

Technical Information

Performance Information

Series PVP16 Pressure Compensated, Variable Volume, Piston Pump

Features

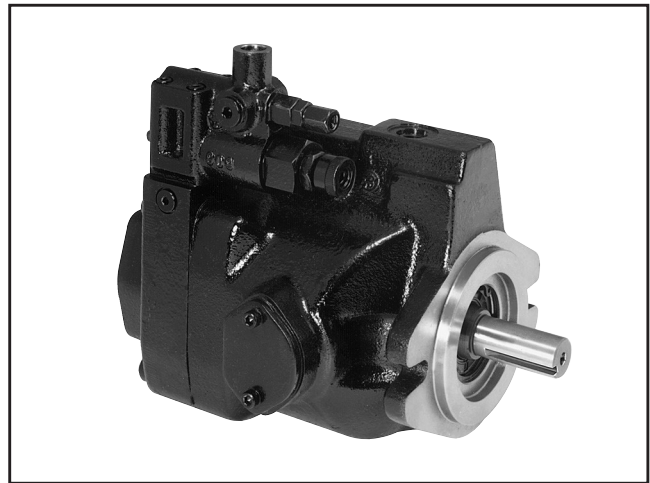
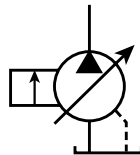
- High Strength Cast-Iron Housing for Reliability and Quiet Operation
- Optional Inlet/Outlet Locations for Ease of Installation
- Replaceable Bronze Port Plate
- Replaceable Piston Slipper Plate
- Thru-Shaft Capability SAE A and AA Pilots Offered
- Low Noise Levels - Promote More Comfortable Operating Environment
- 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)

