

Vickers®

Piston Pumps

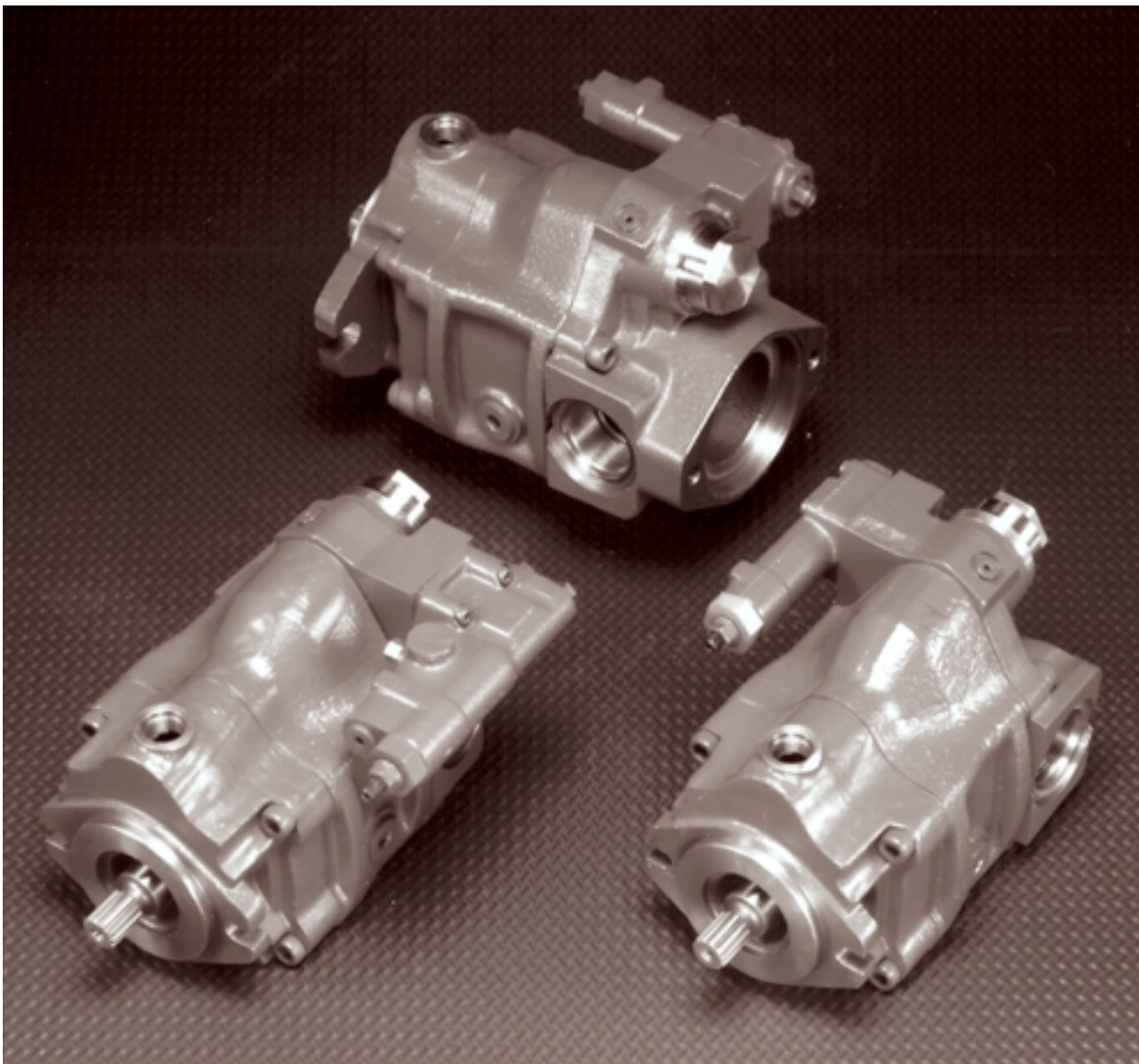


Variable Displacement Piston Pumps for Industrial Applications

PVQ200 Family

21,1 to 141 cm³/r (1.29 to 8.64 in³/r) Displacements

230 bar (3300 psi) Max. Pressure



VICKERS

PVQ200 pumps are open circuit, axial piston designs. A variety of controls provides the ability to match the pumps to each application.

A strong, proven rotating group allows the pumps to handle pressures to 230 bar (3300 psi) continuous and 250 bar (3600 psi) intermittent – with less maintenance cost. High-load bearings and a stiff drive shaft help provide a pump life of 30,000 hours (@ 65% rated pressure), reducing operating costs and extending machine life.

PVQ200 pumps feature a saddle-type yoke with steel-backed polymer bearings. The stiff yoke reduces deflection and allows even loading of bearings, improving life. A single control piston reduces loading on the yoke, resulting in reduced pump size which allows installation in tighter locations.

PVQ200 pumps operate at a level of quietness that exceeds the requirements of today's demanding industrial conditions. The pumps feature a unique three-piece envelope (flange, housing and valve block) specifically created for low fluid-borne and structure-borne noise levels. Another pump feature – a bimetal timing plate – improves pump filling characteristics which, in turn, reduce fluid-borne noise and extend pump life.

An adjustable maximum stop provides a means of tuning flow to your system, while gauge ports allow monitoring of inlet and outlet conditions. These standard features reduce system complexity and cost.

Mounting flanges are offered in SAE and ISO configurations, and ports are offered in SAE and ISO flange versions. This provides a wide variety of installation opportunities for global machine design.

Side- or end-ported models are available to facilitate plumbing and help fit the pump to your machine space needs. Multiple drain ports allow many mounting orientations, reducing installed costs.

PVQ200 pumps are capable of operating with many types of hydraulic fluids used in industrial systems. High-water-content and phosphate ester fluids can be accommodated, in addition to the typical petroleum based and synthetic fluids.

With a PVQ200 pump you can have smaller and quieter power units at higher pressures, using higher speed (1500 and 1800 r/min) electric motors. Your systems will have lower vibration levels on the system piping, helping to ensure a leak-free system.

Typical Applications

- Automotive transfer lines
- Process industry machines
- Clamping fixtures
- Load/unload heavy robots
- Entertainment rides
- Tube forming and bending
- Plastic injection molding
- Blow molding machines

Features & Benefits

- Long pump life
- Quiet pump operation
- Inlet and outlet gauge ports and adjustable maximum displacement stop – standard
- Astonishingly low 4% pressure ripple
- Low installed and operating costs
- Reduced maintenance
- Design flexibility
- Compact size saves space
- Design promotes leak-free system
- Flexibility in machine design
- Compact size saves space
- Design promotes leak-free system

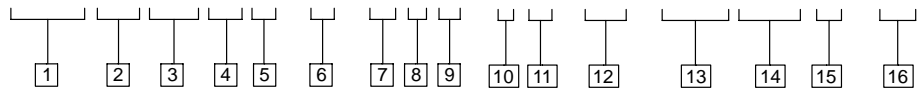
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Model Code

PVQ 50 B2 E R - S - N F S - 1 S - 40 - C23 V11 B - 20



1 Pump series (pressure rating)

PVQ – 230 bar (3300 psi) continuous
250 bar (3600 psi) intermittent

2 Maximum geometric displacement cm³/r (in³/r)

See following page.

3 Mounting flange

See following page.

4 PVQ200 family speed rating

E – Electric motor speeds,
1800 r/min maximum

5 Rotation viewed from shaft end

R – Right hand (clockwise)
L – Left hand (counterclockwise)

6 Adjustable maximum displacement stop

S – With stop
F – Without stop

7 Thru-drive options

See following page for thru-drive
coupling combinations.

8 Main port options

See page 7.

9 Main port locations

E – End
S – Sides

10 Shaft end type

See Page 7.

11 Shaft seal, at electric motor end

S – Single shaft seal, one way
D – Double shaft seal, two way
N – No shaft seal

12 Pump design number

40 – For PVQ20, PVQ50, PVQ63 and
PVQ141
50 – For PVQ81 and PVQ106

Subject to change. Installation
dimensions remain unaltered
for designs 40–49 and 50–59.

13 Pump control options

C** – Pressure compensator;
100–230 bar (1500–3300 psi).
Asterisks denote maximum
pressure setting in tens of bar.
“C23” – 230 bar (3300 psi) – is
standard.
CM** – Pressure compensator; 20–100
bar (300–1500 psi). Asterisks
denote maximum pressure
setting in tens of bar. “CM7” –
70 bar (1000 psi) – is standard.

14 Additional control functions

Blank – No additional control functions.
V** – Load sensing control. 6–14
bar (90–200 psi). Asterisks
denote differential setting in
bar. “V11” is standard 11 bar
(160 psi) factory setting.

VC** – High differential spring. 15–25
bar (218–363 psi). For PVQ20
& PVQ50, “VC24” is standard
24 bar (350 psi) factory
setting. For PVQ63, 81, 106 &
141, “VC20” is standard 20 bar
(300 psi) factory setting.

VX** – For PVQ81 and PVQ106 only.
Extra high differential spring.
26–40 bar (377–580 psi).
“VX35” is standard 35 bar
(508 psi) factory setting.

15 Bleed down orifice option for load sense control

B – Bleed-down orifice installed in
control.
P – Orifice plugged. No bleed-down in
control.

16 Control design number

20 – For all PVQ20 & PVQ50 controls
31 – For all PVQ63 and PVQ141
controls
40 – For all PVQ81 and PVQ106
controls

Model Code

2 Maximum geometric displacement

Displacement	Code					
	20	50	63	81	106	141
cm ³ /r	21,1	50,0	63,1	81,0	106,5	141,0
in ³ /r	1.29	3.05	3.85	4.94	6.50	8.60

3 Mounting flange specifications

Code	Description	PVQ20	PVQ50	PVQ63	PVQ81	PVQ106	PVQ141
A2	SAE J744-82-2 (A, 2-bolt)	●	○	○	○	○	○
MA2	ISO 3019/2-80A2HW	●	○	○	○	○	○
B2	SAE J744-101-2 (B, 2-bolt)	●	●	●	○	○	○
MB2	ISO 3019/2-100A2HW	●	●	●	○	○	○
C2	SAE J744-127-2 (C, 2-bolt)	○	○	●	●	●	●
MC2	ISO 3019/2-125A2HW	○	○	●	●	●	●
C4	SAE J744-127-4 (C, 4-bolt)	○	○	●	●	●	●
MC4	ISO 3019/2-125B4HW	○	○	●	●	●	●
D4	SAE J744-152-4 (D, 4-bolt)	○	○	○	○	○	●
MD4	ISO 3019/2-160B4HW	○	○	○	○	○	●

●=Available

○=Not available

7 Thru-drive options

Code	Description	PVQ20	PVQ50	PVQ63	PVQ81	PVQ106	PVQ141
N	Single pump, non-thru-drive	●	●	●	●	●	●
A9	SAE A, 2-bolt, 9T spline	●	●	●	●	●	●
A11	SAE A, 2-bolt, 11T spline	●	●	○	●	●	●
B13	SAE B, 2-/4-bolt, 13T spline	○	●	●	●	●	●
B15	SAE B-B, 2-/4-bolt, 15T spline	○	●	●	●	●	●
C14	SAE C, 2-/4-bolt, 14T spline	○	○	●	●	●	●
C17	SAE C-C, 2-/4-bolt, 17T spline	○	○	○	●	●	●
MA9	ISO 80-A2HW, 9T SAE spline	●	●	●	●	●	●
MA11	ISO 80-A2HW, 11T SAE spline	●	●	○	●	●	●
MB13	ISO 100-A2/B4HW, 13T SAE spline	○	●	●	●	●	●
MB15	ISO 100-A2/B4HW, 15T SAE spline	○	○	●	●	●	●
MC14	ISO 125-A2/B4HW, 14T SAE spline	○	○	●	●	●	●
MC17	ISO 125-A2/B4HW, 17T SAE spline	○	○	○	●	●	●

●=Available

○=Not available

PVQ200 Family

8 Main port options

Code	Description	Inlet/Outlet	PVQ20	PVQ50	PVQ63	PVQ81	PVQ106	PVQ141
S	SAE J514 Tube Ports	Inlet	-20	-24	-24 (End ports only)	-	-	-
		Outlet	-12	-16	-16 (End ports only)	-	-	-
F	SAE J518 Flange Ports	Inlet	1.25 inch	2.0 inch	2.0 inch	2.0 inch	2.5 inch	2.5 inch
		Outlet	0.75 inch	1.0 inch	1.0 inch	1.0 inch	1.0 inch	1.25 inch*
D	ISO 6149-1 Tube Ports	Inlet	M42	M48	M48 (End ports only)	-	-	-
		Outlet	M27	M33	M33 (End ports only)	-	-	-
M	ISO 6162 Flange Ports	Inlet	32mm	51mm	51mm	51mm	64mm	64mm
		Outlet	19mm	25mm	25mm	25mm	25mm	32mm*
B	British Standard Parallel Pipe – Tube Ports	Inlet	G 1- ¹ / ₄	G 1- ¹ / ₂	-	-	-	-
		Outlet	G ³ / ₄	G 1	-	-	-	-

* SAE Code 62, high pressure series, or ISO 400 bar. Other flange ports are SAE Code 61, standard pressure series, or ISO 25–350 bar.

10 Shaft-end type at prime mover end

Description	Shaft Code					
	PVQ20	PVQ50	PVQ63	PVQ81	PVQ106	PVQ141
SAE J744-16-1, SAE A, Straight keyed	1	-	-	-	-	-
SAE J744-19-1, SAE 19-1, Straight keyed	2	-	-	-	-	-
SAE J744-16-4, SAE A, 9T Spline	3	-	-	-	-	-
SAE J744-16-4, SAE A, 11T Spline	4	-	-	-	-	-
SAE J744-22-1, SAE B, Straight Keyed	5	1	-	-	-	-
SAE J744-25-1, SAE B-B, Straight Keyed	6	2	6	-	-	-
SAE J744-22-4, SAE B, 13T Spline	7	3	7	-	-	-
SAE J744-25-4, SAE B-B, 15T Spline	8	4	8	-	-	-
SAE J744-32-1, SAE C, Straight Keyed	-	-	1	1	1	1
SAE J744-38-1, SAE C-C, Straight Keyed	-	-	-	2	2	2
SAE J744-32-4, SAE C, 14T Spline	-	-	3	3	3	3
SAE J744-38-4, SAE C-C, 17T Spline	-	-	-	4	4	4
SAE J744-44-1, SAE D, Straight Keyed	-	-	-	-	-	5
SAE J744-44-4, SAE D, 13T Spline	-	-	-	-	-	6
ISO 3019/2 E20N, Straight Keyed, Short Spigot	N1 ⁽¹⁾	-	-	-	-	-
ISO 3019/2 E25N, Straight Keyed, Short Spigot	N2 ⁽²⁾	-	-	-	-	-
ISO 3019/2 E25N, Straight Keyed, Short Spigot	N3 ⁽³⁾	N1	N3	-	-	-
ISO 3019/2 E32N, Straight Keyed, Short Spigot	-	-	N1	N1	N1	N1
ISO 3019/2 E40N, Straight Keyed, Short Spigot	-	-	-	N2	N2	N2

- (1) ISO 80mm Pilot only - MA2
(2) ISO 80mm Pilot only - MA2
(3) ISO 100mm Pilot only - MB2

Specifications and Performance

Displacement, Pressure and Flow Ratings At 50°C (120°F), SAE 10W oil, 1 bar absolute (0 psig) inlet

Model Series	Maximum Geometric Displacement cm ³ /r (in ³ /r)	Maximum Pressure bar (psi)			Maximum Flow at 210 bar (3000 psi) l/min (USgpm)			
		Continuous	Intermittent †	Peak ‡	@ 1800 r/min	@ 1500 r/min	@ 1200 r/min	@ 1000 r/min
PVQ20	20,1 (1.22)	230 (3000)	250 (3300)	280 (4000)	35 (9)	29 (8)	23 (6)	19 (5)
PVQ50	50 (3.05)				87 (23)	75 (20)	62 (16)	49 (13)
PVQ63	63,1 (3.85)				111 (29)	93 (24)	74 (19)	60 (16)
PVQ81	81,0 (4.94)				139 (37)	116 (31)	93 (25)	76 (20)
PVQ106	106,5 (6.50)				187 (49)	155 (41)	123 (32)	102 (27)
PVQ141	141,1 (8.60)				238 (63)	199 (53)	158 (42)	131 (35)

† Less than 10% of duty cycle.

‡ Momentary system pressure spikes only.

Speed, Input Power and Torque Ratings At 50°C (120°F), SAE 10W oil, 1 bar absolute (0 psig) inlet

Model Series	Maximum Operating Speed r/min	Maximum Input Power at 210 bar (3000 psi) kW (hp)				Maximum Torque at 210 bar (3000 psi) Nm (lb-ft)	Approximate Weight (dry) kg (lb)
		@ 1800 r/min	@ 1500 r/min	@ 1200 r/min	@ 1000 r/min		
PVQ20	1800	14 (18)	11 (15)	9 (12)	8 (10)	73 (54)	15 (33)
PVQ50	1800	35 (47)	30 (40)	28 (38)	23 (31)	190 (140)	24 (52)
PVQ63	1800	42 (57)	36 (48)	29 (39)	24 (32)	228 (168)	36 (79)
PVQ81	1800	56 (75)	46 (62)	35 (47)	28 (37)	286 (211)	45 (99)
PVQ106	1800	72 (97)	60 (80)	48 (64)	40 (54)	383 (282)	55 (121)
PVQ141	1800	94 (126)	79 (106)	63 (85)	53 (71)	497 (367)	66 (145)

Standard Response Times†

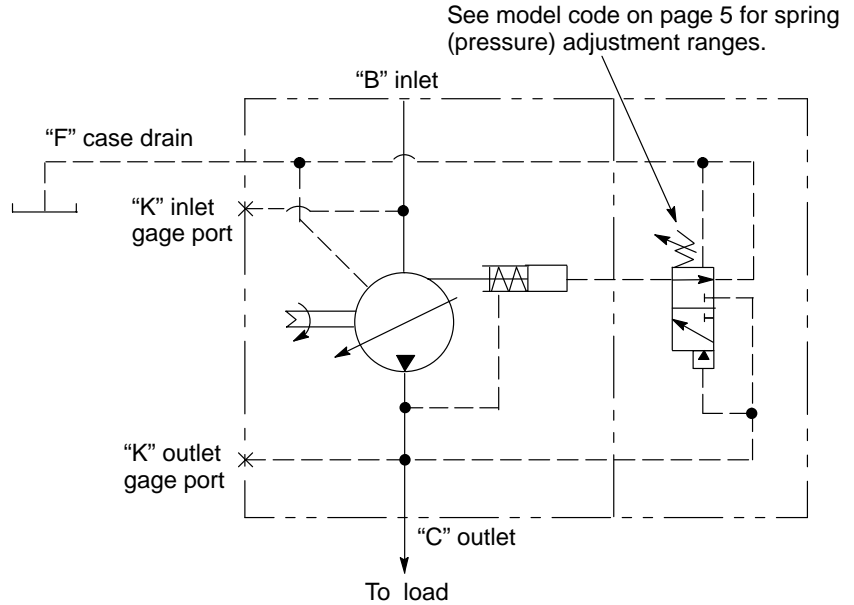
Model Series	On Stroke msec	Off Stroke msec
PVQ20	39	26
PVQ50	140	40
PVQ63	85	20
PVQ81	85	30
PVQ106	72	29
PVQ141	100	30

† Values with pressure compensator control.

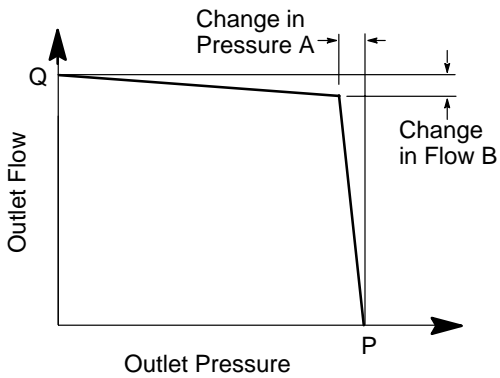
C**, CM** Pressure Compensator Control

The pump will provide a continuously modulated flow to meet changing load demands at a pre-adjusted compensator pressure. At pressures below the compensator setting, the pump will operate at maximum displacement. See model code on page 5 for compensator pressure ranges.

WARNING: The pressure compensator may be adjusted beyond the rated pressure of the pump. When adjusting the pressure limiter, install a 0–350 bar (0–5000 psi) gage in the outlet gage port and limit the pressure setting to 230 bar (3300 psi).



Pressure Cut-off Characteristics of "C21" Pressure Compensator Control @ 50°C (120°F), static conditions



Model Series	Max. Speed r/min	"Q" Outlet Flow l/min (USgpm)	"P" Outlet Pressure bar (psi)	A bar (psi)	B L/min (USgpm)
PVQ20	1800	35 (9.25)	230 (3300)	2,8 (41)	4,5 (1.19)
PVQ50	1800	87 (23)		10 (150)	4,5 (1.19)
PVQ63	1800	113 (29)		7,4 (107)	7,6 (2.00)
PVQ81	1800	141 (37)		1,5 (22)	37 (9.77)
PVQ106	1800	195 (51.5)		1,5 (22)	20 (5.28)
PVQ141	1800	238 (63)		3,5 (51)	14 (3.70)

Control Options

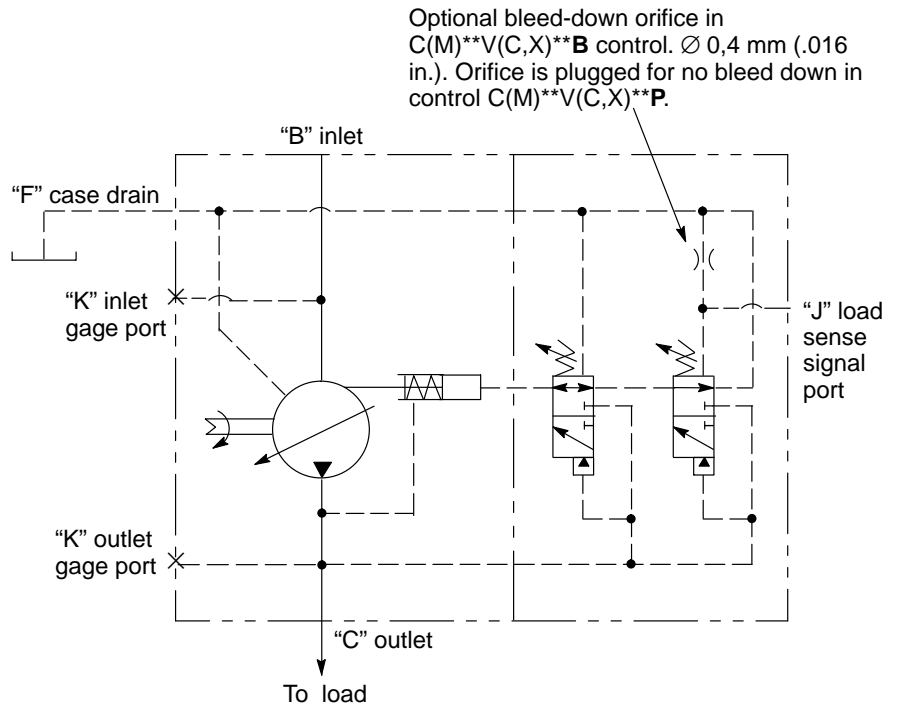
C(M)**V Load Sensing and Pressure Compensator Control

The pump will provide power matching of pump output to system load demand, maximizing efficiency and improving load metering characteristics of any directional control valve installed between the pump and the load.

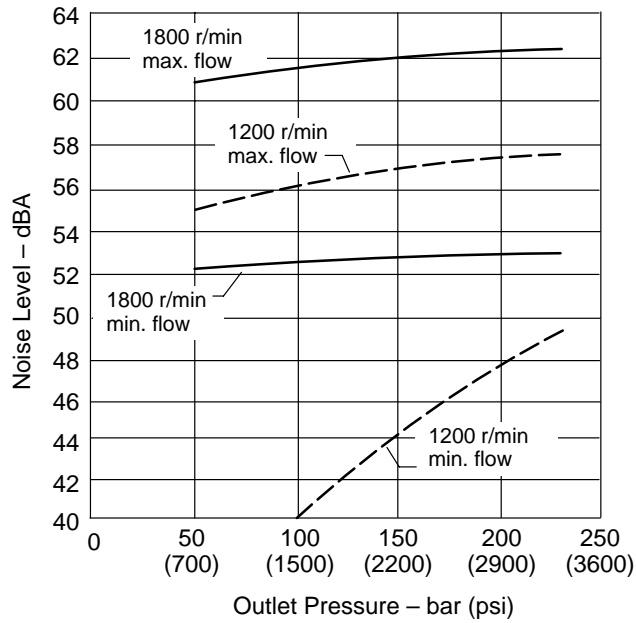
Load sensing ensures that the pump always provides only the amount of flow needed by the load. At the same time, the pump operating pressure adjusts to the actual load pressure plus a pressure differential required for the control action. When the system is not demanding power, the load sense control will operate in an energy-saving stand-by mode.

Typically, the differential pressure is that between the pressure inlet and service port of a proportionally controlled directional valve, or a load sensing directional control valve. See the model code on page 5 for differential pressure settings for load sensing.

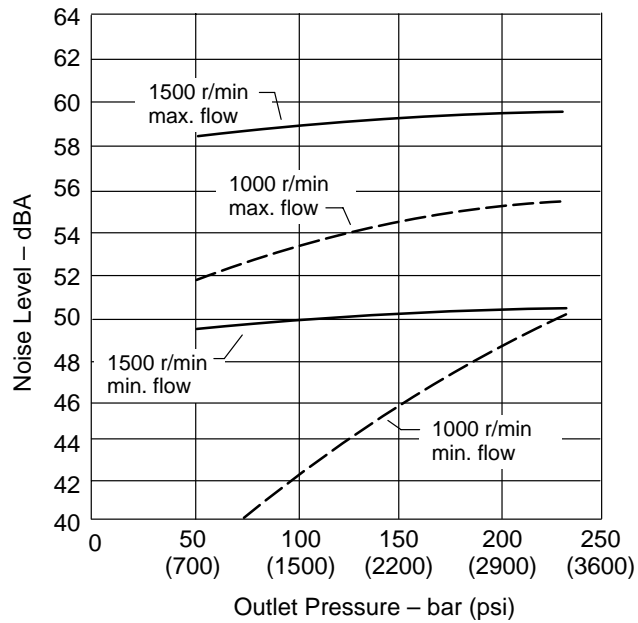
If the load pressure exceeds the system pressure setting, the pressure compensator de-strokes the pump. The load sensing line must be as short as possible and can also be used for remote control or unloading of the pump pressure. For remote control purposes, it is recommended that you contact your Vickers representative for the correct configuration of the control.



Typical Noise Levels at 1800 and 1200 r/min with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



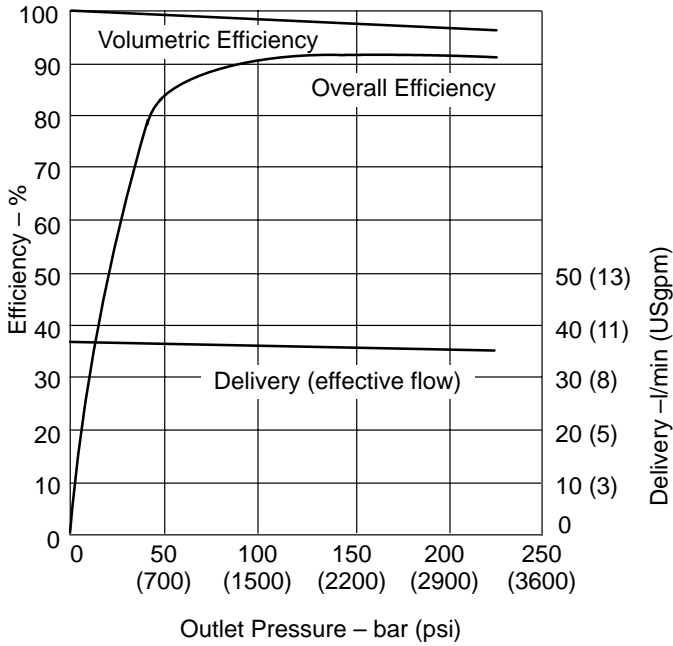
Typical Noise Levels at 1500 and 1000 r/min with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



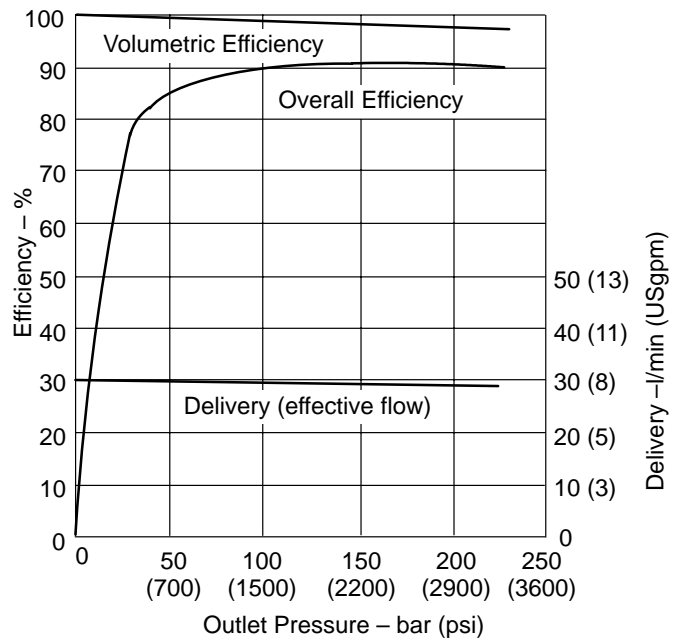
Sound pressure data equivalent to NFPA.

PVQ20 Performance

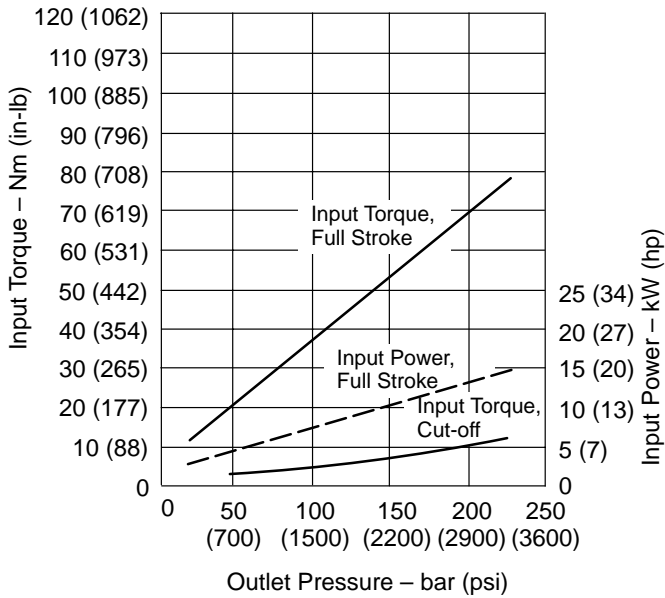
Delivery and Efficiency at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



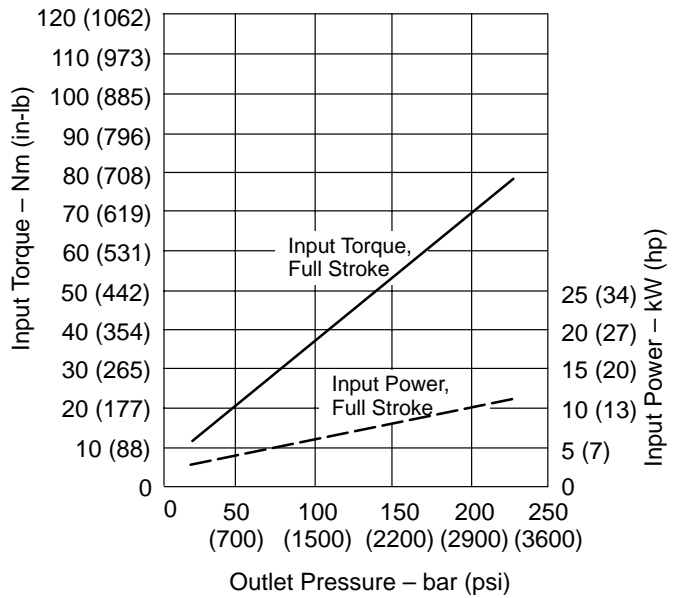
Delivery and Efficiency at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

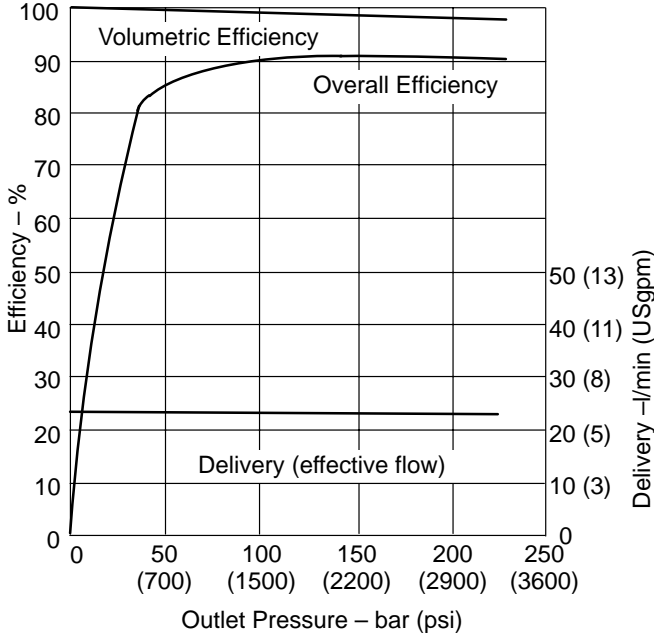


Input Torque and Power at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

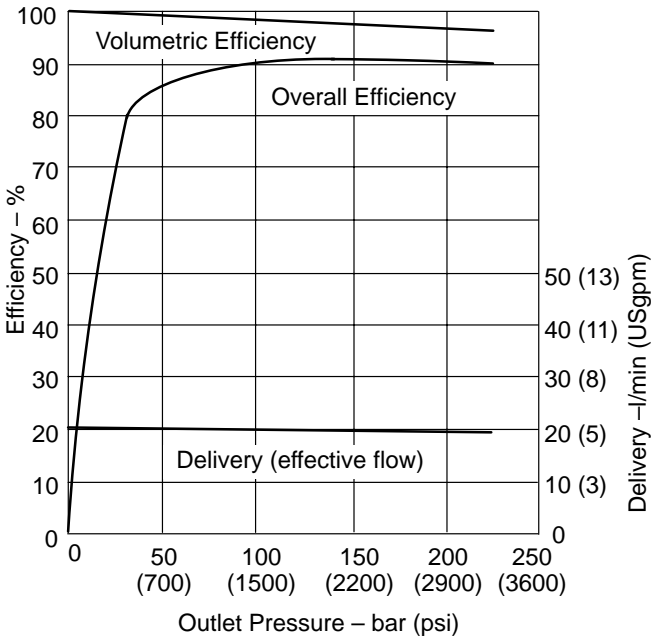


PVQ200 Family

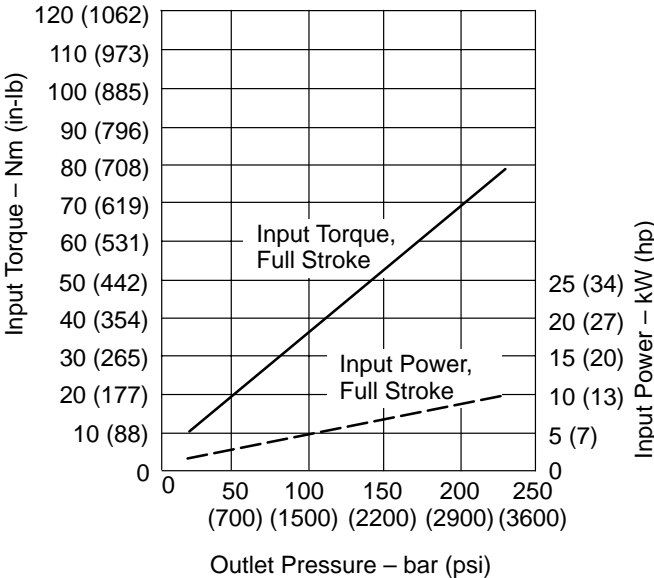
Delivery and Efficiency at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



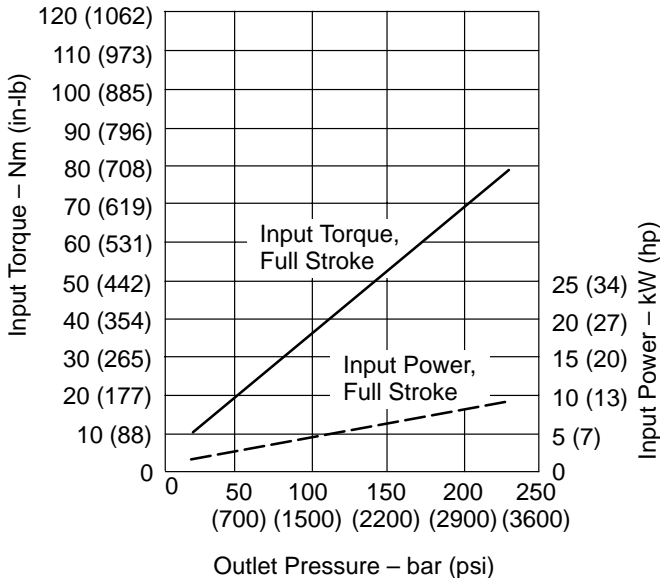
Delivery and Efficiency at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

