

**Technical Information**

**Performance Information**

Series PVP 41/48 Pressure Compensated, Variable Volume, Piston Pumps

**Features**

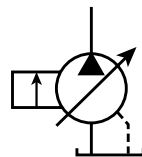
- High Strength Cast-Iron Housing for Reliability and Quiet Operation
- Optional Inlet/Outlet Locations for Ease of Installation
- Replaceable Bronze Port Plate
- Replaceable Piston Slipper Plate
- Thru-Shaft Capability SAE AA, A or B Pilots
- Low Noise Levels
- Fast Response Times

**Controls**

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

**Schematic Symbol**

(Basic Pump)



**Specifications**

Pressure Ratings

Outlet Port: 248 bar (3600 PSI) Continuous (P1)  
310 bar (4500 PSI) Peak (P3)

Inlet Port: 1.72 bar (25 PSI) Maximum  
.17 bar (5 In. Hg.) Vacuum  
Minimum @ 1800 RPM  
(See inlet chart for other speeds)

Case Drain Port: .34 bar (5 PSI) Max. above  
Inlet Port .34 bar (10 PSI)  
Maximum

Speed Ratings: 600 to 2800 RPM — PVP41  
600 to 2400 RPM — PVP48

Operating Temperature Range: - 40°C to 71°C  
(- 40°F to 160°F)

Housing Material: Cast-Iron

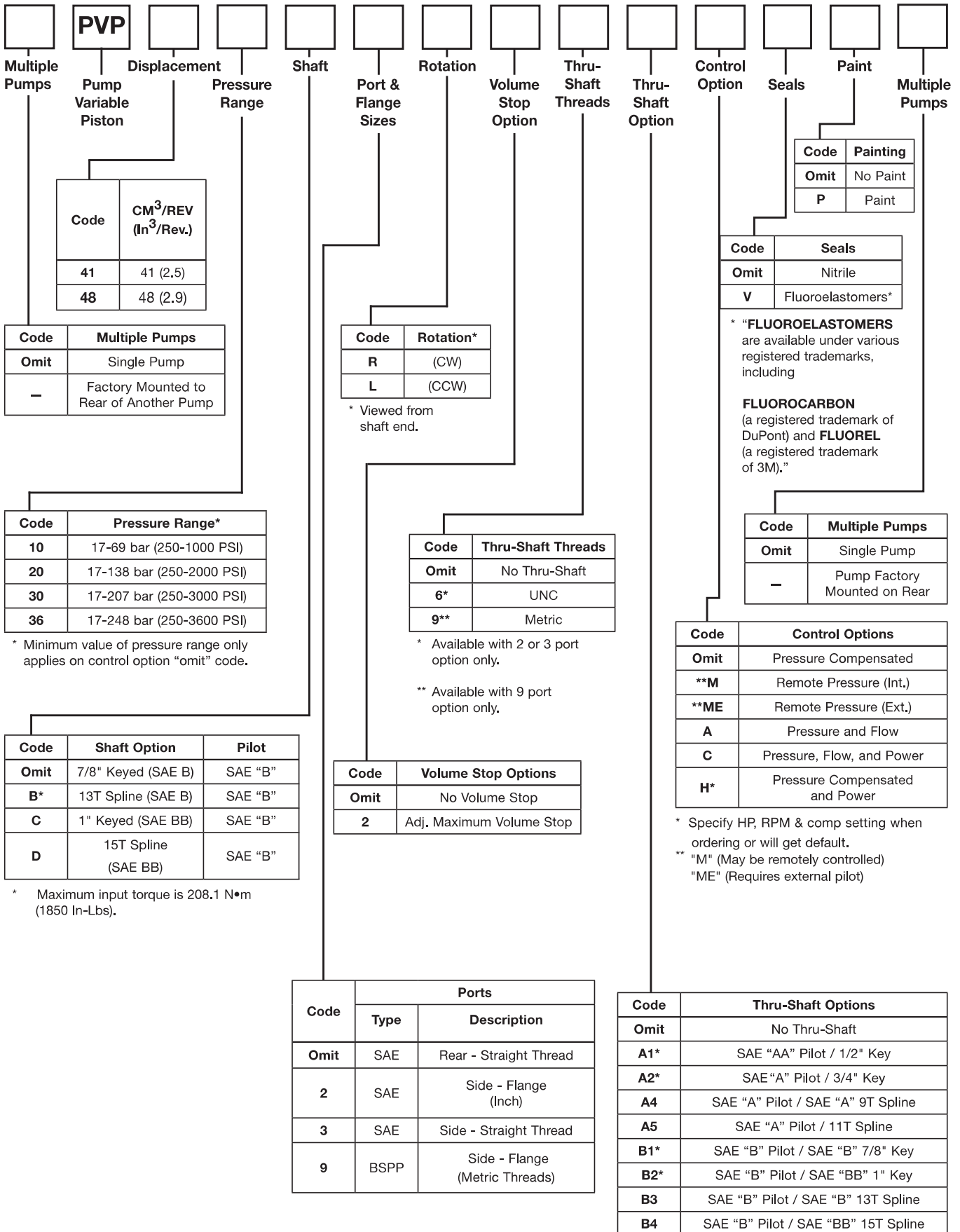
Filtration: ISO 16/13 Recommended  
ISO 18/15 Maximum