Speed Ratings: 600 to 3000 RPM

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

Housing Material: Cast-Iron

Filtration: Maintain SAE Class 4,
ISO 16/13,
ISO 18/15 Maximum

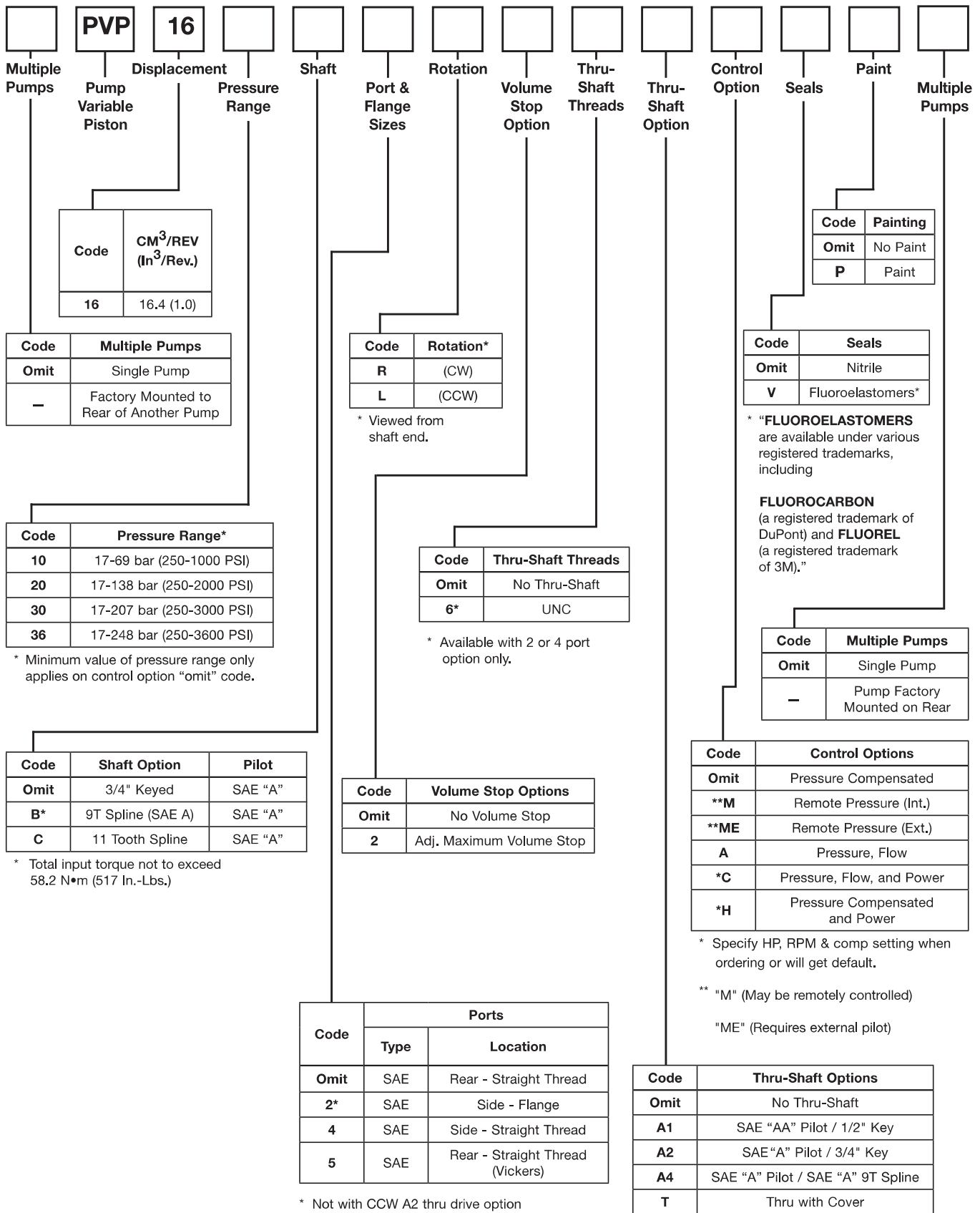
Mounting: SAE "A"
Flange Mount

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

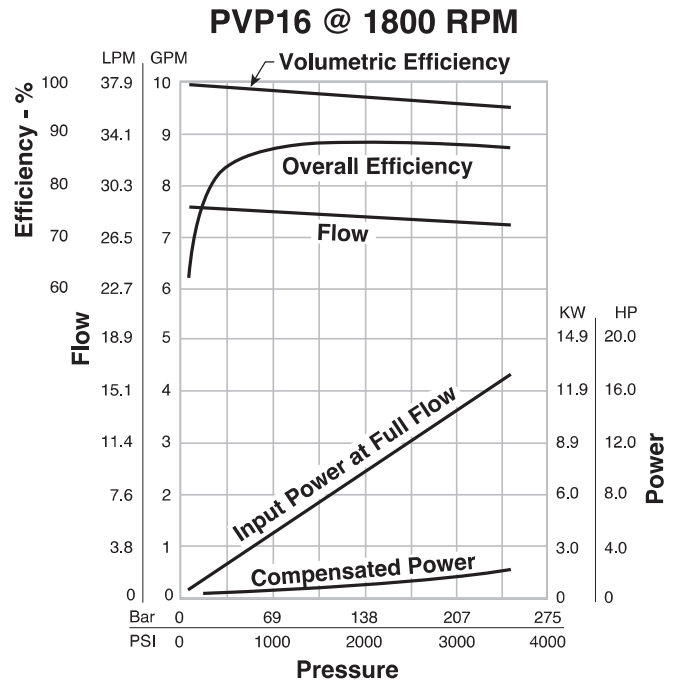
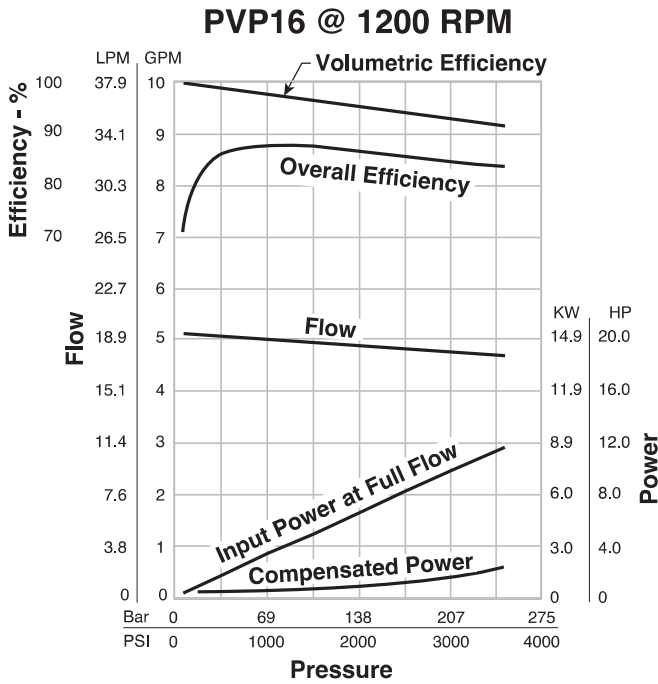
Pump Model	Displacement cc/rev (In ³ /rev)	Pump Delivery @ 21 bar (300 PSI) in LPM (GPM)		Input Power At 1800 RPM, Max. Displacement & 248 bar (3600 PSI)
		1200 RPM	1800 RPM	
PVP16	16.4 (1.0)	19.7 (5.2)	29.5 (7.8)	13.1 kw (17.5 hp)

Ordering Information



Performance Data

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



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

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

WHERE:

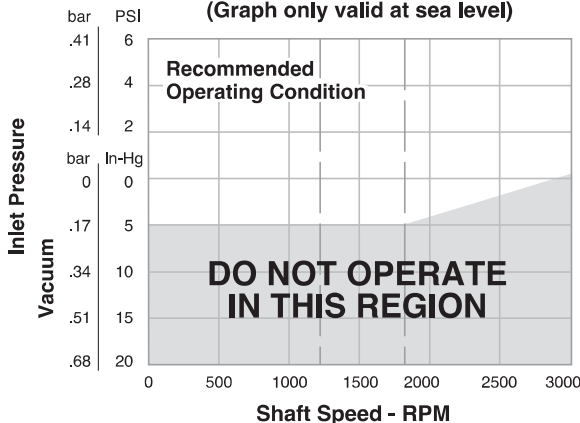
Q = Actual Output Flow in GPM

PSI = Pressure At Pump Outlet

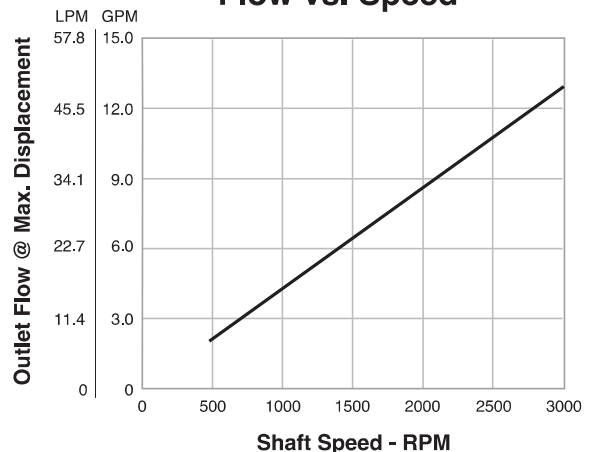
CHp = Input Horsepower @ Full Compensation @ 1800 RPM (from graph read at operating pressure)

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

PVP16 Inlet Characteristics at Full Displacement
(Graph only valid at sea level)

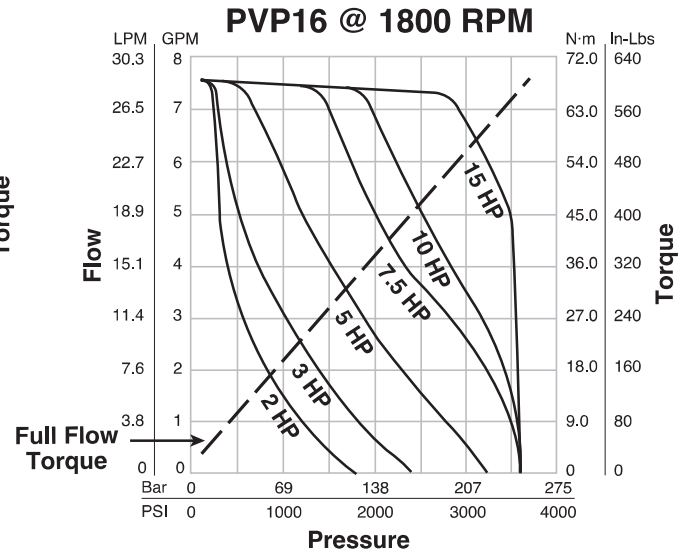
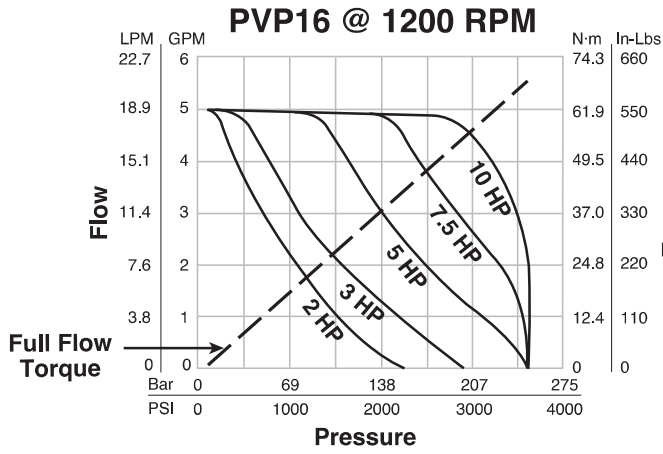


Flow vs. Speed

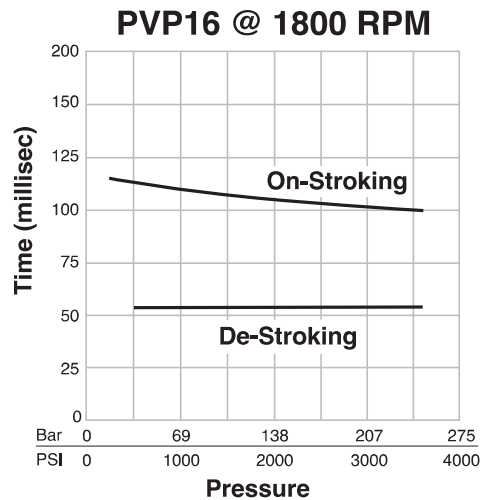
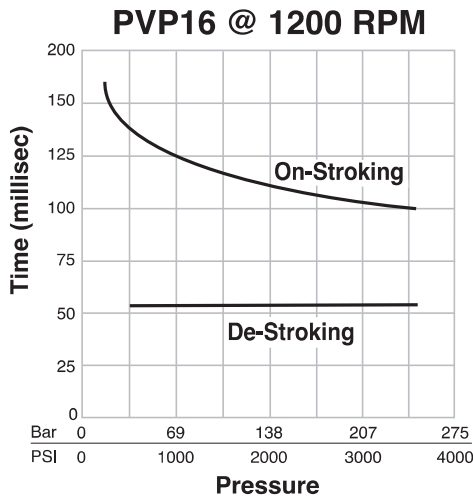


Typical Performance Data - Fluid: Standard Hydraulic Oil 100 SSU @ 49°C (120°F)

