

Multiple Pumps

PVP

Displacement

Pressure Range

Shaft

Port & Flange Sizes

Rotation

Volume Stop Option

Thru-Shaft Threads

Thru-Shaft Option

Control Option

Seals

Paint

Multiple Pumps

Code	CM ³ /REV (In ³ /Rev.)
41	41 (2.5)
48	48 (2.9)

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

Code	Pressure Range*
10	17-69 bar (250-1000 PSI)
20	17-138 bar (250-2000 PSI)
30	17-207 bar (250-3000 PSI)
36	17-248 bar (250-3600 PSI)

* Minimum value of pressure range only applies on control option "omit" code.

Code	Shaft Option	Pilot
Omit	7/8" Keyed (SAE B)	SAE "B"
B*	13T Spline (SAE B)	SAE "B"
C	1" Keyed (SAE BB)	SAE "B"
D	15T Spline (SAE BB)	SAE "B"

* Maximum input torque is 208.1 N•m (1850 In-Lbs).

Code	Rotation*
R	(CW)
L	(CCW)

* Viewed from shaft end.

Code	Thru-Shaft Threads
Omit	No Thru-Shaft
6*	UNC
9**	Metric

* Available with 2 or 3 port option only.

** Available with 9 port option only.

Code	Volume Stop Options
Omit	No Volume Stop
2	Adj. Maximum Volume Stop

Code	Painting
Omit	No Paint
P	Paint

Code	Seals
Omit	Nitrile
V	Fluoroelastomers*

* **FLUOROELASTOMERS** are available under various registered trademarks, including

FLUOROCARBON (a registered trademark of DuPont) and **FLUOREL** (a registered trademark of 3M)."

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

Code	Control Options
Omit	Pressure Compensated
**M	Remote Pressure (Int.)
**ME	Remote Pressure (Ext.)
A	Pressure and Flow
C	Pressure, Flow, and Power
H*	Pressure Compensated and Power

* Specify HP, RPM & comp setting when ordering or will get default.

** "M" (May be remotely controlled)
 "ME" (Requires external pilot)

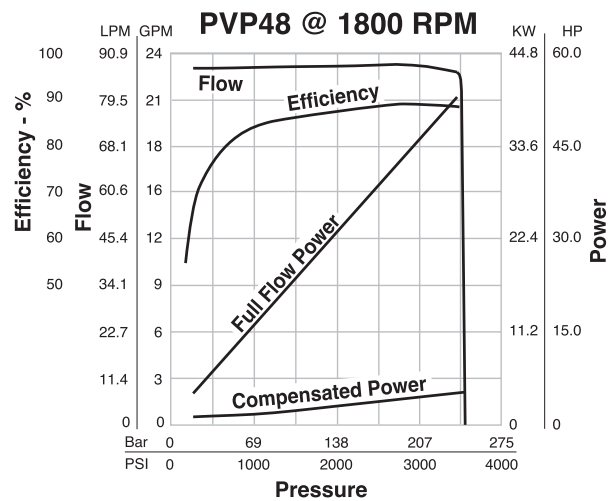
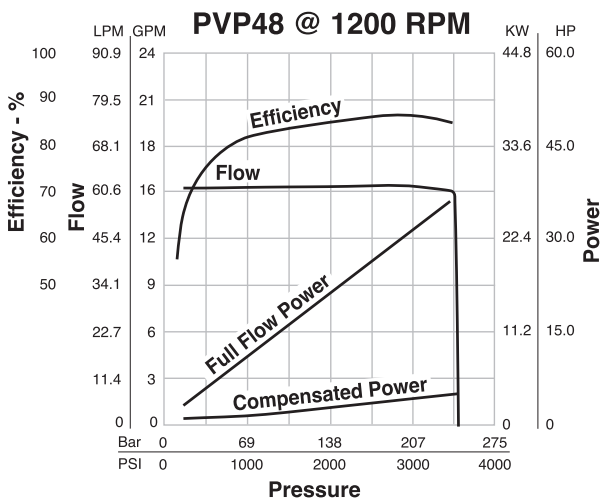
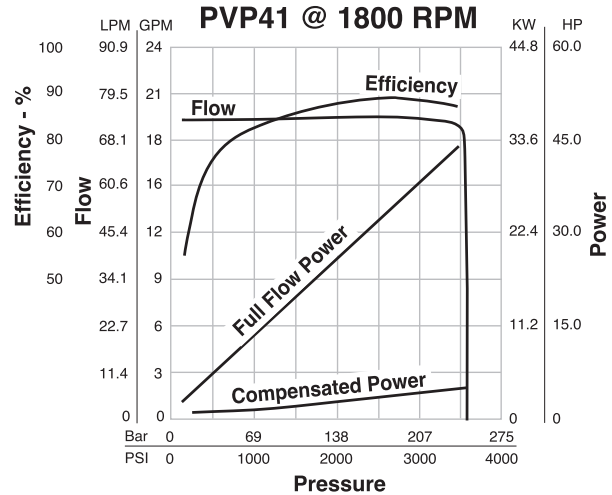
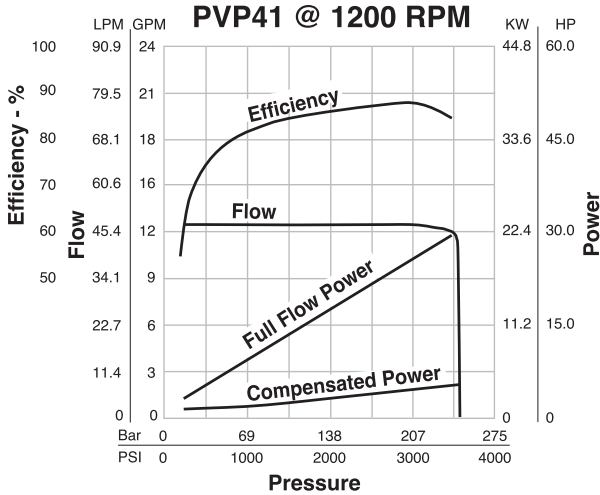
Code	Ports	
	Type	Description
Omit	SAE	Rear - Straight Thread
2	SAE	Side - Flange (Inch)
3	SAE	Side - Straight Thread
9	BSPP	Side - Flange (Metric Threads)