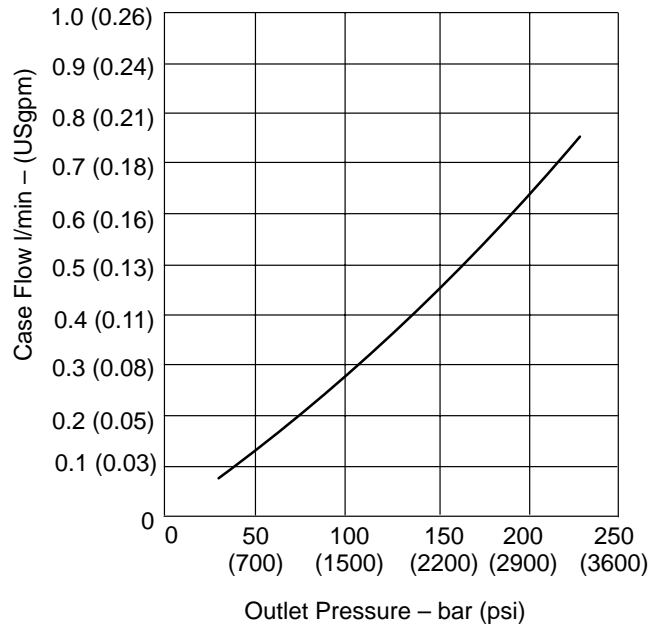


Input Torque and Power at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

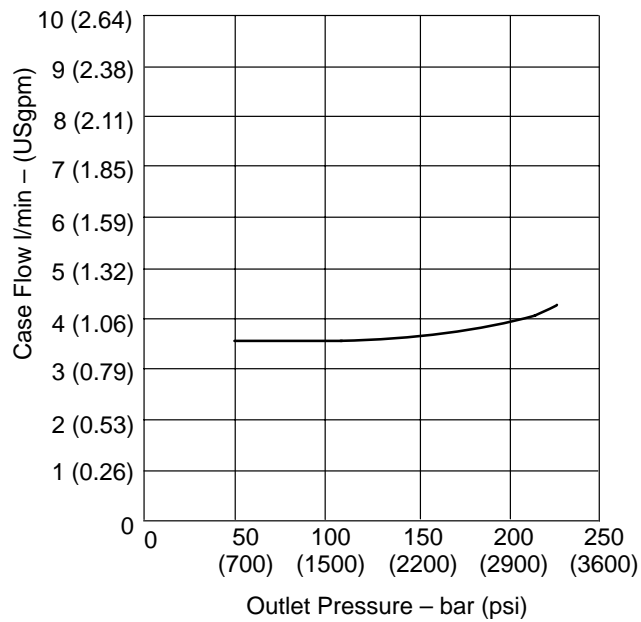


PVQ50 Performance

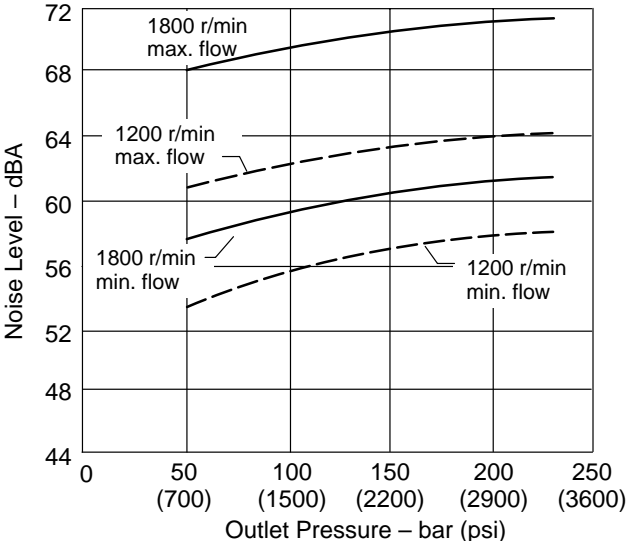
Case Flow versus Outlet Pressure at 1800 r/min, Full Flow, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



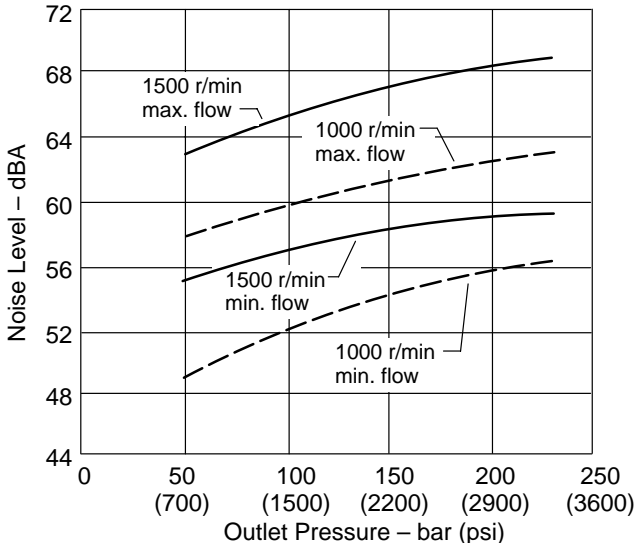
Case Flow versus Outlet Pressure at Cutoff, 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Typical Noise Levels at 1800 and 1200 r/min with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



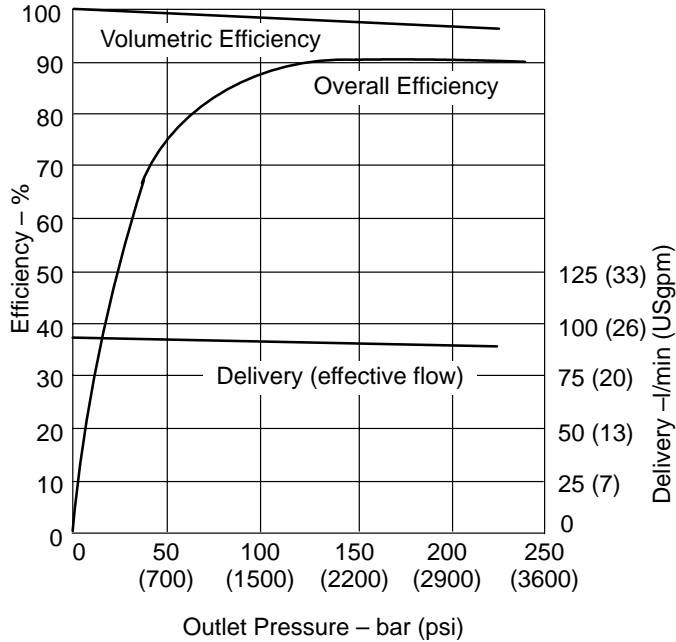
Typical Noise Levels at 1500 and 1000 r/min with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



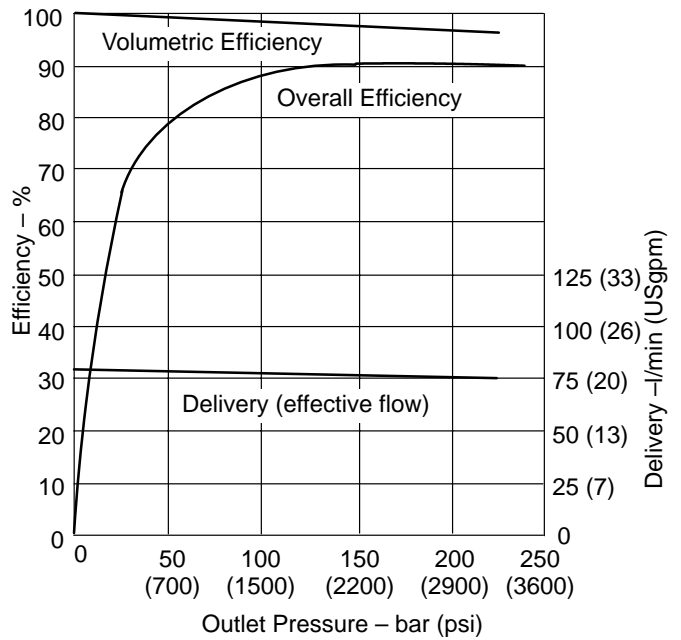
Sound pressure data equivalent to NFPA.

PVQ50 Performance

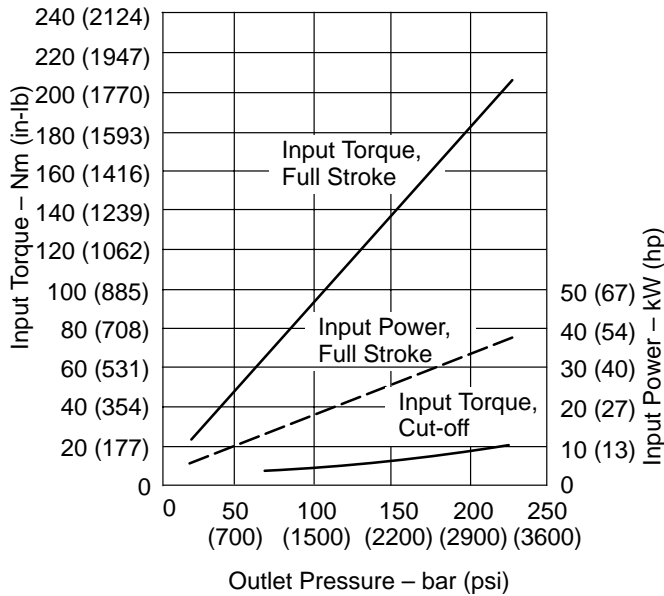
Delivery and Efficiency at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



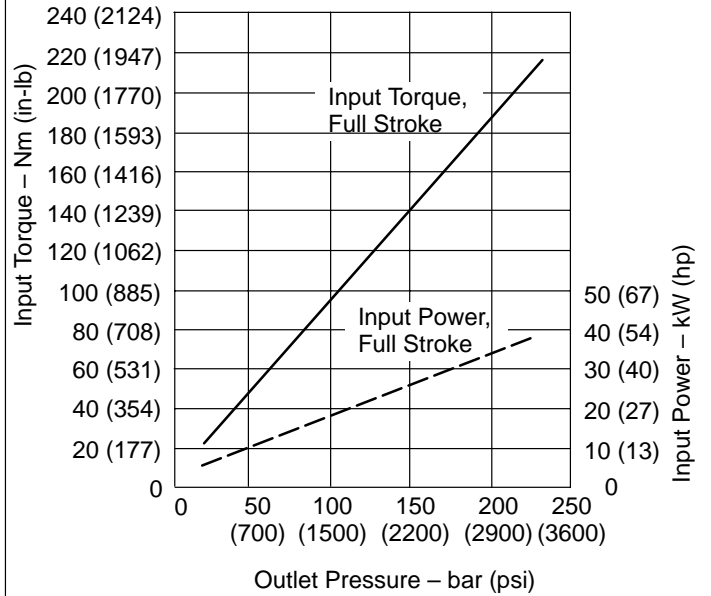
Delivery and Efficiency at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

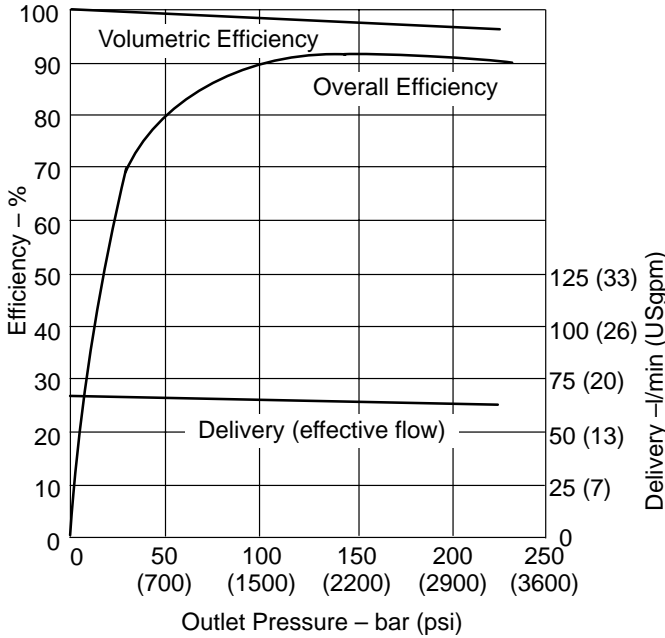


Input Torque and Power at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

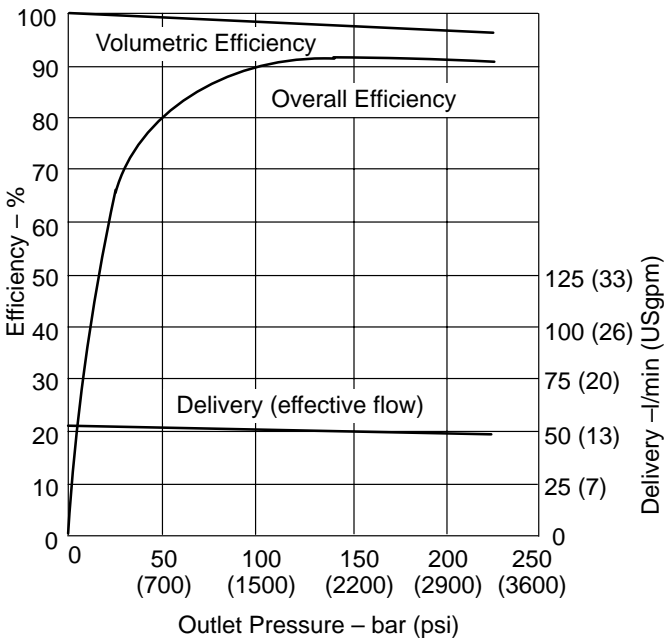


PVQ200 Family

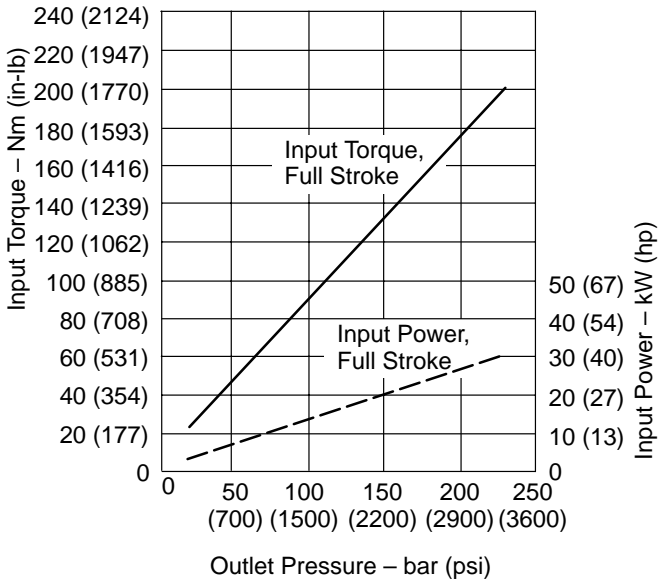
Delivery and Efficiency at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



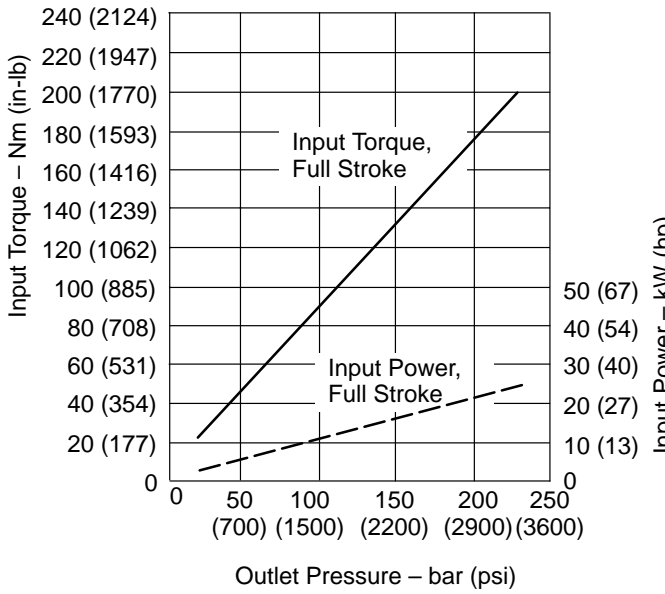
Delivery and Efficiency at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

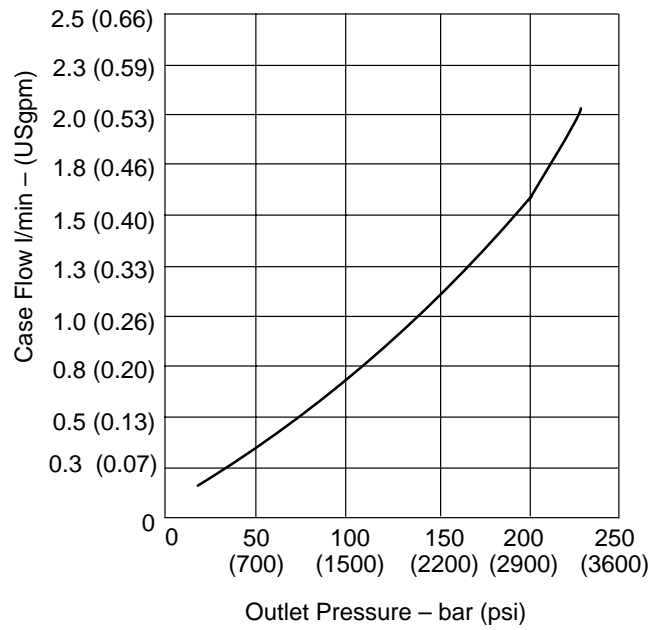


Input Torque and Power at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

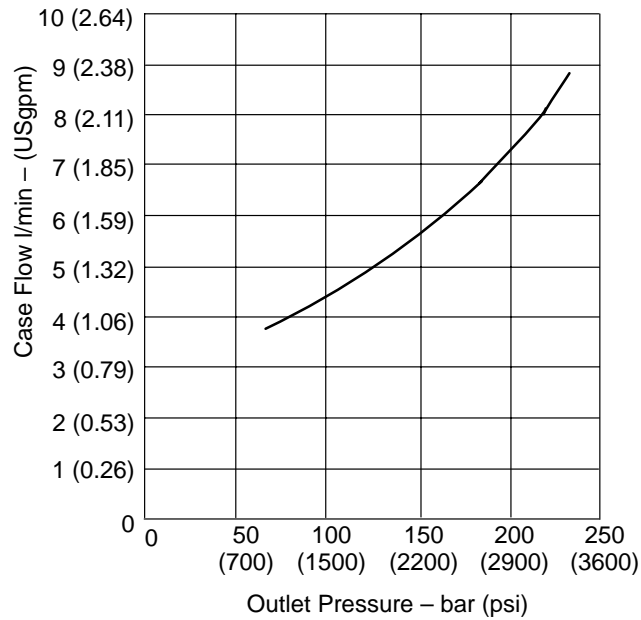


PVQ63 Performance

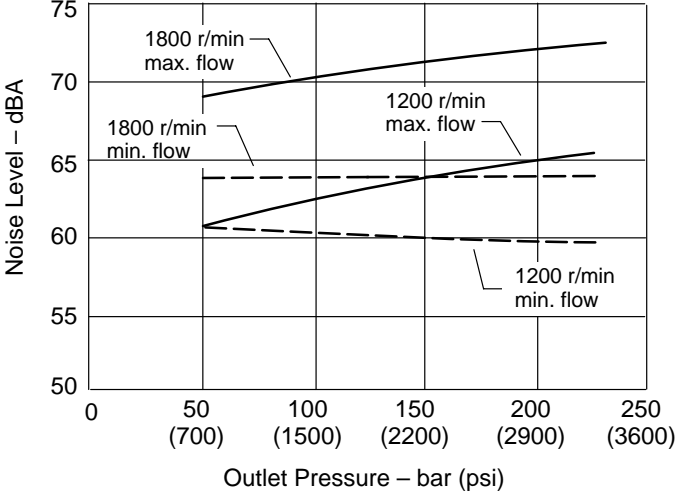
Case Flow versus Outlet Pressure at 1800 r/min, Full Flow, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



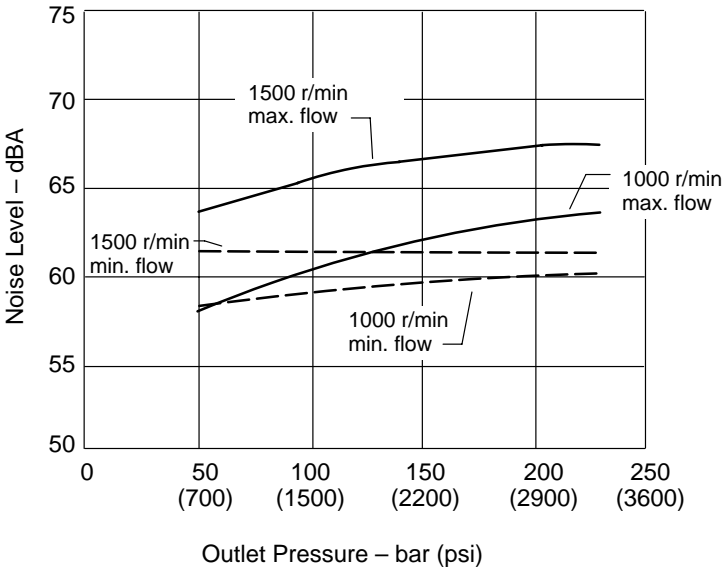
Case Flow versus Outlet Pressure at Cutoff, 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Typical Noise Levels at 1800 and 1200 r/min. with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



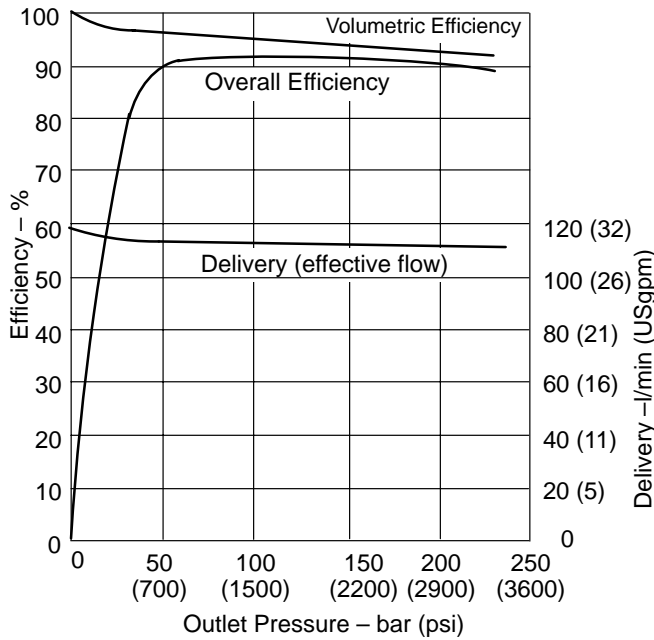
Typical Noise Levels at 1500 and 1000 r/min. with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



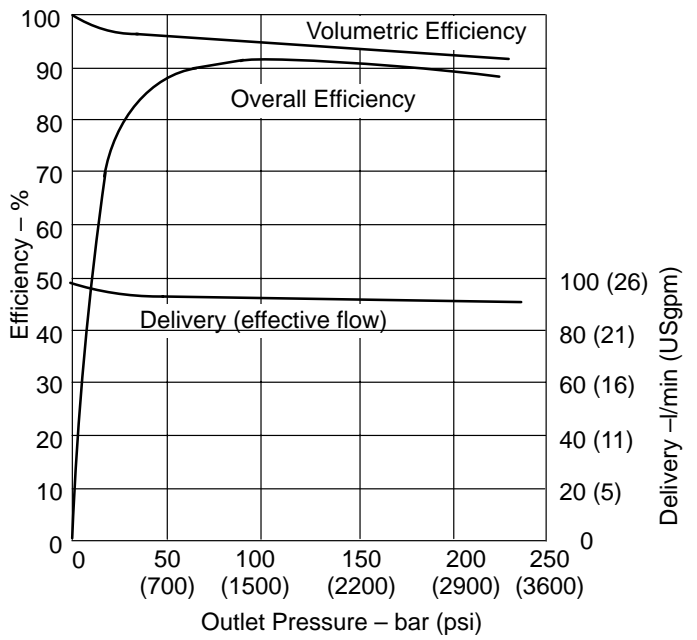
Sound pressure data equivalent to NFPA.

PVQ63 Performance

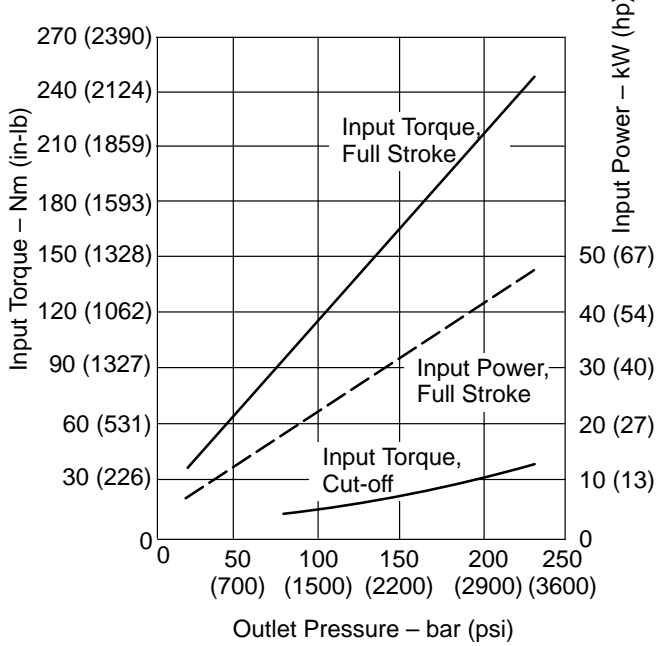
Delivery and Efficiency at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



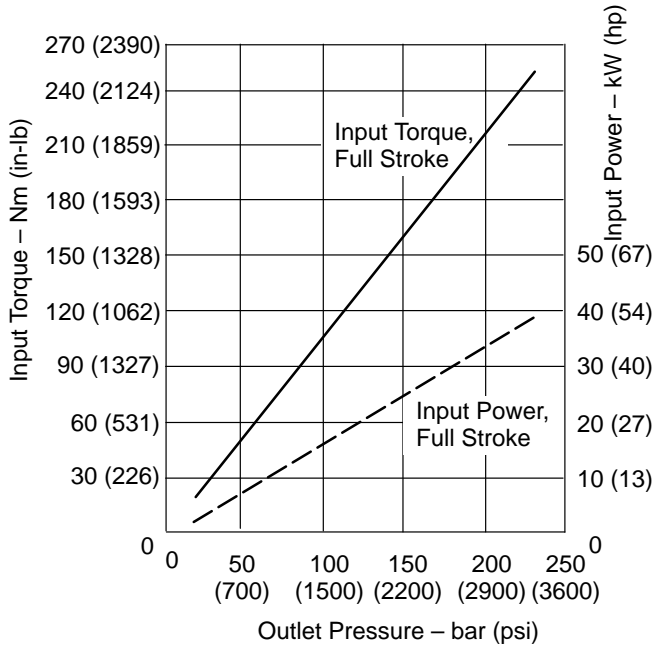
Delivery and Efficiency at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

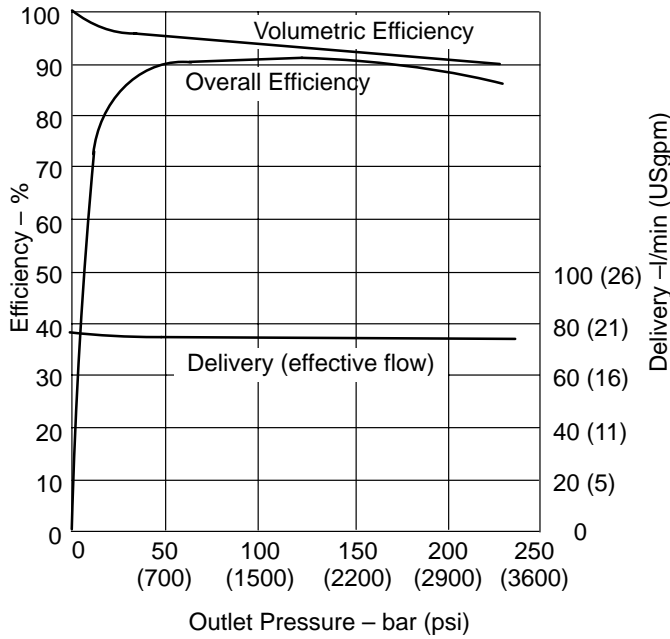


Input Torque and Power at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

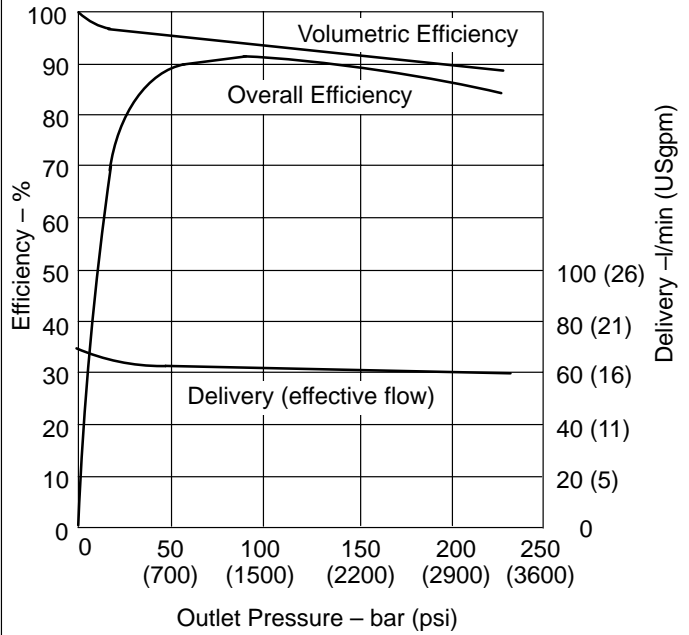


PVQ200 Family

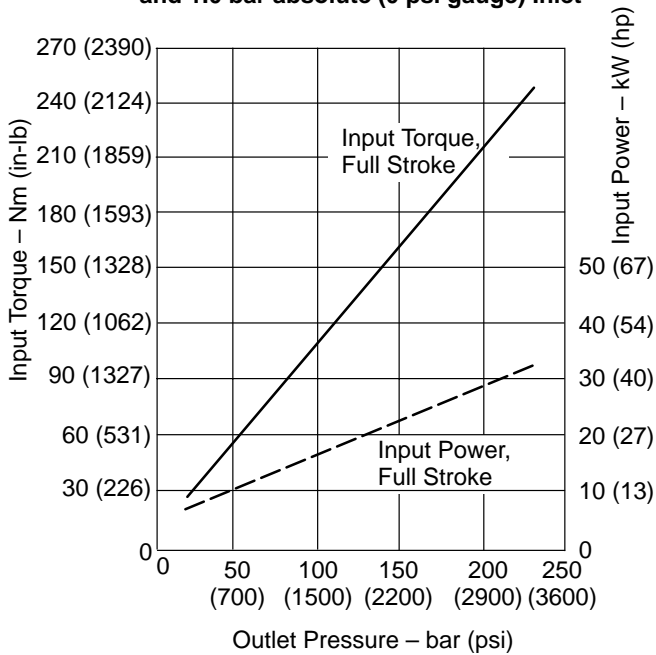
Delivery and Efficiency at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



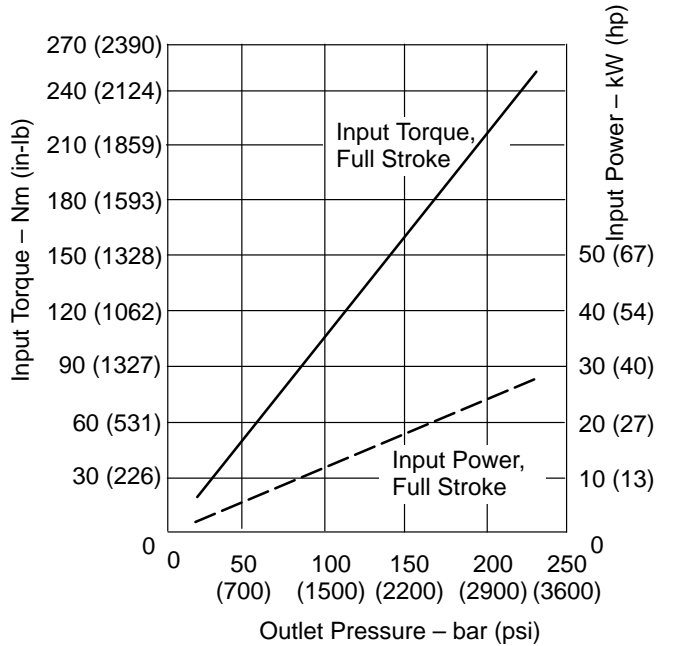
Delivery and Efficiency at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

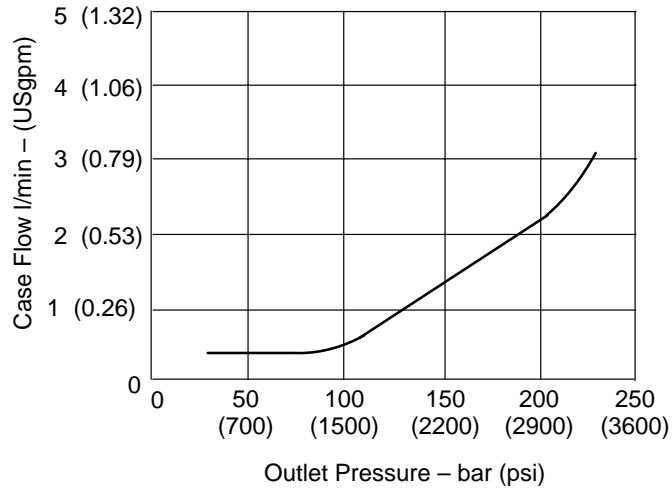


Input Torque and Power at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

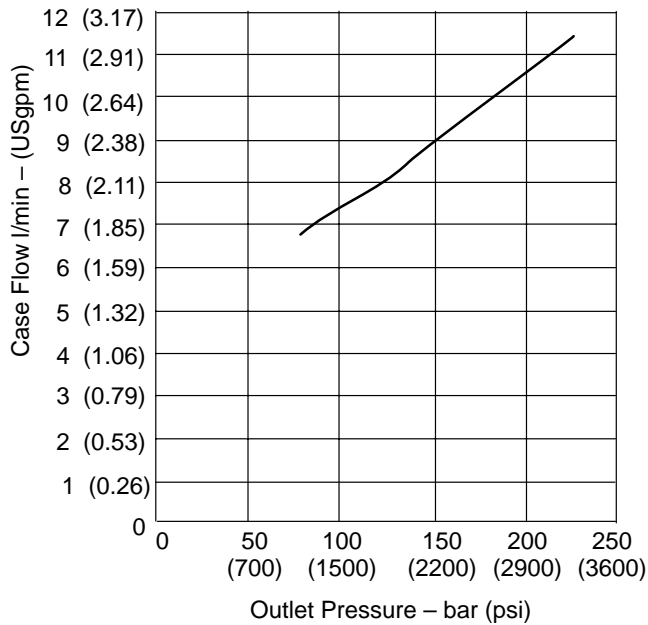


PVQ81 Performance

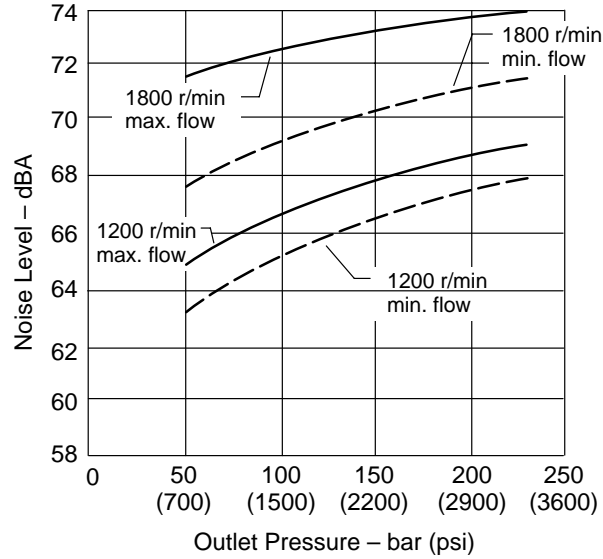
Case Flow versus Outlet Pressure at 1800 r/min, Full Flow, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



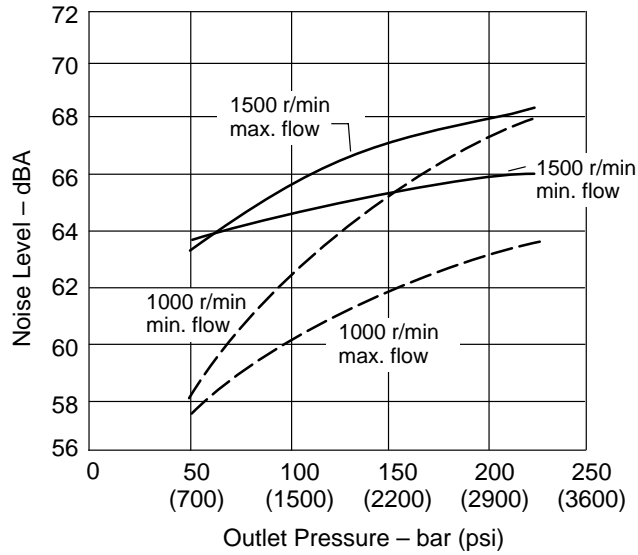
Case Flow versus Outlet Pressure at Cutoff, 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Typical Noise Levels at 1800 and 1200 r/min. with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



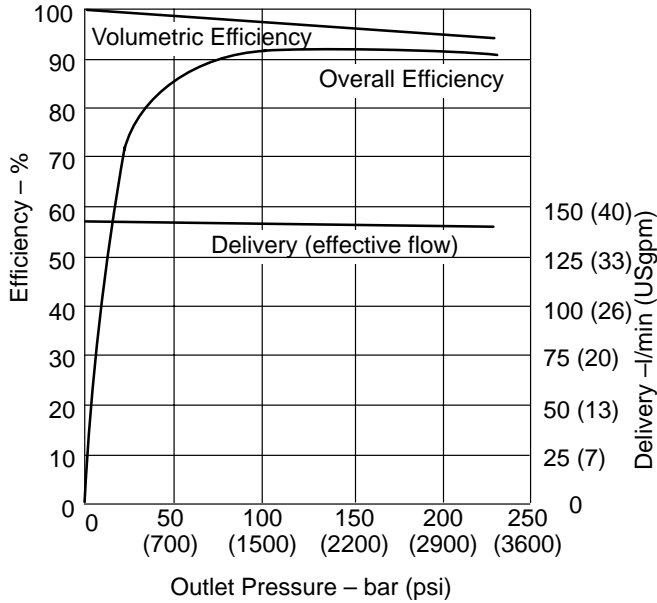
Typical Noise Levels at 1500 and 1000 r/min. with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



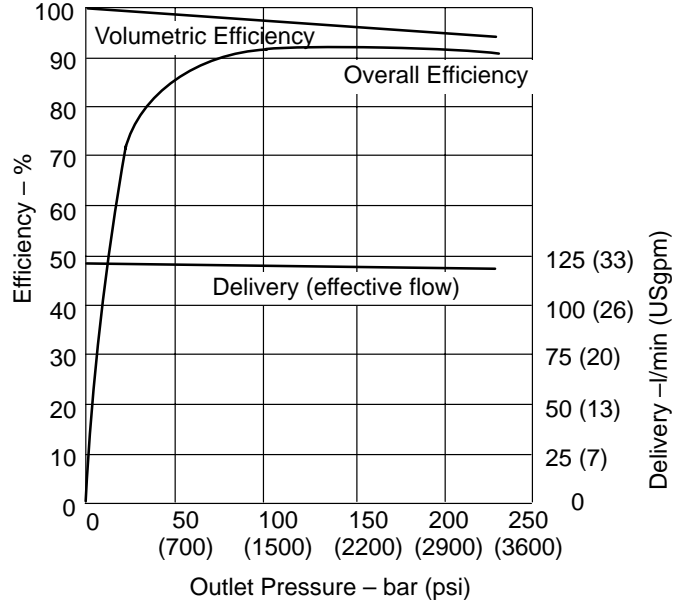
Sound pressure data equivalent to NFPA.