Mounting: SAE “B”  
Flange Mount

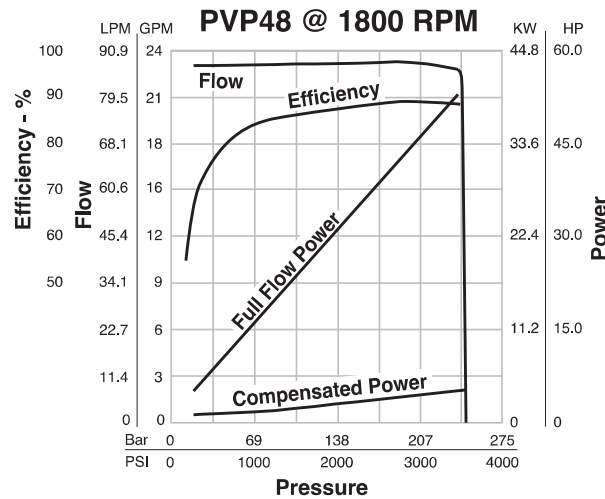
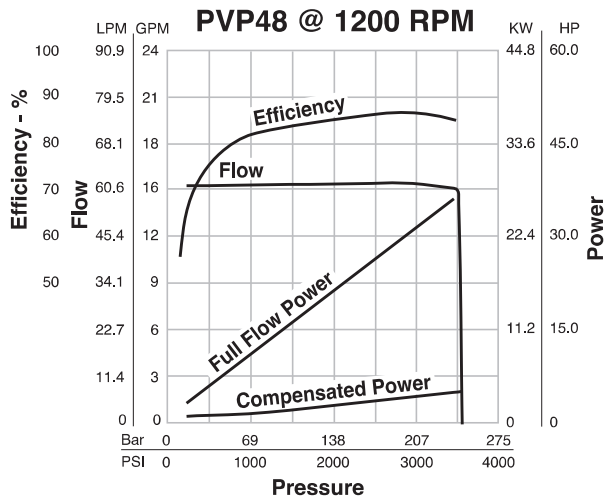
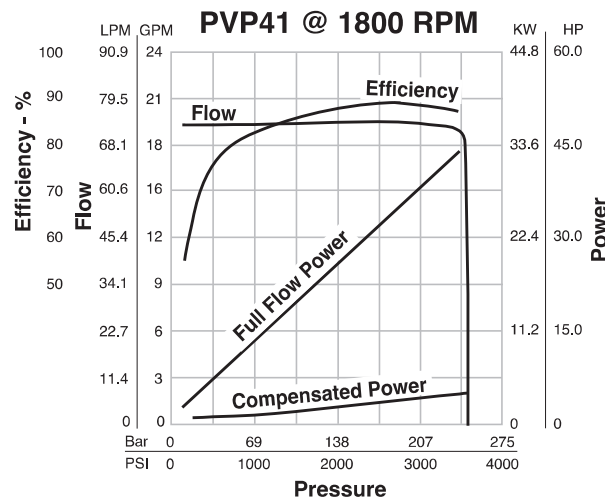
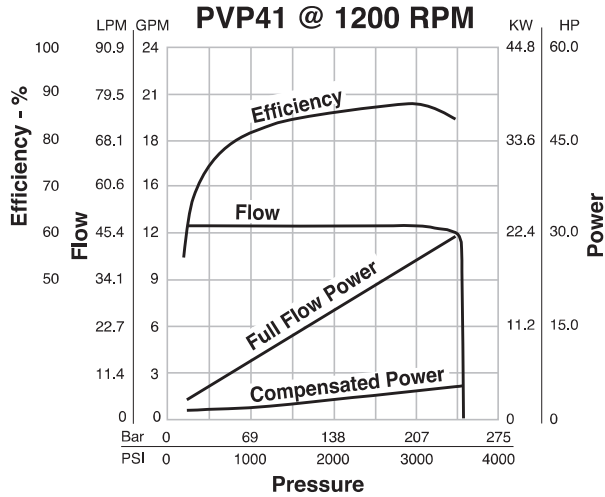
Installation Data: See page 42 of this catalog for specific recommendations pertaining to system cleanliness, fluids, start-up, inlet conditions, shaft alignment, drain line restrictions and other important factors relative to the proper installation and use of these pumps.

**Quick Reference Data Chart**

Pump Model	Displacement cc/rev (In <sup>3</sup> /rev)	Pump Delivery @ 7 bar (100 PSI) in LPM (GPM)		Input Power At 1800 RPM, Max. Displacement & 248 bar (3600 PSI)
		1200 RPM	1800 RPM	
PVP41	41.0 (2.5)	49.2 (13.0)	73.8 (19.5)	33.2 kw (44.5 hp)
PVP48	48.0 (2.9)	57.6 (15.2)	86.4 (22.8)	40.3 kw (54.0 hp)



**Typical Performance Data - Fluid: Standard Hydraulic Oil 100 SSU @ 49°C (120°F)**

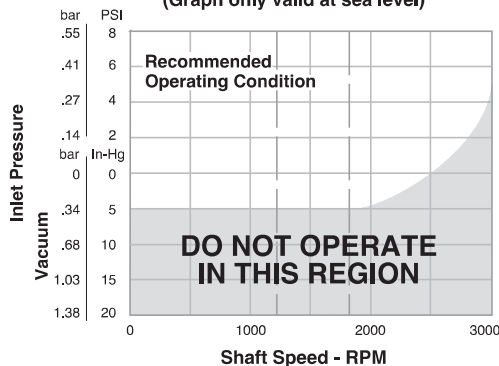


NOTE: The efficiencies and data in the graph are good only for pumps running at 1200 or 1800 RPM and stroked to maximum. To calculate approximate horsepower for the other conditions, use the following formula:

$$HP = \left[ \frac{Q \times (PSI)}{1714} \right] + (CHp)$$

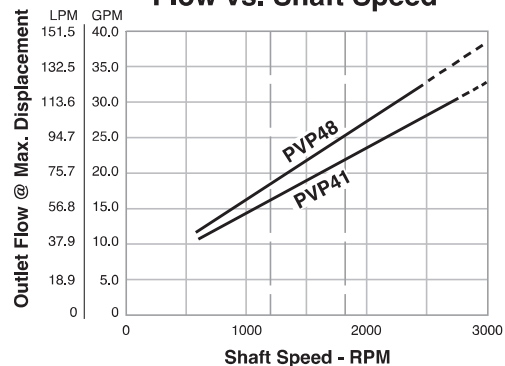
Actual GPM is directly proportional to drive speed and maximum volume setting. Flow loss, however, is a function of pressure only.

WHERE: **PVP 41/48**  
**Inlet Characteristics at Full Displacement**  
 (Graph only valid at sea level)



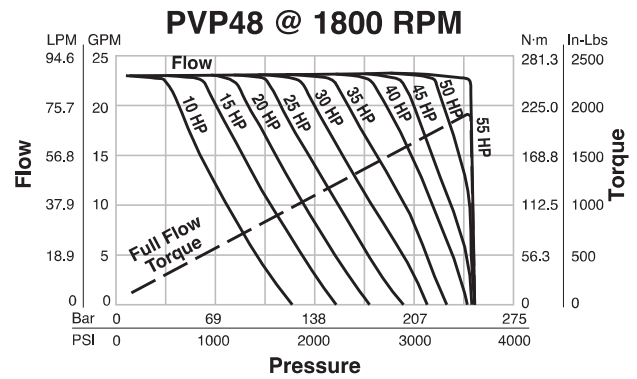
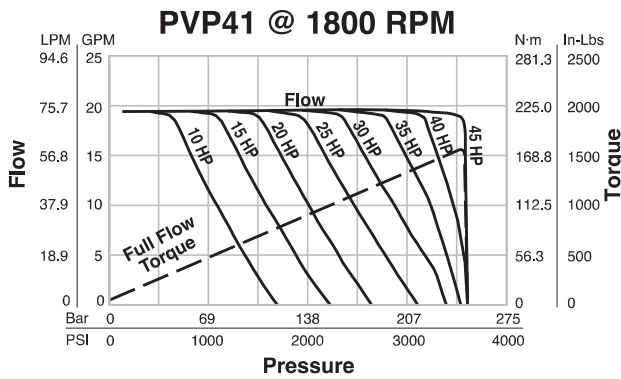
- Q = Actual Output Flow in GPM
- PSI = Pressure At Pump Outlet
- CHp = Input Horsepower @ Full compensation @ 1800 RPM (from graph read at operating pressure)