Code	Thru-Shaft Options
Omit	No Thru-Shaft
A1*	SAE "AA" Pilot / 1/2" Key
A2*	SAE "A" Pilot / 3/4" Key
A4	SAE "A" Pilot / SAE "A" 9T Spline
A5	SAE "A" Pilot / 11T Spline
B1*	SAE "B" Pilot / SAE "B" 7/8" Key
B2*	SAE "B" Pilot / SAE "BB" 1" Key
B3	SAE "B" Pilot / SAE "B" 13T Spline
B4	SAE "B" Pilot / SAE "BB" 15T Spline

* Keyed option only available with UNC threads.



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



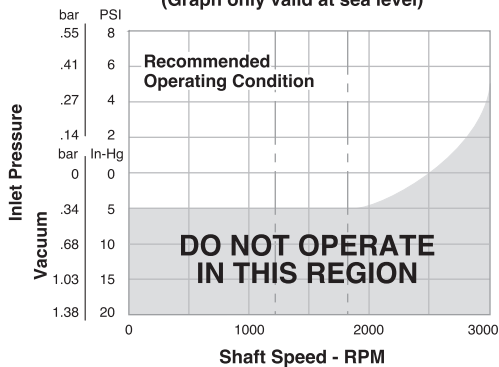
NOTE: The efficiencies and data in the graph are good only for pumps running at 1200 or 1800 RPM and stroked to maximum. To calculate approximate horsepower for the other conditions, use the following formula:

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

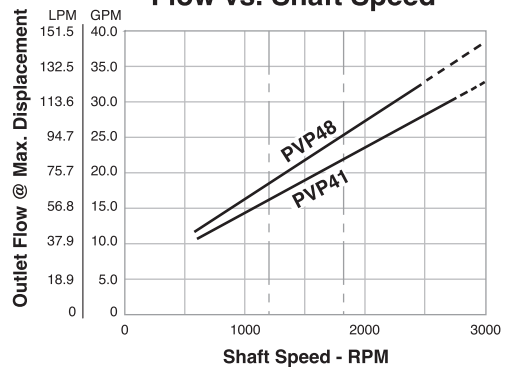
- Q = Actual Output Flow in GPM
- PSI = Pressure At Pump Outlet
- CHp = Input Horsepower @ Full compensation @ 1800 RPM (from graph read at operating pressure)

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)

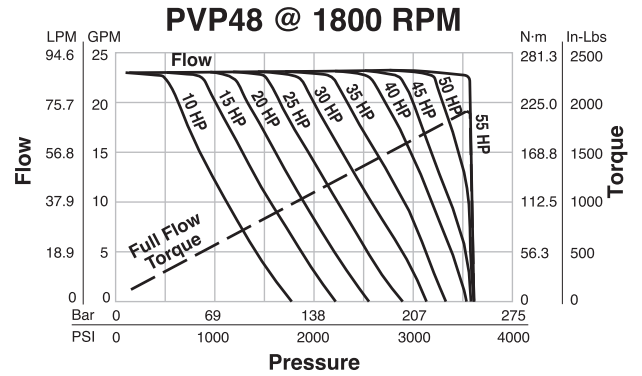
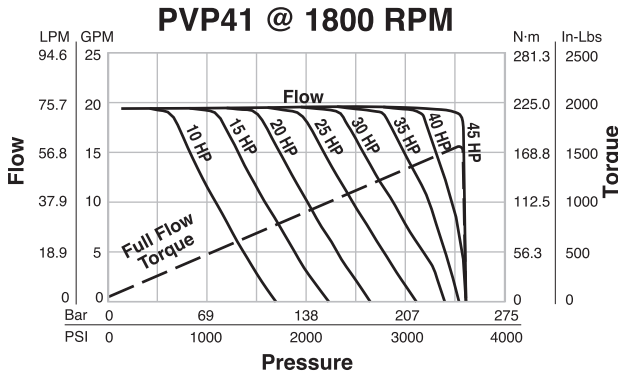