PVQ81 Performance

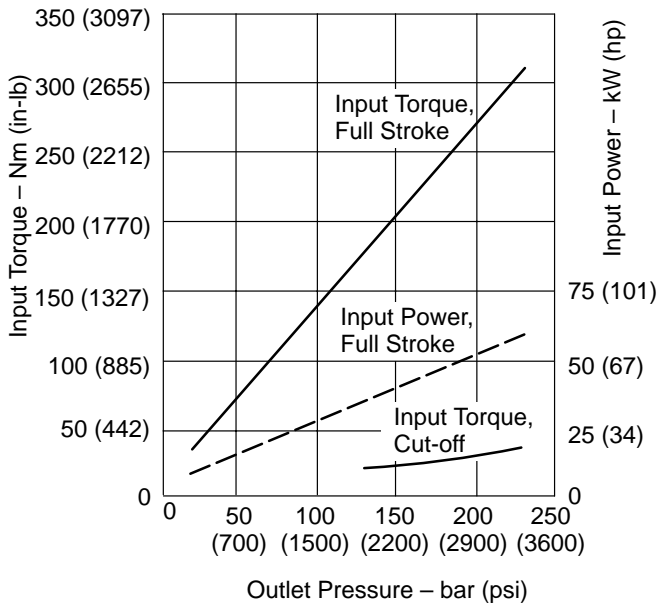
Delivery and Efficiency at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



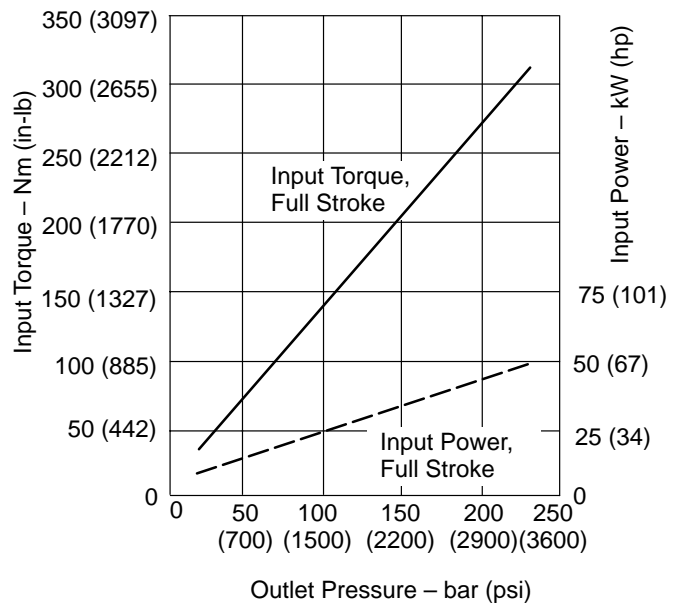
Delivery and Efficiency at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

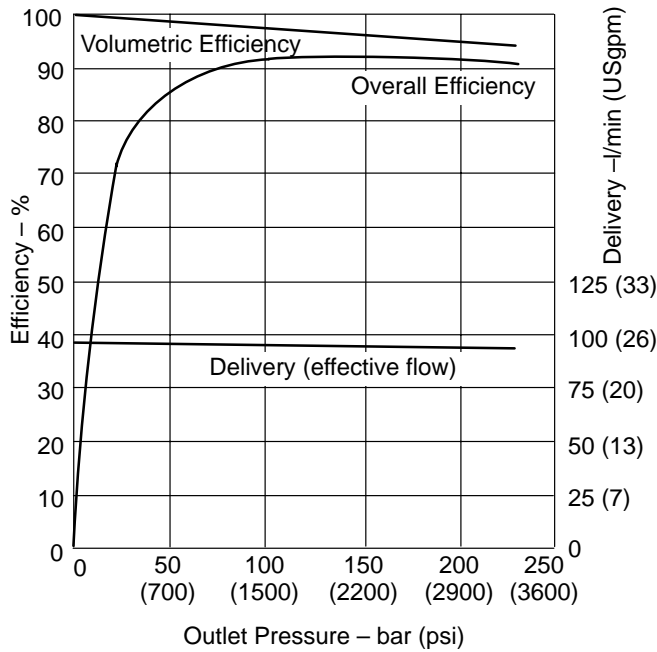


Input Torque and Power at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

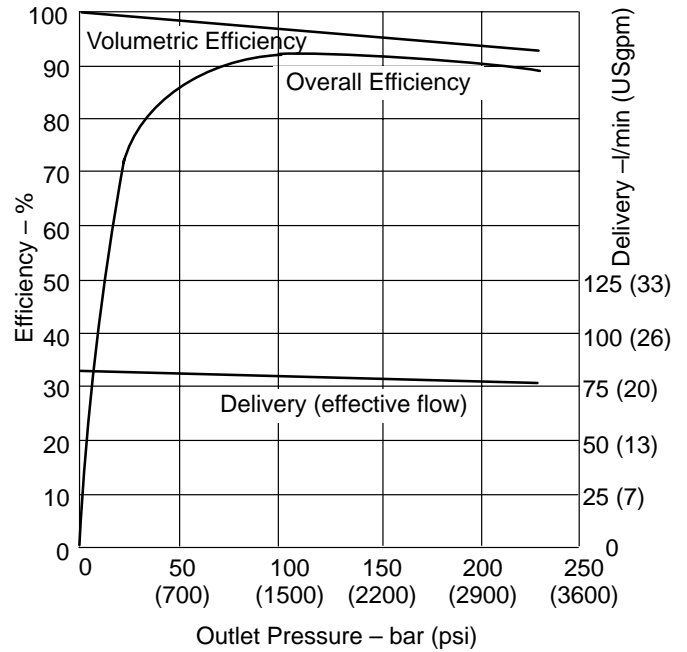


PVQ200 Family

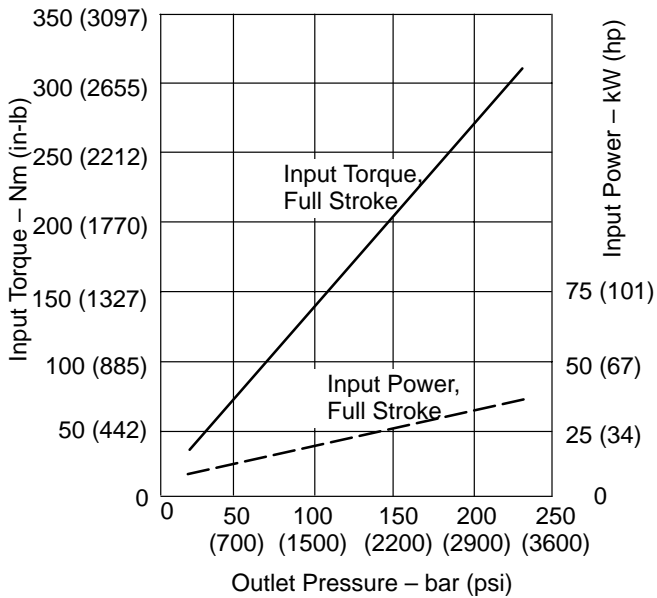
Delivery and Efficiency at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



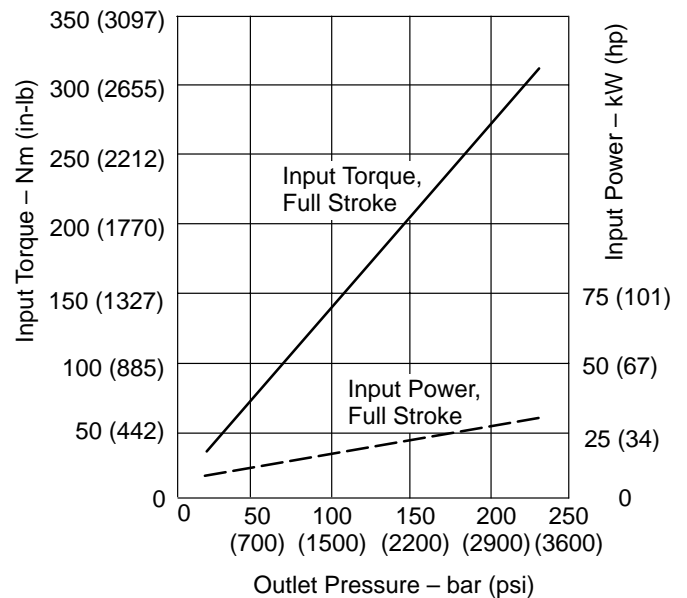
Delivery and Efficiency at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

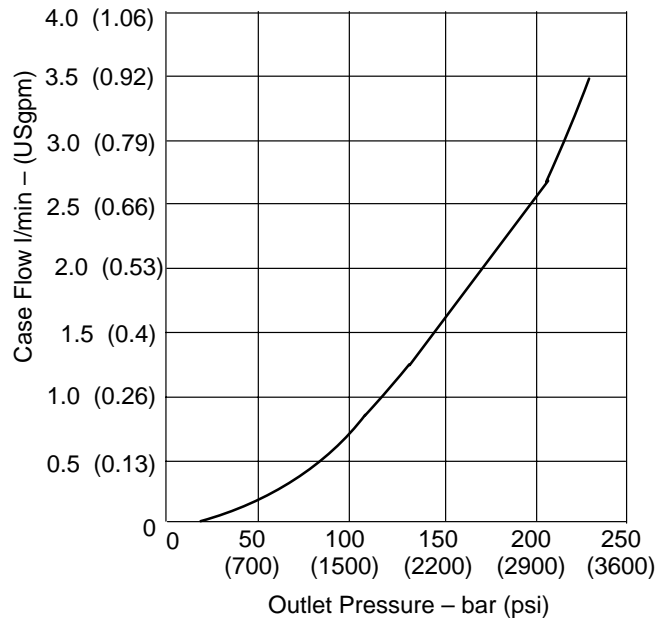


Input Torque and Power at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

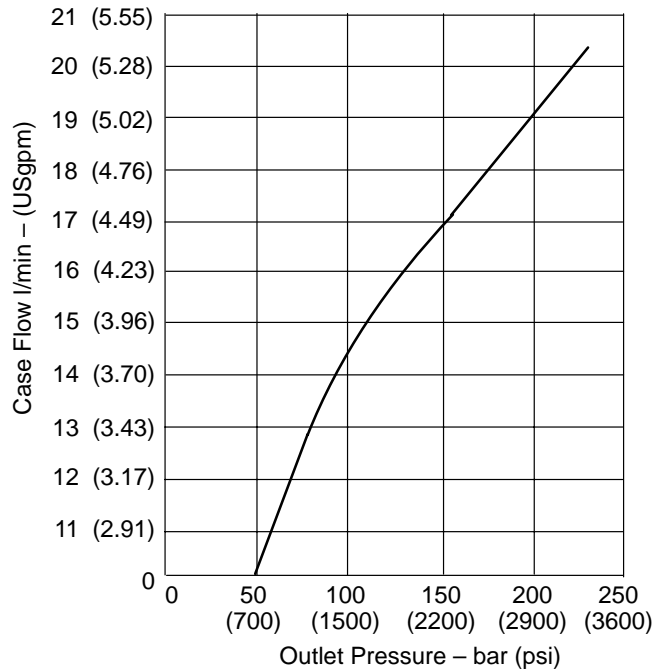


PVQ106 Performance

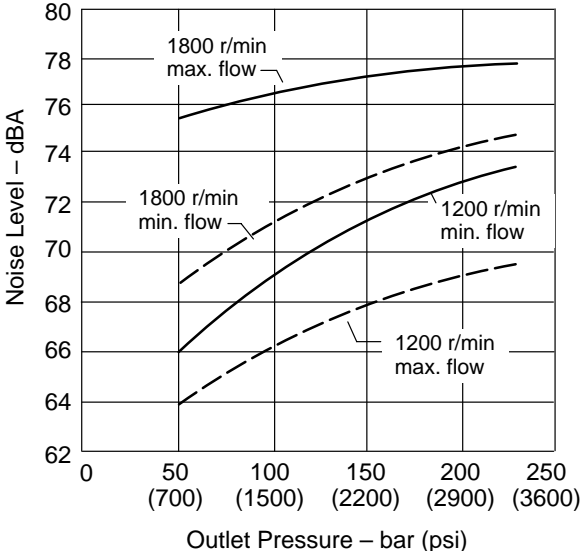
Case Flow versus Outlet Pressure at 1800 r/min, Full Flow, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



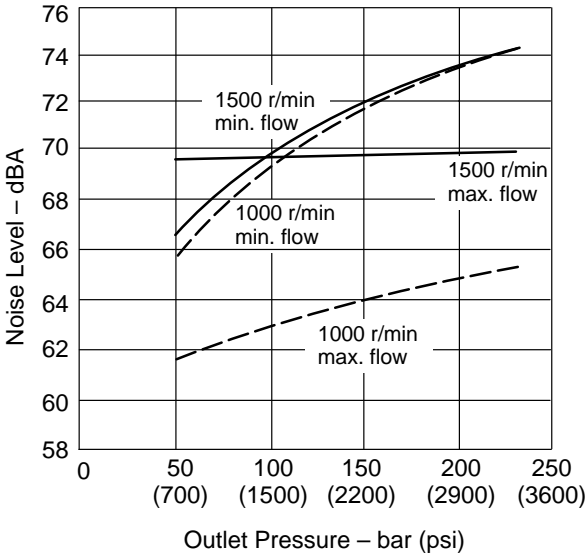
Case Flow versus Outlet Pressure at Cutoff, 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Typical Noise Levels at 1800 and 1200 r/min. with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



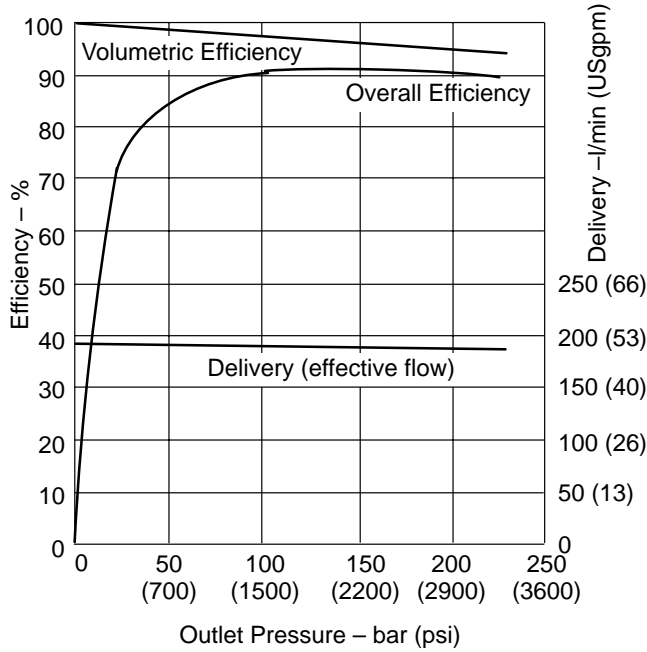
Typical Noise Levels at 1500 and 1000 r/min. with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



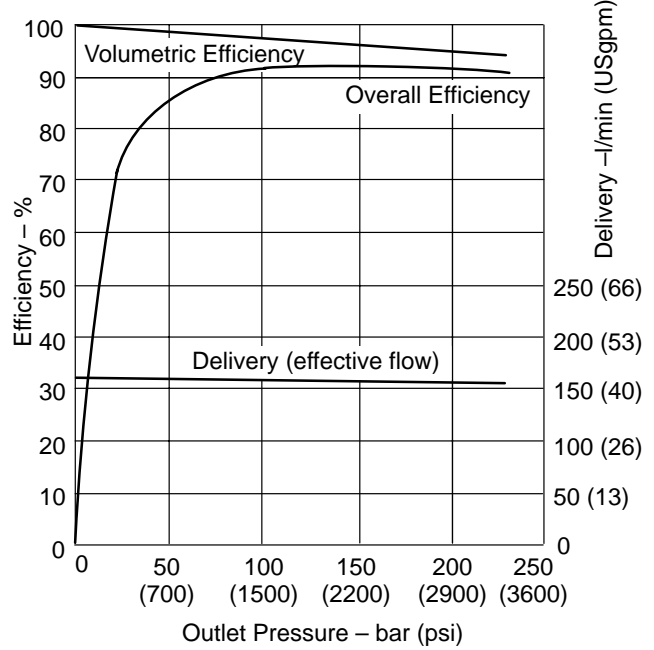
Sound pressure data equivalent to NFPA.

PVQ106 Performance

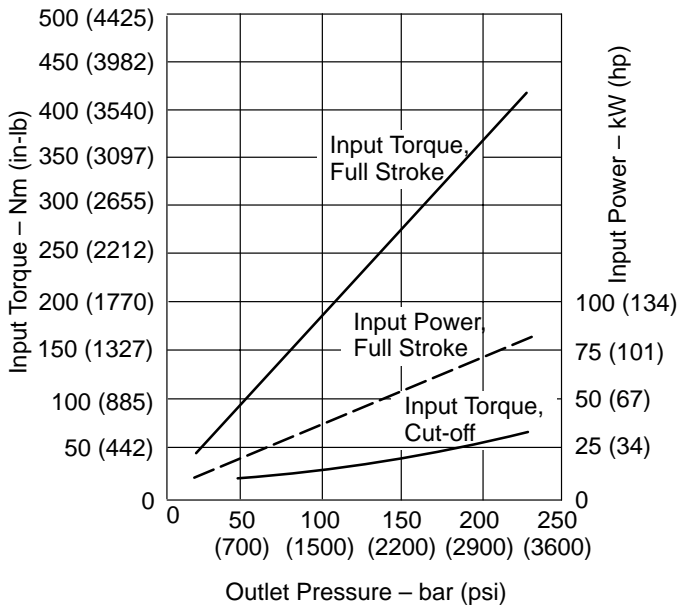
Delivery and Efficiency at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



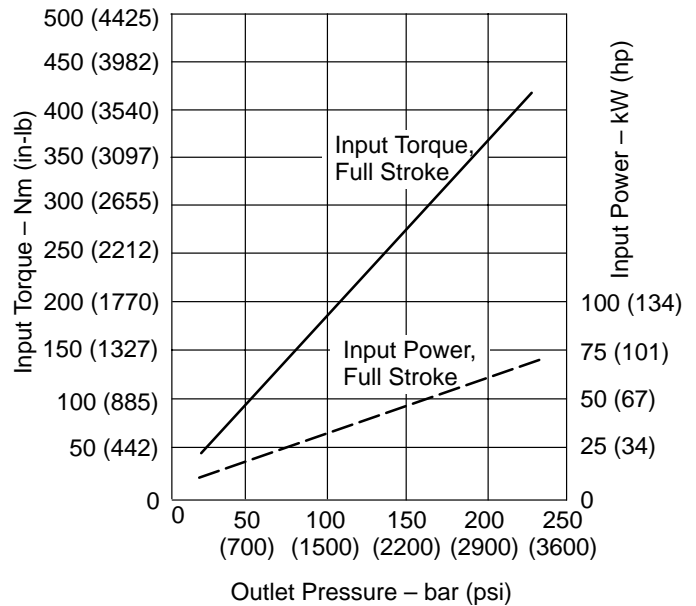
Delivery and Efficiency at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

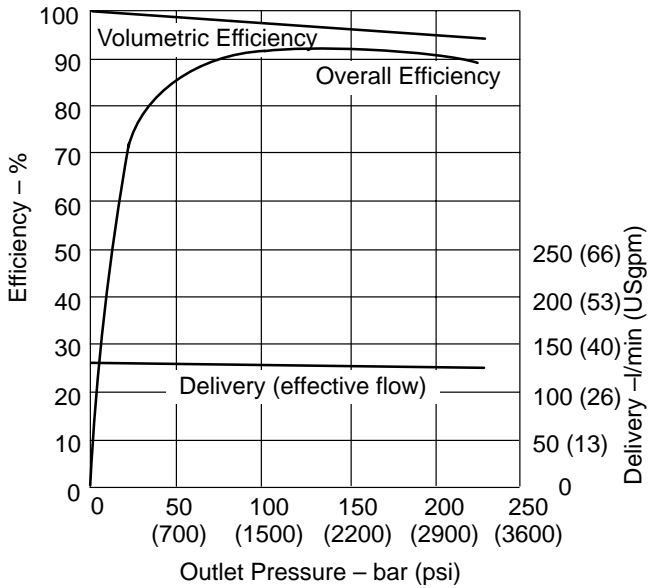


Input Torque and Power at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

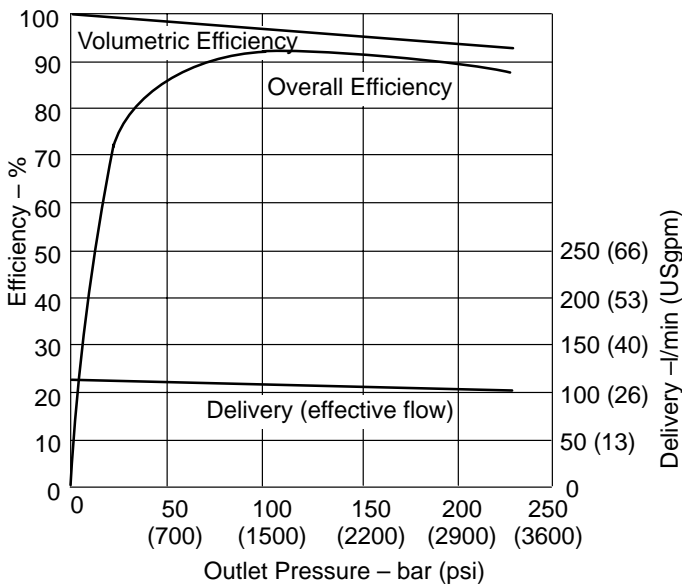


PVQ200 Family

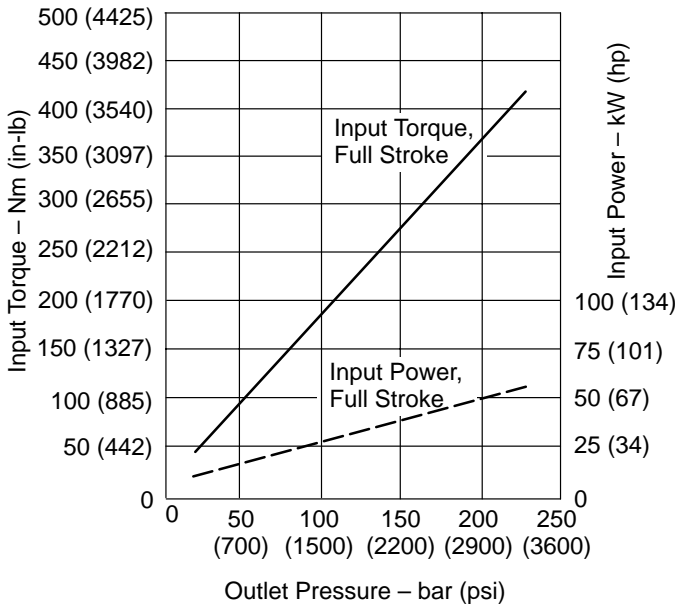
Delivery and Efficiency at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



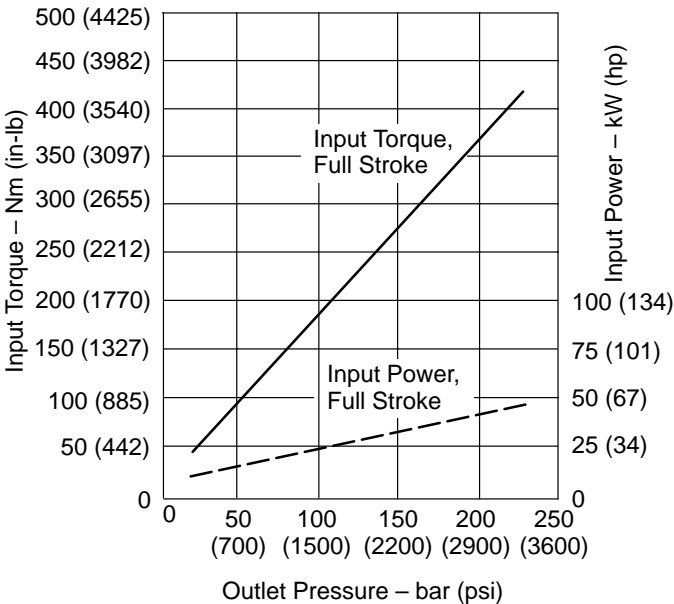
Delivery and Efficiency at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

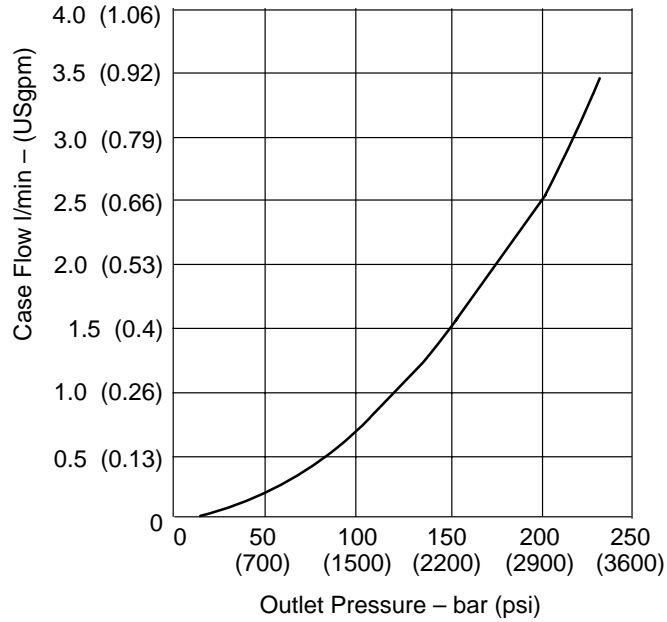


Input Torque and Power at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

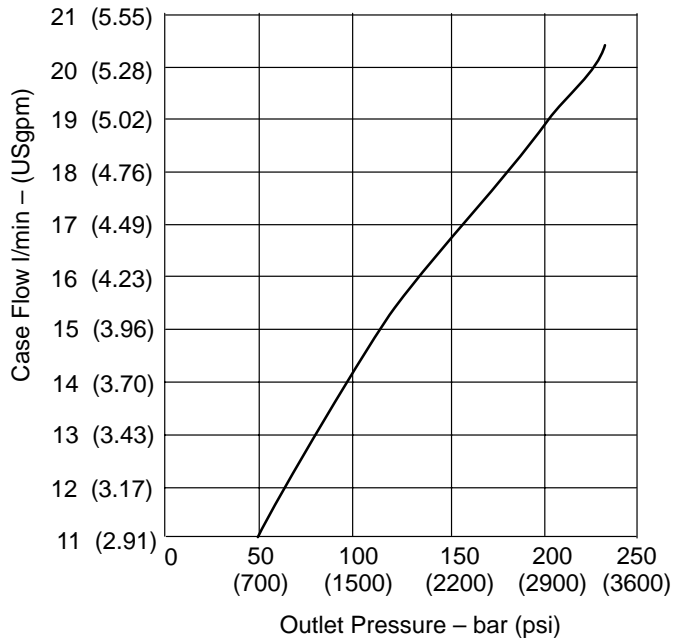


PVQ141 Performance

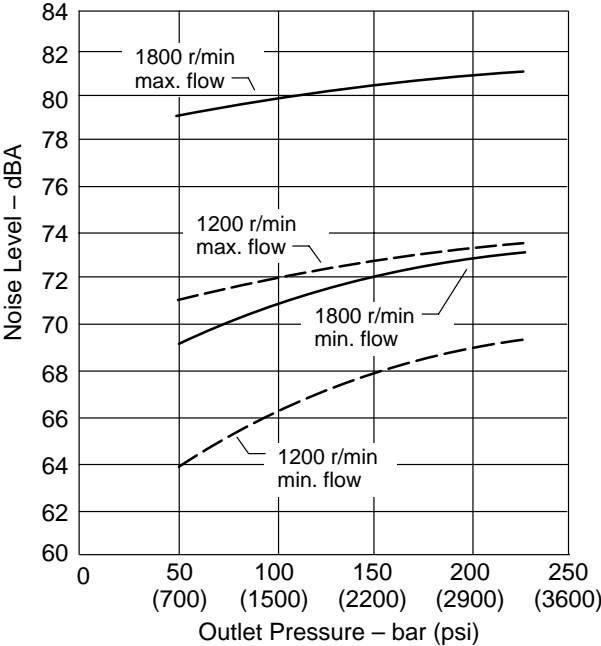
Case Flow versus Outlet Pressure at 1800 r/min, Full Flow, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



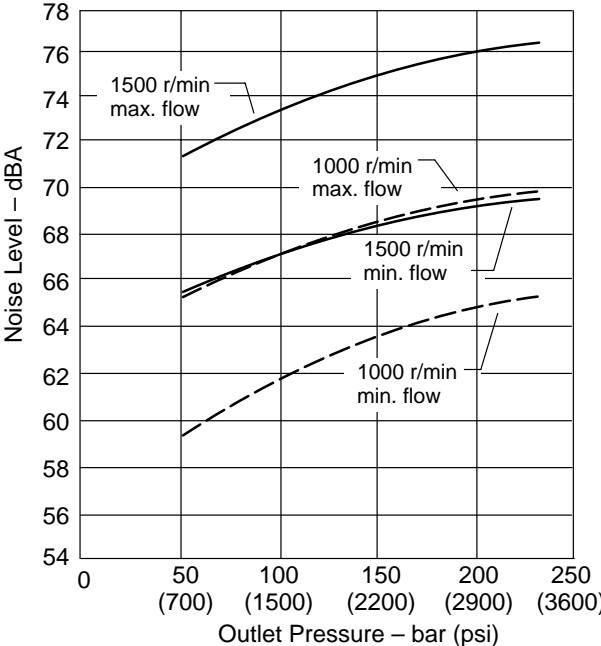
Case Flow versus Outlet Pressure at Cutoff, 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Typical Noise Levels at 1800 and 1200 r/min with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



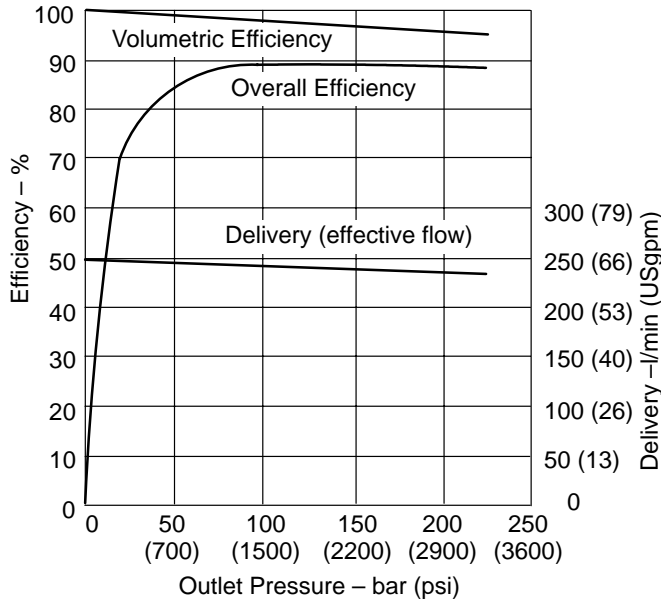
Typical Noise Levels 1500 and 1000 r/min with Petroleum Oil (10W) at 50°C (120°F) and 1.0 bar absolute (0 psi gauge) Inlet



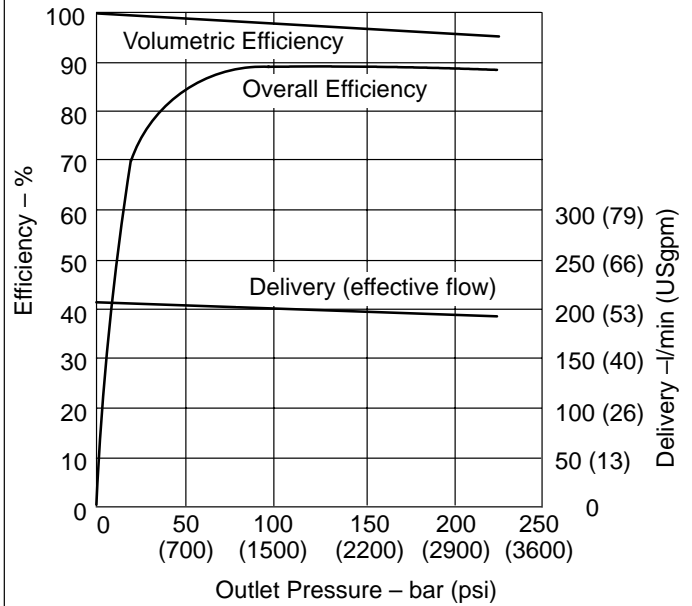
Sound pressure data equivalent to NFPA.