**PVP 41/48**  
**Flow vs. Shaft Speed**

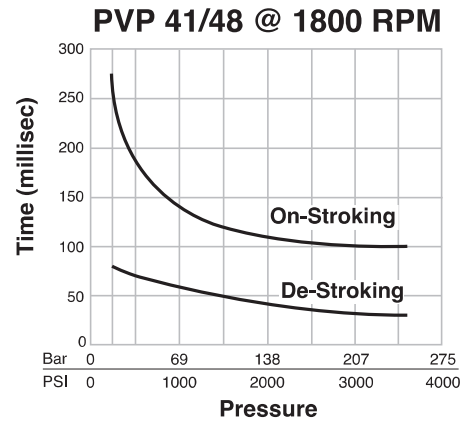
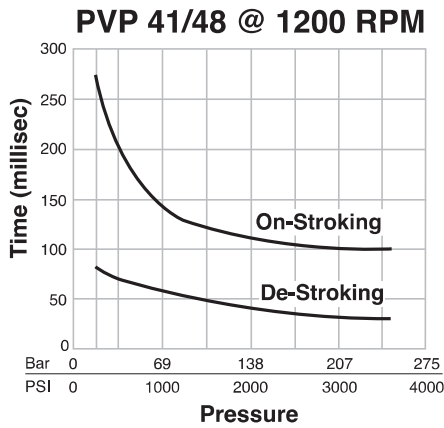