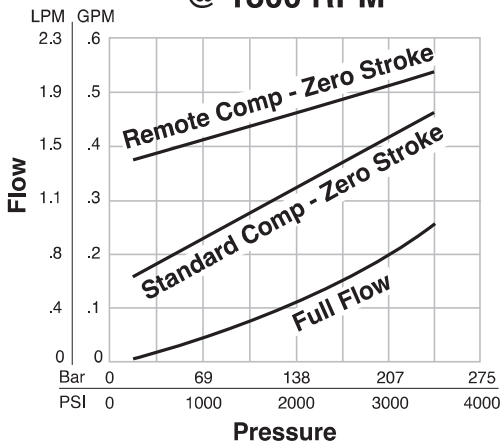
Power Control



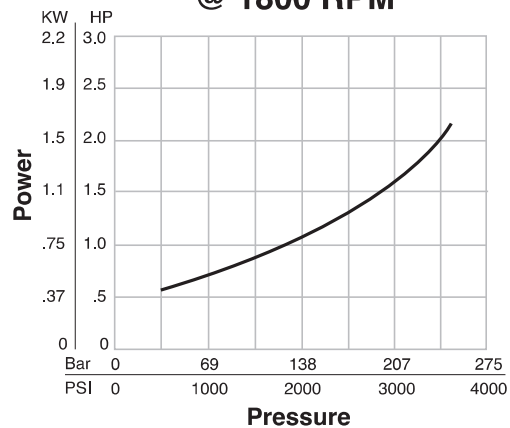
Response Times



PVP16 Approximate Case Drain Flow @ 1800 RPM



PVP16 Compensated Power @ 1800 RPM



Dimensional Data

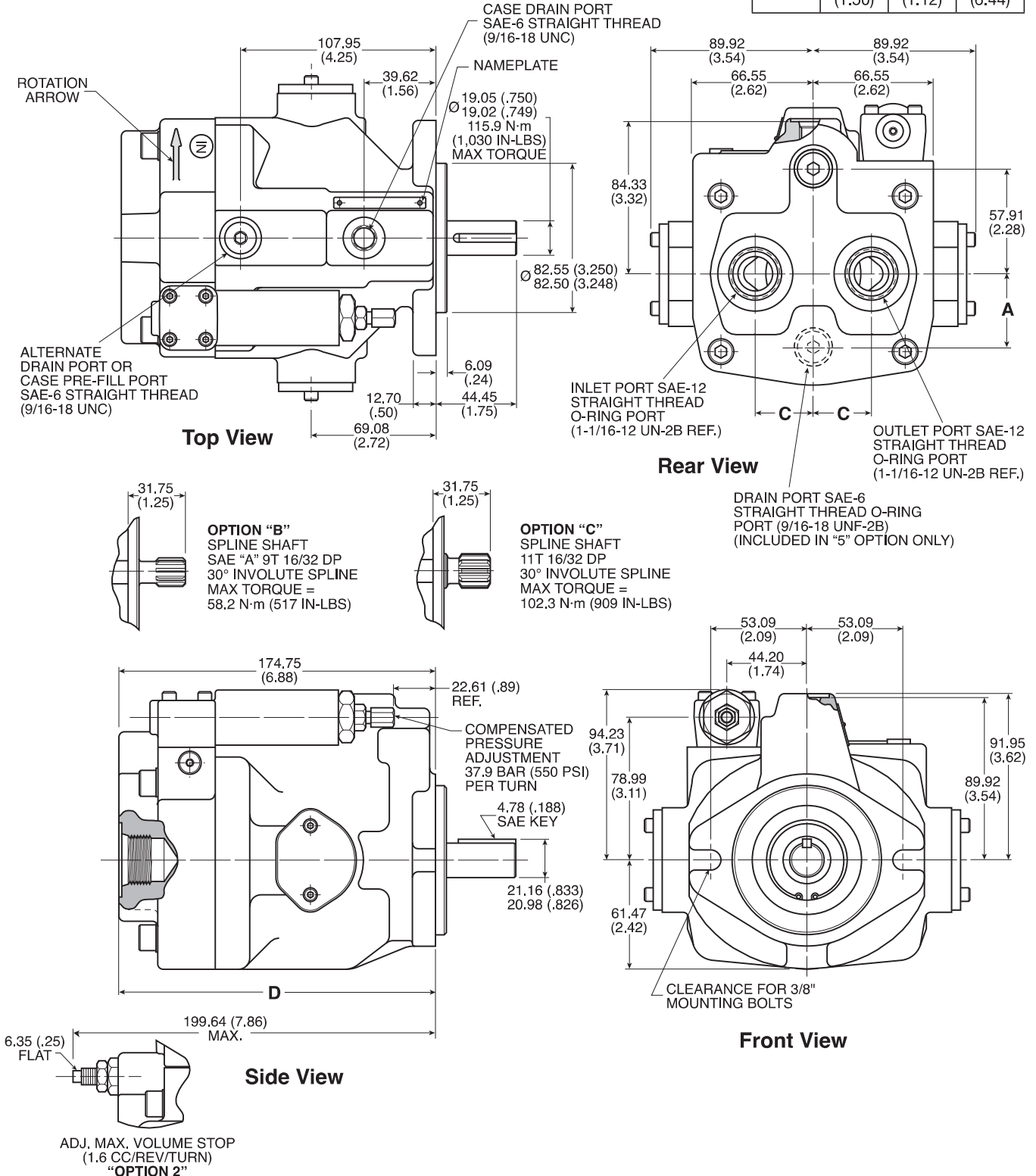
Rear Ported Pump Dimensions

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

NOTE:

Illustration shows Righthand (CW) rotation pump. Lefthand (CCW) pumps will have inlet and outlet ports reversed with compensator on outlet side.