PVP 41/48 Flow vs. Shaft Speed

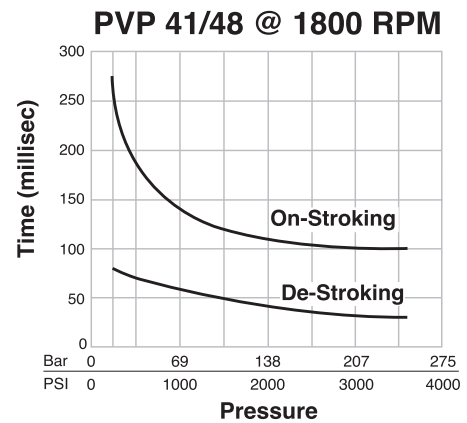
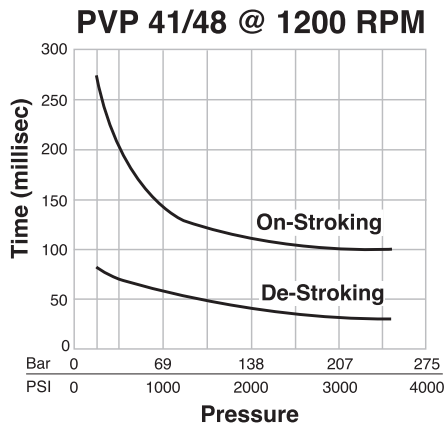


Typical Performance Data - Fluid: Standard Hydraulic Oil 100 SSU @ 49°C (120°F)