PVQ141 Performance

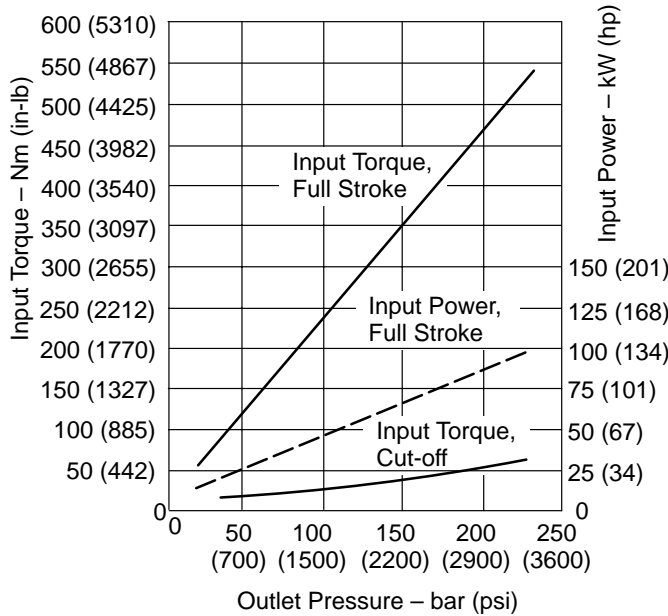
Delivery and Efficiency at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



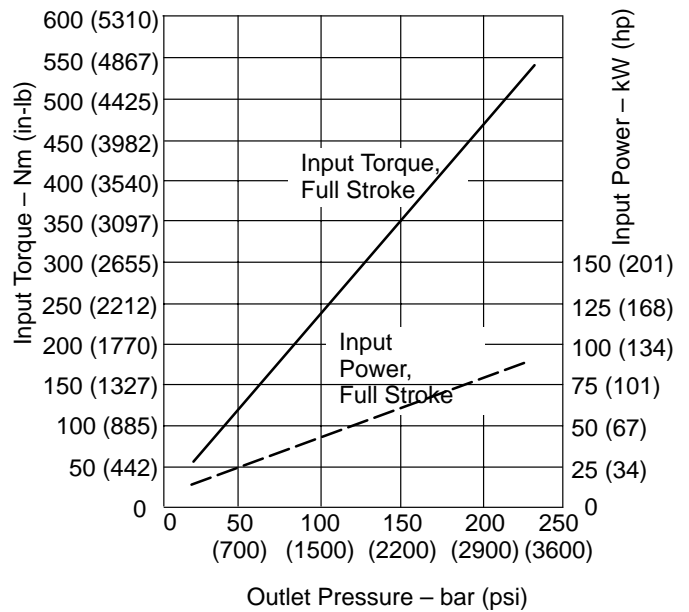
Delivery and Efficiency at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1800 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

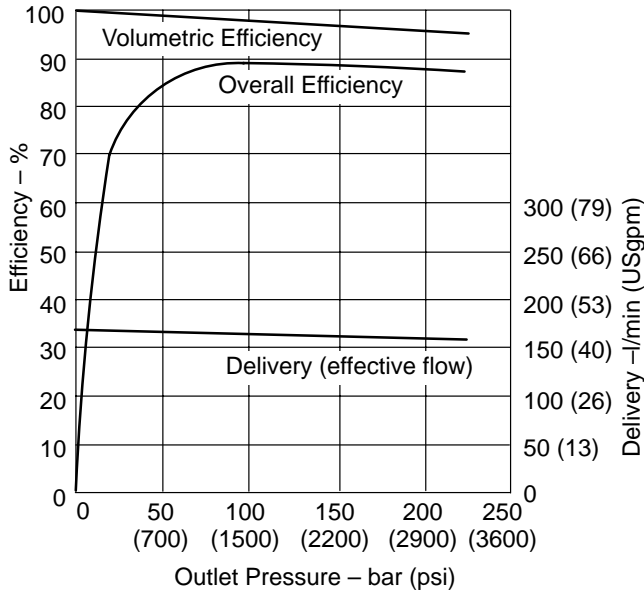


Input Torque and Power at 1500 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet

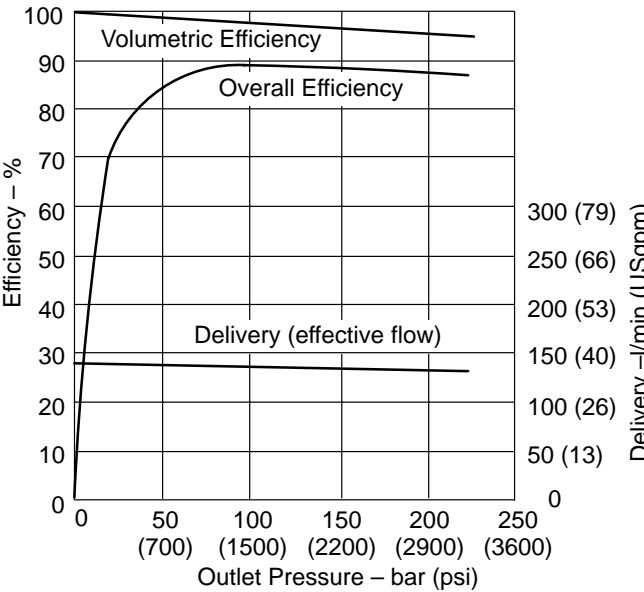


PVQ200 Family

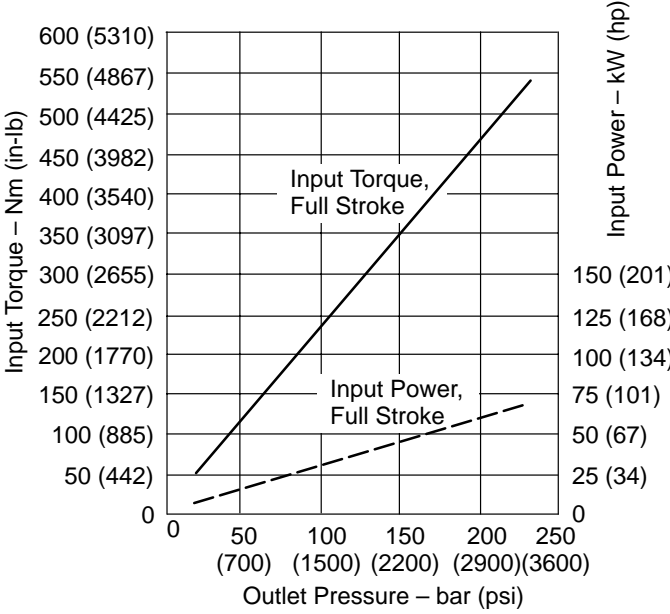
Delivery and Efficiency at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



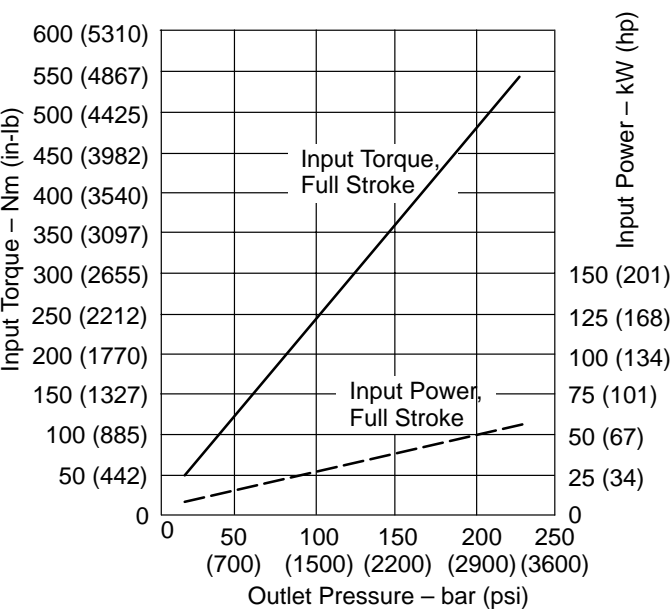
Delivery and Efficiency at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



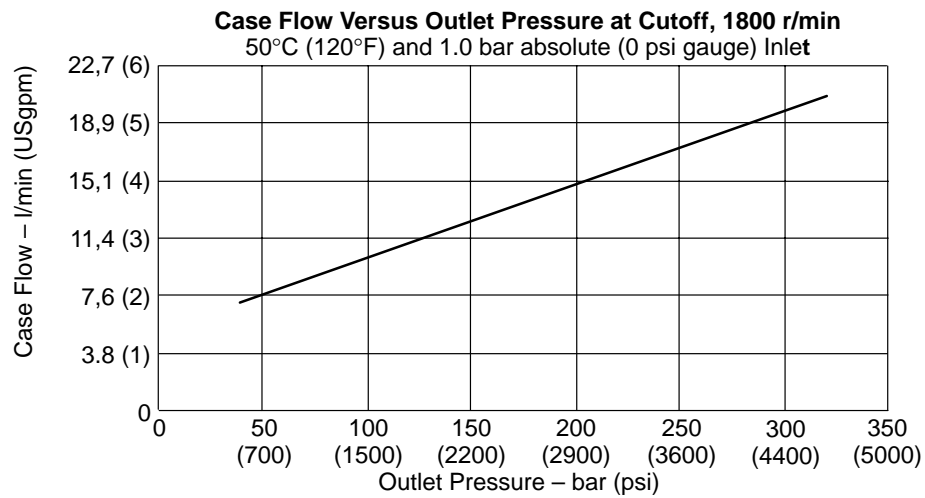
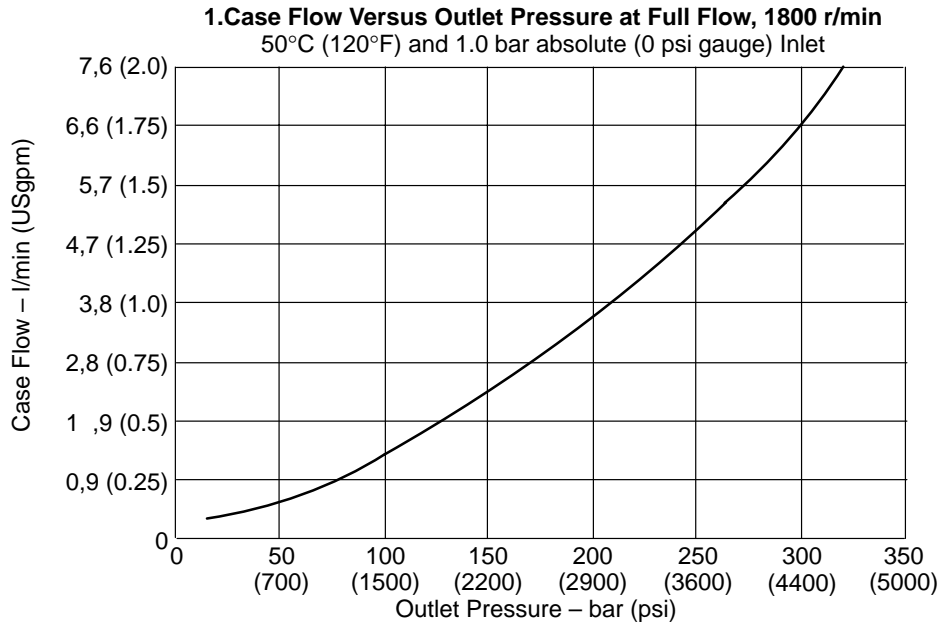
Input Torque and Power at 1200 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



Input Torque and Power at 1000 r/min, 50°C (120°F), and 1.0 bar absolute (0 psi gauge) Inlet



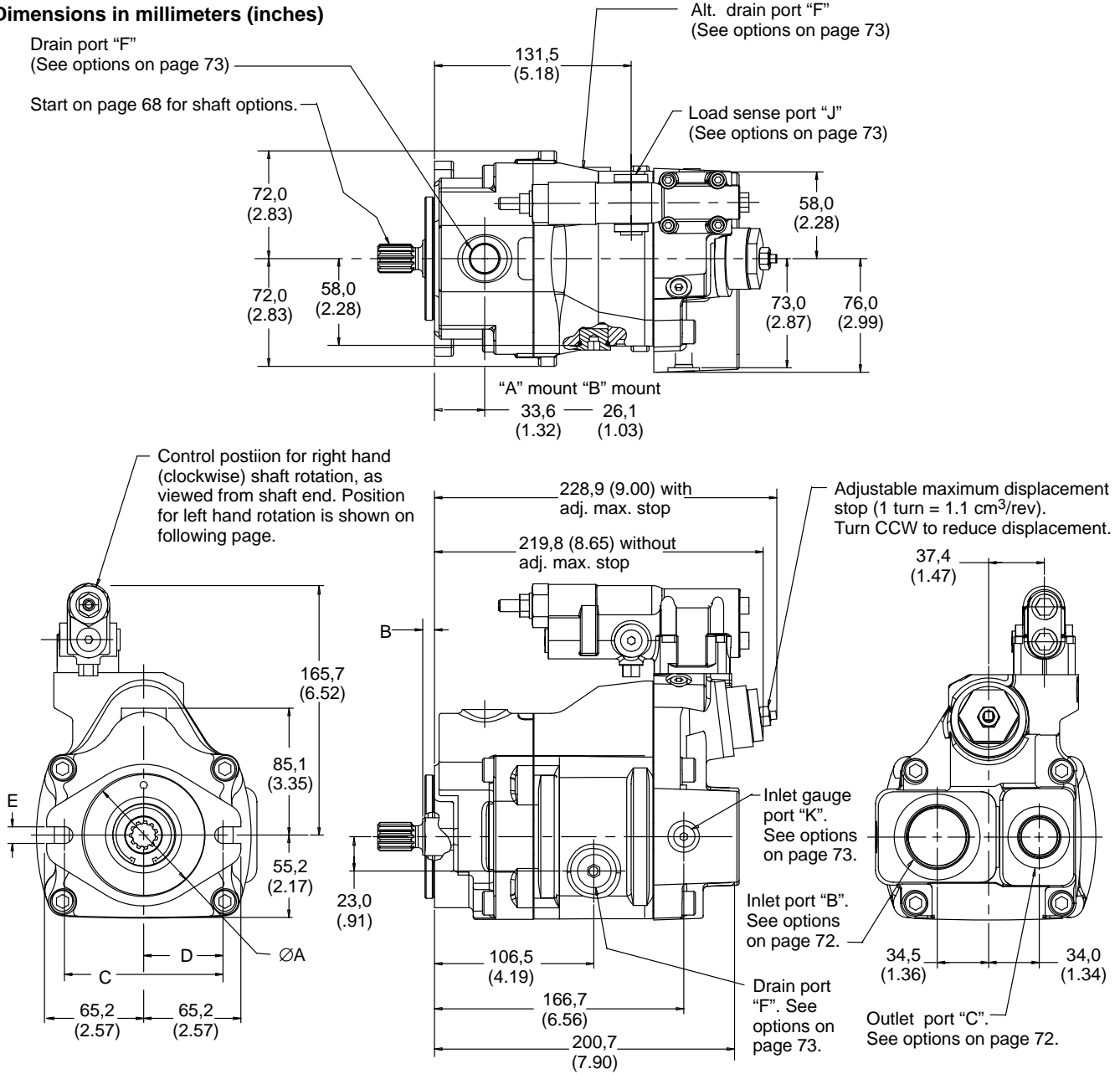
PVQ141 Performance



PVQ20 End-ported Models

PVQ200 Family

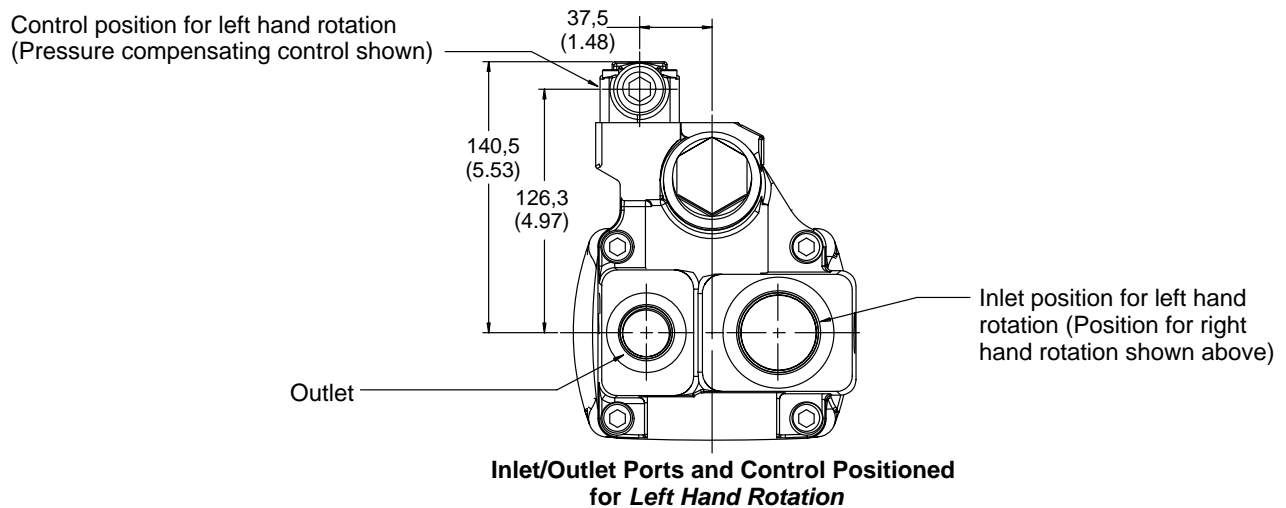
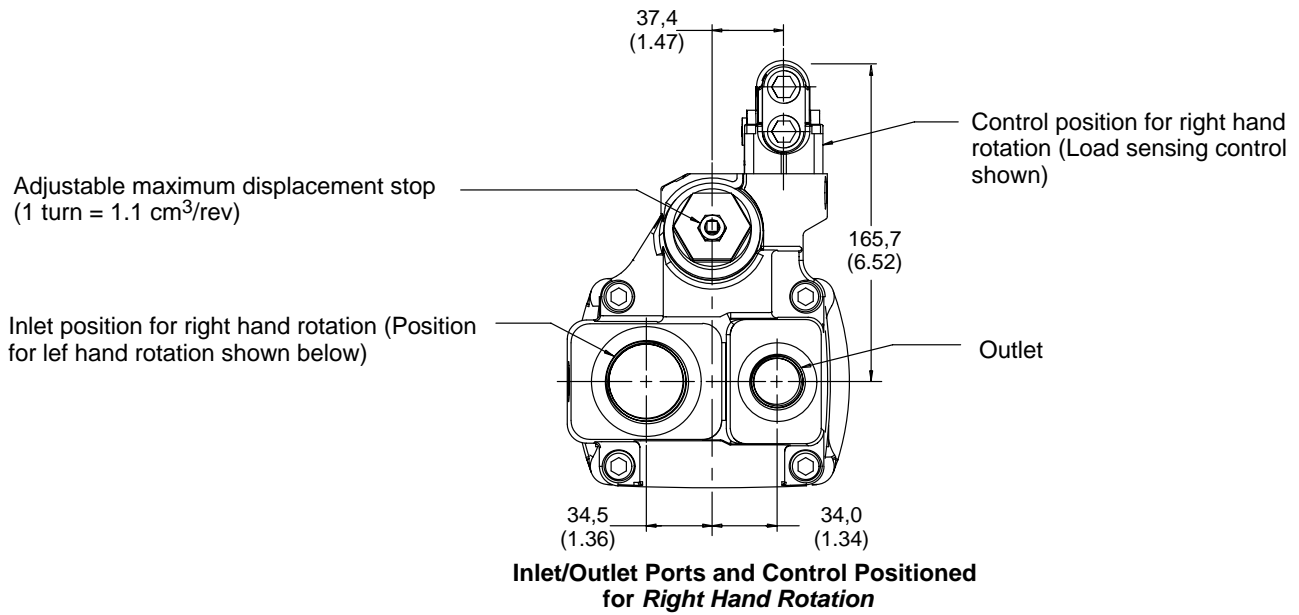
Dimensions in millimeters (inches)



"A" Pilot Flange Designation	ØA	B	C	D	E
SAE J744-82-2 Model Code "A2"	82,55 (3.25)	8,00 (.315)	106,4 (4.19)	53,2 (2.09)	11,35/10,97 (.447/.432)
ISO 3019/2-80A2HW Model Code "MA2"	80,00 (3.15)	8,00 (.315)	109,0 (4.29)	54,5 (2.15)	11,27/11,00 (.444/.433)
"B" Pilot Flange Designation					
SAE J744-101-2 Model Code "B2"	101,60 (4.00)	8,00 (.315)	146,0 (5.750)	73,0 (2.875)	14,55/14,17 (.572/.557)
ISO 3019/2-100A2HW Model Code "MB2"	100,00 (3.937)	8,00 (3.15)	140,0 (5.512)	70,0 (2.756)	14,27/14,00 (.562/.551)

PVQ20 End-ported Models

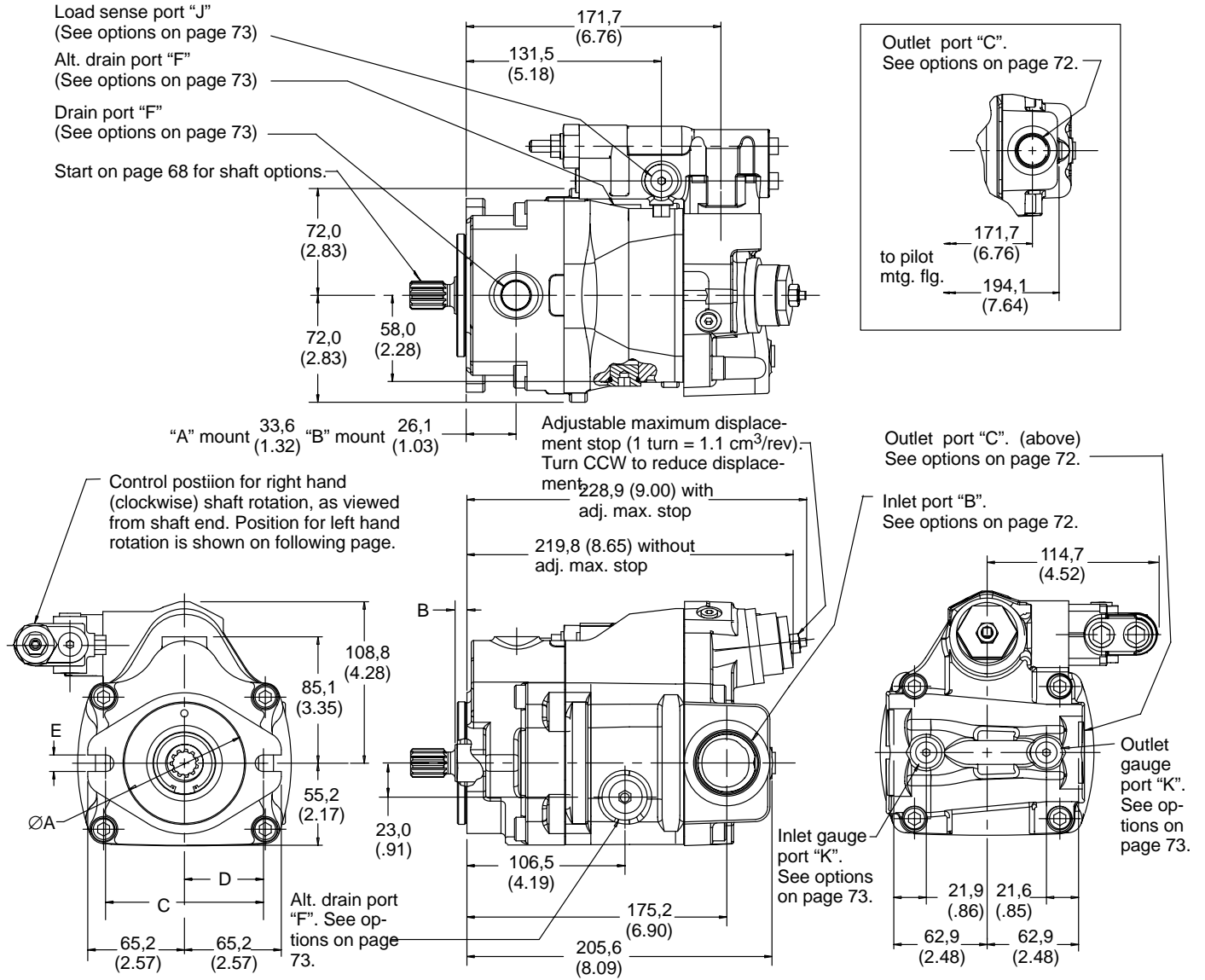
Dimensions in millimeters (inches)



PVQ20 Side-ported Models

PVQ200 Family

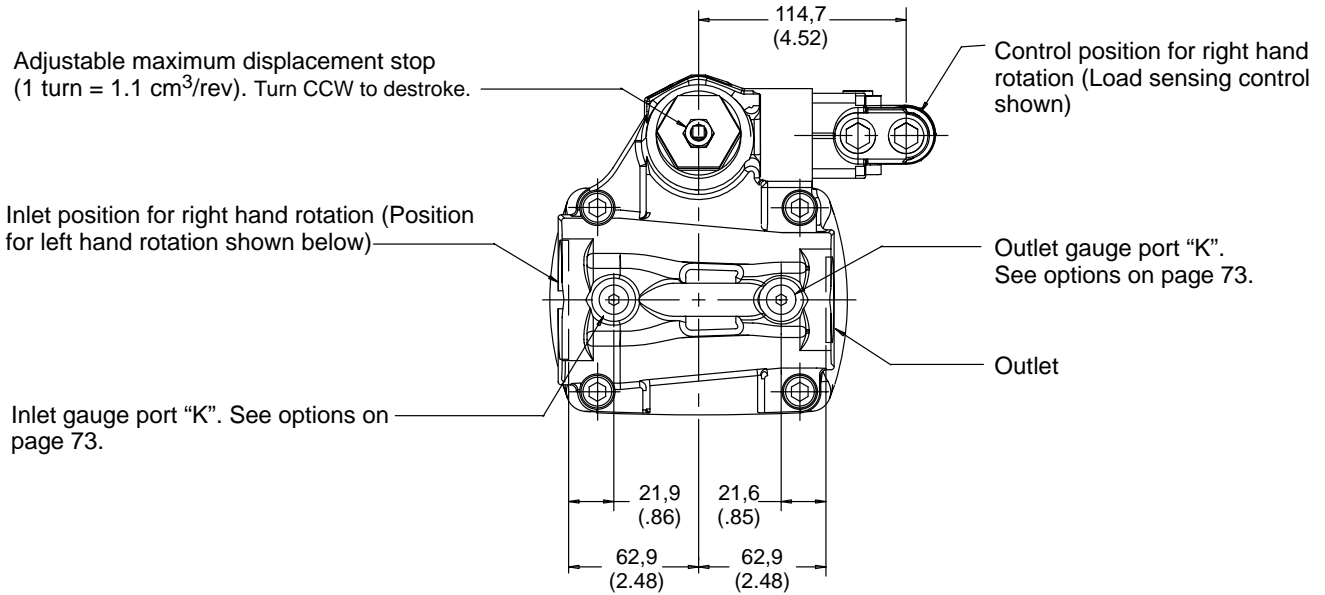
Dimensions in millimeters (inches)



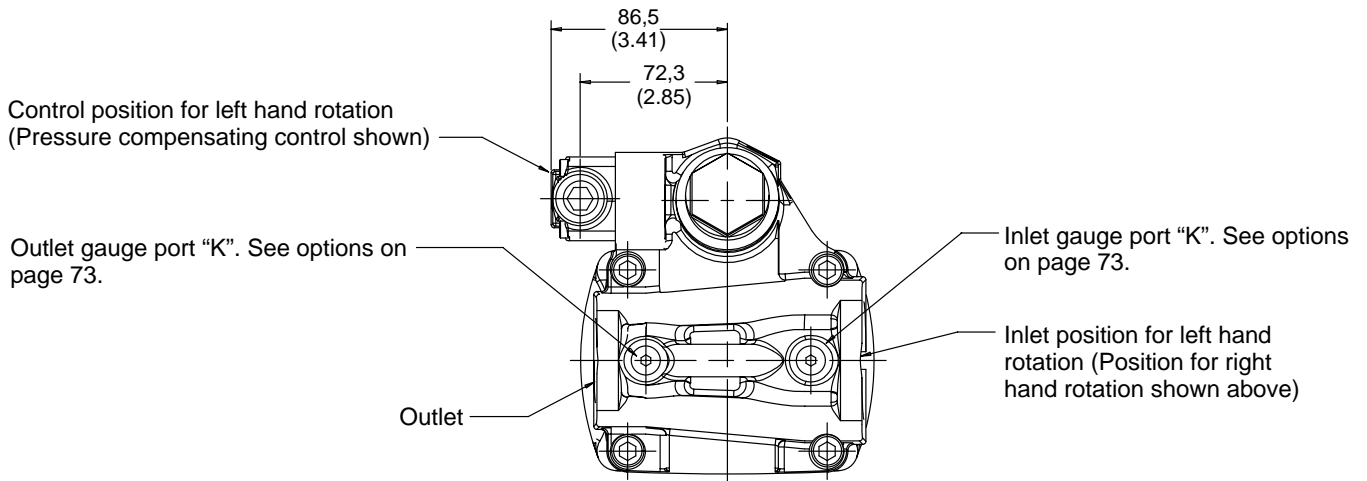
"A" Pilot Flange Designation	ØA	B	C	D	E
SAE J744-82-2 Model Code "A2"	82,55 (3.25)	8,00 (.315)	106,4 (4.19)	53,2 (2.09)	11,35/10,97 (.447/.432)
ISO 3019/2-80A2HW Model Code "MA2"	80,00 (3.15)	8,00 (.315)	109,0 (4.29)	54,5 (2.15)	11,27/11,00 (.444/.433)
"B" Pilot Flange Designation					
SAE J744-101-2 Model Code "B2"	101,60 (4.00)	8,00 (.315)	146,0 (5.750)	73,0 (2.875)	14,55/14,17 (.572/.557)
ISO 3019/2-100A2HW Model Code "MB2"	100,00 (3.937)	8,00 (3.15)	140,0 (5.512)	70,0 (2.756)	14,27/14,00 (.562/.551)

PVQ20 Side-ported Models

Dimensions in millimeters (inches)



Inlet/Outlet Ports and Control Positioned for Right Hand Rotation

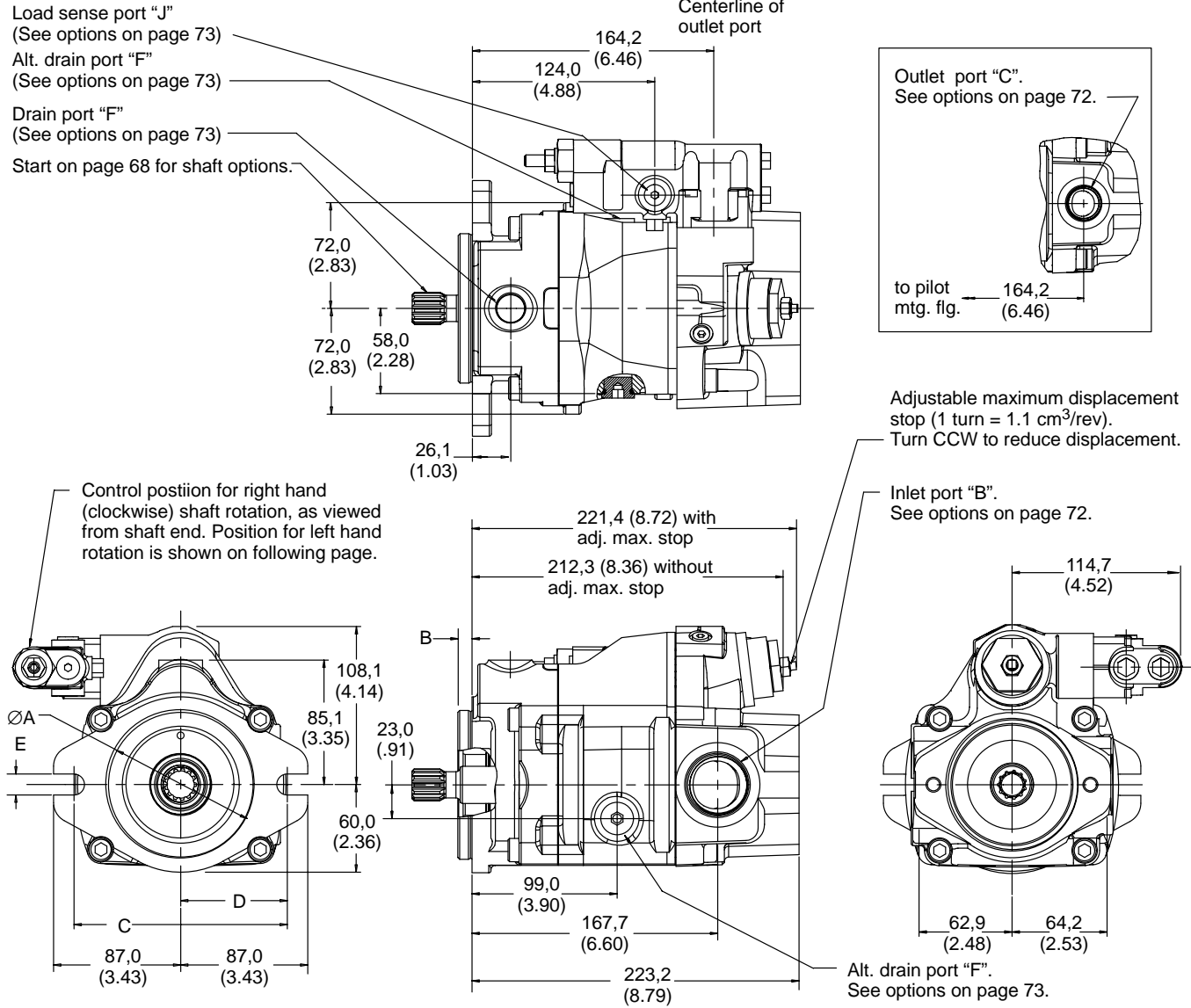


Inlet/Outlet Ports and Control Positioned for Left Hand Rotation

PVQ20 Thru-drive Models

PVQ200 Family

Dimensions in millimeters (inches)



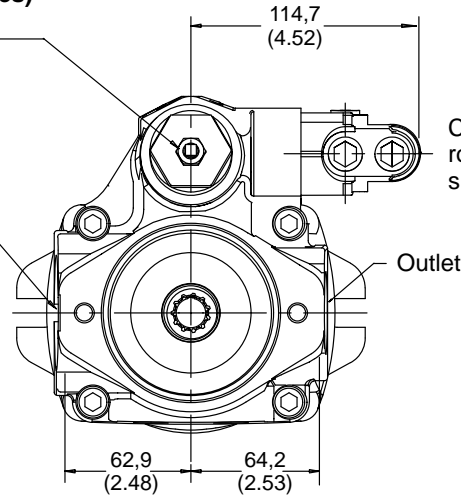
"B" Pilot Flange Designation	ØA	B	C	D	E
SAE J744-101-2 Model Code "B2"	101,60 (4.00)	8,00 (.315)	146,0 (5.75)	73,0 (2.87)	14,55/14,17 (.572/.558)
ISO 3019/2-100 A2HW Model Code "MB2"	100,00 (3.94)	8,00 (.315)	140,0 (5.51)	70,0 (2.76)	14,27/14,00 (.562/.551)

PVQ20 Thru-drive End Views

Dimensions in millimeters (inches)

Adjustable maximum displacement stop (1 turn = 1.1 cm³/rev). Turn CCW to reduce displacement.

Inlet position for right hand rotation (Position for left hand rotation shown below)



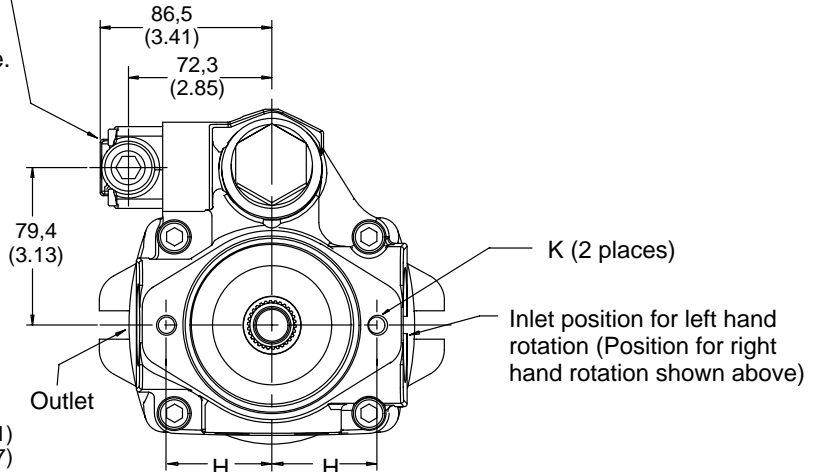
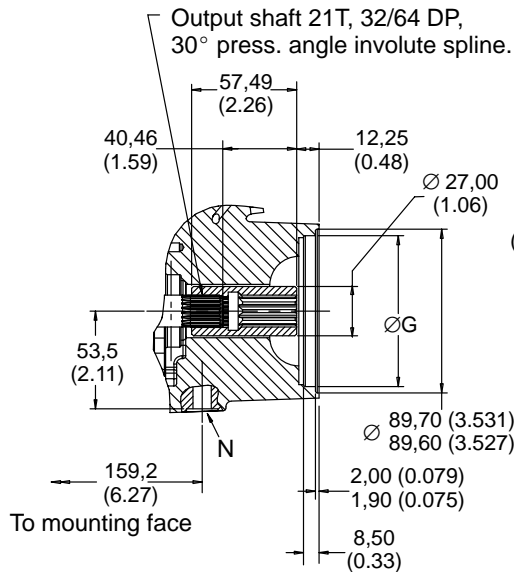
Control position for right hand rotation (Load sensing control shown)

Outlet

Inlet/Outlet Ports and Control Positioned for Right Hand Rotation

Coupling Code	Description
A9	For SAE "A" pad with a 9T, 16/32 DP, 30° Press. angle, involute spline.
A11	For SAE "A" pad with a 11T, 16/32 DP, 30° Press. angle, involute spline.
MA9	For ISO 80 A2HW pad with 9T, 16/32 DP, 30° Press. angle, involute spline.
MA11	For ISO 80 A2HW pad with a 11T, 16/32 DP, 30° Press. angle, involute spline.

Control position for left hand rotation (Pressure compensating control shown)

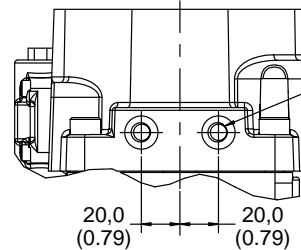


K (2 places)

Inlet position for left hand rotation (Position for right hand rotation shown above)

Outlet

Inlet/Outlet Ports and Control Positioned for Left Hand Rotation



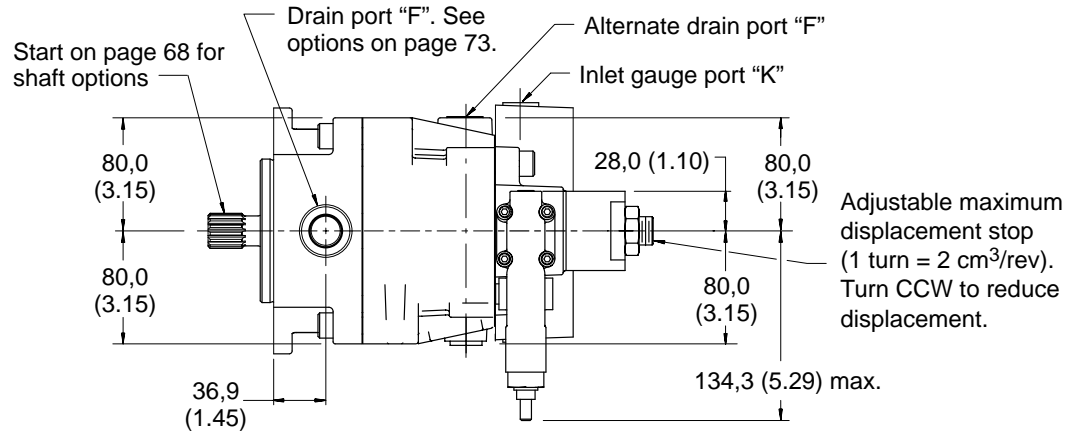
N Support attachment points (2 places)

Thru-drive Flange Designation	Port Code	ØG	H	K	N
SAE "A" Pad	F, S	82,625 (3.253) 82,575 (3.250)	53,2 (2.09)	.375-16 UNC-2B thd 0.75 deep min	.375-16 UNC-2B thd 0.62 deep min
	D, M, B	82,625 (3.253) 82,575 (3.250)	53,2 (2.09)	M10 x 1,50 thd 19,05 deep min	M10 x 1,50 thd 15,88 deep min
ISO 80-A2HW Pad	D, M, B	80,046 (3.15) 80,002 (3.149)	54,5 (2.15)	M10 thd x 19,05 deep min	M10 thd x 15,88 deep min

PVQ50 End-ported Models

PVQ200 Family

Dimensions in millimeters (inches)

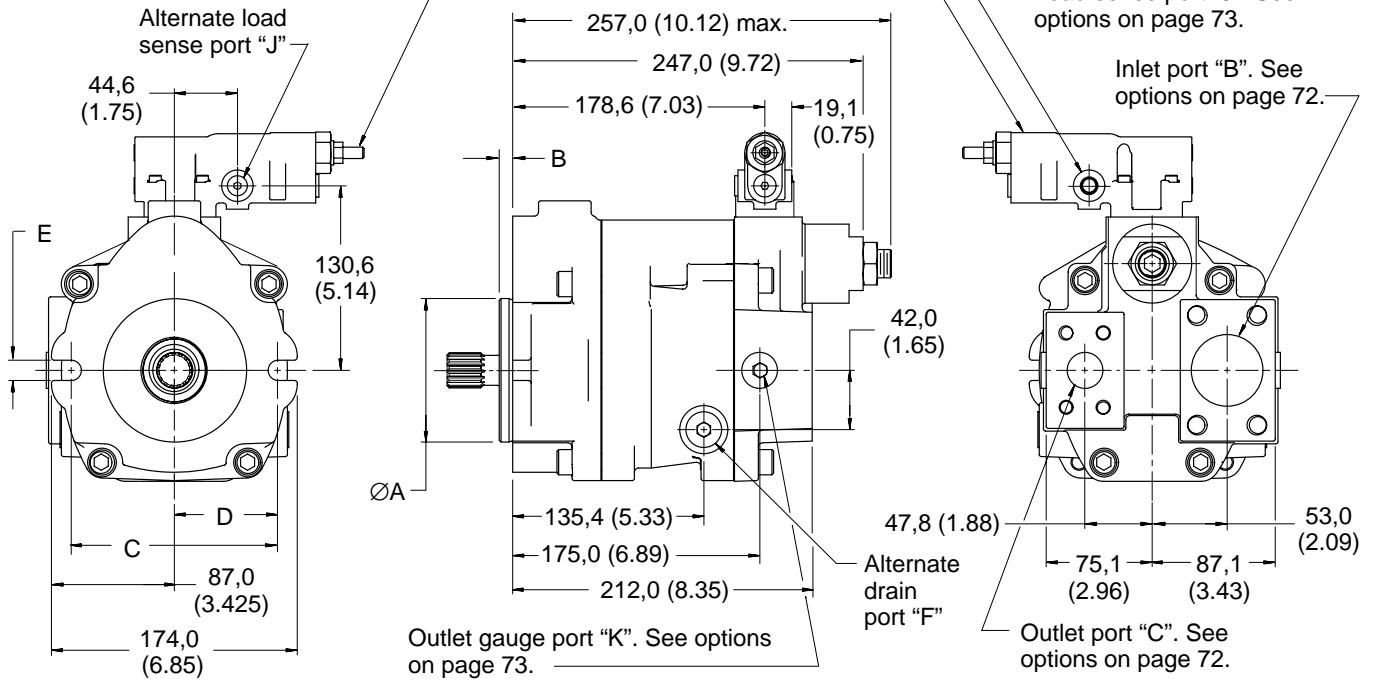


Control position for left hand (counterclockwise) shaft rotation, as viewed from shaft end. Position for right hand rotation is shown on following page.