Pilot Dimensions			
Pilot Option	A	C	D
OMIT	N/A	32.00 (1.26)	173.23 (6.82)
5	38.10 (1.50)	28.44 (1.12)	144.53 (6.44)



Dimensional Data

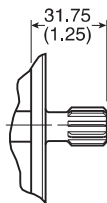
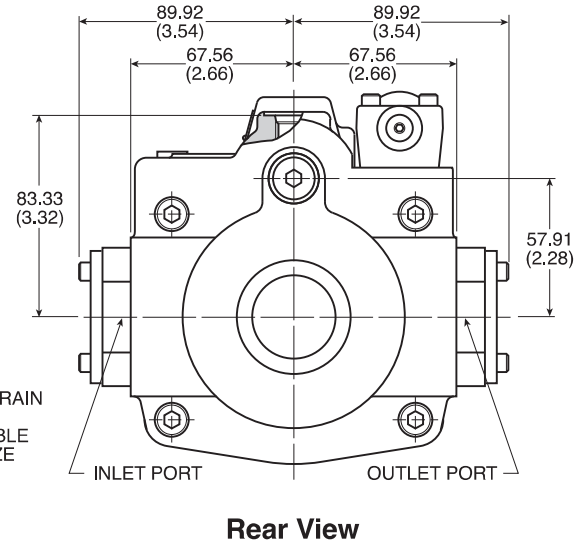
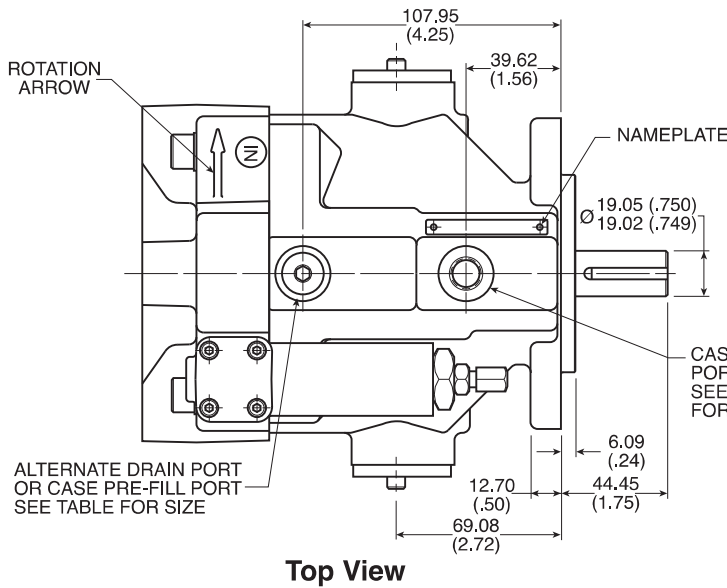
**Side Ported – Options 2 & 4
Dimensions**

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

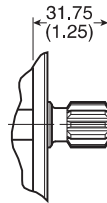
NOTE:

Illustration shows Righthand (CW) rotation pump.
Lefthand (CCW) pumps will have inlet and outlet ports
reversed with compensator on outlet side.

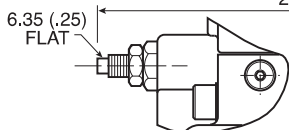
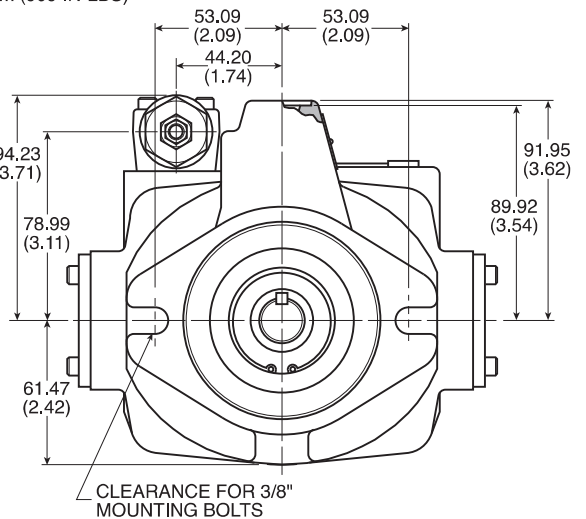
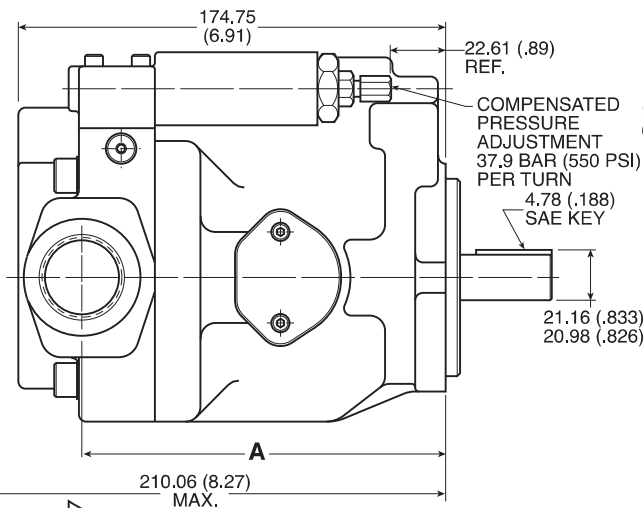
Port Size Type and Location			
Option	A	Inlet and Outlet Ports	Drain Port
2	148.84 (5.86)	3/4" SAE 4-Bolt Flange 3/8-16 Thread Std PSI Series (Code 61)	SAE-6 Straight Thread (9/16-18UNC)
4	152.40 (6.00)	SAE-16 Straight Thread (1-5/16-12UN-2B)	SAE-6 Straight Thread (9/16-18UNC)