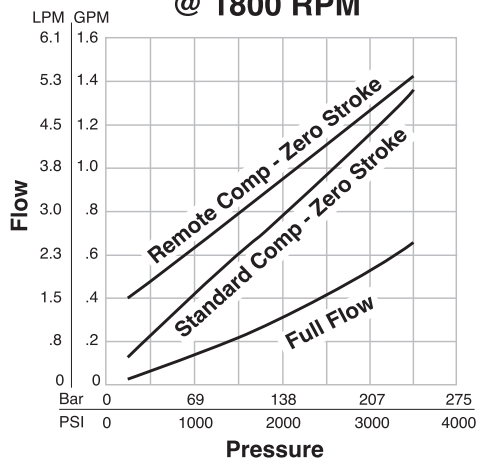
Power Control



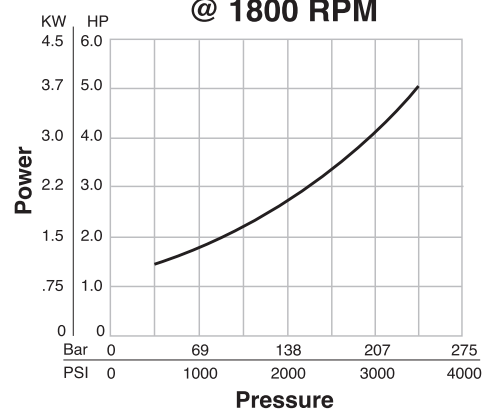
Response Times



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



**Compensated Power
 @ 1800 RPM**



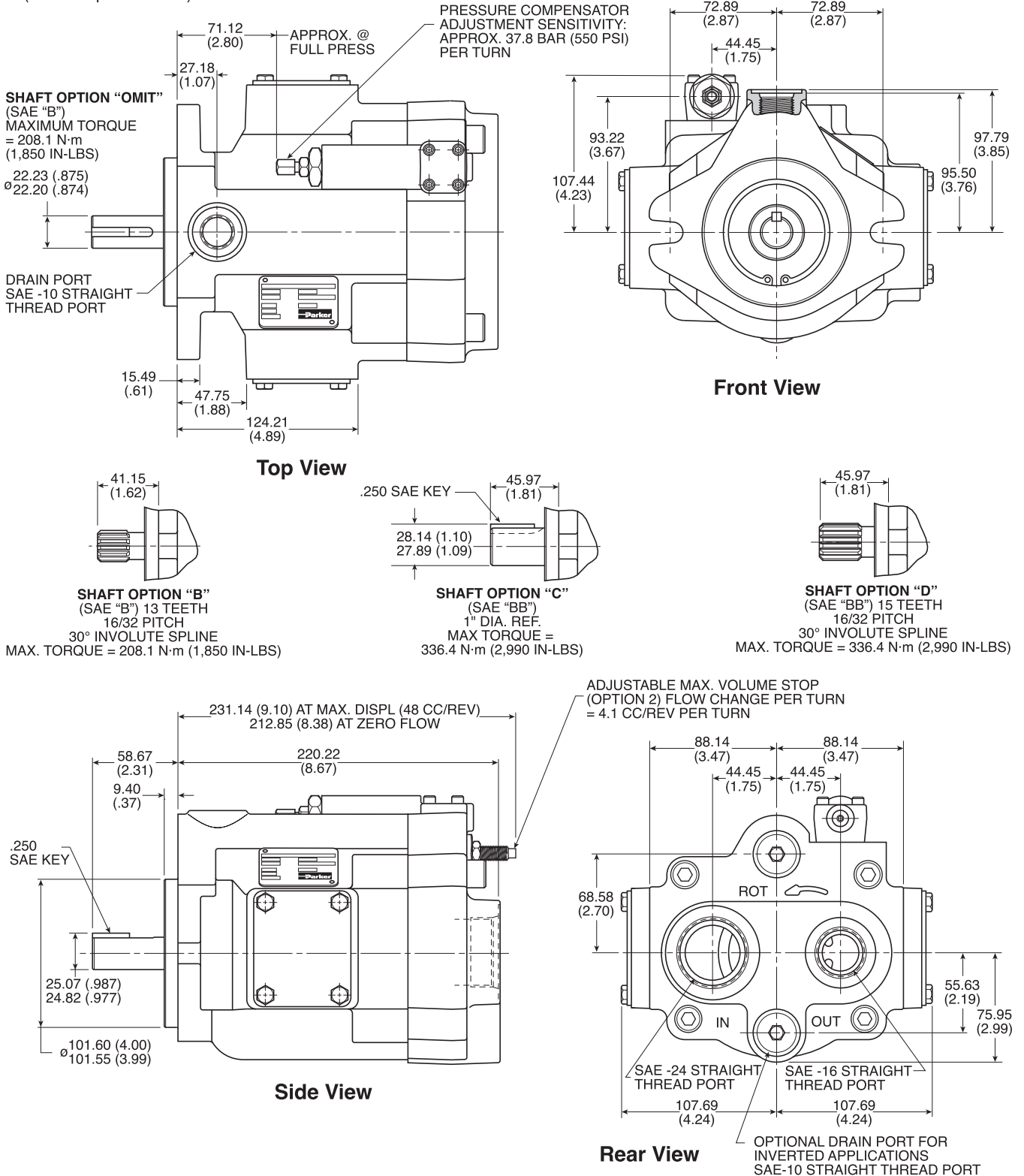
Dimensional Data

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

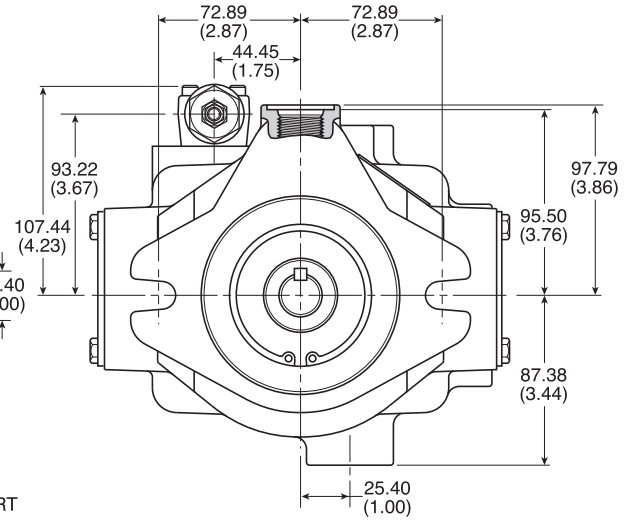
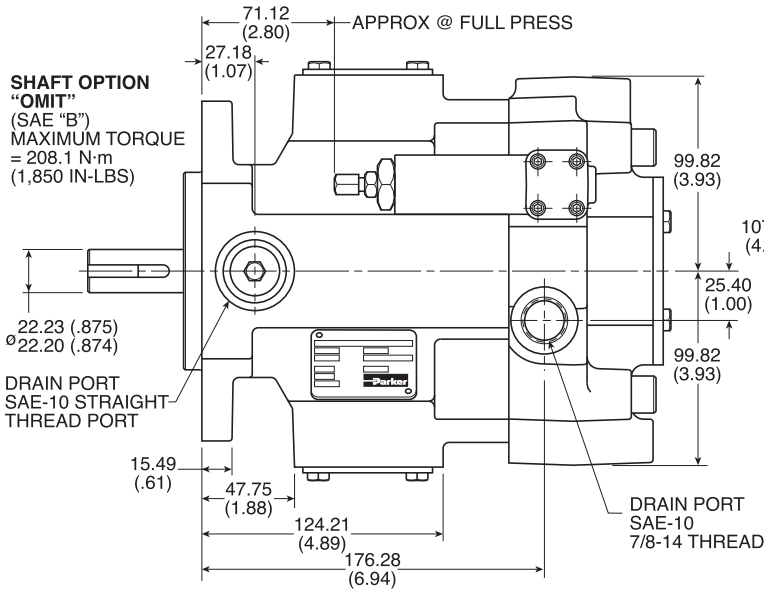
Side Ported – Options 2 & 3 Dimensions

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

NOTES:

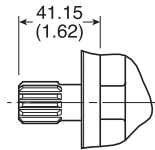
1. Righthand (CW) rotation pump shown. Lefthand (CCW) rotation pump will have inlet and outlet ports reversed.
2. Pump shown with standard pressure compensator (control option "omit").