Load sensing control (See pressure compensated control on following page)

Load sense port "J". See options on page 73.

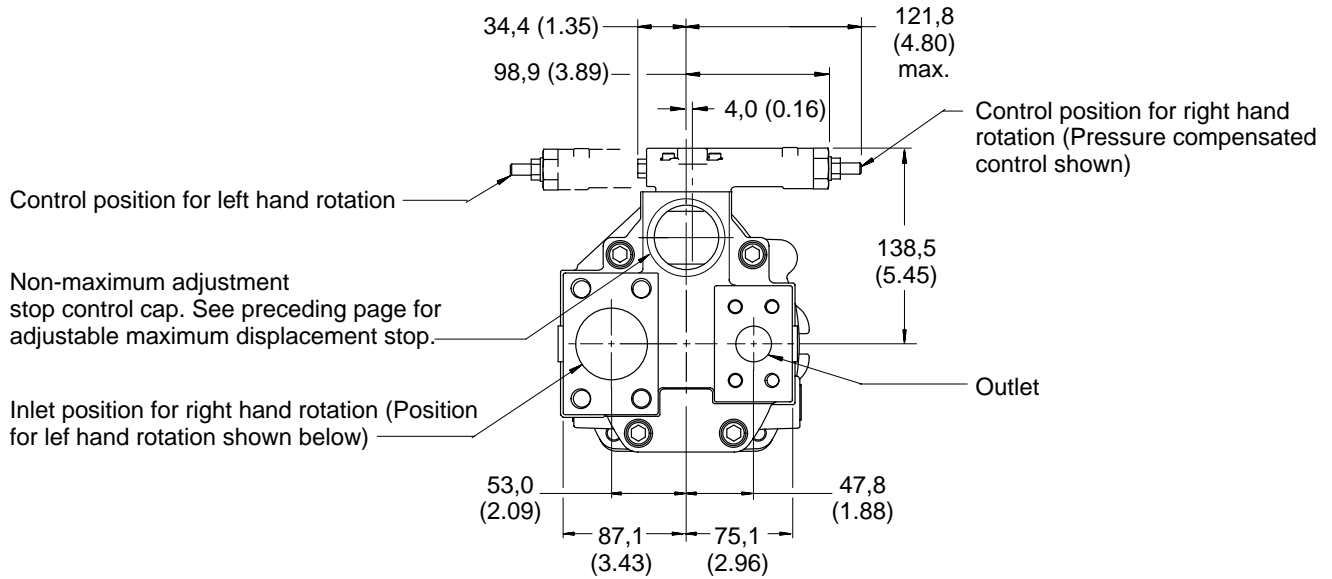
Inlet port "B". See options on page 72.



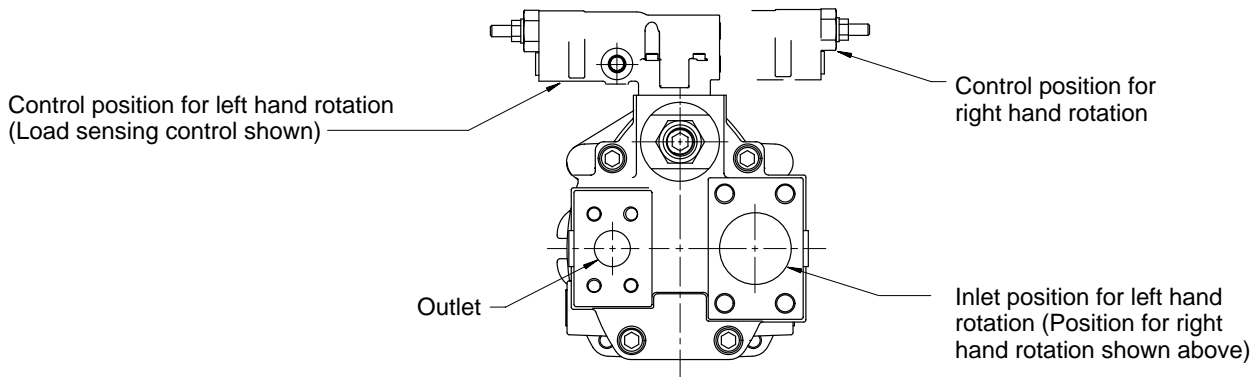
Flange Designation	ØA	B	C	D	E
SAE J744-101-2	101,60/101,55 (4.000/3.998)	9,70/9,19 (.382/.362)	146,0 (5.750)	73,0 (2.875)	14,55/14,17 (.572/.557)
ISO 3019/2-100A2HW	100,00/99,95 (3.937/3.935)	9,50/9,00 (.374/.354)	140,0 (5.512)	70,0 (2.756)	14,27/14,00 (.562/.551)

PVQ50 End-ported Models

Dimensions in millimeters (inches)



Inlet/Outlet Ports and Control Positioned for Right Hand Rotation



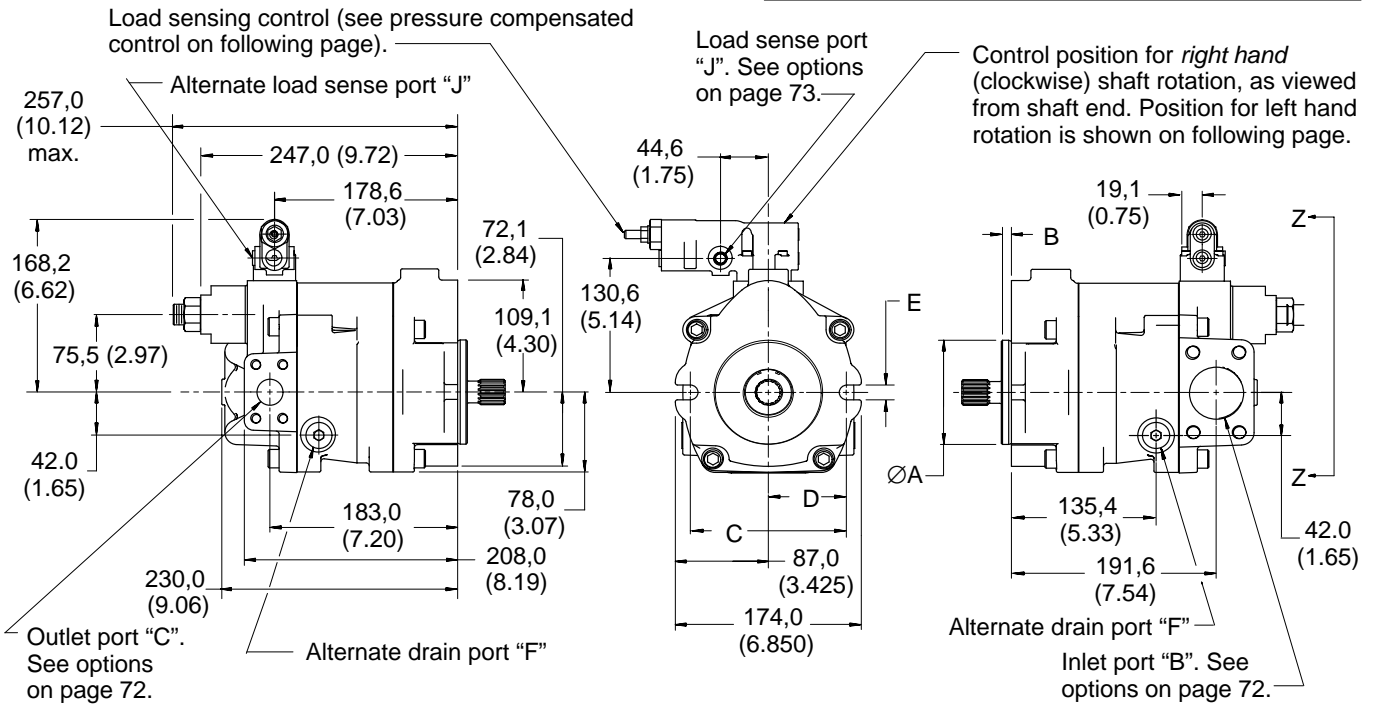
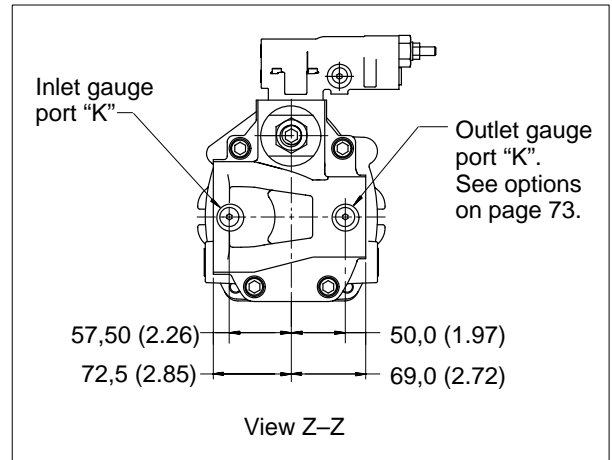
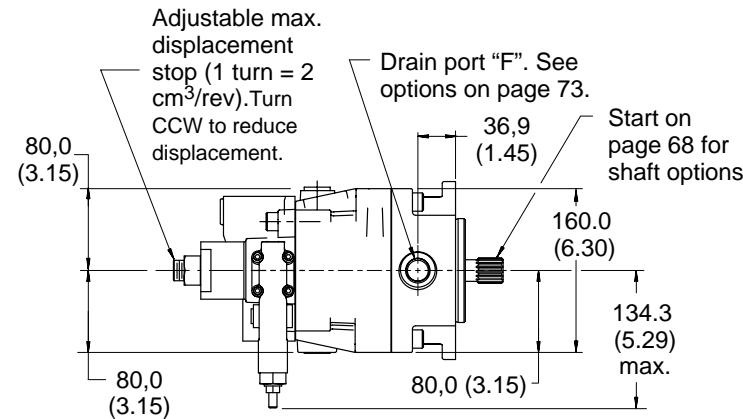
Inlet/Outlet Ports and Control Positioned for Left Hand Rotation

Dimensions shown on preceding page.

PVQ50 Side-ported Models

PVQ200 Family

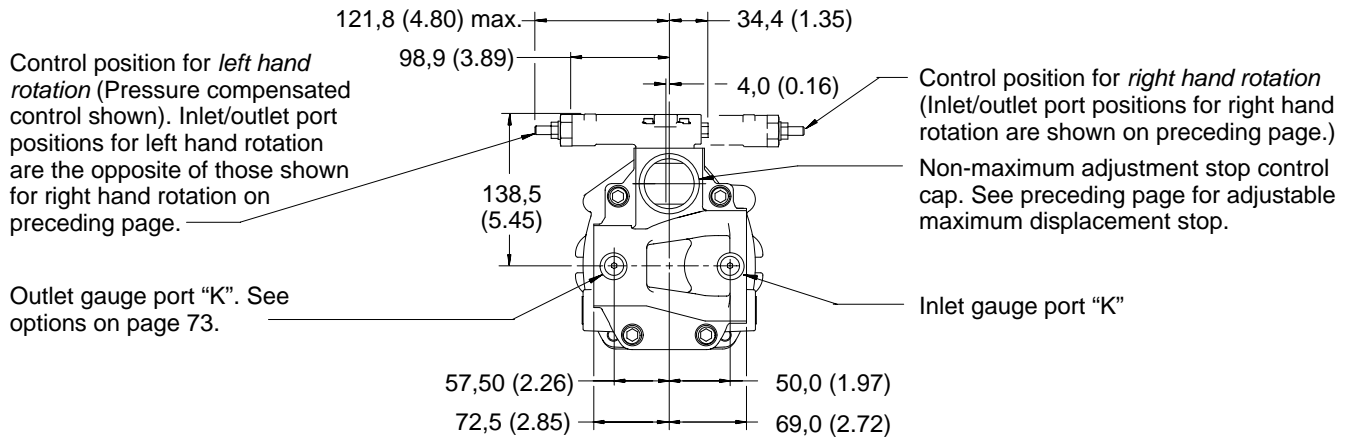
Dimensions in millimeters (inches)



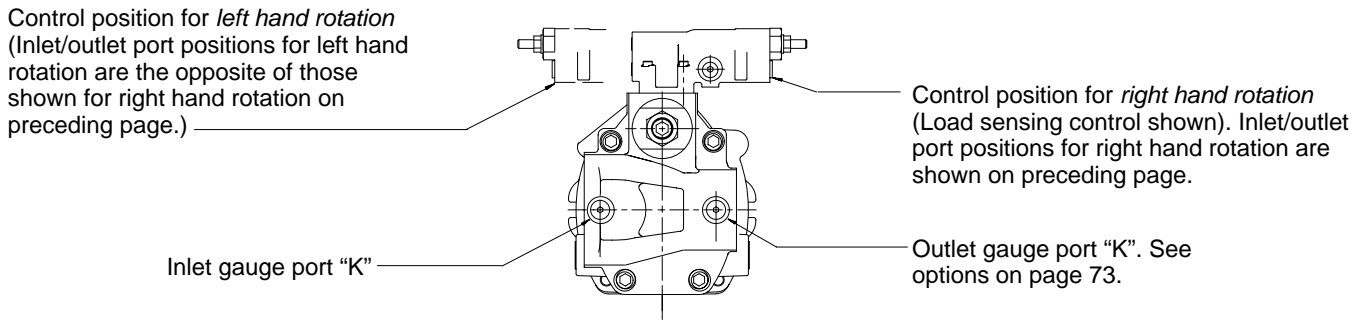
Flange Designation	ØA	B	C	D	E
SAE J744-101-2	101,60/101,55 (4.000/3.998)	9,70/9,19 (.382/.362)	146,0 (5.750)	73,0 (2.875)	14,55/14,17 (.572/.557)
ISO 3019/2-100A2HW	100,00/99,95 (3.937/3.935)	9,50/9,00 (.374/.354)	140,0 (5.512)	70,0 (2.756)	14,27/14,00 (.562/.551)

PVQ50 Side-ported Models

Dimensions in millimeters (inches)



Inlet/Outlet Ports and Control Positioned for Left Hand Rotation



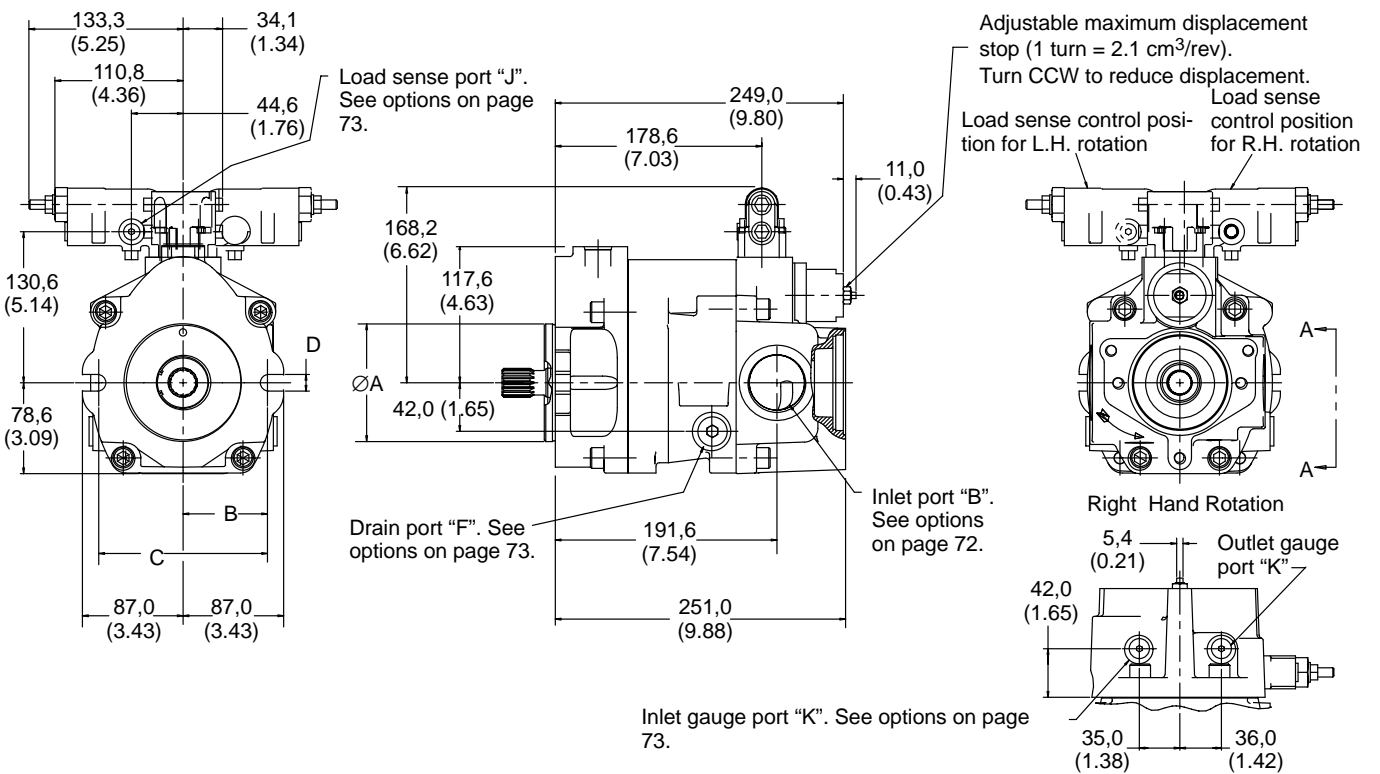
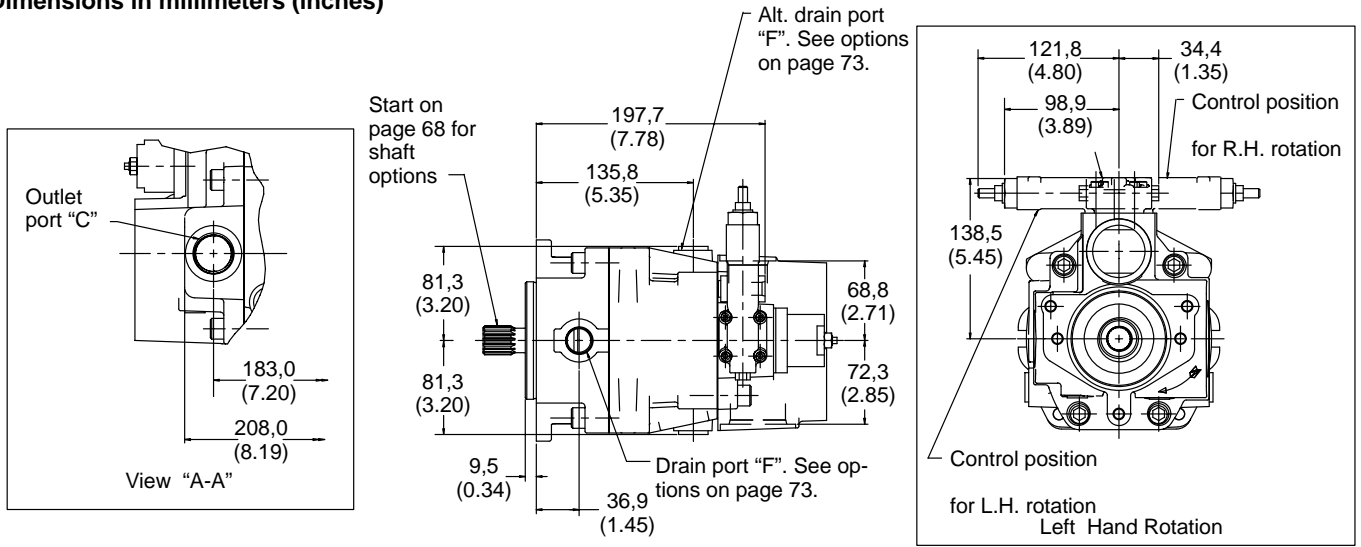
Inlet/Outlet Ports and Control Positioned for Right Hand Rotation

Dimensions shown on preceding page.

PVQ50 Thru-drive Models

PVQ200 Family

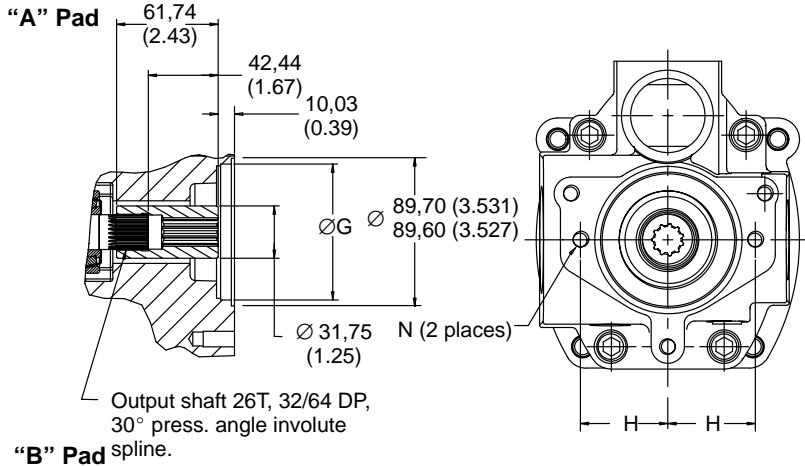
Dimensions in millimeters (inches)



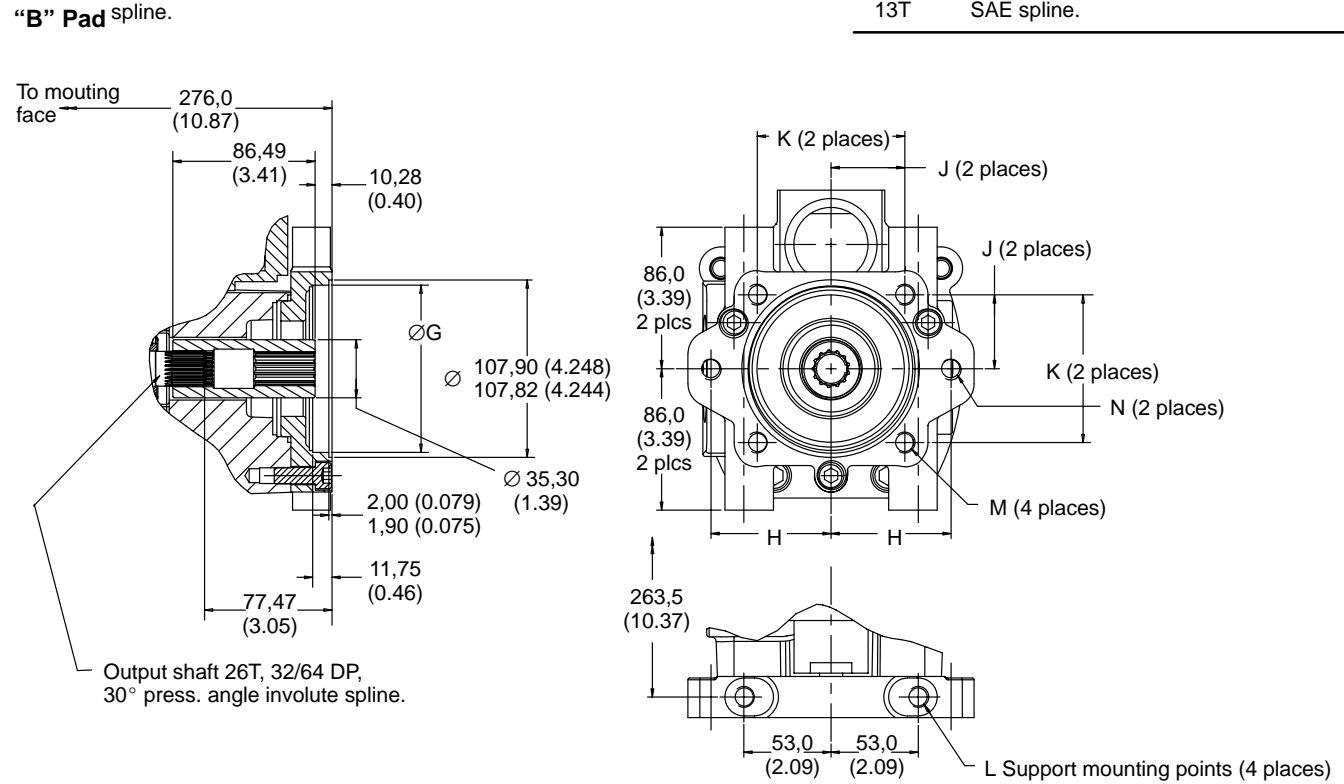
Flange Designation	ØA	B	C	D
SAE 2-bolt mount	101,60/101,55 (4.000/3.998)	73,0 (2.87)	146,0 (5.750)	14,55/14,17 (.572/.557)
ISO 100 2-bolt mount	100,00/99,95 (3.937/3.935)	70,0 (2.76)	140,0 (5.512)	14,27/14,00 (.562/.551)

PVQ50 Thru-drive Models

Dimensions in millimeters (inches)



Coupling Code	Description
A9	For SAE "A" pad with a 9T, 16/32 DP, 30° pressure angle involute spline.
A11	For SAE "A" pad with a 11T, 16/32 DP, 30° pressure angle involute spline.
B13	For SAE "B" pad with a 13T, 16/32 DP, 30° pressure angle involute spline.
B15	For SAE "B" pad with a 15T, 16/32 DP, 30° pressure angle involute spline.
MA9	For ISO 80-A2HW pad with a 9T SAE spline.
MA11	For ISO 80-A2HW pad with a 11T SAE spline.
MB13	For ISO 100-A2/B4HW pad with a 13T SAE spline.



Thru-drive Flange Designation	ØG	H	J	K	L	M	N
SAE "A" Pad	82,625 (3.253) 82,575 (3.250)	53,2 (2.09)	-	-	-	-	.375-16 UNC-2B thd 0.60 deep min
ISO 80-A2HW Pad	80,046 (3.15) 80,002 (3.149)	54,5 (2.15)	-	-	-	-	M10 thd x 15,0 deep min
SAE "B" Pad	101,65 (4.002) 101,60 (4.00)	73,0 (2.87)	44,9 (1.77)	89,8 (3.54)	.500-13 UNC-2B thd 1.00" deep min M12 x 24,9 deep min	.500-13 UNC-2B thd thru M10 thd thru	.500-13 UNC-2B thd thru M12 thd thru
ISO 100-A2/B4HW Pad	100,0 (3.937) 99,946 (3.935)	70,0 (2.76)	44,2 (1.74)	88,38 (3.48)	M12 thd x 24,9 deep min	M10 thd thru	M12 thd thru

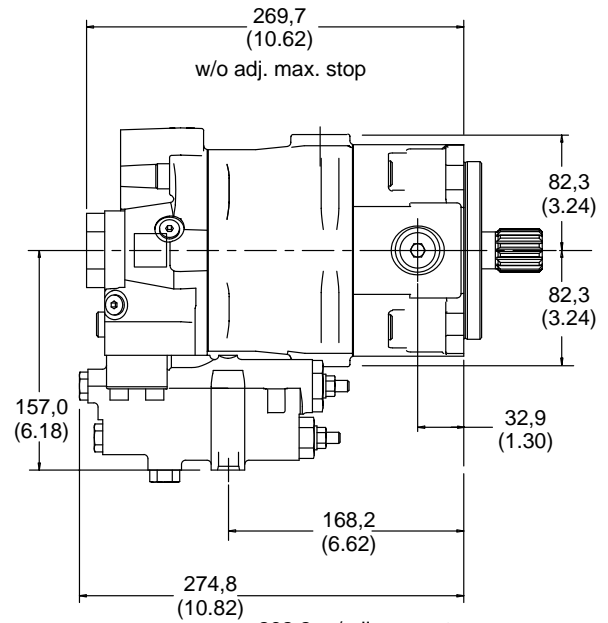
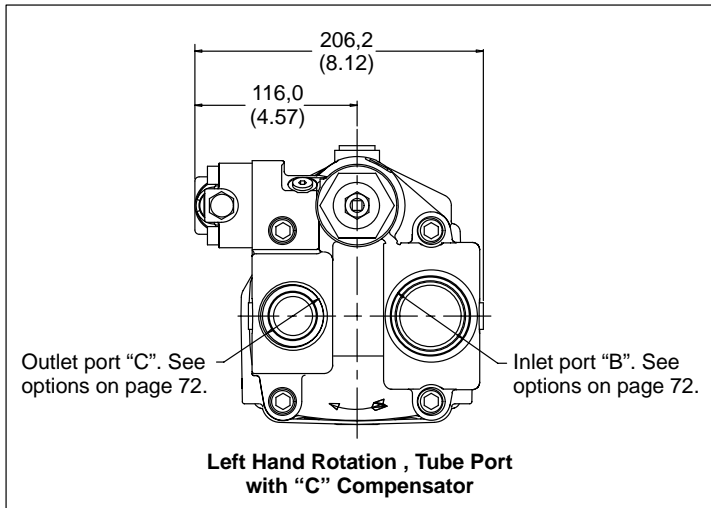
PVQ63 End-ported Models

PVQ200 Family

Dimensions in millimeters (inches)

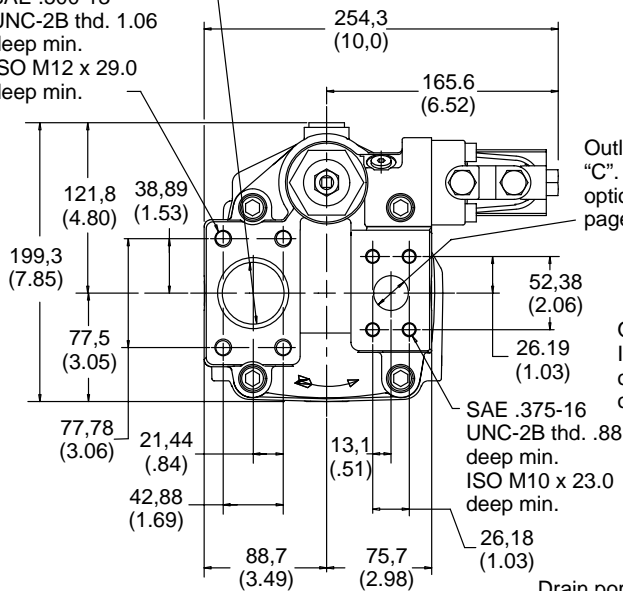
See mounting flange options on page 67.

Start on page 68 for shaft options.



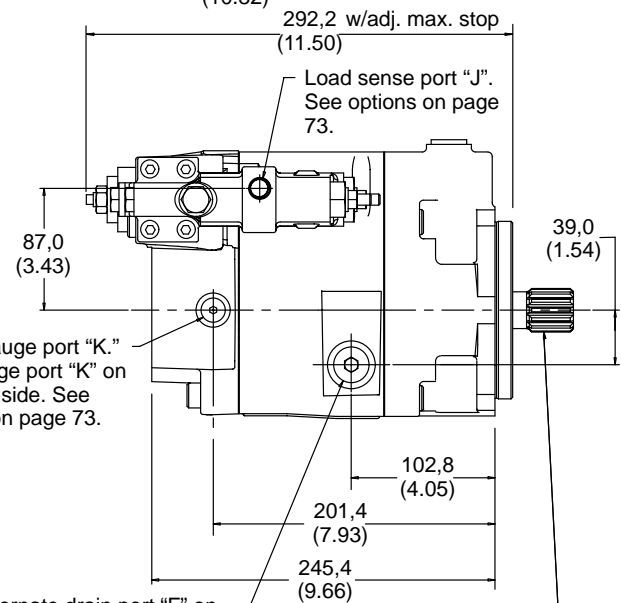
Inlet port "B". See options on page 72.

SAE .500-13
UNC-2B thd. 1.06
deep min.
ISO M12 x 29.0
deep min.



Right Hand Rotation, Flange Port with "CV" Compensator

Drain port "F". Alternate drain port "F" on opposite side. See options on page 73.



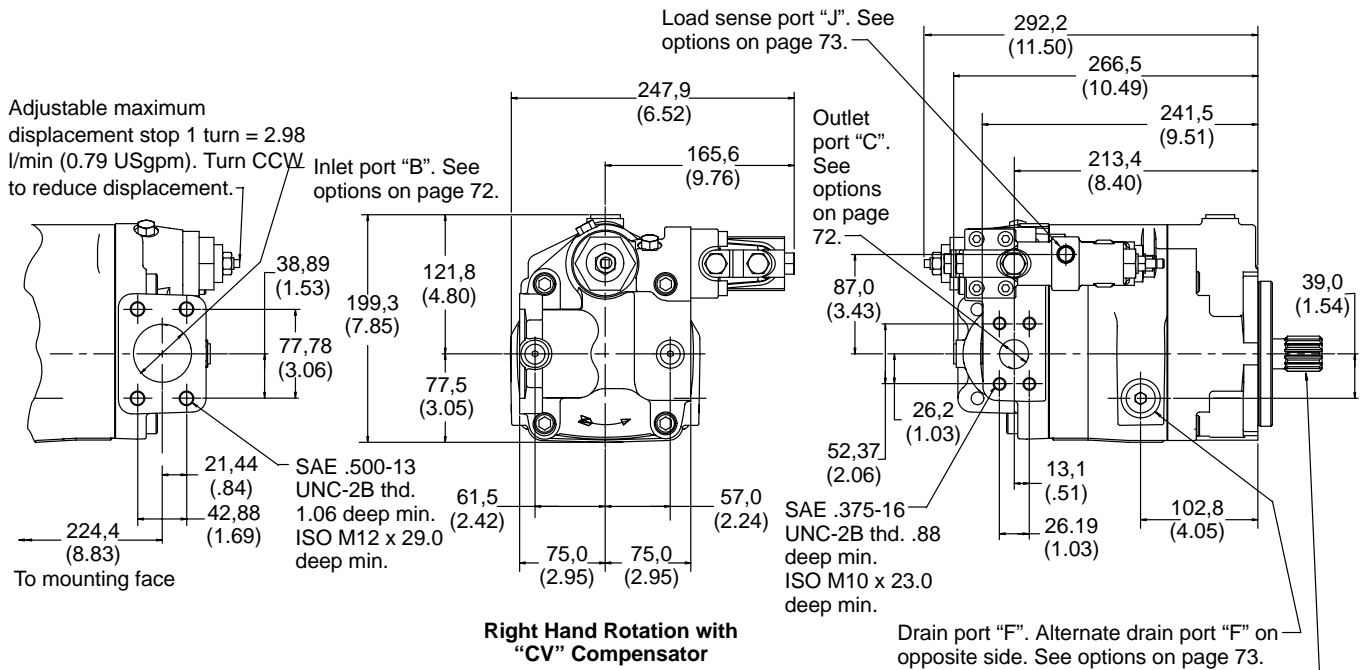
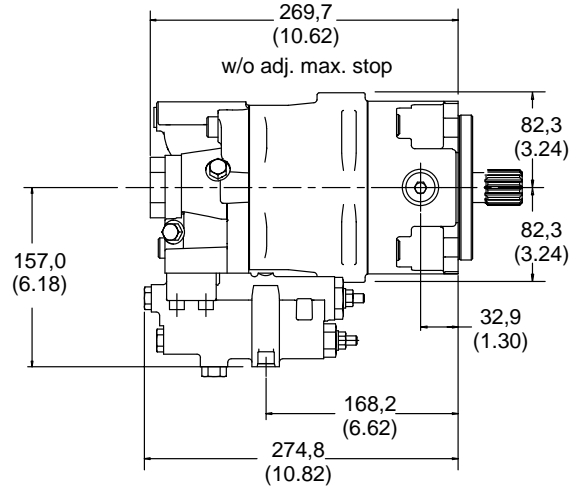
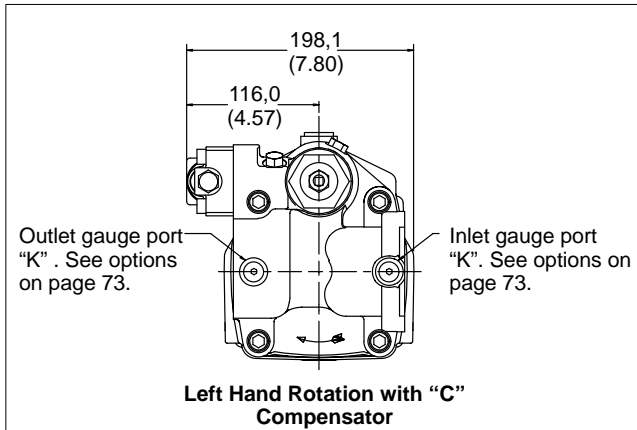
Start on page 67 for shaft and mounting flange dimensions.