**Typical Performance Data - Fluid: Standard Hydraulic Oil 100 SSU @ 49°C (120°F)**

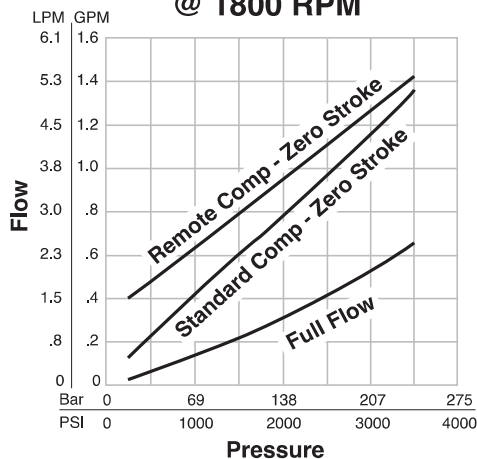
**Power Control**



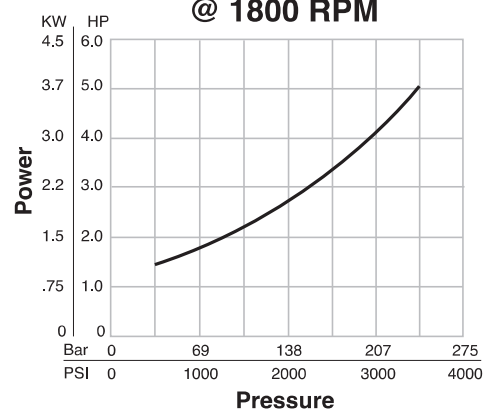
**Response Times**



**PVP 41/48  
 Approximate Case Drain Flow  
 @ 1800 RPM**



**Compensated Power  
 @ 1800 RPM**



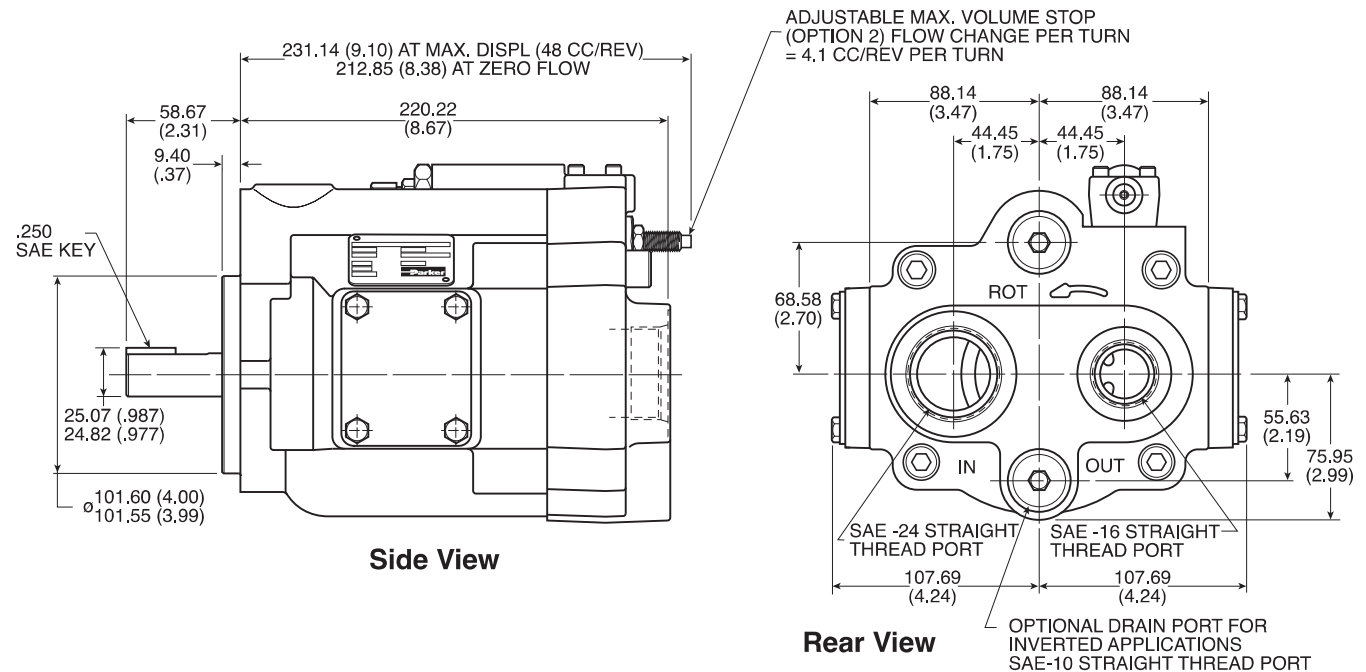
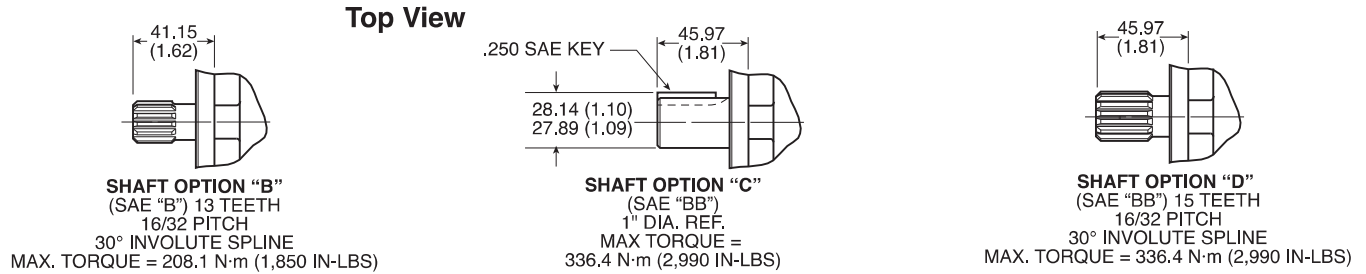
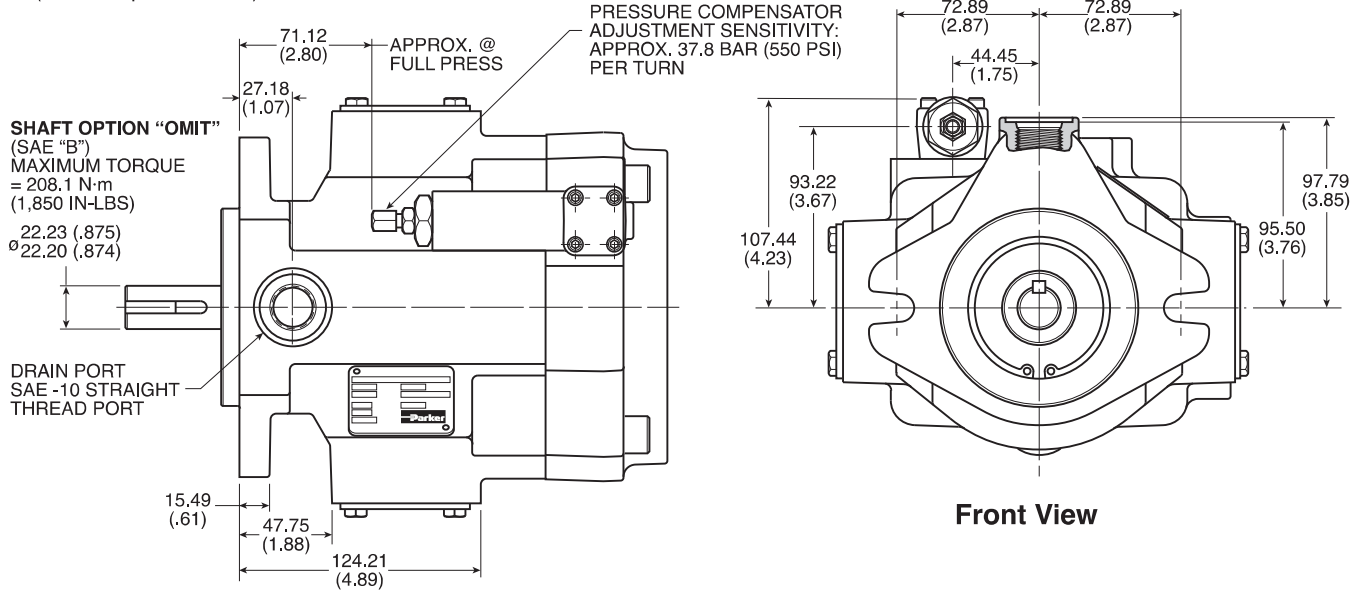
**Dimensional Data**

**Rear Ported Pump Dimensions**

\* Inch equivalents for millimeter dimensions are shown in (\*\*).

**NOTES:**

1. Righthand (CW) rotation pump shown. Lefthand (CCW) rotation pump will have inlet and outlet ports reversed.
2. Pump shown with standard pressure compensator (control option "omit").



**Dimensional Data**

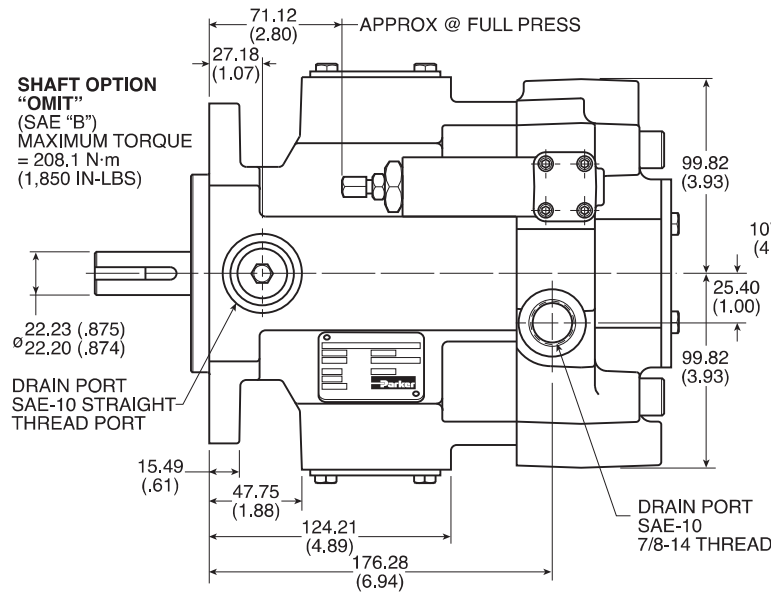
**Side Ported – Options 2 & 3 Dimensions**

\* Inch equivalents for millimeter dimensions are shown in (\*\*).