OPTION "B"
SPLINE SHAFT
SAE "A" 9T 16/32 DP
30° INVOLUTE SPLINE
MAX TORQUE =
58.2 N·m (517 IN-LBS)



OPTION "C"
SPLINE SHAFT
11T 16/32 DP
30° INVOLUTE SPLINE
MAX TORQUE =
102.3 N·m (909 IN-LBS)



ADJ. MAX. VOLUME STOP
(1.6 CC/REV/TURN)
"OPTION 2"

Dimensional Data

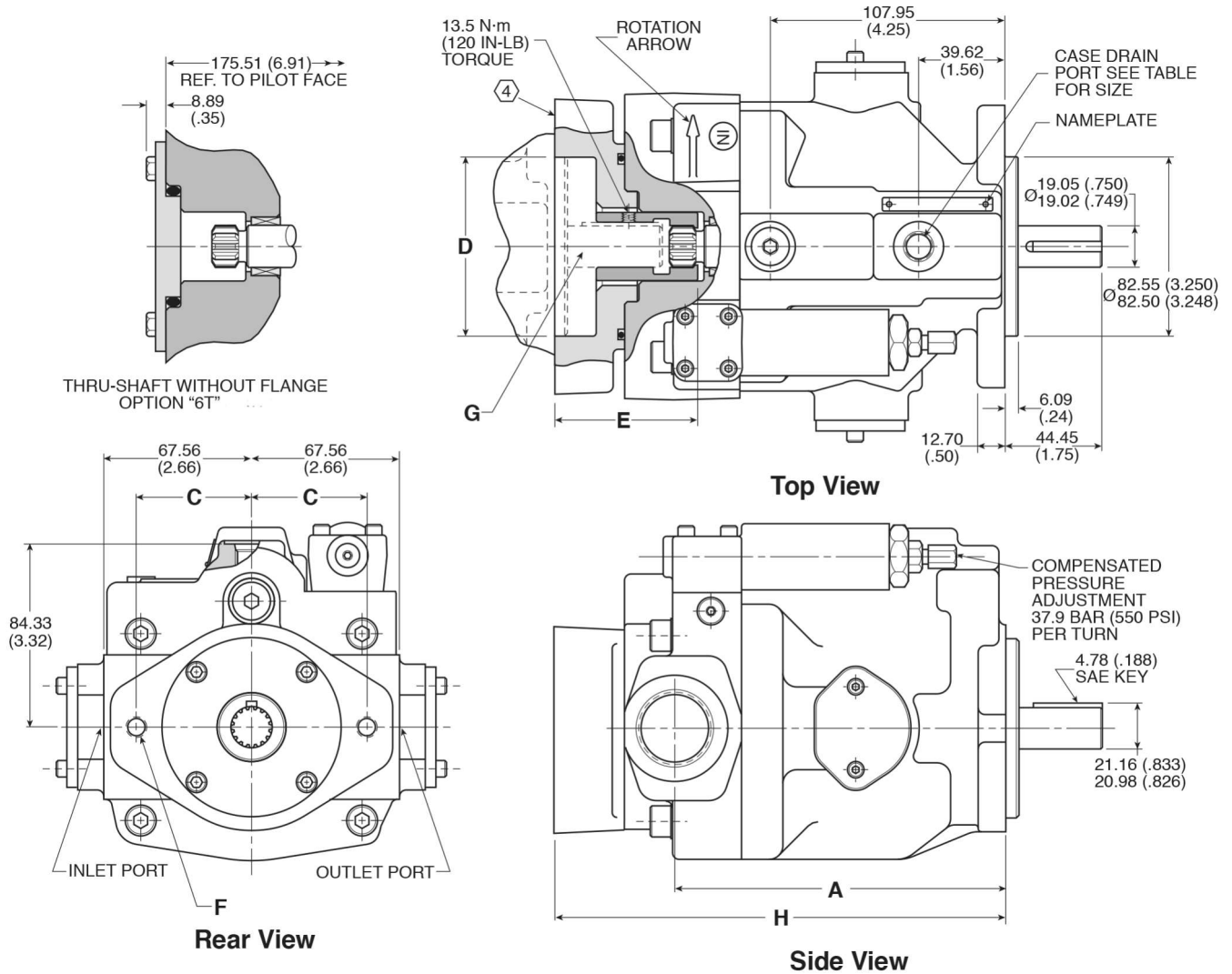
Thru-Shaft Pump Dimensions

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

NOTES:

1. Righthand (CW) rotation pump shown above. Counterclockwise (CCW) pump will have inlet and outlet ports reversed with the compensator over the outlet port.
2. Splined shaft (option "B") not recommended with Thru-Shaft pumps.
3. The maximum torque transmitting capacity for rear mounting of pumps is limited by the allowable torque of the input shaft.
- ④ Options 6A2, 6A4 Design Series 12 have a gasket. All other options incorporate an o-ring seal and have an o-ring groove.