PVQ63 Side-ported Models

Dimensions in millimeters (inches)

See mounting flange options on page 67.

Start on page 68 for shaft options.



Start on page 67 for shaft and mounting flange dimensions.

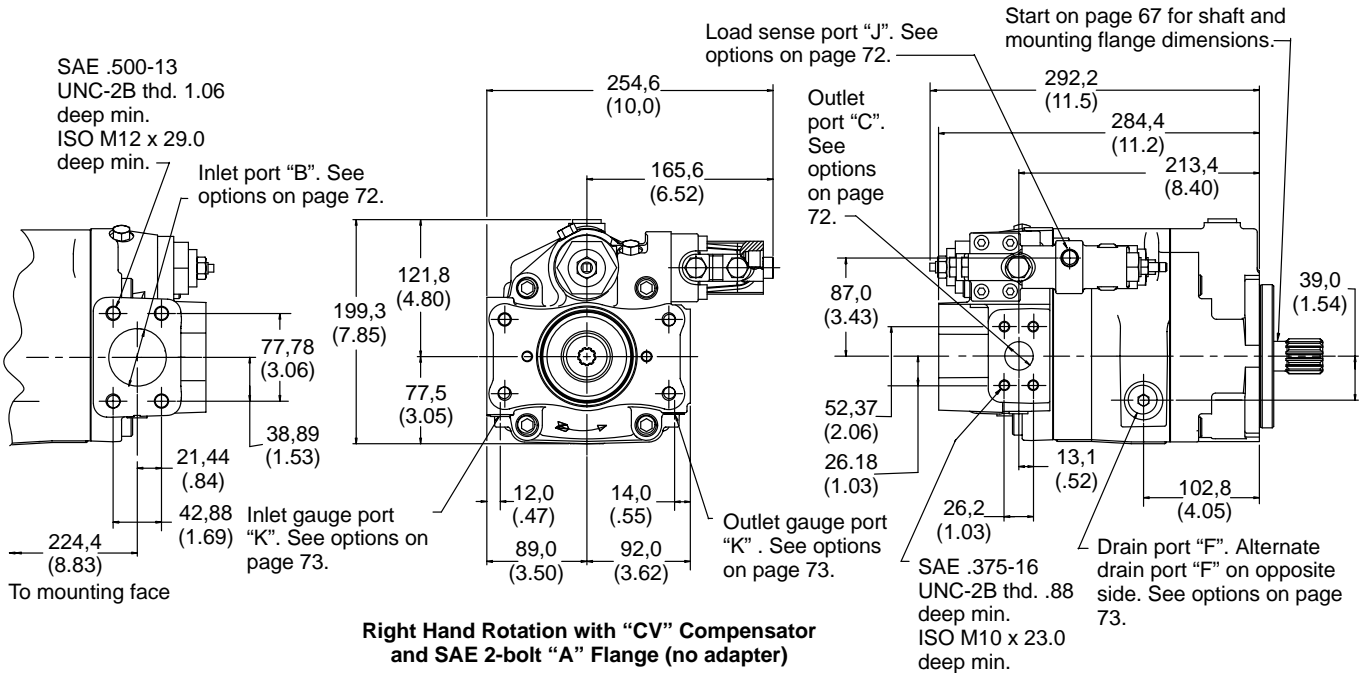
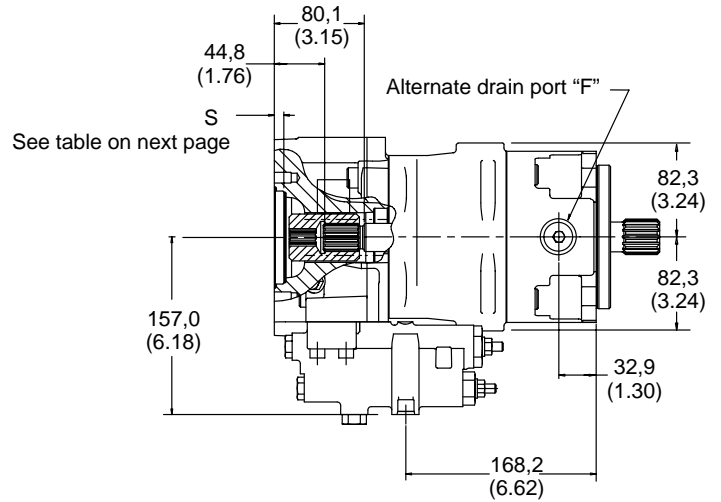
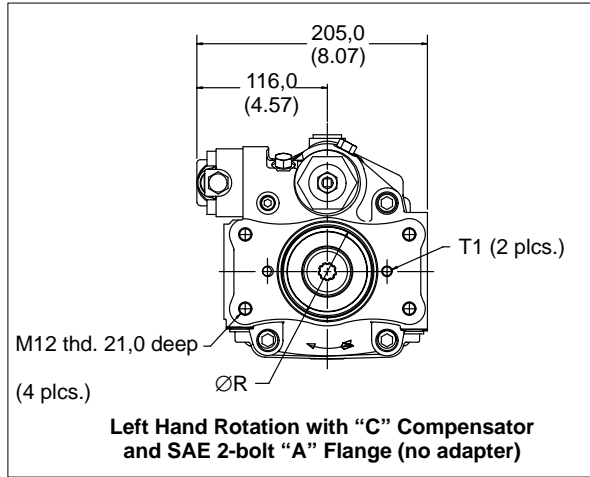
PVQ63 Thru-drive Models

PVQ200 Family

Dimensions in millimeters (inches)

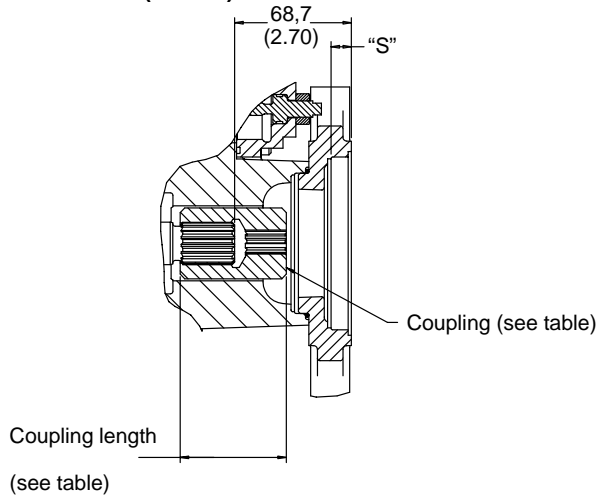
See mounting flange options on page 67.

Start on page 68 for shaft options.



PVQ63 Thru-drive Models

Dimensions in millimeters (inches)



Coupling length

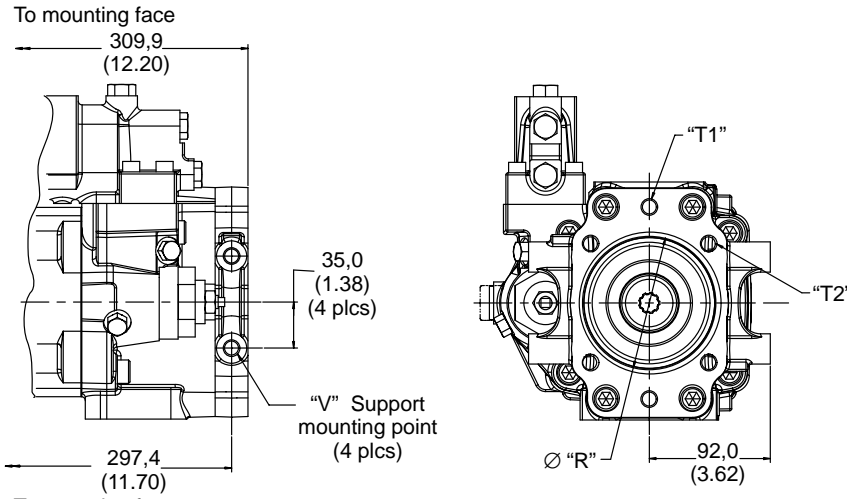
SAE "A", 9T	62,5 (2.46)
SAE "B", 13T	93,0 (3.66)
SAE "B-B", 15T	93,0 (3.66)
SAE "C", 14T	93,0 (3.66)

Coupling Code

Description

A9	SAE "A", 9T, 16/32 DP, 30° pressure angle involute spline.
B13	SAE "B", 13T, 16/32 DP, 30° pressure angle involute spline.
B15	SAE "B-B", 15T, 16/32 DP, 30° pressure angle involute spline.
C14	SAE "C", 14T, 12/24 DP, 30° pressure angle involute spline.
MA9	For ISO 80-A2HW pad with a 9T SAE spline.
MA11	For ISO 80-A2HW pad with a 11T SAE spline.
MB13	For ISO 100-A2/B4HW pad with a 13T SAE spline.
MB15	For ISO 100-A2/B4HW pad with a 15T SAE spline.
MC14	For ISO 125-A2/B4HW pad with a 14T SAE spline.
MC17	For ISO 125-A2/B4HW pad with a 17T SAE spline.

"B" Adapter Flange



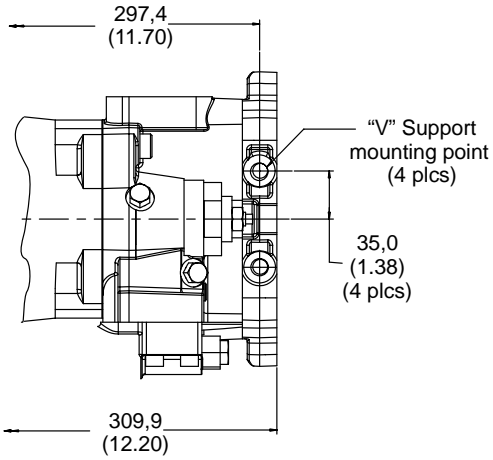
Right hand rotation with "CV" compensator and SAE 2/4 bolt "B" adapter flange

Adapter	Flange	Bolt	Pilot Dia.	Pilot Depth	2-bolt		4-bolt		Support Mounting Point
			"R"	"S"	"T1"	"T2"	"V"		
None	SAE "A" 2-bolt	SAE	∅82,6 (3.25)	9,0/8,0 (.35/.31)	.375-16 UNC-2B thd	N/A	N/A	N/A	
		ISO			M10 thd.	N/A	N/A	N/A	
		ISO 80	∅80,05 (3.15)	9,0/8,0 (.35/.31)	M10 thd.	N/A	N/A	N/A	
B	SAE "B" 2/4 bolt	SAE	∅101,65 (4.00)	12,5/11,5 (.49/.45)	.50-13 UNC-2B thd	.50-13 UNC-2B thd	.50-13 UNC-2B thd .98" deep		
		ISO			M12 thd.	M12 thd.	M12 thd x 25,0 deep		
		ISO 100	∅100,05 (3.94)	12,5/11,5 (.49/.45)	M12 thd.	M12 thd.	M12 thd x 25,0 deep		

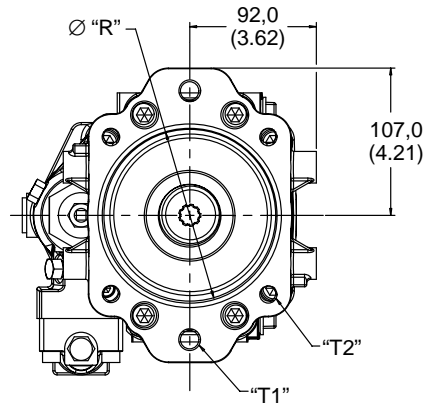
Dimensions in millimeters (inches)

"C" Adapter Flange

To mounting face



To mounting face



Left hand rotation with "C" compensator and SAE 2/4 bolt "C" adapter flange

Adapter	Flange	Bolt	Pilot Dia.	Pilot Depth	2-bolt	4-bolt	Support Mouting Point
			"R"	"S"	"T1"	"T2"	"V"
C	SAE "C" 2/4 bolt	SAE	\varnothing 127,05 (5.00)	15,5/14,5 (.61/.57)	.625-11 UNC-2B thd	.50-13 UNC-2B thd	.50-13 UNC-2B thd. .98" deep
		ISO			M16 thd.	M12 thd.	M12 thd x 25,0 deep
	ISO 125	ISO	\varnothing 125,05 (4.92)	15,5/14,5 (.61/.57)	M16 thd.	M12 thd.	M12 thd x 25,0 deep

PVQ81 End-ported Models

Dimensions in millimeters (inches)

See mounting flange options on page 67.

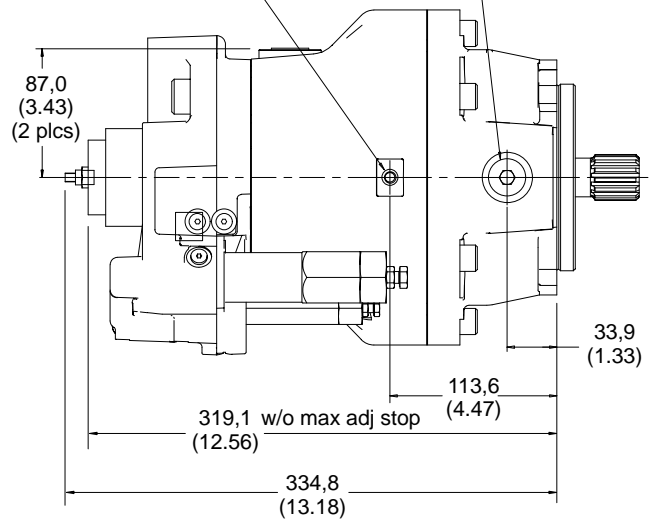
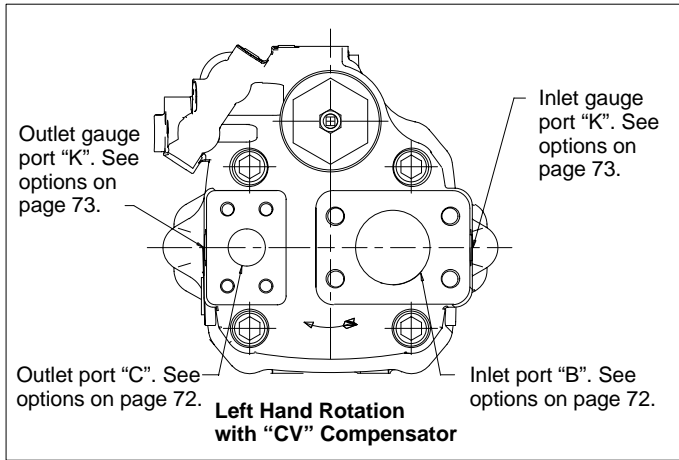
Start on page 68 for shaft options.

Lifting point .375-16 UNC thd.

10.0 deep with SAE drain

M10 x 10.00 deep with ISO drain

Alt. drain port "F". See options on page 73.



Max. adj. stop. One rotation will change displacement 6,6 – 7,4 L/min (1.7 – 1.9 USgpm) at 1800 rpm. Turn CCW to reduce displacement.

Inlet port "B". See options on page 72.

SAE .500-13 UNC-2B thd. 1.06 deep min. ISO M12 x 19,5 deep min.

21,44 (0.84)

42,88 (1.69)

Inlet gauge port "K". See options on page 73.

38,88 (1.53)

77,77 (3.06)

42,5 (1.67)

96,8 (3.81)

57,0 (2.24)

84,5 (3.33)

114,0 (4.49)

114,0 (4.49)

Right Hand Rotation with "CV" Compensator

Outlet port "C". See options on page 72.

Pressure compensator

Load sense port "J". See options on page 73.

138,7 (5.46)

77,8 (3.06)

52,37 (2.06)

16,93 (.67)

26,18 (1.03)

Outlet gauge port "K"

SAE .375-16 UNC-2B thd. .88 deep min. ISO M10 x 14,5 deep min.

26,19 (1.03)

Drain port "F". See options on page 73.

226,9 (8.93)

145,2 (5.72)

181,6 (7.15)

261,6 (10.30)

278,6 (10.97)

33,0 (1.30)

Start on page 67 for shaft and mounting flange dimensions.

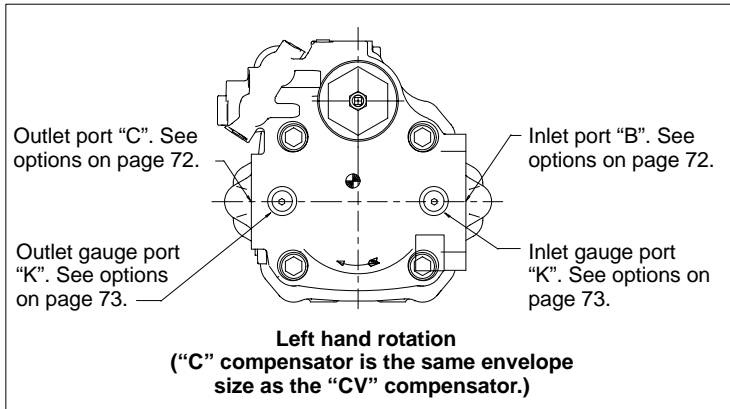
PVQ81 Side-ported Models

PVQ200 Family

Dimensions in millimeters (inches)

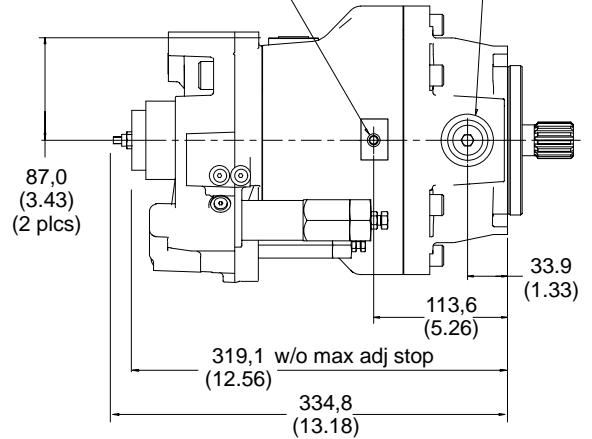
See mounting flange options on page 67.

Start on page 68 for shaft options.

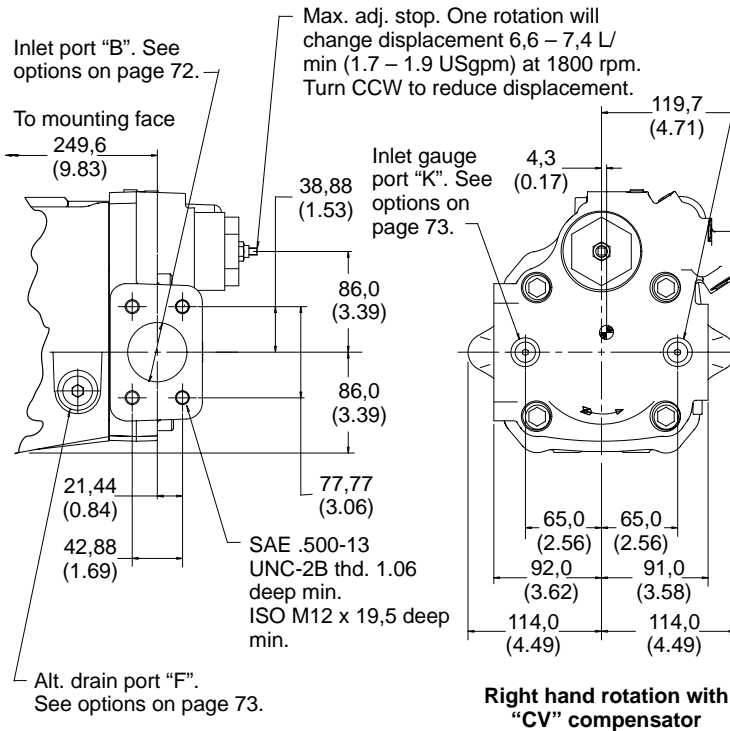


Lifting point .375-16 UNC thd.
10.0 deep with SAE drain
M10 x 10.00 deep with ISO drain

Alt. drain port "F". See options on page 73.



SAE .375-16 UNC-2B thd. .88 deep min.
ISO M10 x 14,5 deep min.



Load sense port "J". See options on page 73.

Outlet gauge port "K". See options on page 73.

138,7 (5.46)

77,8 (3.06)

52,37 (2.06)

26,18 (1.03)

26,19 (1.03)

16,83 (0.66)

13,1 (0.52)

Drain port "F". See options on page 73.

279,6 (11.0)

288,0 (11.34)

226,9 (8.93)

146,1 (5.75)

C/G location

181,6 (7.15)

246,6 (9.71)

33,0 (1.30)

Outlet port "C". See options on page 72.

Start on page 67 for shaft and mounting flange dimensions.

PVQ81 Thru-drive Models

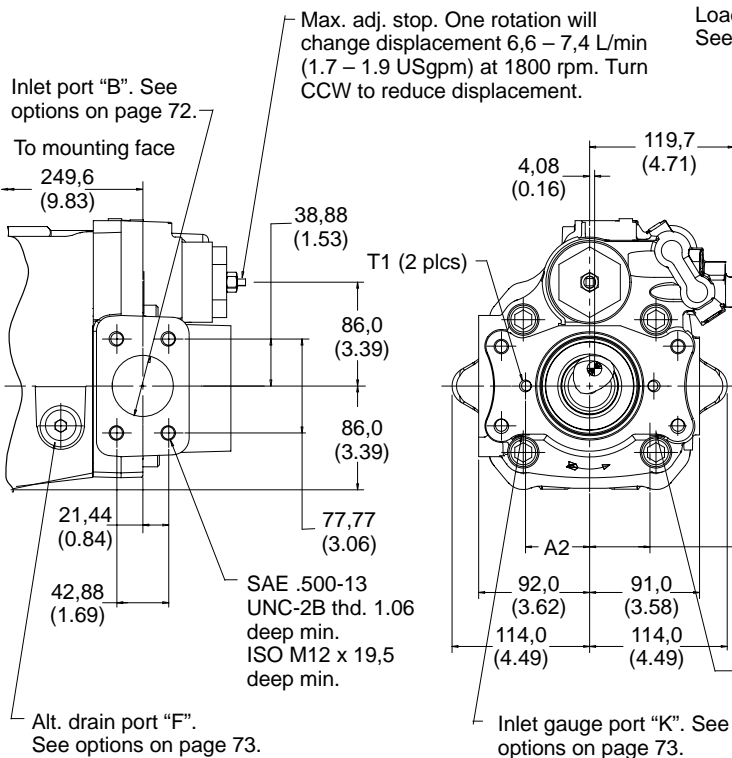
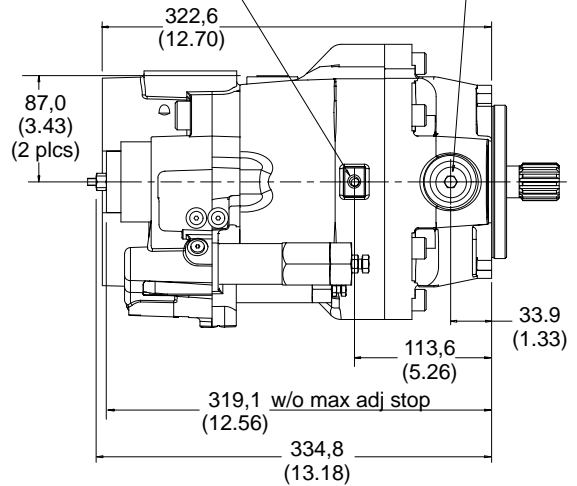
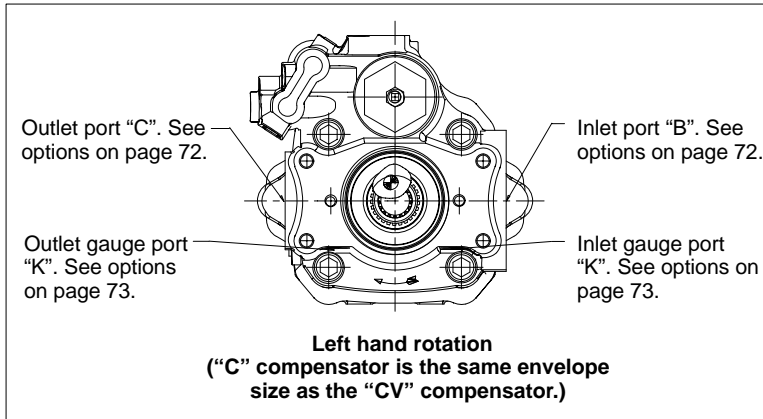
Dimensions in millimeters (inches)

See mounting flange options on page 67.

Start on page 68 for shaft options.

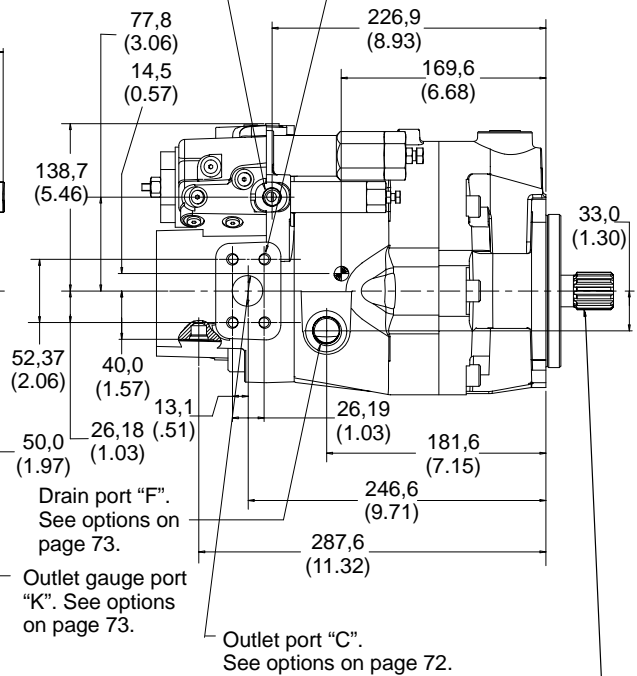
Lifting point .375-16 UNC thd.
10.0 deep with SAE drain
M10 x 10.00 deep with ISO drain

Alt. drain port "F". See options on page 73.



Load sense port "J". See options on page 73.

SAE .375-16 UNC-2B thd. .88 deep min.
ISO M10 x 14,5 deep min.

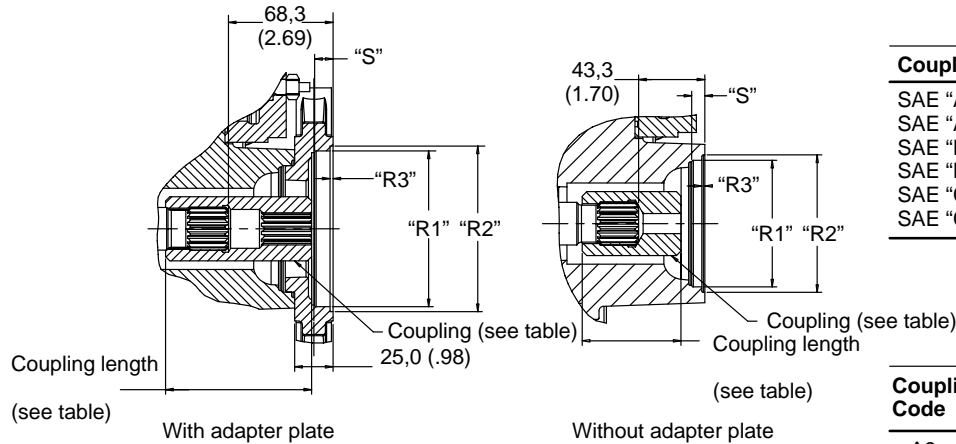


Right hand rotation with "CV" compensator

Start on page 67 for shaft and mounting flange dimensions.

PVQ200 Family

Dimensions in millimeters (inches)



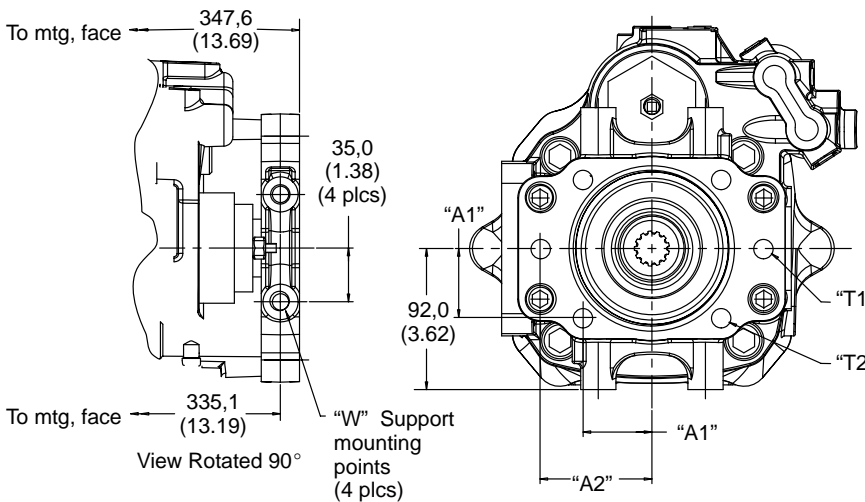
Coupling length

SAE "A", 9T	64,5 (2.54)
SAE "A", 11T	65,3 (2.57)
SAE "B", 13T	95,3 (3.75)
SAE "B-B", 15T	95,3 (3.75)
SAE "C", 14T	95,3 (3.75)
SAE "C-C", 17T	91,8 (3.61)

Coupling Code Description

Coupling Code	Description
A9	SAE "A", 9T, 16/32 DP, 30° pressure angle involute spline.
A11	SAE "A", 11T, 16/32 DP, 30° pressure angle involute spline.
B13	SAE "B", 13T, 16/32 DP, 30° pressure angle involute spline.
B15	SAE "B-B", 15T, 16/32 DP, 30° pressure angle involute spline.
C14	SAE "C", 14T, 12/24 DP, 30° pressure angle involute spline.
C17	SAE "C-C", 17T, 12/24 DP, 30° pressure angle involute spline.
MA9	For ISO 80-A2HW pad with a 9T SAE spline.
MA11	For ISO 80-A2HW pad with a 11T SAE spline.
MB13	For ISO 100-A2/B4HW pad with a 13T SAE spline.
MB15	For ISO 100-A2/B4HW pad with a 15T SAE spline.
MC14	For ISO 125-A2/B4HW pad with a 14T SAE spline.
MC17	For ISO 125-A2/B4HW pad with a 17T SAE spline.

"B" Adapter Flange



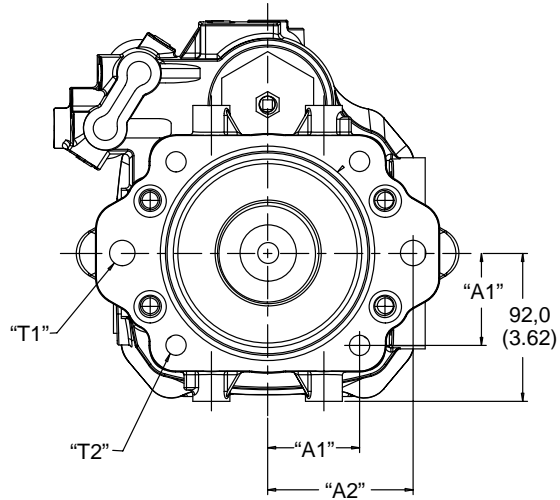
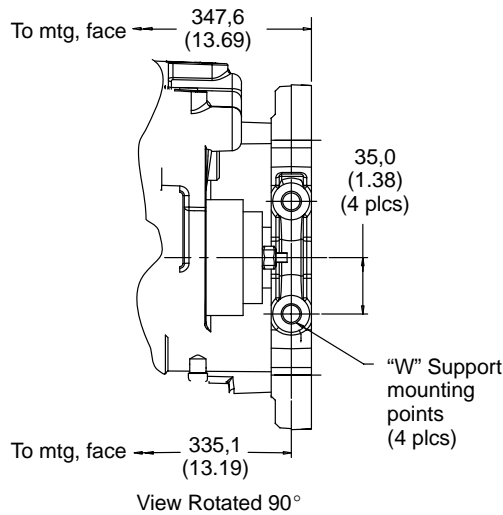
Right hand rotation with "CV" compensation and ISO or SAE 2/4 bolt "B" adapter flange

Adapter	Flange	Bolt	Pilot				2-bolt	4-bolt	Support Mtg. Point	4-bolt	2-bolt
			"R1"	"R2"	"R3"	"S"					
None	SAE "A" 2-bolt	SAE	Ø82,6 (3.25)	Ø89,65 (3.53)	2,00 (.08) 1,90 (.07)	9,0/8,0 (.35/.31)	.375-16 UNC-2B thd	N/A	N/A	N/A	53,2 (2.09)
		ISO	Ø80,05 (3.15)	Ø89,75 (3.53)	2,70 (.11) 2,60 (.10)	9,0/8,0 (.35/.31)	M10 thd.	N/A	N/A	N/A	54,5 (2.15)
	ISO 80	ISO	Ø80,05 (3.15)	Ø89,75 (3.53)	2,70 (.11) 2,60 (.10)	9,0/8,0 (.35/.31)	M10 thd.	N/A	N/A	N/A	54,5 (2.15)
B	SAE "B" 2/4 bolt	SAE	Ø101,65 (4.00)	Ø108,05 (4.25)	2,00 (.08) 1,90 (.07)	12,5/11,5 (.49/.45)	.50-13 UNC-2B thd	.50-13 UNC-2B thd	.50-13 UNC-2B thd. .98" deep	44,19 (1.74)	73,0 (2.87)
		ISO	Ø100,05 (3.94)	Ø108,75 (4.28)	2,70 (.11) 2,60 (.10)	12,5/11,5 (.49/.45)	M12 thd.	M12 thd.	M12 thd x 25,0 deep	88,39 (3.48)	70,0 (2.76)
	ISO 100	ISO	Ø100,05 (3.94)	Ø108,75 (4.28)	2,70 (.11) 2,60 (.10)	12,5/11,5 (.49/.45)	M12 thd.	M10 thd.	M12 thd x 25,0 deep	88,39 (3.48)	70,0 (2.76)

PVQ81 Thru-drive Models

Dimensions in millimeters (inches)

"C" Adapter Flange



Left hand rotation with "CV" compensator and ISO or SAE 2/4 bolt "C" adapter flange

Adapter	Flange	Bolt	Pilot Dia.	O-ring Dia.	O-ring Depth	Pilot Depth	2-bolt	4-bolt	Support Mtg. Point	4-bolt	2-bolt
			"R1"	"R2"	"R3"	"S"	"T1"	"T2"	"W"	"A1"	"A2"
C	SAE "C" 2/4 bolt	SAE	Ø127,05 (5.00)	Ø133,45 (5.25)	2,00 (.08) 1,90 (.07)	15,5/14,5 (.61/.57)	.625-11 UNC-2B thd	.50-13 UNC-2B thd	.50-13 UNC-2B thd. .98" deep	57,25 (2.25)	90,5 (3.56)
		ISO					M16 thd.	M12 thd.	M12 thd. 25,0 deep		
	ISO 125	ISO	Ø125,05 (4.92)	Ø133,75 (3.26)	2,70 (.11) 2,60 (.10)	15,5/14,5 (.61/.57)	M16 thd.	M12 thd.	M12 thd. 25,0 deep	56,57 (2.23)	90,0 (3.54)

PVQ106 End-ported Models

PVQ200 Family

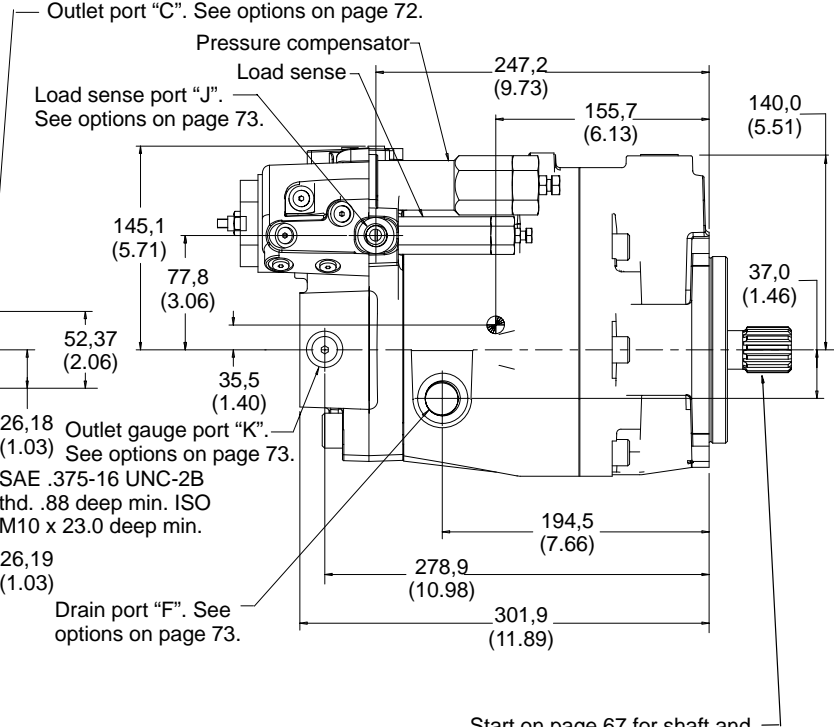
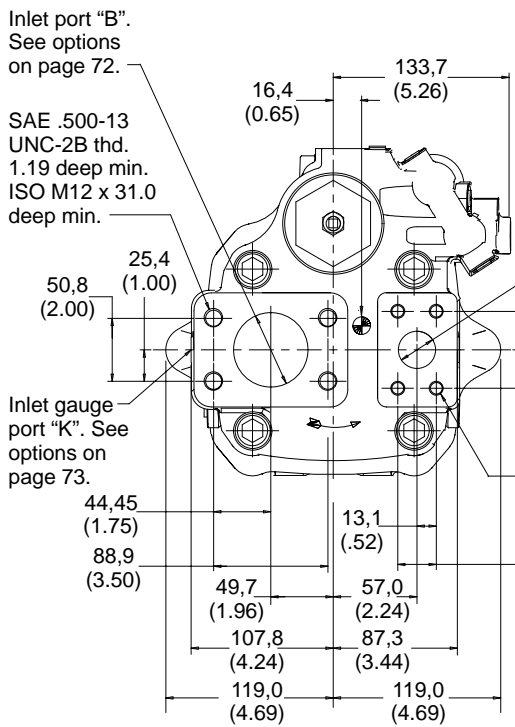
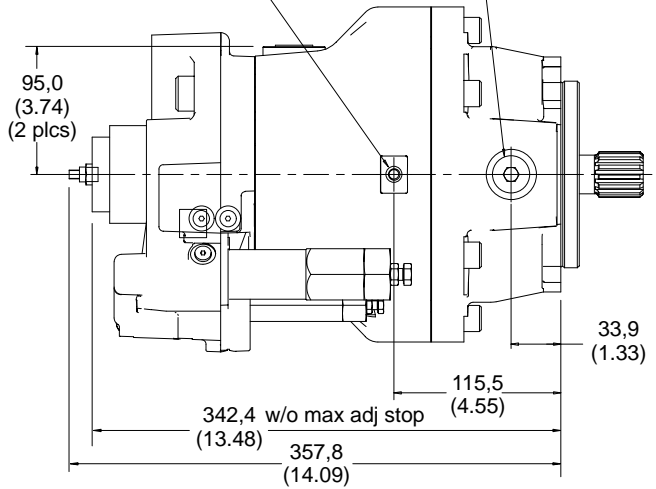
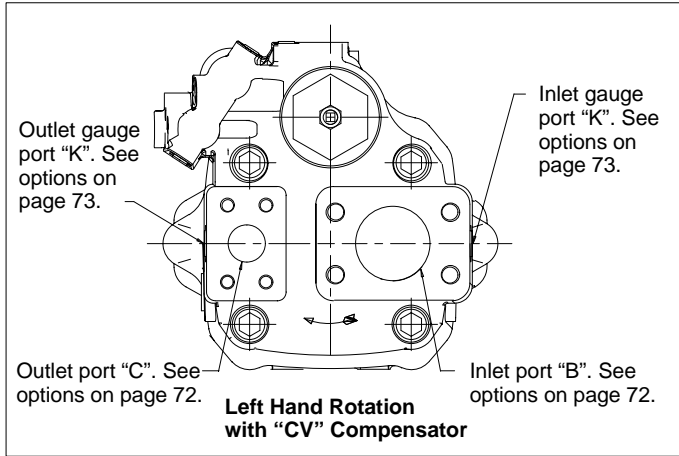
Dimensions in millimeters (inches)

See mounting flange options on page 67.