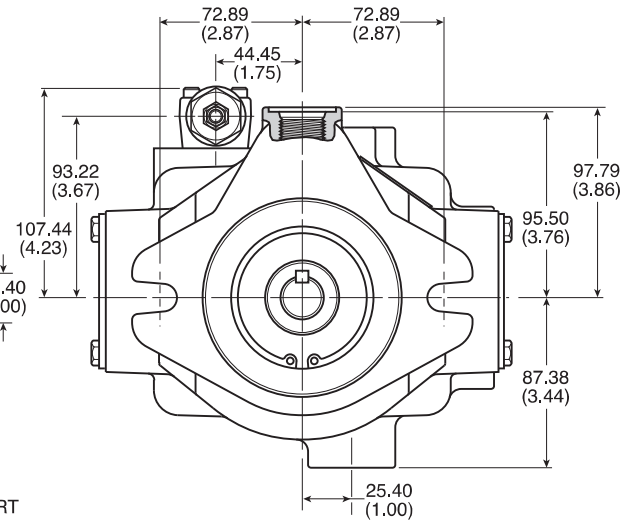
**NOTES:**

1. Righthand (CW) rotation pump shown. Lefthand (CCW) rotation pump will have inlet and outlet ports reversed.
2. Pump shown with standard pressure compensator (control option "omit").

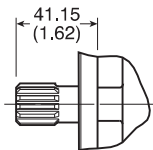
Port Size		
Option	Inlet	Outlet
2	1-1/2" SAE 4-Bolt Flange 1/2-13 Thread Standard Pressure Series (Code 61)	1" SAE 4-Bolt Flange 3/8-16 Thread Standard Pressure Series (Code 61)
3	SAE-24 Straight Thread (1-7/8-12UN-2B)	SAE-16 Straight Thread (1-5/16-12UN-2B)



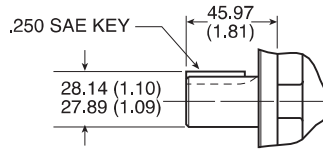
**Top View**



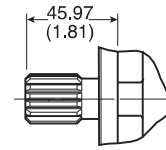
**Front View**



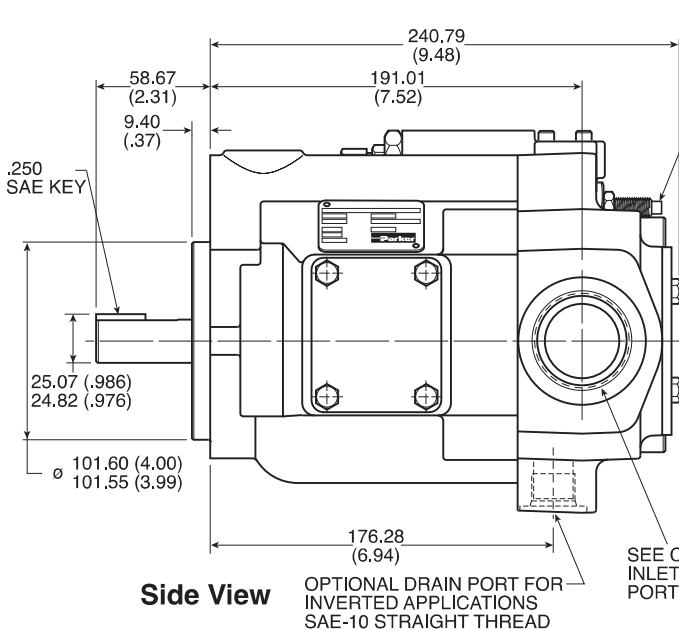
**SHAFT OPTION "B"**  
(SAE "B") 13 TEETH  
16/32 PITCH  
30° INVOLUTE SPLINE  
MAX. TORQUE = 208.1 N·m (1,850 IN-LBS)



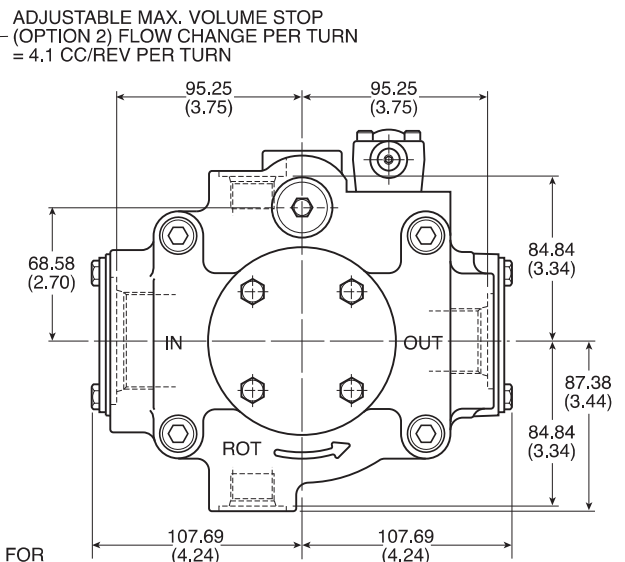
**SHAFT OPTION "C"**  
(SAE "BB")  
1" DIA. REF.  
MAX TORQUE = 336.4 N·m (2,990 IN-LBS)