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)

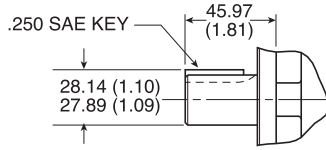


Front View

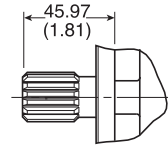
Top View



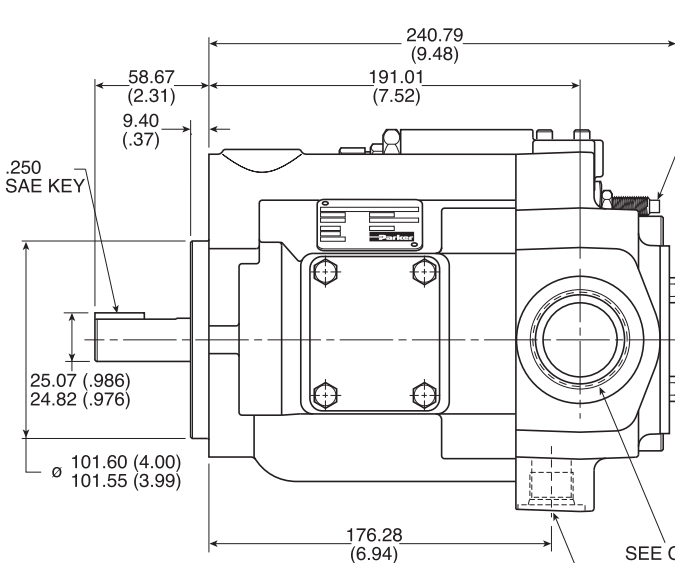
SHAFT OPTION "B"
(SAE "B") 13 TEETH
16/32 PITCH
30° INVOLUTE SPLINE
MAX. TORQUE = 208.1 N·m (1,850 IN-LBS)



SHAFT OPTION "C"
(SAE "BB") 15 TEETH
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)