Start on page 68 for shaft options.

Lifting point .375-16 UNC thd.
10.0 deep with SAE drain
M10 x 10.00 deep with ISO drain

Alt. drain port "F". See options on page 73.



Right Hand Rotation with "CV" Compensator

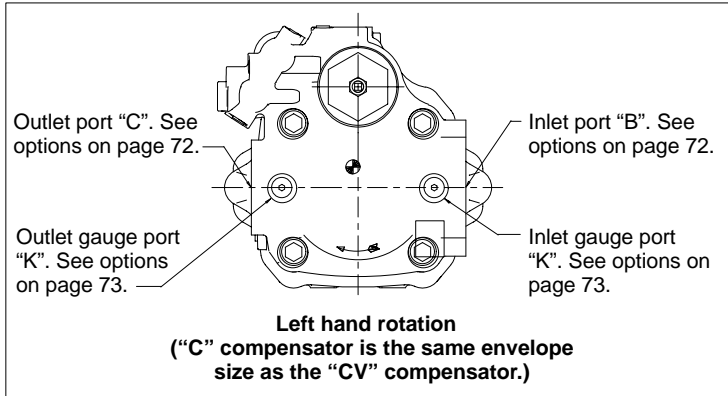
Start on page 67 for shaft and mounting flange dimensions.

PVQ106 Side-ported Models

Dimensions in millimeters (inches)

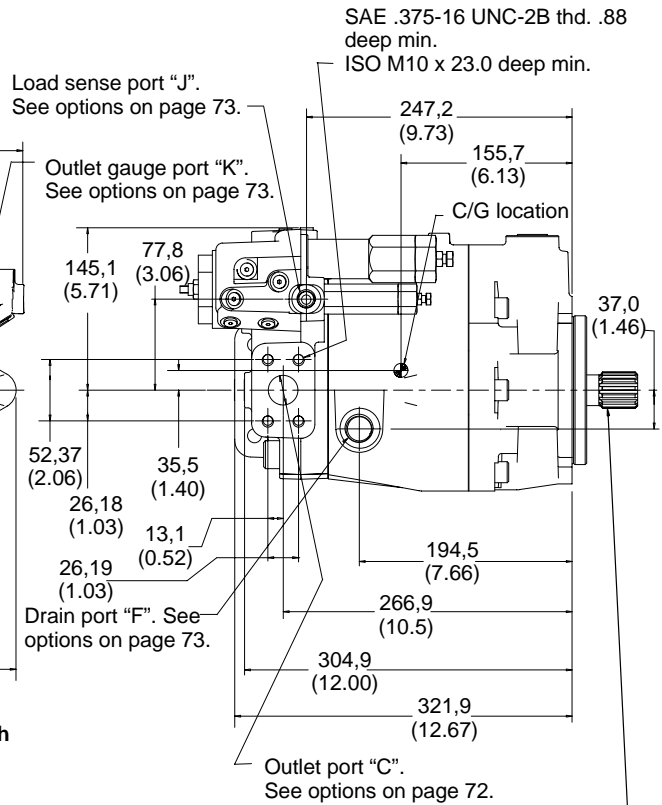
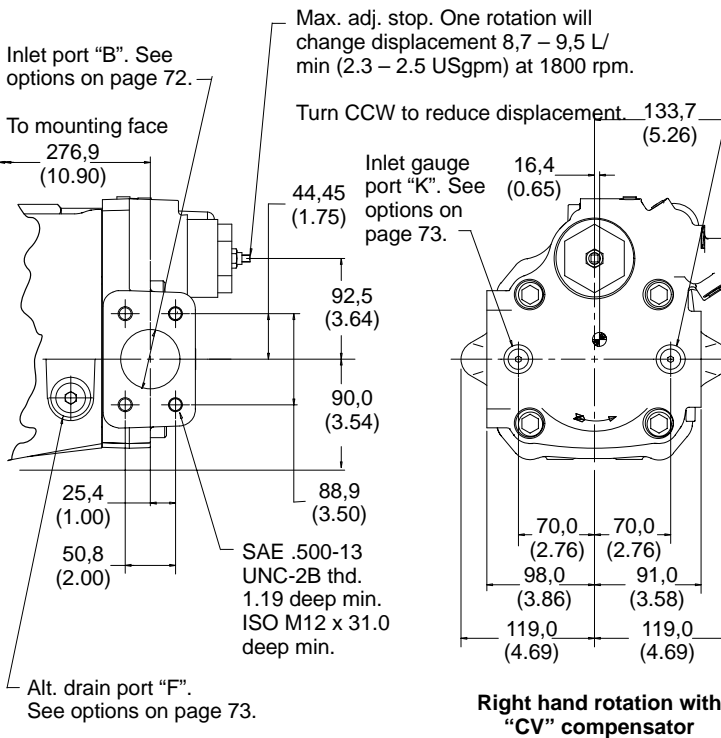
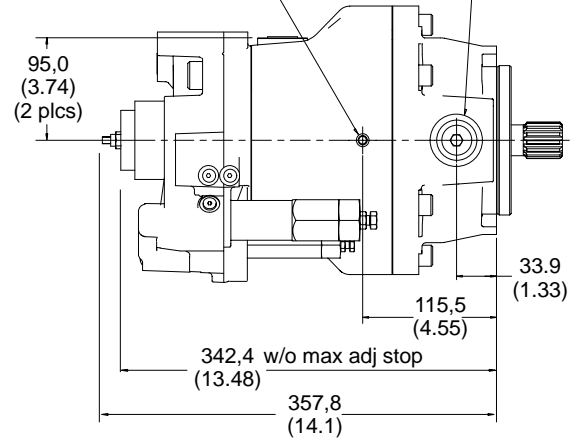
See mounting flange options on page 67.

Start on page 68 for shaft options.



Lifting point .375-16 UNC thd.
10.0 deep with SAE drain
M10 x 10.00 deep with ISO drain

Alt. drain port "F". See options on page 73.



Start on page 67 for shaft and mounting flange dimensions.

PVQ106 Thru-drive Models

PVQ200 Family

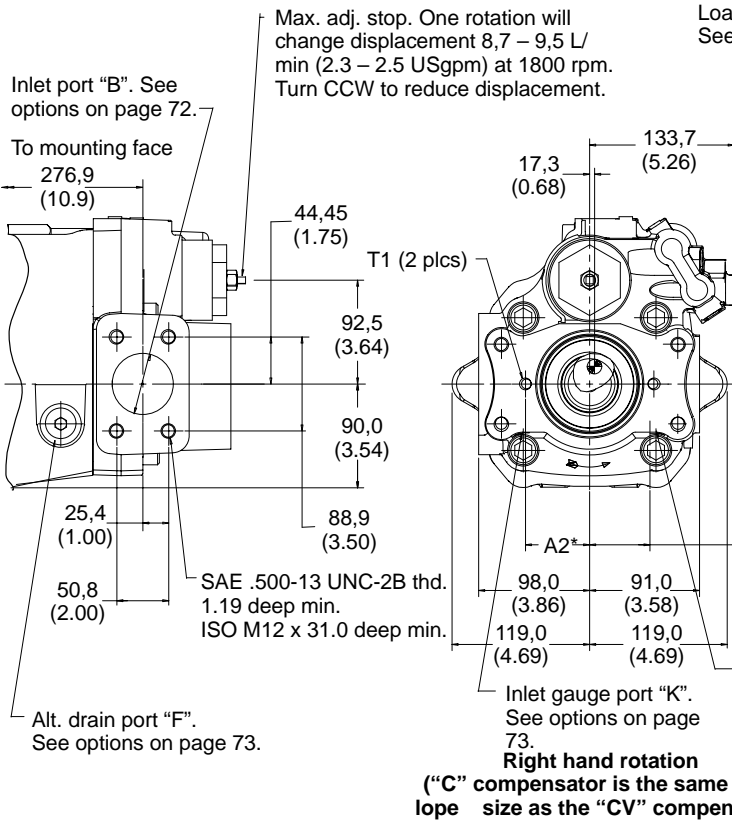
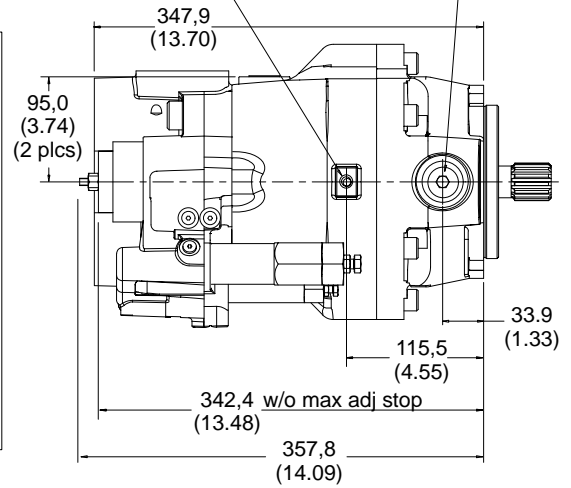
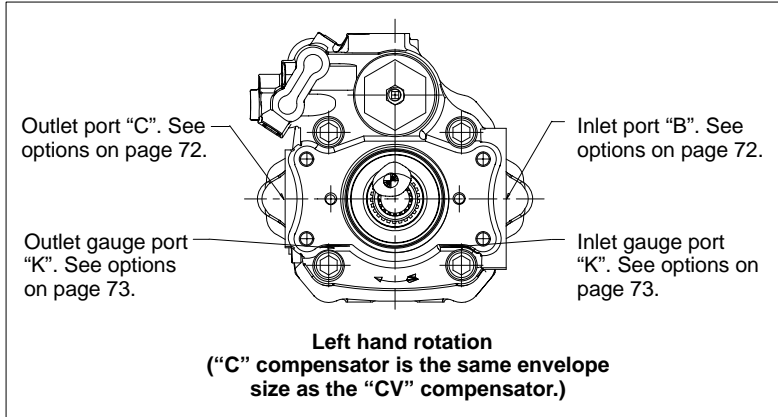
Dimensions in millimeters (inches)

See mounting flange options on page 67.

Start on page 68 for shaft options.

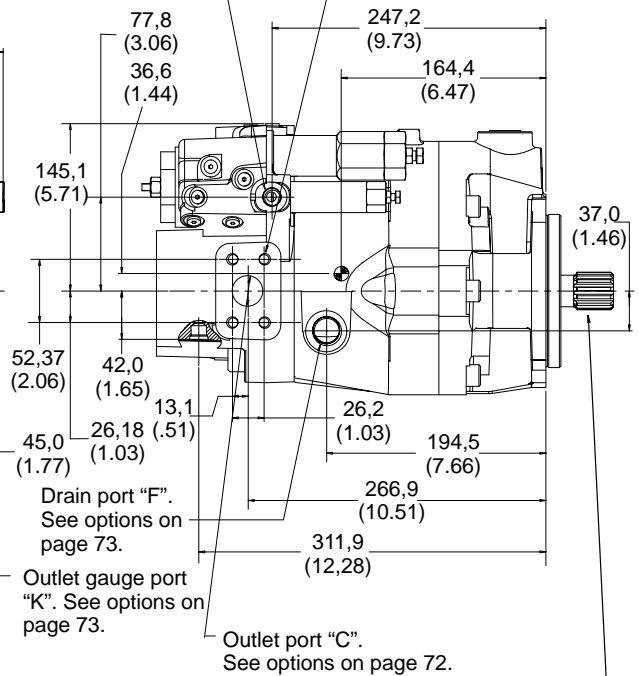
Lifting point .375-16 UNC thd.
10.0 deep with SAE drain
M10 x 10.00 deep with ISO drain

Alt. drain port "F". See options on page 73.



Load sense port "J". See options on page 73.

SAE .375-16 UNC-2B thd. .88 deep min. ISO M10 x 23.0 deep min.

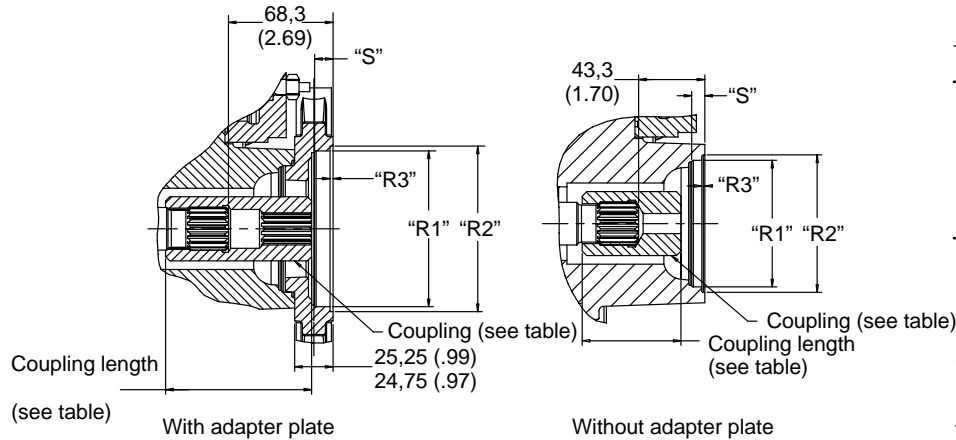


Start on page 67 for shaft and mounting flange dimensions.

* See table on page 60.

PVQ200 Family

Dimensions in millimeters (inches)



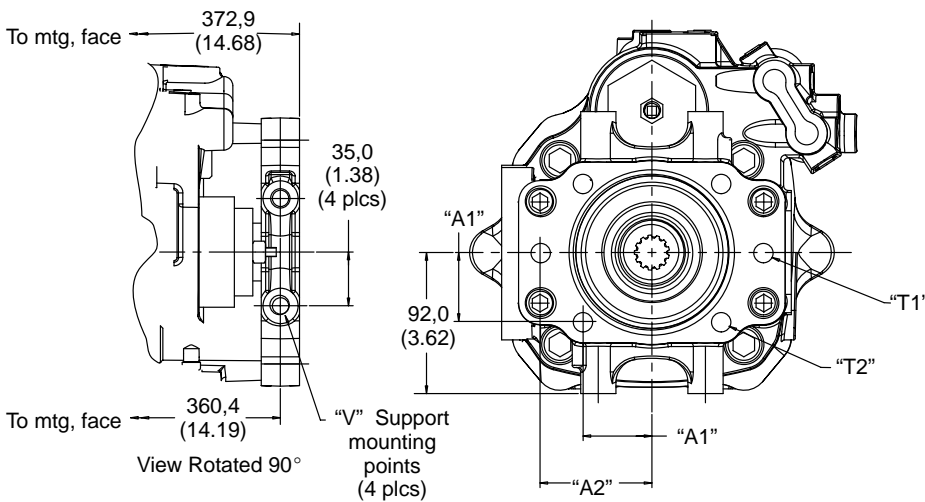
Coupling Length

SAE "A", 9T	64,5 (2.54)
SAE "A", 11T	65,3 (2.57)
SAE "B", 13T	95,3 (3.75)
SAE "B-B", 15T	95,3 (3.75)
SAE "C", 14T	95,3 (3.75)
SAE "C-C", 17T	91,8 (3.61)

Coupling Code Description

Coupling Code	Description
A9	SAE "A", 9T, 16/32 DP, 30° pressure angle involute spline.
A11	SAE "A", 11T, 16/32 DP, 30° pressure angle involute spline.
B13	SAE "B", 13T, 16/32 DP, 30° pressure angle involute spline.
B15	SAE "B-B", 15T, 16/32 DP, 30° pressure angle involute spline.
C14	SAE "C", 14T, 12/24 DP, 30° pressure angle involute spline.
C17	SAE "C-C", 17T, 12/24 DP, 30° pressure angle involute spline.
MA9	For ISO 80-A2HW pad with a 9T SAE spline.
MA11	For ISO 80-A2HW pad with a 11T SAE spline.
MB13	For ISO 100-A2/B4HW pad with a 13T SAE spline.
MB15	For ISO 100-A2/B4HW pad with a 15T SAE spline.
MC14	For ISO 125-A2/B4HW pad with a 14T SAE spline.
MC17	For ISO 125-A2/B4HW pad with a 17T SAE spline.

"B" Adapter Flange



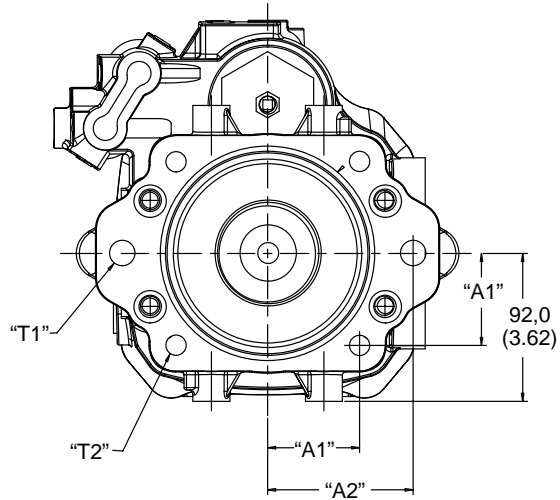
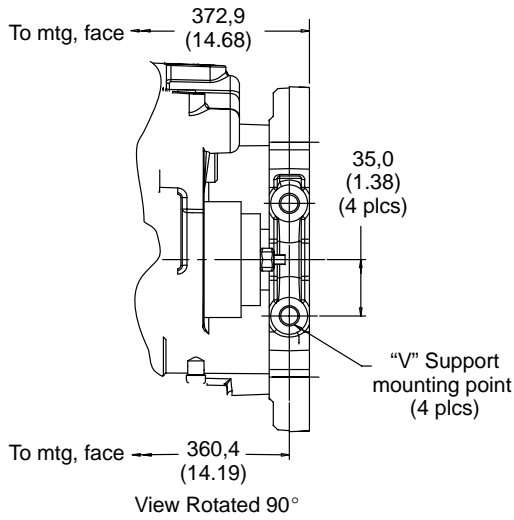
Right hand rotation with "CV" compensation and ISO or SAE 2/4 bolt "B" adapter flange

Adapter	Flange	Bolt	Pilot Dia.				O-ring Depth		2-bolt	4-bolt	Support Mtg. Points	4-bolt	2-bolt
			"R1"	"R2"	"R3"	"S"	"T1"	"T2"					
None	SAE "A" 2-bolt	SAE	Ø82,6 (3.25)	Ø89,65 (3.53)	2,00 (.08) 1,90 (.07)	9,0/8,0 (.35/.31)	.375-16 UNC-2B thd 0.59 deep	N/A	N/A	N/A	N/A	53,2 (2.09)	
		ISO	Ø80,05 (3.15)	Ø89,75 (3.53)	2,70 (.11) 2,60 (.10)	9,0/8,0 (.35/.31)	M10 thd x 18,0 deep	N/A	N/A	N/A	N/A	54,5 (2.15)	
	ISO 80	ISO	Ø80,05 (3.15)	Ø89,75 (3.53)	2,70 (.11) 2,60 (.10)	9,0/8,0 (.35/.31)	M10 thd x 18,0 deep	N/A	N/A	N/A	N/A	54,5 (2.15)	
B	SAE "B" 2/4 bolt	SAE	Ø101,65 (4.00)	Ø108,05 (4.25)	2,00 (.08) 1,90 (.07)	12,5/11,5 (.49/.45)	.50-13 UNC-2B thd	.50-13 UNC-2B thd	.50-13 UNC-2B thd. .98" deep	44,9 (1.77)	73,0 (2.87)		
		ISO	Ø100,05 (3.94)	Ø108,75 (4.28)	2,70 (.11) 2,60 (.10)	12,5/11,5 (.49/.45)	M12 thd.	M12 thd.	M12 thd x 25,0 deep	44,19 (1.74)	70,0 (2.76)		
	ISO 100	ISO	Ø100,05 (3.94)	Ø108,75 (4.28)	2,70 (.11) 2,60 (.10)	12,5/11,5 (.49/.45)	M12 thd.	M10 thd.	M12 thd x 25,0 deep	44,19 (1.74)	70,0 (2.76)		

PVQ106 Thru-drive Models

Dimensions in millimeters (inches)

"C" Adapter Flange



Left hand rotation with "CV" compensator and ISO or SAE 2/4 bolt "C" adapter flange

Adapter	Flange	Bolt	Pilot Dia.	O-ring Dia.	O-ring Depth	Pilot Depth	2-bolt	4-bolt	Support Mtg. Points	4-bolt	2-bolt
			"R1"	"R2"	"R3"	"S"	"T1"	"T2"	"V"	"A1"	"A2"
C	SAE "C" 2/4 bolt	SAE	127,05 (5.00)	Ø133,45 (5.25)	2,00 (.08) 1,90 (.07)	15,5/14,5 (.61/.57)	.625-11 UNC-2B thd	.50-13 UNC-2B thd	.50-13 UNC-2B thd .98" deep	57,25 (2.25)	90,5 (3.56)
		ISO					M16 thd.	M12 thd.	M12 thd x 25,0 deep		
	ISO 125	ISO	Ø125,05 (4.92)	Ø133,75 (5.27)	2,70 (.11) 2,60 (.10)	15,5/14,5 (.61/.57)	M16 thd.	M12 thd.	M12 thd x 25,0 deep	56,57 (2.23)	90,0 (3.54)

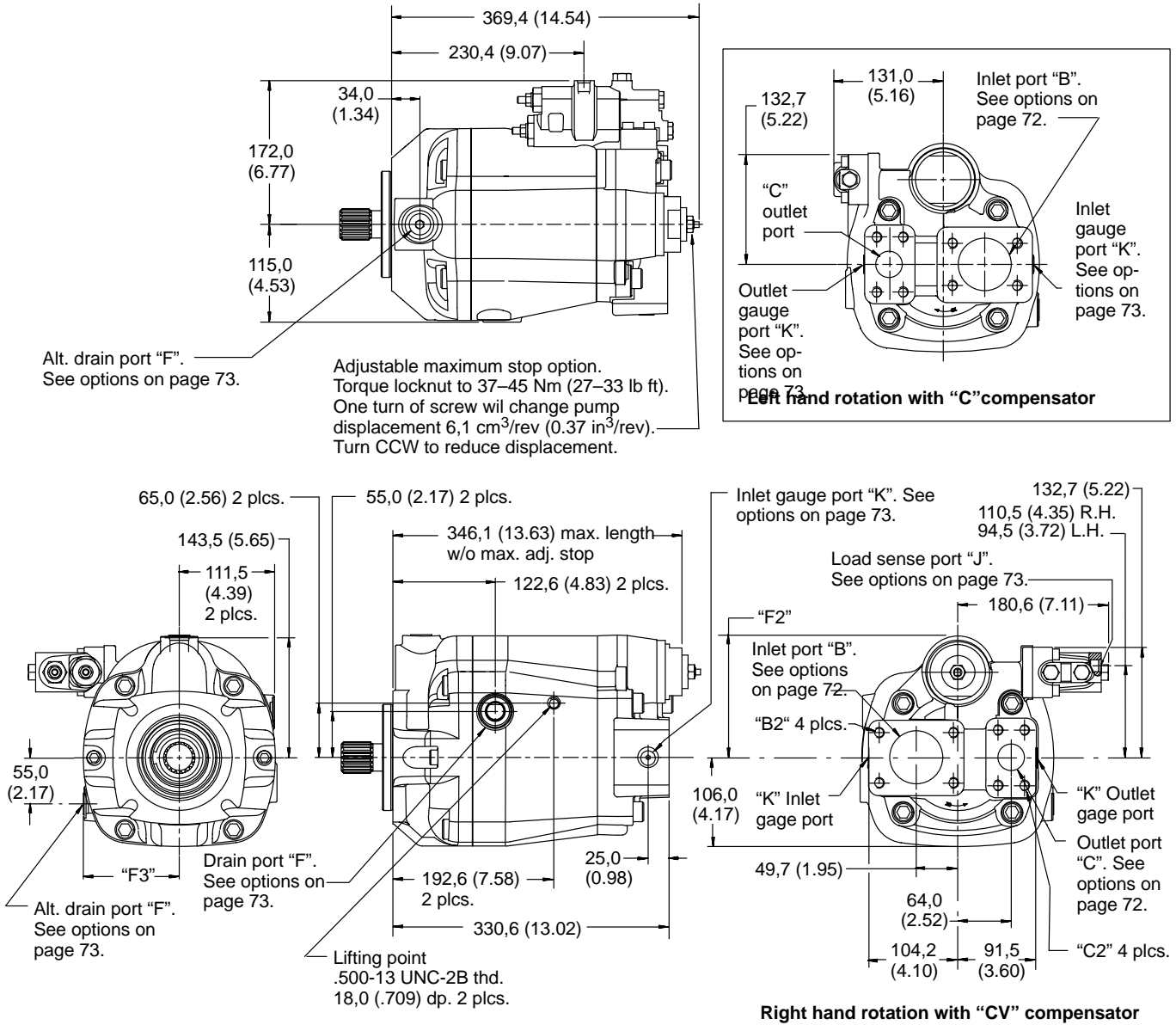
PVQ141 End-ported Models

PVQ200 Family

Dimensions in millimeters (inches)

See mounting flange options on page 67.

Start on page 68 for shaft options.



Port	"B"*	"B2"	"C"*	"C2"	"F2"	"F3"
SAE	2.50 inch dia. SAE J518 Code 61, low pressure.	.500–13 UNC–2B thd. 1.19 deep minimum	1.25 inch dia. SAE J518 Code 62, high pressure.	.500–13 UNC–2B thd. 1.00 deep minimum	146,8 (5.78)	114,9 (4.52)
ISO	64 mm diameter. ISO 6162 Type II, 315 bar.	M12 thread 31,0 deep minimum	32 mm diameter. ISO 6162, 400 bar.	M12 thread 27,0 deep minimum	148,5 (5.85)	116,6 (4.59)

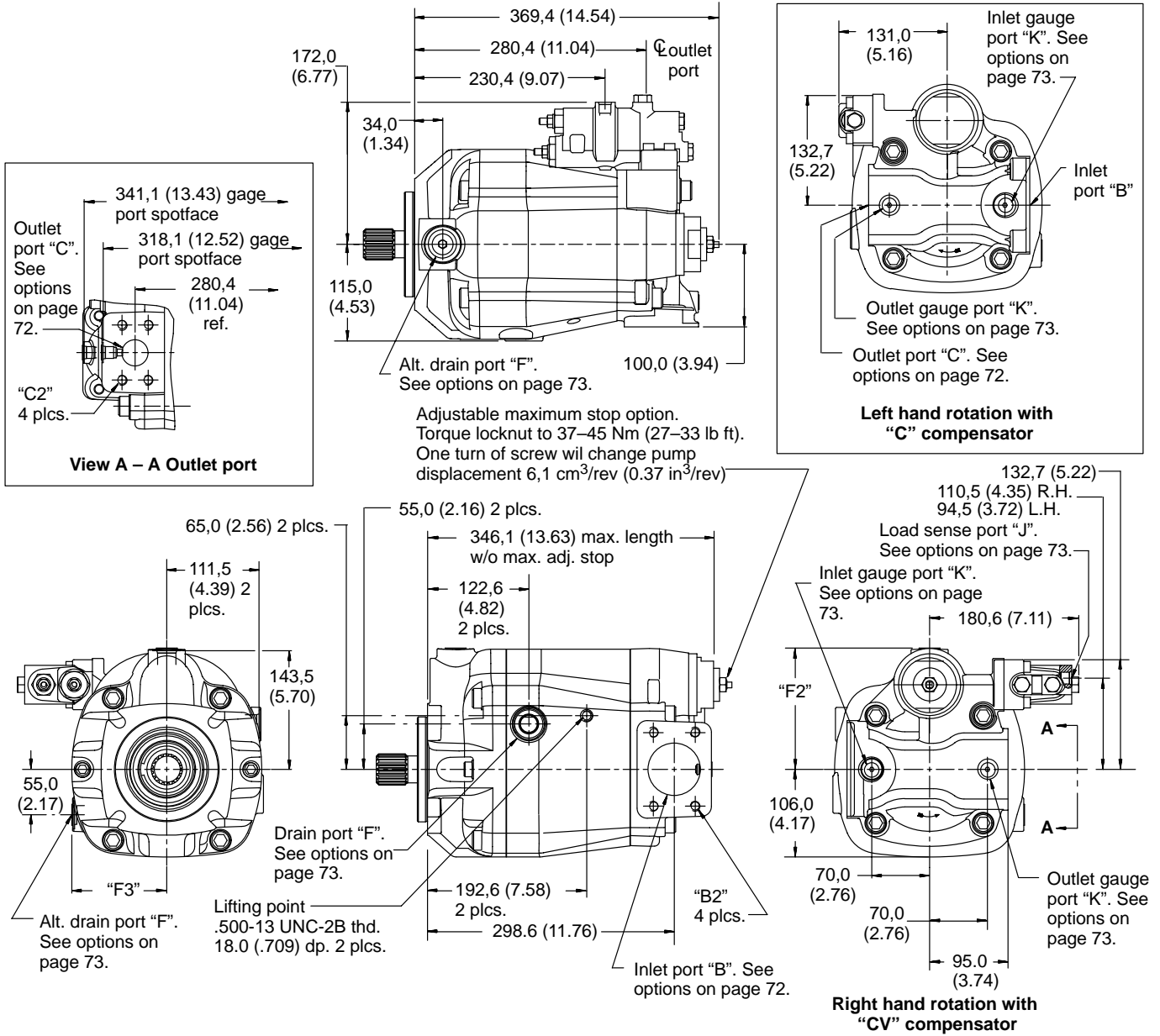
*4-bolt flange port. See page 72 for load sensing, drain, and gage port threads.

PVQ141 Side-ported Models

Dimensions in millimeters (inches)

See mounting flange options on page 67.

Start on page 68 for shaft options.



Port	"B"*	"B2"	"C"*	"C2"	"F2"	"F3"
SAE	2.50 inch dia. SAE J518 Code 61, low pressure.	.500–13 UNC–2B thd. 1.19 deep minimum	1.25 inch dia. SAE J518 Code 62, high pressure.	.500–13 UNC–2B thd. 1.00 deep minimum	146,8 (5.78)	114,9 (4.52)
ISO	64 mm diameter. ISO 6162 Type II, 315 bar.	M12 thread 31,0 deep minimum	32 mm diameter. ISO 6162, 400 bar.	M12 thread 27,0 deep minimum	148,5 (5.85)	116,6 (4.59)

*4-bolt flange port. See page 72 for load sensing, drain, and gage port threads.

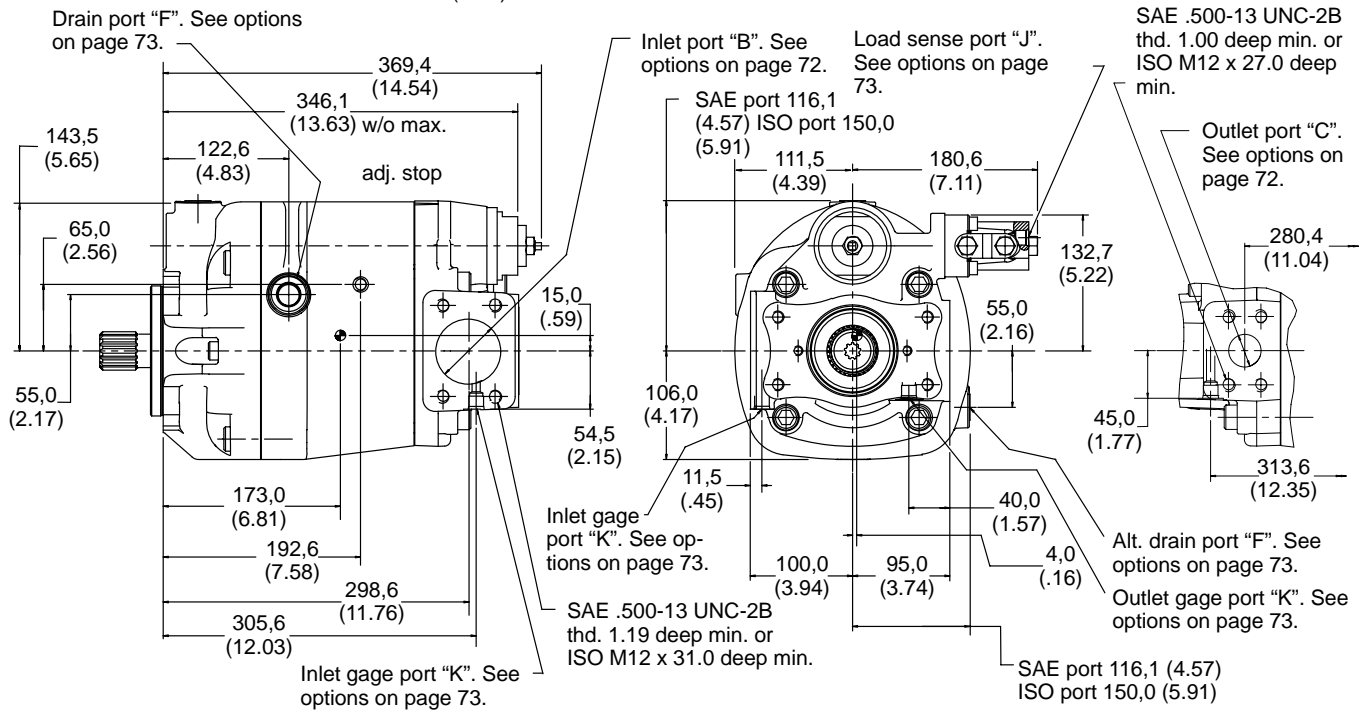
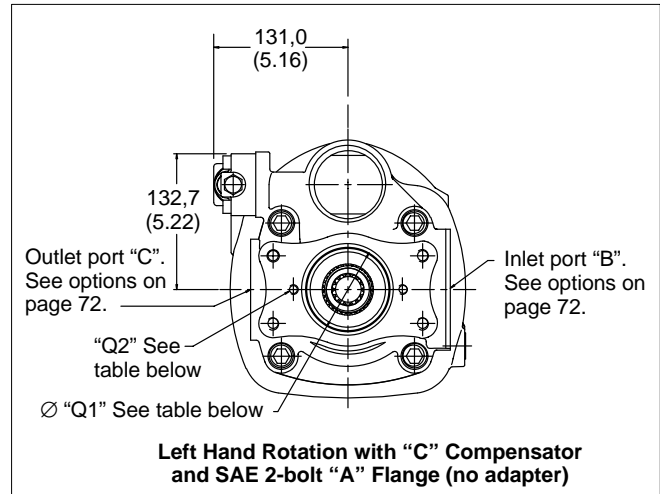
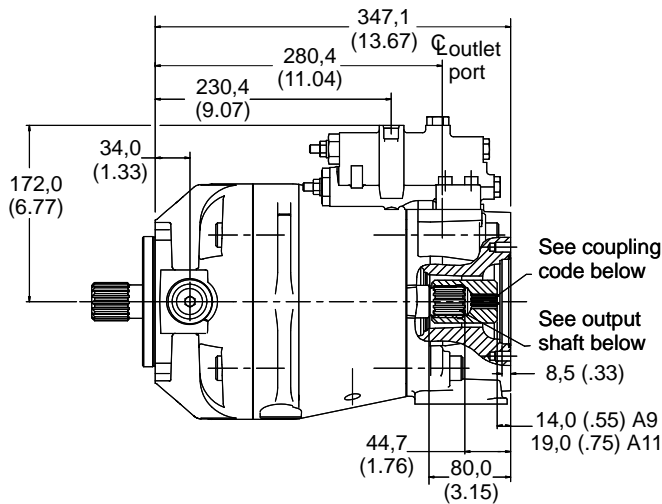
PVQ141 Thru-drive Models

PVQ200 Family

Dimensions in millimeters (inches)

See mounting flange options on page 67.