**SHAFT OPTION "D"**  
(SAE "BB") 15 TEETH  
16/32 PITCH  
30° INVOLUTE SPLINE  
MAX. TORQUE = 336.4 N·m (2,990 IN-LBS)



**Side View**



**Rear View**

SEE CHART FOR INLET & OUTLET PORT SPECIFICATIONS

**Dimensional Data**

**Side Ported – Option 9 Dimensions**

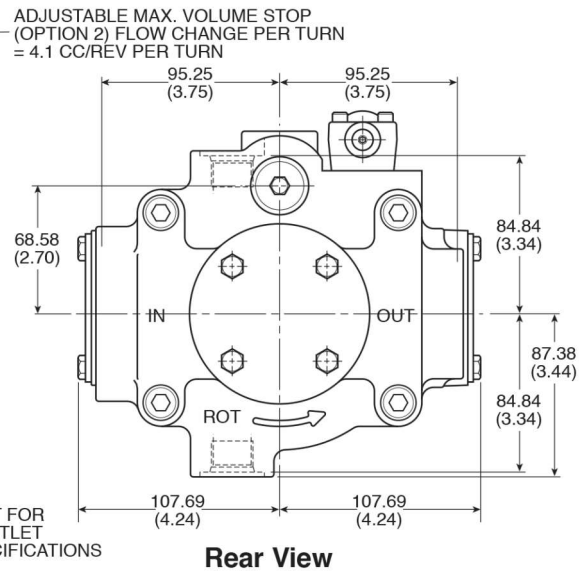
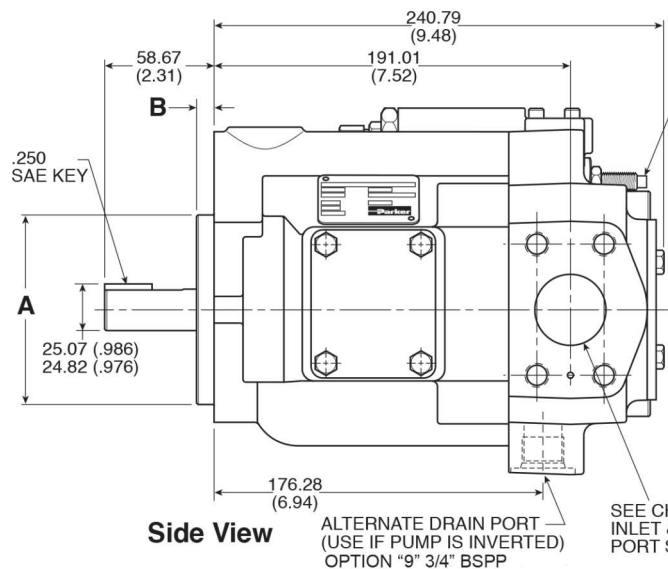
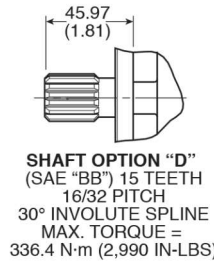
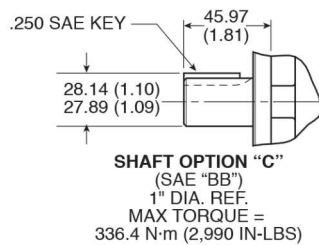
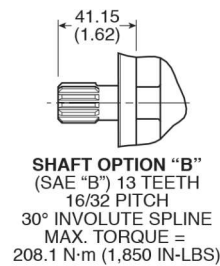
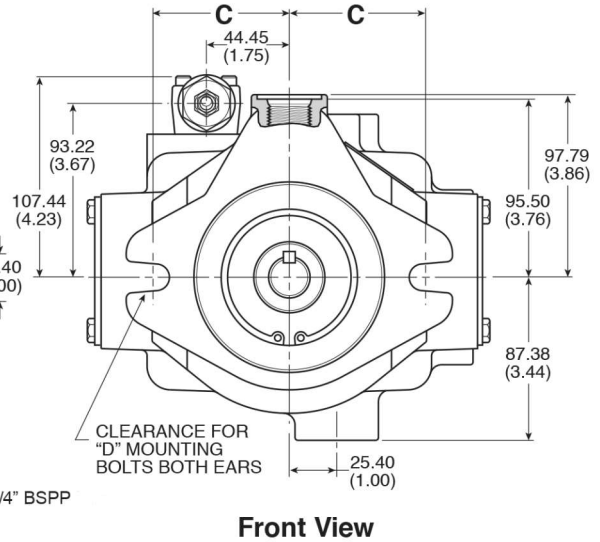
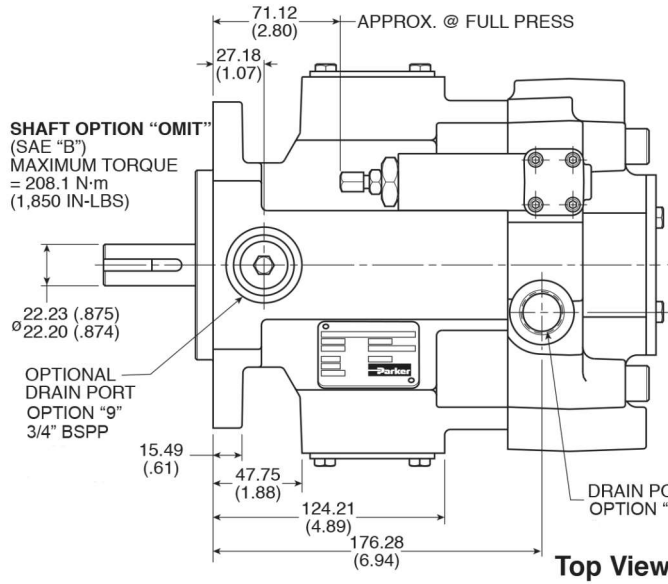
\* Inch equivalents for millimeter dimensions are shown in (\*\*).

**NOTES:**

1. Righthand (CW) rotation pump shown. Lefthand (CCW) rotation pump will have inlet and outlet ports reversed.
2. Pump shown with standard pressure compensator (control option "omit").

Pilot Dimensions				
Shaft Option	A	B	C	D
Omit	101.60/101.55	9.40	72.90	ø 12.70
B, C, D	(4.000/3.998)	(.37)	(2.87)	(.50)

Inlet Port	Outlet Port
1-1/2" SAE 4-Bolt Flange M12 Thread Standard Pressure Series (Code 61)	1" SAE 4-Bolt Flange M10 Thread Standard Pressure Series (Code 61)



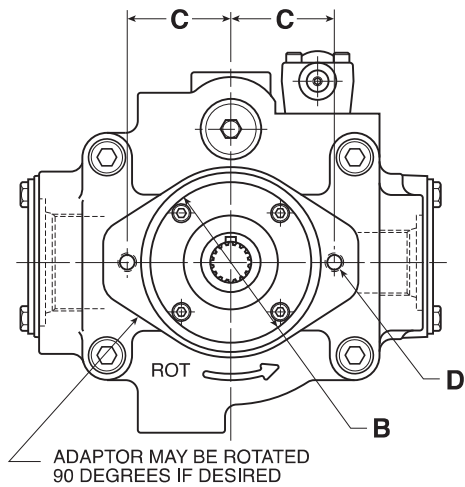
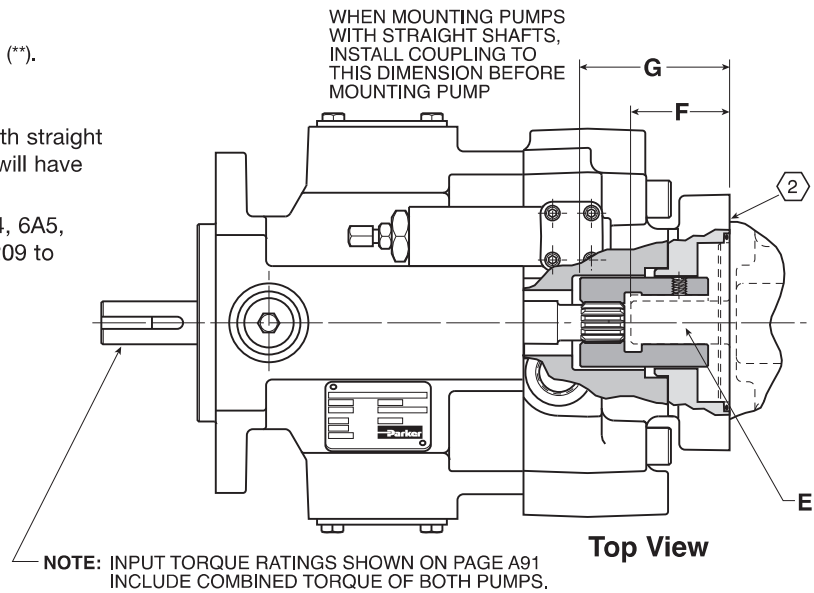
**Dimensional Data**