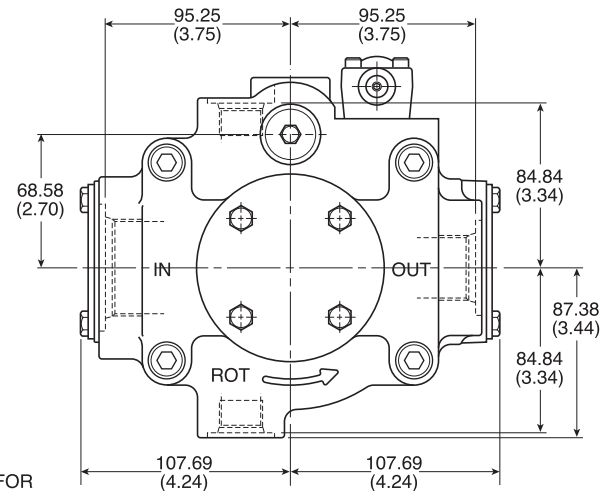


Side View

OPTIONAL DRAIN PORT FOR INVERTED APPLICATIONS SAE-10 STRAIGHT THREAD

SEE CHART FOR INLET & OUTLET PORT SPECIFICATIONS

ADJUSTABLE MAX. VOLUME STOP (OPTION 2) FLOW CHANGE PER TURN = 4.1 CC/REV PER TURN



Rear View

Dimensional Data

Side Ported – Option 9 Dimensions

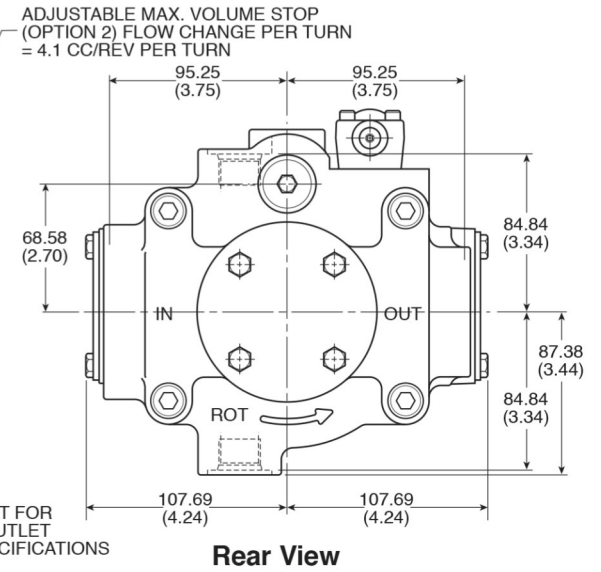
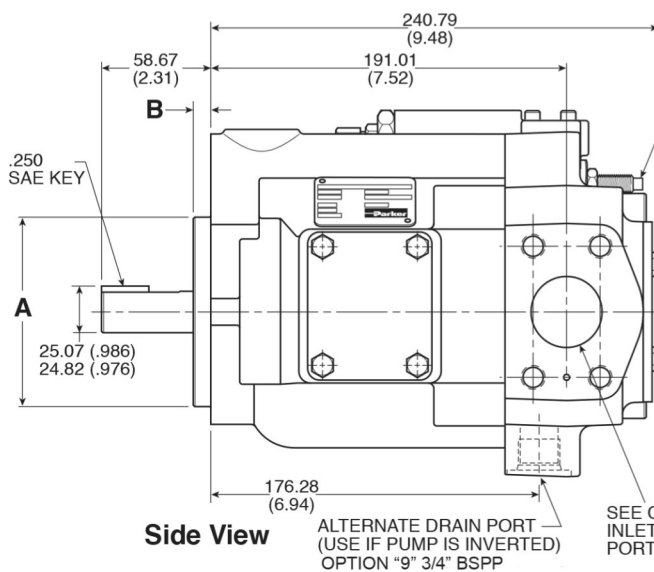
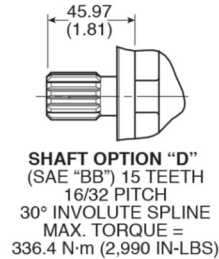
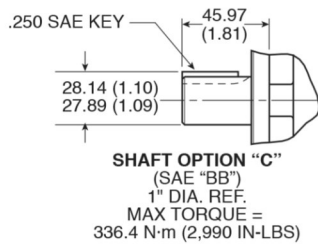
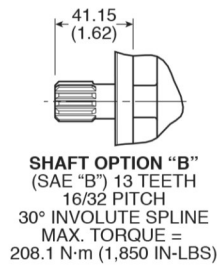
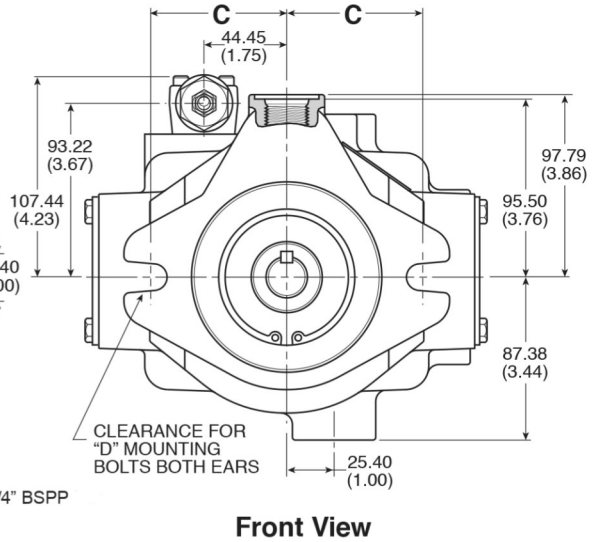
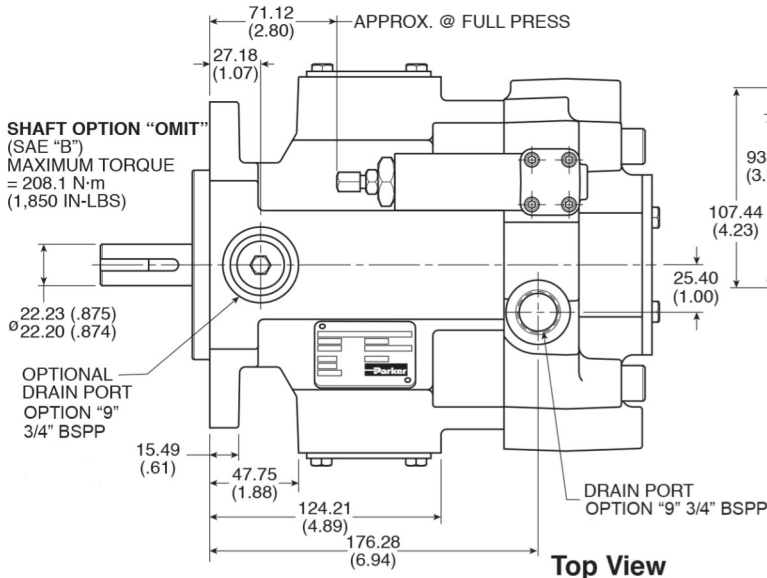
* Inch equivalents for millimeter dimensions are shown in (**).