Port Size Type and Location			
Option	A	Inlet and Outlet Ports	Drain Port
2	148.84 (5.86)	3/4" SAE 4-Bolt Flange 3/8-16 Thread Std PSI Series (Code 61)	SAE-6 Straight Thread (9/16-18UNC)
4	152.40 (6.00)	SAE-16 Straight Thread (1-5/16-12UN-2B)	SAE-6 Straight Thread (9/16-18UNC)



Dimensions – Thru Shaft Options

VARIATION	C	D	E	F	G	H
6A1	41.28 (1.63)	50.83/50.85 (2.001/2.002)	57.66 (2.27)	5/16-18UNC-2B	12.50 x 3.18 (.50 x .125) Key	200.91 (7.91)
6A2	53.19 (2.09)	82.58/82.60 (3.251/3.252)	64.01 (2.52)	3/8-16UNC-2B	19.05 x 4.76 (.75 x .188) Key	207.26 (8.16)
6A4	53.19 (2.09)	82.58/82.60 (3.251/3.252)	N/A	3/8-16UNC-2B	9 Tooth 16/32 Pitch	207.26 (8.16)

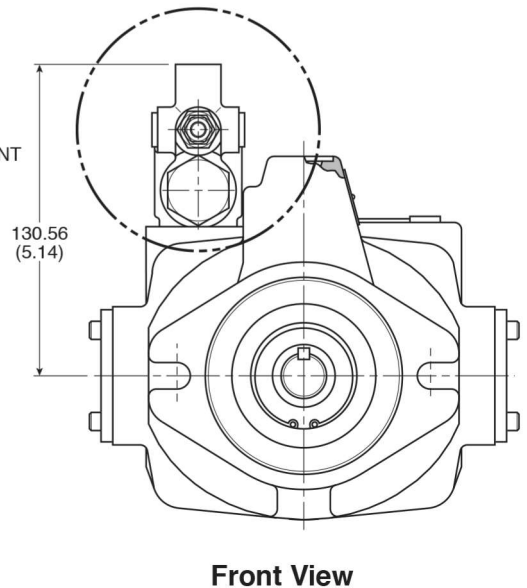
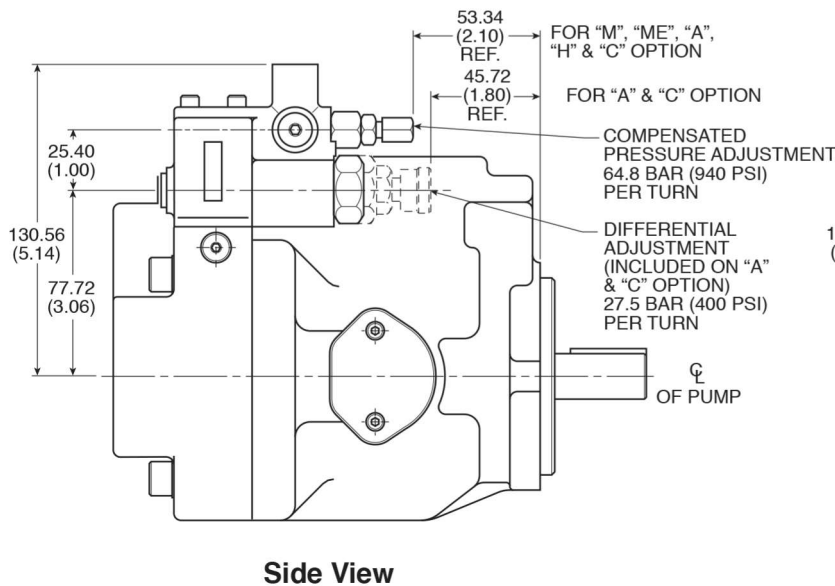
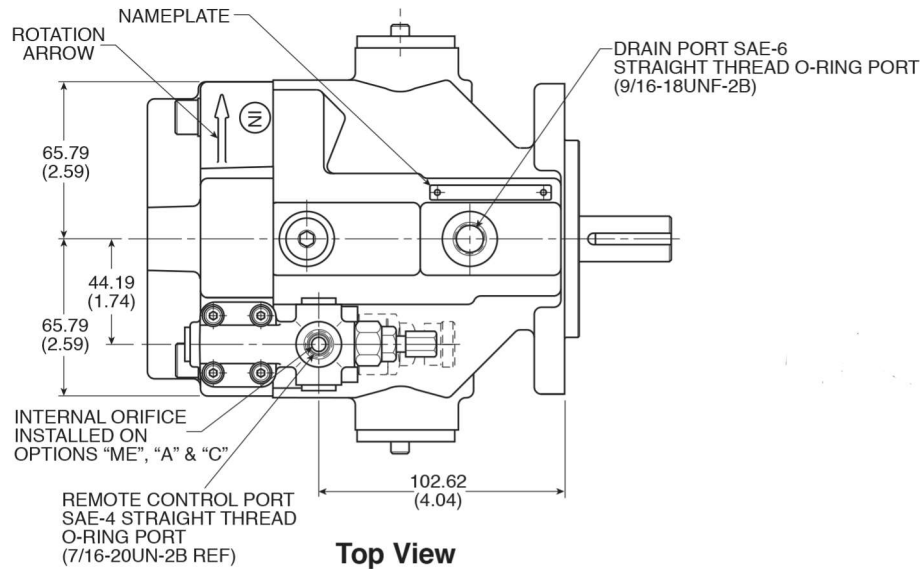
Dimensional Data