**Thru-Shaft Pump Dimensions**

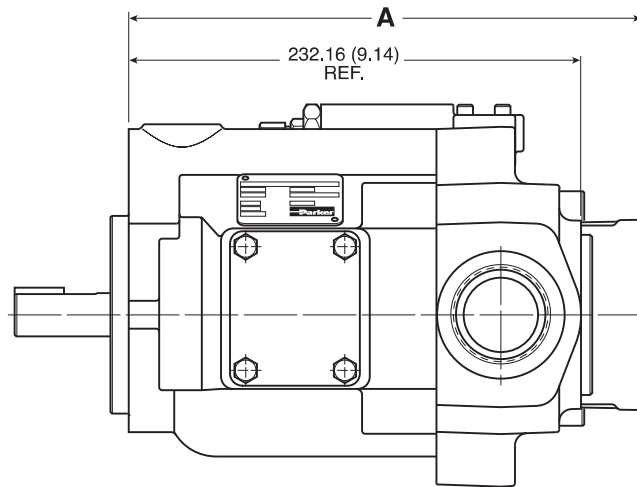
\* Inch equivalents for millimeter dimensions are shown in (\*\*).

**NOTES:**

1. Righthand (CW) rotation side ported pump with straight thread ports shown. Lefthand (CCW) pumps will have inlet and outlet ports reversed.
2. Later versions of Thru-Shaft options 6A2, 6A4, 6A5, 9A4 and 9A5, incorporate a gasket, P/N 801209 to seal on the rear pump rather than an o-ring.
3. Maximum torque transmitting capacity for rear pumps = 208.1 N•m (1,850 In-Lbs).



**Rear View**



**Side View**

**Dimensions – Thru Shaft Options**

VARIATION	A	B	C	D	E	F	G
6A1	257.56 (10.14)	50.83/50.85 (2.001/2.002)	41.28 (1.63)	5/16-18UNC-2B	∅ .50 X .125 Key	38.10 (1.50)	69.09 (2.72)
6A2	263.91 (10.39)	82.58/82.60 (3.251/3.252)	53.19 (2.09)	3/8-16UNC-2B	∅ .75 X .1875 Key	44.45 (1.75)	75.44 (2.97)
6A4	263.91 (10.39)	82.58/82.60 (3.251/3.252)	53.19 (2.09)	3/8-16UNC-2B	9 Tooth 16/32 Pitch	31.75 (1.25)	N/A
6A5	263.91 (10.39)	82.58/82.60 (3.251/3.252)	53.19 (2.09)	3/8-16UNC-2B	11 Tooth 16/32 Pitch	31.75 (1.25)	N/A
6B1	277.88 (10.94)	101.63/101.65 (4.001/4.002)	73.03 (2.88)	1/2-13UNC-2B	∅ .875 X .25 Key	58.67 (2.31)	89.41 (3.52)
6B2	277.88 (10.94)	101.63/101.65 (4.001/4.002)	73.03 (2.88)	1/2-13UNC-2B	∅ 1.00 X .25 Key	45.97 (1.81)	89.41 (3.52)
6B3	277.88 (10.94)	101.63/101.65 (4.001/4.002)	73.03 (2.88)	1/2-13UNC-2B	13 Tooth 16/32 Pitch	41.15 (1.62)	N/A
6B4	277.88 (10.94)	101.63/101.65 (4.001/4.002)	73.03 (2.88)	1/2-13UNC-2B	15 Tooth 16/32 Pitch	45.97 (1.81)	N/A
9A4	263.91 (10.39)	82.58/82.60 (3.251/3.252)	53.19 (2.09)	M10 x 1.50	9 Tooth 16/32 Pitch	31.75 (1.25)	N/A
9A5	263.91 (10.39)	82.58/82.60 (3.251/3.252)	53.19 (2.09)	M10 x 1.50	11 Tooth 16/32 Pitch	31.75 (1.25)	N/A
9B3	277.88 (10.94)	101.63/101.65 (4.001/4.002)	73.03 (2.88)	M12 x 1.75	13 Tooth 16/32 Pitch	41.15 (1.62)	N/A
9B4	277.88 (10.94)	101.63/101.65 (4.001/4.002)	73.03 (2.88)	M12 x 1.75	15 Tooth 16/32 Pitch	45.97 (1.81)	N/A



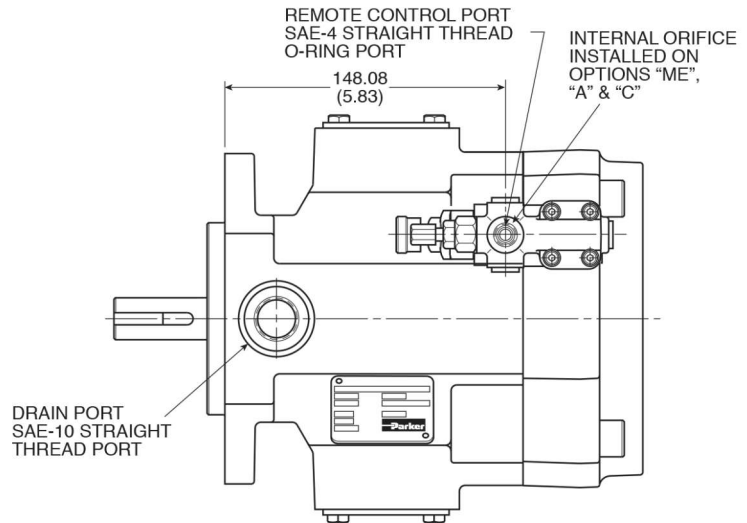
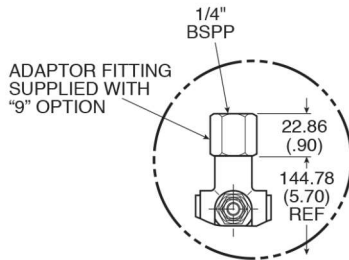
**Dimensional Data**