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)



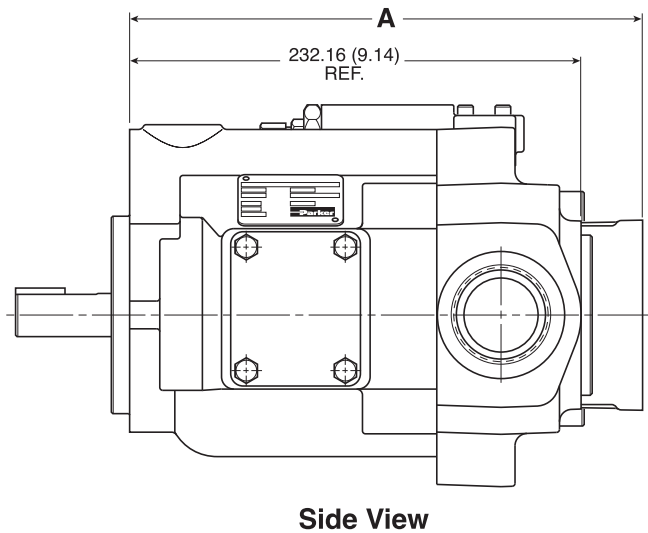
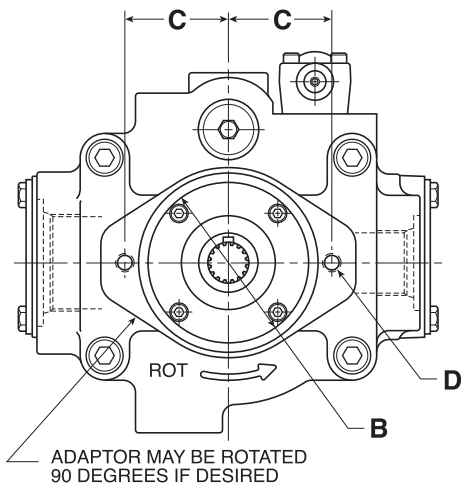
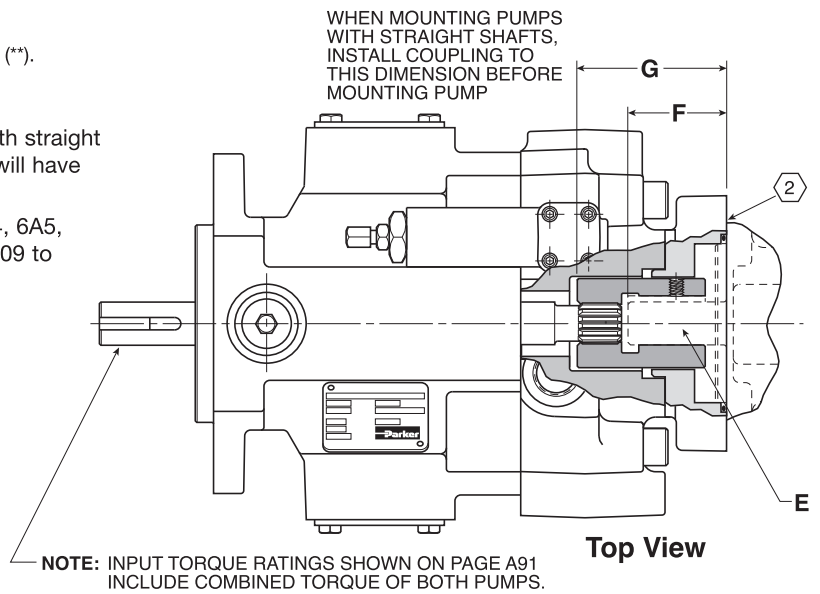
Dimensional Data

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

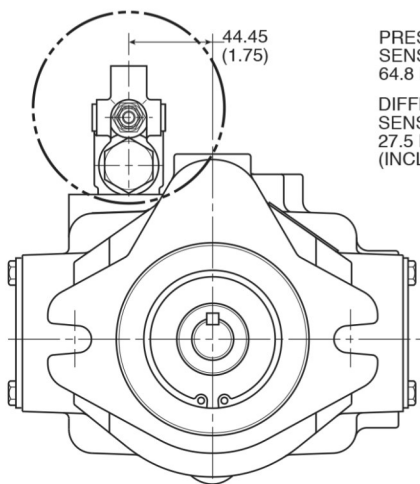
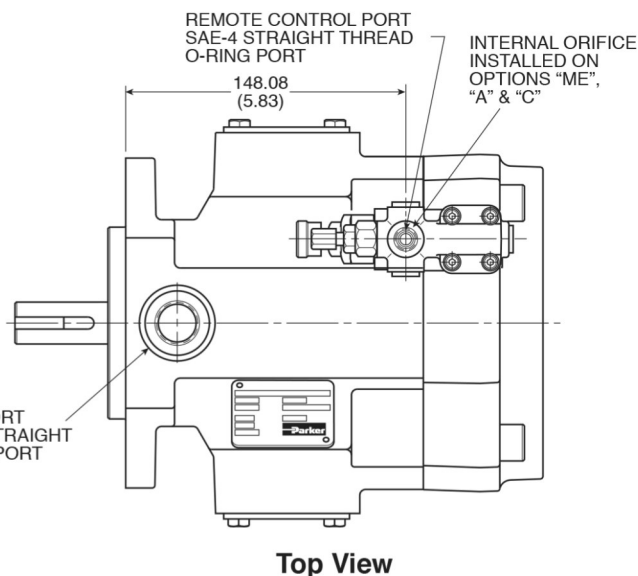
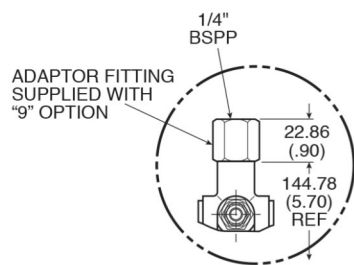
Dimensional Data