Remote Compensator Control Pump Dimensions

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

NOTES:

1. Righthand (CW) rotation pump shown below. Lefthand (CCW) pumps will have compensator on opposite side.
2. When controlling pump compensator pressure with remote relief valve, remote relief valve must be capable of passing 1.89 LPM (.5 GPM).
3. Remote compensator option "M", "ME" & "A" available on pumps with any port location.



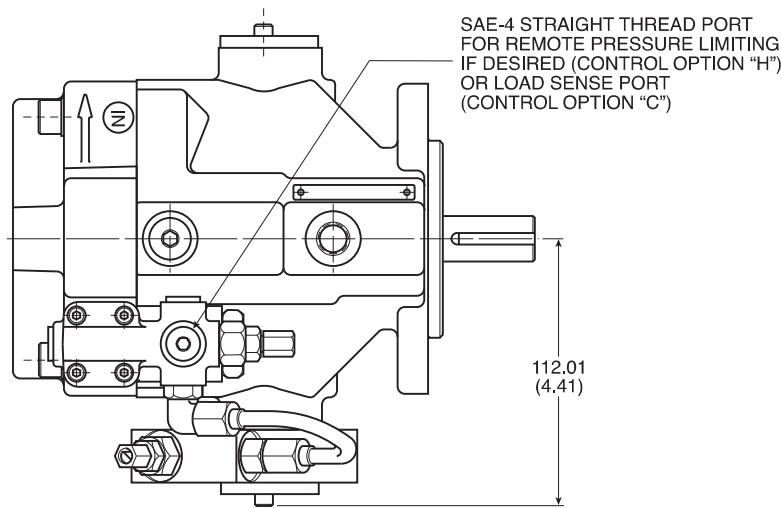
Dimensional Data

Power (Torque) Control Pump Dimensions

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

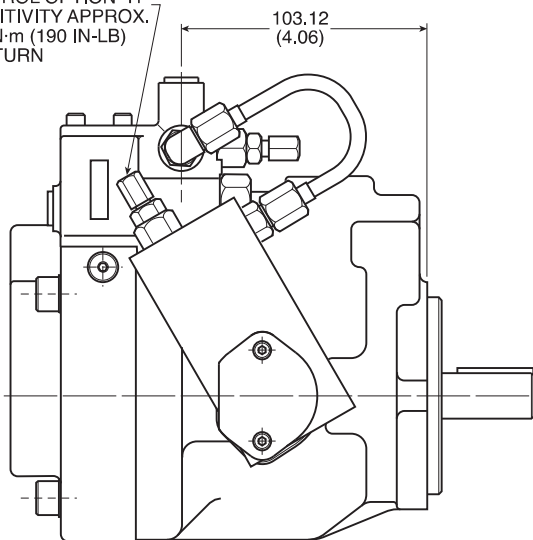
NOTES:

1. Righthand (CW) rotation rear ported pump shown. Counterclockwise (CCW) pumps will have inlet and outlet ports reversed with compensator and power block on outlet side.
2. Power control shown on rear ported pump. Also available on side ported or thru-shaft option pumps.

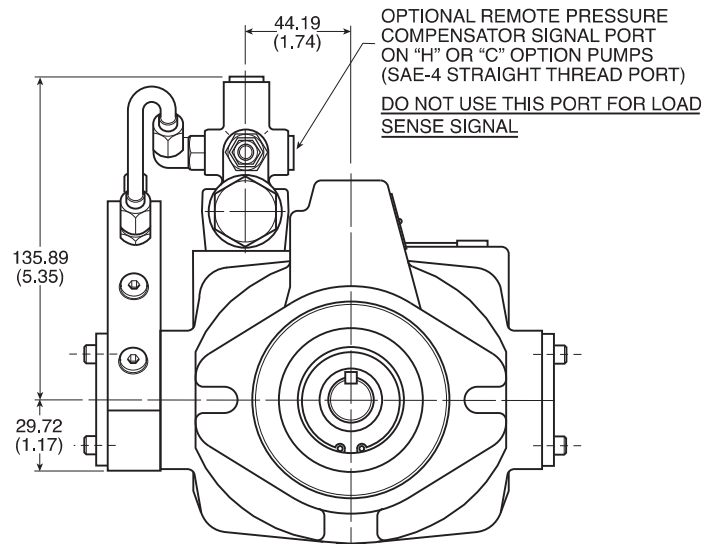


Top View

TORQUE LIMIT ADJUSTMENT CONTROL OPTION "H" SENSITIVITY APPROX. 21,4 N·m (190 IN·LB) PER TURN



Side View



Front View