PV plus

Code example PV:

code field no.:

PV	046	R	1	A	1	T	1	N	PWS	XX	YY
1	2	3	4	5	6	7	8	9	10	11	12

PV		Thru drive and Second Pump Option	PVplus	
Field			Field	
7	8	Description	Remark	
T	1	Thru shaft Capable with Cover	7	8
A	4	2/4 Bolt SAE "A" Pilot 3.25"/SAE "A" 9T Spline Coupler	T	1
B	7	2/4 Bolt SAE "B" Pilot 4.00"/SAE "B" 13T Spline Coupler	A	4
C	8	2/4 Bolt SAE "C" Pilot 5.00"/SAE "C" 14T Spline Coupler	B	3
H	2	4 Bolt 80mm Pilot/W ? x ? x ? x 8f DIN 5480 Coupler	B*	7
J	2	4 Bolt 100mm Pilot/W 25 x 1.5 x 15 x 8f DIN 5480 Coupler	C**	3
K	2	4 Bolt 125mm Pilot/W 32 x 1.5 x 20 x 8f DIN 5480 Coupler	C***	7
W	7	2/4 Bolt SAE "B" Pilot 4.00"/SAE "BB" 15T Spline Coupler	H	3
Y	7	2 Bolt SAE "AA" Pilot 2.00"/SAE "A" 9T Spline	J	3
			K****	3
			W	3
			W	7
			Y#	7

*Not available with size 1
 **Size 2 or larger
 ***Not available with size 1 and 2
 ****Only available with 032 and larger
 #Only available with size 1

PV	Description	Remark	PVplus
Field 9	Seal material		Field 9
N	NBR		N
V	FPM		V

PV	Description	Remark	PVplus
Field 10	Compensator options		Field 10
**S	standard pressure compensator	only fast response option available	F*S
*RC	remote pressure compensator	only fast response option available	FRC
*R1	remote pressure compensator with D03 interface	only fast response option available	FR1
*F1	load-sensing compensator with D03 interface	only fast response option available	FF1
L	horse power compensator	no longer for load sensing	*L*

PV	Description	Remark	PVplus
Field 11	Design series pump		Field 11
	not required on order		

PV	Description	Remark	PVplus
Field 12	Design series compensator		Field 12
	not required on order		

*Consult Factory for assistance in crossing over PV model codes that are not shown.

Code example PV:

code field no.:

PV	046	R	1	D	3	T	1	N	FWS	XX	YY
1	2	3	4	5	6	7	8	9	10	11	12