**Remote Compensator Control Pump Dimensions**

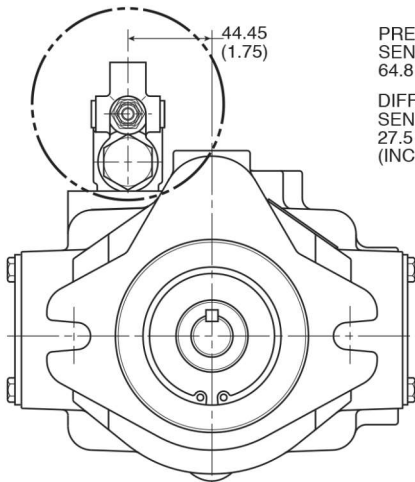
\* Inch equivalents for millimeter dimensions are shown in (\*\*).

**NOTES:**

1. Righthand (CW) rotation rear ported pump shown. Lefthand (CCW) pumps will have inlet and outlet ports reversed.
2. When controlling pump compensator pressure with remote relief valve, size relief valve to pass 1.89 LPM (.5 GPM).
3. Remote compensator shown on rear ported pump. Also available on side ported or thru-shaft option pumps.

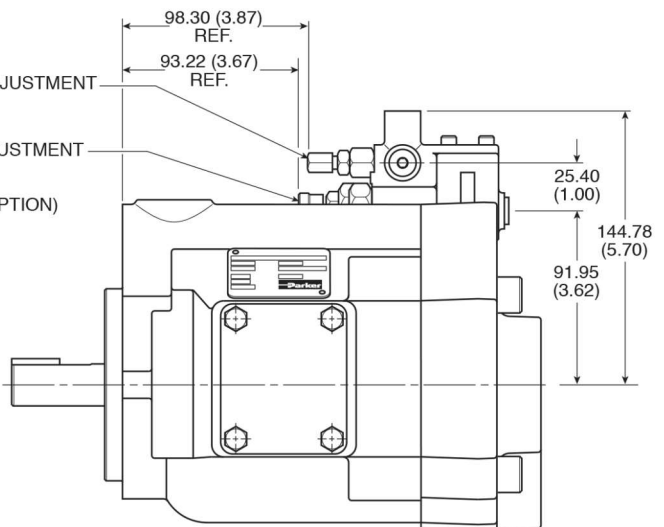


**Top View**



**Front View**

PRESSURE COMPENSATOR ADJUSTMENT  
SENSITIVITY: APPROXIMATELY  
64.8 BAR (940 PSI) PER TURN  
DIFFERENTIAL PRESSURE ADJUSTMENT  
SENSITIVITY: APPROXIMATELY  
27.5 BAR (400 PSI) PER TURN  
(INCLUDED ON "A" CONTROL OPTION)



**Side View**

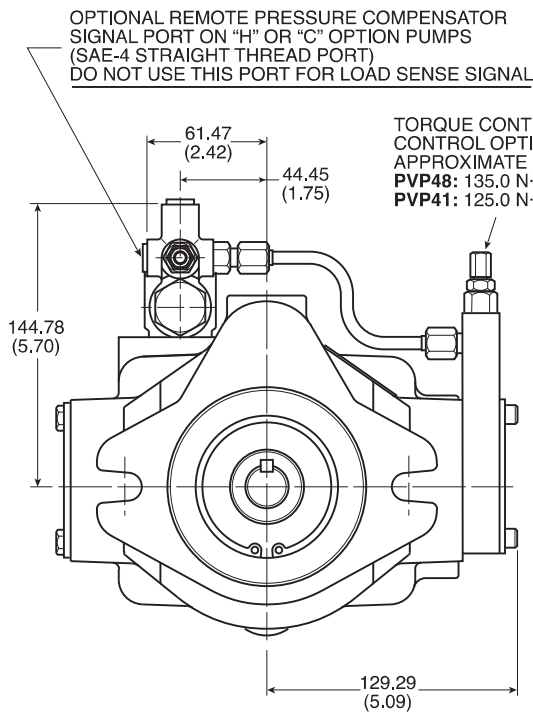
**Dimensional Data**

**Power (Torque) Control Pump Dimensions**

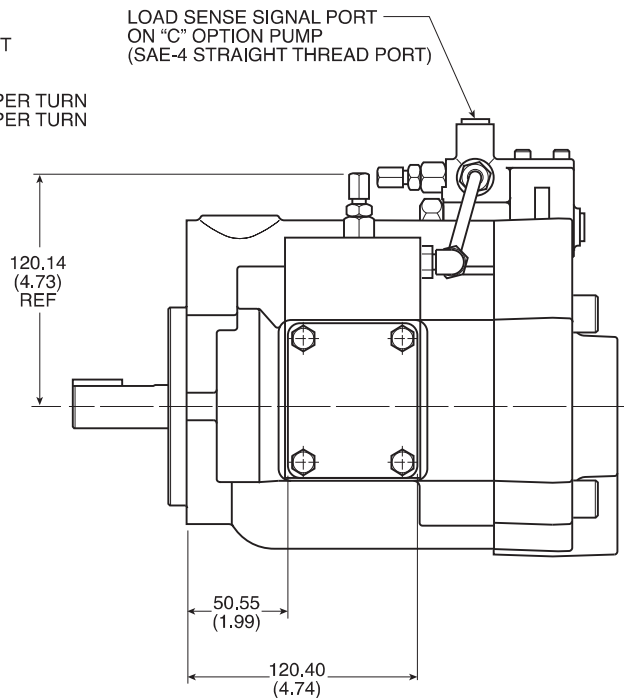
\* Inch equivalents for millimeter dimensions are shown in (\*\*).

**NOTES:**

1. Righthand (CW) ported pump shown.
2. Power (Torque) control shown with rear ported pump.  
Also available on side ported and thru-shaft pumps.
3. Power torque control does not change with rotation.



**Front View**



**Side View**