Remote Compensator Control Pump Dimensions

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

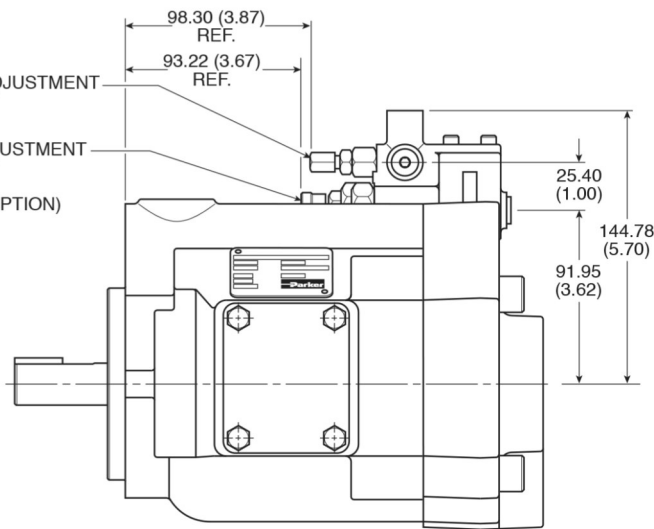
NOTES:

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.



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

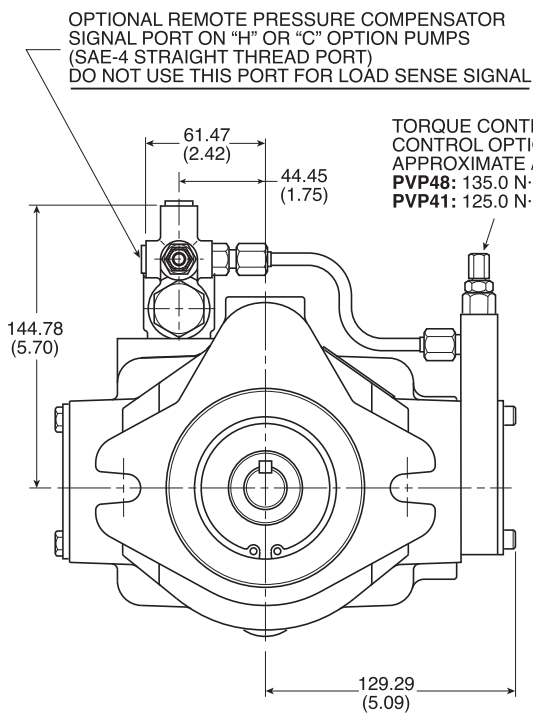
Dimensional Data

Power (Torque) Control Pump Dimensions

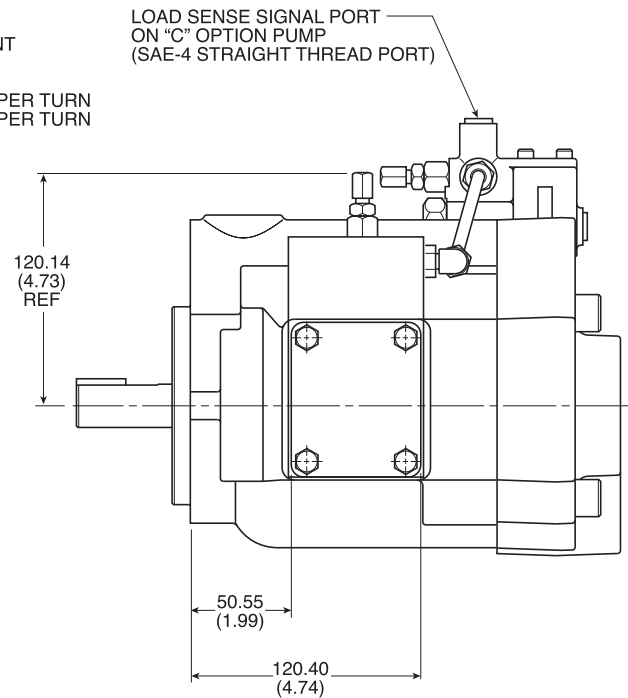
* Inch equivalents for millimeter dimensions are shown in (**).

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