Start on page 68 for shaft options.



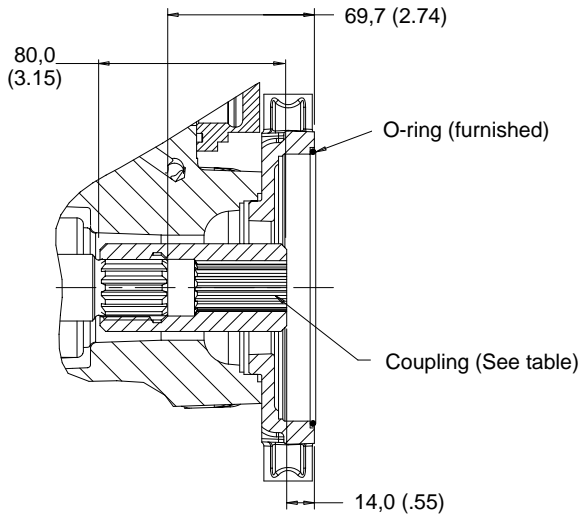
Right Hand Rotation with "CV" Compensator and SAE 2-bolt "A" Flange (no adapter)

Model Code	"Q1" Thru-drive Flange	"Q2" 2-bolt Thread
PV*-A*F*	SAE J744-82-2 Ø82.625/82.575 bore	.375 - 16 UNC-2B thd.
PV*-A*M*	SAE J744-82-2 Ø82.625/82.575 bore	0.80 deep M10 thd x 18,0 deep
PV*-MA*M*	ISO 3019/2-80A2 Ø80.075/80.25 bore	M10 thd x 18,0 deep

Coupling Code	Description
A9	For SAE "A" pad with a 9T, 16/32 DP, 30° Press. angle, involute spline.
A11	For SAE "A" pad with a 11T, 16/32 DP, 30° Press. angle, involute spline.
Output shaft	14T 12/24 DP external involute spline

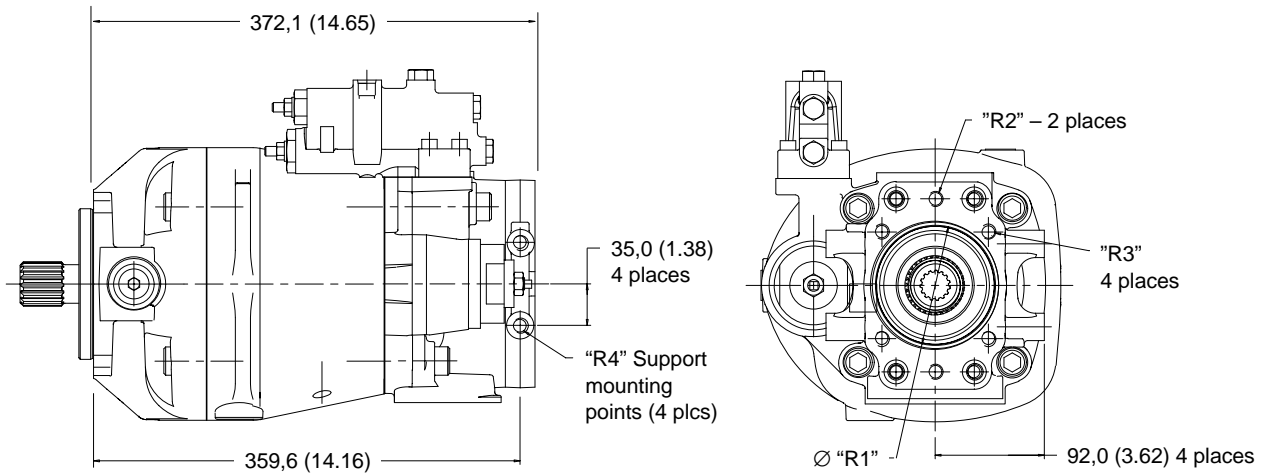
PVQ141 Thru-drive Models

Dimensions in millimeters (inches)



Coupling Code	Description
B13	SAE "B", 13T, 16/32 DP, 30° pressure angle involute spline.
B15	SAE "B-B", 15T, 16/32 DP, 30° pressure angle involute spline.
C14	SAE "C", 14T, 12/24 DP, 30° pressure angle involute spline.
C17	SAE "C-C", 17T, 12/24 DP, 30° pressure angle involute spline.
MA9	For ISO 80-A2HW pad with a 9T SAE spline.
MA11	For ISO 80-A2HW pad with a 11T SAE spline.
MB13	For ISO 100-A2/B4HW pad with a 13T SAE spline.
MB15	For ISO 100-A2/B4HW pad with a 15T SAE spline.
MC14	For ISO 125-A2/B4HW pad with a 14T SAE spline.
MC17	For ISO 125-A2/B4HW pad with a 17T SAE spline.

"B" Adapter Flange



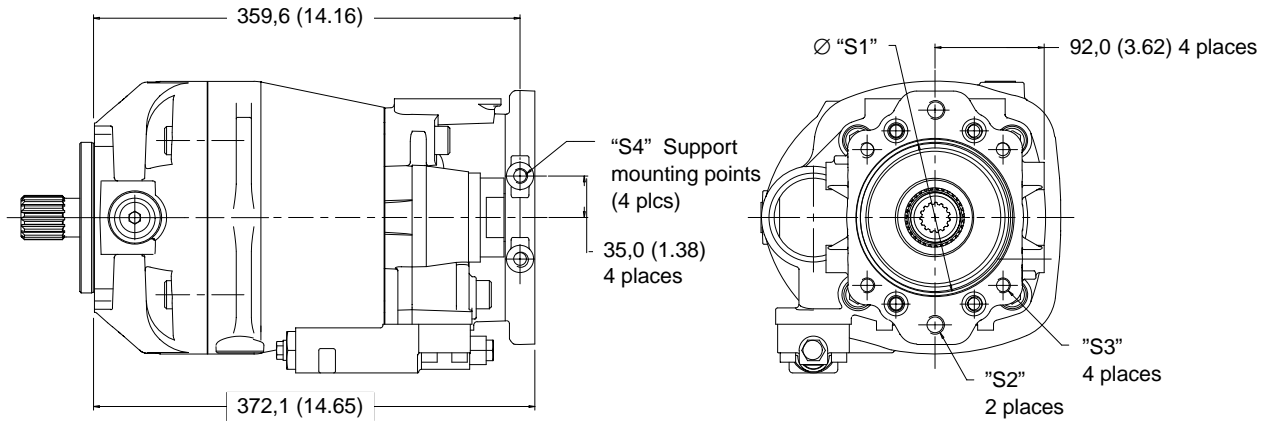
Right Hand Rotation with SAE 2/4 Bolt "B" Flange and ISO 100 Adapter Flange

Model Code	"R1" Thru-drive Flange	"R2" 2-bolt Thread	"R3" 4-bolt Thread	"R4" Support Mtg. Point
PV*-*-B*F*	SAE J744-101-2 & -4 Ø101,675/101.625 bore 12,50/11,50 deep	.500 - 13 UNC-2B 0.98 deep	.500 - 13 UNC-2B 0.98 deep	.500 - 13 UNC-2B 0.98 deep
PV*-*-B*M*	SAE J744-101-2 & -4 Ø101,675/101.625 bore 12,50/11,50 deep	M12 thd x 25,0 deep	M12 thd x 25,0 deep	M12 thd x 25,0 deep
PV*-*-MB*M*	ISO 3019/2-100A2 & B2 Ø100,075/100.025 bore 12,50/11,50 deep	M12 thd x 25,0 deep	M12 thd x 25,0 deep	M12 thd x 25,0 deep

PVQ200 Family

Dimensions in millimeters (inches)

"C" Adapter Flange

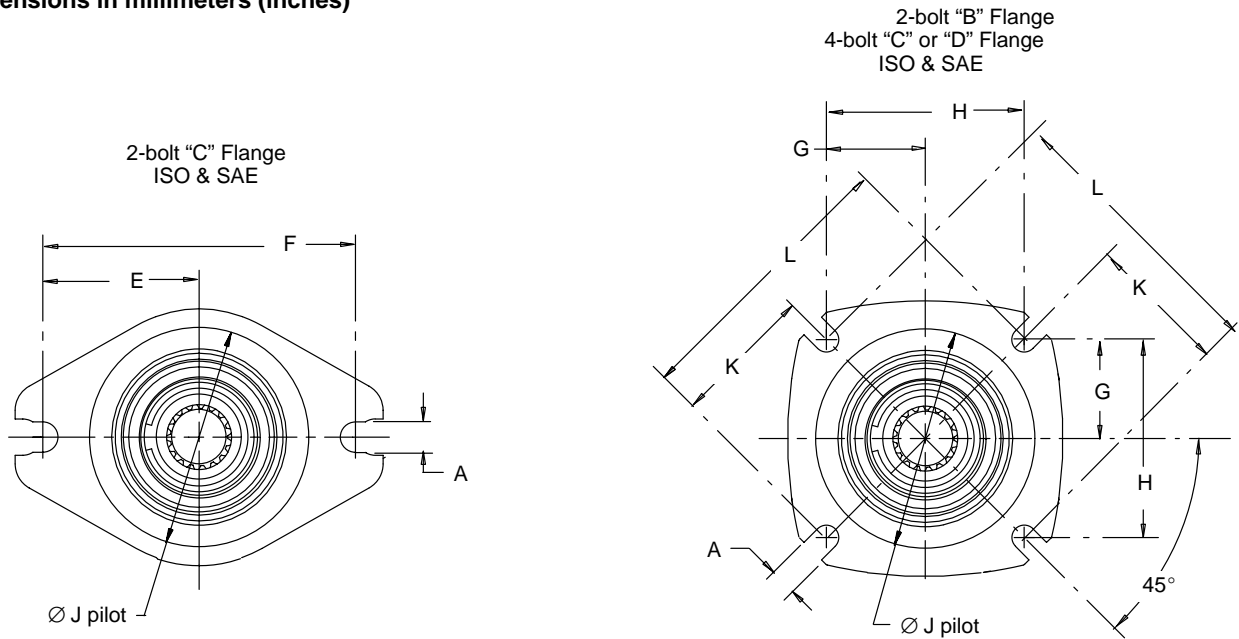


Left Hand Rotation with SAE 2/4 bolt "C"
and ISO 125 Adapter Flange

Model Code	"S1" Thru-drive Flange	"S2" 2-bolt Thread	"S3" 4-bolt Thread	"S4" Support Mtg. Points
PV*-*-C*F*	SAE J744-127-2 & -4 Ø127,075/127.025 bore 15,50/14,50 deep	.625 - 11 UNC-2B 0.98 deep	.500 - 13 UNC-2B 0.98 deep	.500 - 13 UNC-2B 0.98 deep
PV*-*-C*M*	SAE J744-127-2 & -4 Ø127,075/127.025 bore 15,50/14,50 deep	M16 thd x 25,0 deep	M12 thd x 25,0 deep	M12 thd x 25,0 deep
PV*-*-MC*M*	ISO 3019/2-125A2 & B4 Ø125,075/125.025 bore 15,50/14,50 deep	M16 thd x 25,0 deep	M12 thd x 25,0 deep	M12 thd x 25,0 deep

Mounting Flange Options

Dimensions in millimeters (inches)

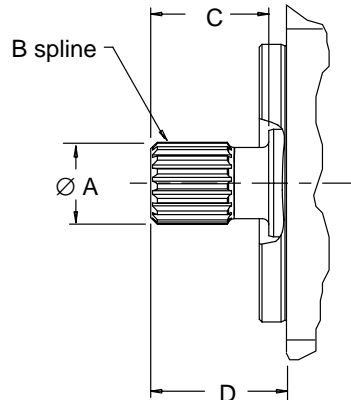


Model Series	2-bolt or 4-bolt Flange	Flange Designation	A	E	F	G	H	J	K	L
PVQ63	2-bolt "B" (special)	SAE J744-101-2 ("B") Flange Code B2	14,3 (.562)	—	—	—	—	Ø101,60/101,55 (Ø4.000/3.998)	73,0 (2.874)	146,0 (5.748)
		ISO 3019/2-100A2HW Flange Code MB2	14,0 (.551)	—	—	—	—	Ø100,00/99,95 (Ø3.937/3.935)	70,0 (2.756)	140,0 (5.512)
PVQ63 PVQ81 PVQ106 PVQ141	2-bolt "C"	SAE J744-127-2 ("C") Flange Code C2	17,4 (.685)	90,5 (3.563)	181,0 (7.126)	—	—	Ø127,00/126,95 (Ø5.000/4.998)	—	—
		ISO 3019/2-125A2HW Flange Code MC2	18,0 (.709)	90,0 (3.543)	180,0 (7.09)	—	—	Ø 125,00/124,95 (Ø 4.921/4.919)	—	—
	4-bolt "C"	SAE J744-127-4 ("C") Flange Code C4	14,2 (.559)	—	—	57,25 (2.254)	114,50 (4.508)	Ø127,00/126,95 (Ø5.000/4.998)	—	—
		ISO 3019/2-125B4HW Flange Code MC4	14,0 (.551)	—	—	—	—	Ø 125,00/124,95 (Ø 4.921/4.919)	80,0 (3.150)	160,0 (6.299)
PVQ141	4-bolt "D"	SAE J744-152-4 ("D") Flange Code D4	20,6 (.812)	—	—	80,82 (3.182)	161,64 (6.364)	Ø152,40/152,35 (Ø6.000/5.998)	—	—
		ISO 3019/2-160B4HW Flange Code MD4	18,0 (.709)	—	—	—	—	Ø 160,00/159,95 (Ø 6.299/6.297)	100,0 (3.937)	200,0 (7.874)

* Flanges for PVQ20 and PVQ50 are shown on pages 35 and 41, respectively.

Dimensions in millimeters (inches)

SAE Splined Shaft



Model Series	SAE Splined Shaft Designation	Shaft Code	A max.	B	C	D	Max. Input Torque* Nm (lb. in.)
PVQ20	SAE J744-16-4 SAE "A" (9T)	3	15,88 (.625)	9T 16/32 DP	37,0 (1.46)	32,0 (1.26)	58 (517)
	SAE J744-19-4 SAE "A" (11T)	4	19,05 (.750)	11T 16/32 DP	30,0 (1.18)	38,0 (1.50)	123 (1100)
	SAE J744-22-4 SAE "B" (13T)	7	21,82 (.859)	13T 16/32 DP	33,0 (1.31)	41,0 (1.61)	208 (1850)
	SAE J744-25-4 SAE "B-B" (15T)	8	24,99 (.984)	15T 16/32 DP	38,0 (1.50)	46,0 (1.81)	337 (2987)
PVQ50	SAE J744-22-4 SAE "B" (13T)	3	21,82 (.859)	13T 16/32 DP	33,0 (1.31)	41,0 (1.61)	208 (1850)
	SAE J744-25-4 SAE "B-B" (15T)	4	24,99 (.984)	15T 16/32 DP	38,0 (1.50)	46,0 (1.81)	337 (2987)
PVQ63	SAE J744-22-4 SAE "B" (13T)	7	21,82 (.859)	13T 16/32 DP	33,0 (1.31)	41,0 (1.61)	208 (1850)
	SAE J744-25-4 SAE "B-B" (15T)	8	24,99 (.984)	15T 16/32 DP	38,0 (1.50)	46,0 (1.81)	337 (2987)
	SAE J744-32-4 SAE "C" (14T)	3	31,22 (1.229)	14T 12/24 DP	48,0 (1.89)	56,0 (2.20)	640 (5660)
PVQ81 PVQ106	SAE J744-32-4 SAE "C" (14T)	3	31,22 (1.229)	14T 12/24 DP	48,0 (1.89)	56,0 (2.20)	640 (5660)
	SAE J744-38-4 SAE "C-C" (17T)	4	37,57 (1.479)	17T 12/24 DP	54,0 (2.13)	62,0 (2.44)	1215 (10,750)
PVQ141	SAE J744-32-4 SAE "C" (14T)	3	31,22 (1.229)	14T 12/24 DP	48,0 (1.89)	56,0 (2.20)	640 (5660)
	SAE J744-38-4 SAE "C-C" (17T)	4	37,57 (1.479)	17T 12/24 DP	54,0 (2.13)	62,0 (2.44)	1215 (10,750)
	SAE J744-44-4 SAE "D" (13T)	6	43,71 (1.721)	13T 8/16 DP	67,0 (2.63)	75,0 (2.95)	1215 (10,750)

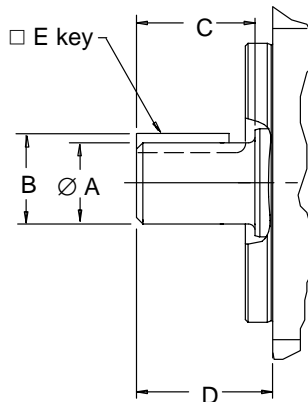
* Torque of non-thru-drive PVQ pump, or combined torque of PVQ thru-drive pump and thru-driven pump.

NOTE: In those cases where geometric tolerances of mounting are critical, or where specific tolerance ranges are required and not specified, consult Vickers Engineering department for specific limits.

Shaft Options

Dimensions in millimeters (inches)

SAE Keyed Shaft



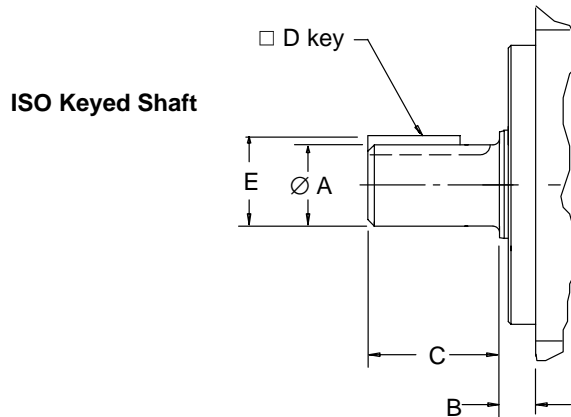
Model Series	SAE Keyed Shaft Designation	Shaft Code	A	B	C	D	E	Max. Input Torque* Nm (lb. in.)
PVQ20	SAE J744-16-1 SAE "A"	1	15,88 (.625)	17,60 (.693)	24,0 (.945)	32,0 (1.26)	3,99 (.157)	58 (517)
	SAE J744-19-1 SAE "A"	2	19,05 (.750)	21,10 (.831)	24,0 (.945)	32,0 (1.26)	4,80 (.189)	104 (918)
	SAE J744-22-1 SAE "B"	5	22,22 (.875)	25,12 (.989)	33,0 (1.31)	41,0 (1.61)	6,35 (.250)	135 (1200)
	SAE J744-25-1 SAE "B-B"	6	25,37 (.999)	28,22 (1.111)	38,0 (1.50)	46,0 (1.81)	6,35 (.250)	215 (1900)
PVQ50	SAE J744-22-1 SAE "B"	1	22,22 (.875)	25,12 (.989)	33,0 (1.31)	41,0 (1.61)	6,35 (.250)	135 (1200)
	SAE J744-25-1 SAE "B-B"	2	25,37 (.999)	28,22 (1.111)	38,0 (1.50)	46,0 (1.81)	6,35 (.250)	215 (1900)
PVQ63	SAE J744-25-1 SAE "B-B"	6	25,37 (.999)	28,22 (1.111)	38,0 (1.50)	46,0 (1.81)	6,35 (.250)	215 (1900)
	SAE J744-32-1 SAE "C"	1	31,75 (1.25)	35,32 (1.39)	48,0 (1.89)	56,0 (2.20)	7,93 (.312)	450 (3980)
PVQ81 PVQ106	SAE J744-32-1 SAE "C"	1	31,75 (1.25)	35,33 (1.39)	48,0 (1.89)	56,0 (2.20)	7,97 (.313)	450 (3980)
	SAE J744-38-1 SAE "C-C"	2	38,10 (1.50)	42,40 (1.67)	54,0 (2.13)	62,0 (2.44)	9,55 (.376)	765 (6770)
PVQ141	SAE J744-32-1 SAE "C"	1	31,75 (1.25)	35,32 (1.39)	48,0 (1.89)	56,0 (2.20)	7,93 (.312)	450 (3980)
	SAE J744-38-1 SAE "C-C"	2	38,10 (1.50)	42,39 (1.67)	54,0 (2.13)	62,0 (2.44)	9,52 (.375)	765 (6770)
	SAE J744-44-1 SAE "D"	5	44,45 (1.75)	49,46 (1.95)	67,0 (2.64)	75,0 (2.95)	11,11 (.438)	1200 (10,620)

* Torque of non-thru-drive PVQ pump, or combined torque of PVQ thru-drive pump and thru-driven pump.

NOTE: In those cases where geometric tolerances of mounting are critical, or where specific tolerance ranges are required and not specified, consult Vickers Engineering department for specific limits.

PVQ200 Family

Dimensions in millimeters (inches)



Model Series	ISO Keyed Shaft Designation	Shaft Code	A	B	C	D	E	Max. Input Torque* Nm (lb. in.)
PVQ20	ISO 3019/2 E20N	N1 ⁽¹⁾	19,9 (.786)	8,5 (.335)	36 (1.42)	6 (.236)	22,5 (.886)	113 (1000)
	ISO 3019/2 E25N	N2 ⁽¹⁾	25 (.984)	8,5 (.335)	42 (1.65)	8 (.315)	28,0 (1.102)	215 (1900)
	ISO 3019/2 E25N	N3 ⁽²⁾	25 (.984)	10 (.393)	42 (1.65)	8 (.315)	28,0 (1.102)	215 (1900)
PVQ50	ISO 3019/2 E25N	N1	25 (.984)	10 (.393)	42 (1.65)	8 (.315)	28,0 (1.102)	215 (1900)
PVQ63	ISO 3019/2 E25N	N3	25 (.984)	10 (.393)	42 (1.65)	8 (.315)	28,0 (1.102)	215 (1900)
	ISO 3019/2 E32N	N1	32 (1.26)	10 (.393)	58 (2.28)	10 (.394)	35,0 (1.378)	450 (3980)
PVQ81	ISO 3019/2 E32N	N1	32 (1.26)	10,5 (.413)	58 (2.28)	10 (.394)	35,0 (1.378)	450 (3980)
PVQ106	ISO 3019/2 E40N	N2	40 (1.57)	10,5 (.413)	82 (3.23)	12 (.472)	43,0 (1.693)	870 (7700)
PVQ141	ISO 3019/2 E32N	N1	32 (1.26)	10 (.393)	58 (2.28)	10 (.394)	35,0 (1.378)	450 (3980)
	ISO 3019/2 E40N	N2	40 (1.57)	10 (.393)	82 (3.23)	12 (.472)	43 (1.693)	870 (7700)

(1) ISO 80mm pilot only – MA2

(2) ISO 100mm pilot only – MB2

* Torque of non-thru-drive PVQ pump, or combined torque of PVQ thru-drive pump and thru-driven pump.

NOTE: In those cases where geometric tolerances of mounting are critical, or where specific tolerance ranges are required and not specified, consult Vickers Engineering for specific limits.

Input Shaft Selection Data

SAE Splined Shafts

Model Series	Shaft Designation	Shaft Code	Max. Input Torque† Nm (lb. in.)	Max. Thru-drive Output Torque‡ Nm (lb. in.)
PVQ20	SAE J744-22-4 (SAE "B", 13T)	7	208 (1850)	123 (1100)
	SAE J744-25-4 (SAE "B-B", 15T)	8	337 (2987)	123 (1100)
PVQ50	SAE J744-22-4 (SAE "B", 13T)	3	208 (1850)	208 (1850)*
	SAE J744-25-4 (SAE "B-B" 15T)	4	337 (2987)	337 (2987)
PVQ63	SAE J744-22-4 (SAE "B" 13T)	7	208 (1850)	208 (1850)*
	SAE J744-25-4 (SAE "B-B" 15T)	8	337 (2987)	337 (2987)
	SAE J744-32-4 (SAE "C" 14T)	3	640 (5660)	337 (2987)
PVQ81 PVQ106	SAE J744-32-4 (SAE "C" 14T)	3	640 (5660)	515 (4560)
	SAE J744-38-4 (SAE "C-C" 17T)	4	1215 (10,750)	PVQ81 515 (4560) PVQ106 515 (4560)
PVQ141	SAE J744-32-4 (SAE "C" 14T)	3	640 (5660)	640 (5660)
	SAE J744-38-4 (SAE "C-C" 17T)	4	1215 (10,750)	640 (5660)
	SAE J744-44-4 (SAE "D" 13T)	6	1700 (15,000)	640 (5660)

SAE Keyed Shafts

Model Series	Shaft Designation	Shaft Code	Max. Input Torque† Nm (lb. in.)	Max. Thru-drive Output Torque‡ Nm (lb. in.)
PVQ20	SAE J744-22-1 SAE "B"	5	135 (1200)	123 (1100)
	SAE J744-25-1 SAE "B-B"	6	215 (1900)	123 (1088)
PVQ50	SAE J744-22-1 SAE "B"	1	135 (1200)	135 (1200)*
	SAE J744-25-1 SAE "B-B"	2	215 (1900)	215 (1900)*
PVQ63	SAE J744-25-1 SAE "B-B"	6	215 (1900)	215 (1900)*
	SAE J744-32-1 SAE "C"	1	450 (3980)	337 (2987)
PVQ81 PVQ106	SAE J744-32-1 SAE "C"	1	450 (3980)	450 (3980)*
	SAE J744-38-1 SAE "C-C"	2	765 (6770)	515 (4560)
PVQ141	SAE J744-32-1 SAE "C"	1	450 (3980)	450 (3980)*
	SAE J744-38-1 SAE "C-C"	2	765 (6770)	640 (5660)
	SAE J744-44-1 SAE "D"	5	1200 (10,620)	640 (5660)

ISO Keyed Shafts

Model Series	Shaft Designation	Shaft Code	Max. Input Torque† Nm (lb. in.)	Max. Thru-drive Output Torque‡ Nm (lb. in.)
PVQ20	ISO 3019/2 E25N	N3	215 (1900)	123 (1088)
PVQ50	ISO 3019/2 E25N	N1	215 (1900)	215 (1900)*
PVQ63	ISO 3019/2 E25N	N3	215 (1900)	215 (1900)*
	ISO 3019/2 E32N	N1	450 (3980)	337 (2987)
PVQ81 PVQ106	ISO 3019/2 E32N	N1	450 (3980)	450 (3980)*
	ISO 3019/2 E40N	N2	870 (7700)	515 (4560)
PVQ141	ISO 3019/2 E32N	N1	450 (3980)	450 (3980)*
	ISO 3019/2 E40N	N2	870 (7700)	640 (5660)

† This is maximum total torque of the thru drive pump and the thru driven pump(s).

‡ This is maximum torque which can be applied to the thru driven pump(s).

* This value is limited by the maximum input torque.

Port Options

PVQ200 Family

Inlet and Outlet Ports				
Model Series	Inlet/Outlet Port Option (per model code, page 5)	Port Code	Inlet Port "B"	Outlet Port "C"
PVQ20	Inch Flange	F	SAE J518 Code 61, standard pressure. 1.25 inch diameter, .4375-14 x 1.12 bolt holes	SAE J518 Code 61, standard pressure. 0.75 inch diameter, .375-16 x .88 bolt holes
	Metric Flange	M	ISO 6162 Type II, 315 bar. 31,75 mm diameter, M10 x 28 bolt holes	ISO 6162 Type II, 315 bar. 19,05 mm diameter, M10 x 22 bolt holes
	Inch Tube	S	SAE J1926 O-ring -20, for 1-1/4 inch O.D. tube	SAE J1926 O-ring -12, for 3/4 inch O.D. tube
	Metric Tube	D	ISO 6149-1, M42 thread	ISO 6149-1, M27 thread
	British Parallel Pipe	B	ISO 228-1:1994 (E), G 1-1/4 thread	ISO 228-1:1994 (E), G 3/4 thd.
PVQ50	Inch Flange	F	SAE J518 Code 61, standard pressure. 2.00 inch diameter, .500-13 x 1.06 bolt holes	SAE J518 Code 61, standard pressure. 1.00 inch diameter, .375-16 x .87 bolt holes
	Metric Flange	M	ISO 6162 Type II, 315 bar. 51 mm diameter, M12 x 27 bolt holes	ISO 6162 Type II, 315 bar. 25 mm diameter, M10 x 22 bolt holes
	Inch Tube	S	SAE J1926 O-ring -24, for 1-1/2 inch O.D. tube	SAE J1926 O-ring -16, for 1 inch O.D. tube
	Metric Tube	D	ISO 6149-1, M48 thread	ISO 6149-1, M33 thread
	British Parallel Pipe	B	ISO 228-1:1994 (E), G 1-1/2 thread	ISO 228-1:1994 (E), G 1 thread
PVQ63	Inch Flange	F	SAE J518 Code 61, standard pressure. 2.00 inch diameter, .500-13 x 1.06 bolt holes	SAE J518 Code 61, standard pressure. 1.00 inch diameter, .375-16 x .88 bolt holes
	Metric Flange	M	ISO 6162 Type II, 350 bar. 51 mm diameter, M12 x 29 bolt holes	ISO 6162 Type, 350 bar. 25 mm diameter, M10 x 23 bolt holes
	Inch Tube (End ported models only)	S	SAE J1926 O-ring -24, for 1-1/2 inch O.D. tube	SAE J1926 O-ring -16, for 1 inch O.D. tube
	Metric Tube (End ported models only)	D	ISO 6149-1, M48 thread	ISO 6149-1, M33 thread
PVQ81	Inch Flange	F	SAE J518 Code 61, standard pressure. 2.00 inch diameter, .500-13 x 1.19 bolt holes	SAE J518 Code 61, standard pressure. 1.00 inch diameter, .375-16 x .88 bolt holes
	Metric Flange	M	ISO 6162 Type I, 350 bar. 51 mm diameter, M12 x 20 bolt holes	ISO 6162 Type I, 350 bar. 25 mm diameter, M10 x 17 bolt holes
PVQ106	Inch Flange	F	SAE J518 Code 61, standard pressure. 2.50 inch diameter, .500-13 x 1.19 bolt holes	SAE J518 Code 62, high pressure. 1.00 inch diameter, .375-16 x .88 bolt holes
	Metric Flange	M	ISO 6162 Type II, 315 bar. 64 mm diameter, M12 x 31 bolt holes	ISO 6162 Type, 400 bar. 25 mm diameter, M10 x 23 bolt holes
PVQ141	Inch Flange	F	SAE J518 Code 61, standard pressure. 2.50 inch diameter, .500-13 x 1.19 bolt holes	SAE J518 Code 62, high pressure. 1.25 inch diameter, .500-13 x 1.00 bolt holes
	Metric Flange	M	ISO 6162 Type II, 315 bar. 64 mm diameter, M12 x 31 bolt holes	ISO 6162 Type, 400 bar. 32 mm diameter, M12 x 27 bolt holes

Port Options

Drain, Load Sensing, and Gauge Ports

Model Series	Inlet/Outlet Port Option (per model code, page 5)	Port Code	Drain Port "F"	Load Sensing Port "J"	Gauge Port "K"
PVQ20	Inch Flange or Tube	F, S	SAE J1926 O-ring, .50" O.D. tube. .750-16 UNF 2B thread.	SAE J1926 O-ring, .25" O.D. tube. .4375-20 UNF 2B thread.	SAE J1926 O-ring, .25" O.D. tube. .4375-20 UNF 2B thread.
	Metric Flange or Tube	M, D	ISO 6149-1 O-ring M18 x 1,5 thread	ISO 6149-1 O-ring M12 x 1,5 thread	ISO 6149-1 O-ring M12 x 1,5 thread
	British Parallel Pipe	B	ISO 228-1:1994 (E) G 1/2 thread	ISO 228-1:1994 (E) G 1/4 thread	ISO 228-1:1994 (E) G 1/4 thread
PVQ50	Inch Flange or Tube	F, S	SAE J1926 O-ring, .625" O.D. tube. .875-14 UNF 2B thread.	SAE J1926 O-ring, .250" O.D. tube. .4375-20 UNF 2B thread.	SAE J1926 O-ring, .375" O.D. tube. .5625-18 UNF 2B thread.
	Metric Flange or Tube	M, D	ISO 6149-1 O-ring M22 x 1,5 thread	ISO 6149-1 O-ring M12 x 1,5 thread	ISO 6149-1 O-ring M14 x 1,5 thread
	British Parallel Pipe	B	ISO 228-1:1994 (E) G 1/2 thread	ISO 228-1:1994 (E) G 1/4 thread	ISO 228-1:1994 (E) G 1/4 thread
PVQ63	Inch Flange or Tube	F, S	SAE J1926 O-ring, .625" O.D. tube. .875-14 UNF 2B thread.	SAE J1926 O-ring, .375" O.D. tube. .5625-18 UNF 2B thread.	SAE J1926 O-ring, .375" O.D. tube. .5625-18 UNF 2B thread.
	Metric Flange or Tube	M, D	ISO 6149-1 O-ring M22 x 1,5 thread	ISO 6149-1 O-ring M14 x 1,5 thread	ISO 6149-1 O-ring M14 x 1,5 thread
PVQ81 PVQ106	Inch Flange	F	SAE J1926 O-ring, .625" O.D. tube. .875-14 UNF 2B thread.	SAE J1926 O-ring, .375" O.D. tube. .562-18 UNF 2B thread.	SAE J1926 O-ring, .375" O.D. tube. .5625-18 UNF 2B thread.
	Metric Flange	M	ISO 6149-1 O-ring M22 x 1,5 thread	ISO 6149-1 O-ring M14 x 1,5 thread	ISO 6149-1 O-ring M14 x 1,5 thread
PVQ141	Inch Flange	F	SAE J1926 O-ring, .625" O.D. tube. .875-14 UNF 2B thread.	SAE J1926 O-ring, .375" O.D. tube. .562-18 UNF 2B thread.	SAE J1926 O-ring, .375" O.D. tube. .5625-18 UNF 2B thread.
	Metric Flange	M	ISO 6149-1 O-ring M22 x 1,5 thread	ISO 6149-1 O-ring M14 x 1,5 thread	ISO 6149-1 O-ring M14 x 1,5 thread

Operating Requirements

PVQ200 Family

Inlet Pressure, Case Pressure, and Operating Temperature Requirements

Inlet Pressure			Case Pressure			Operating Temperature	
Rated Absolute bar (psi)	Minimum bar, absolute (in. Hg)	Maximum Gauge bar (psi)	Maximum Continuous bar (psi)	Maximum Intermittent bar (psi)	Peak bar (psi)	Rated °C (°F)	Maximum Intermittent °C (°F)
1,0 (14.5)	0,85 (5)	3,5 (50)	0,5 (7)	2 (30)	3,5 (50)	50 (120)	104 (220)

Hydraulic Fluids

Fluid	Recommended Operating Viscosity Range cSt (SUS)	Maximum Viscosity at Startup cSt (SUS)	Minimum Viscosity @ Max. Intermittent Temperature of 104° C (220° F) cSt (SUS)
Use anti-wear hydraulic oil, or automotive type crankcase oil (designations SC, SD, SE, or SF) per SAE J183 FEB80	16 to 40 (80 to 180)	5000 (20,000)	9 (50)

For more information, see Vickers publication 694. For operation on other alternative or environmentally friendly fluids, please contact your Vickers representative.

Fluid Cleanliness

The PVQ pumps are rated in anti-wear petroleum fluids with a contamination level of 20/18/14 (Vickers) or ISO 18/14. Operation in fluids with levels more contaminated than this is not recommended. Fluids other than petroleum, severe service cycles, or temperature extremes are cause for adjustment of these codes. Please contact your Vickers representative for specific duty cycle recommendations.

Vickers PVQ pumps, as with any variable displacement piston pumps, will operate with apparent satisfaction in fluids up to the rating specified here. Experience has shown, however, that pump and hydraulic system life is not optimized with high fluid contamination levels (high ISO cleanliness codes).

Proper fluid condition is essential for long and satisfactory life of hydraulic components and systems. Hydraulic fluid must have the correct balance of cleanliness, materials, and additives for protection against wear of components, elevated viscosity, and inclusion of air.

Essential information on the correct methods for treating hydraulic fluid is included in Vickers publication 561 – “Vickers Guide to Systemic Contamination Control” – available from your local Vickers distributor. In this publication, filtration and cleanliness levels for extending the life of axial piston pumps and other system components are listed. Included is an excellent discussion of the selection of products needed to control fluid condition.



Warning. Care should be taken that mechanical and hydraulic resonances are avoided in the application of the pump. Such resonances can seriously compromise the life and/or safe operation of the pump.

Drive Data

Mounting attitude can be either horizontal or vertical, using the appropriate case drain ports to ensure that the case remains full of fluid at all times. Consult your local Vickers representative if a different arrangement is required.

In those cases where geometric tolerances of mounting are critical, or where specific tolerance ranges are required and not specified, consult Vickers Engineering for specific limits.

Direction of shaft rotation, viewed from the electric motor end, must be as indicated in the model designation on the pump – either right hand (clockwise) or left hand (counterclockwise).

Direct coaxial drive through a flexible coupling is recommended. If drives imposing radial shaft loads are considered, please consult your Vickers representative.

Start-up Procedure

Make sure the reservoir and circuit are clean and free of dirt/debris prior to filling with hydraulic fluid.

Fill the reservoir with filtered oil and fill to a level sufficient enough to prevent vortexing at the suction connection to pump inlet. It is good practice to clean the system by flushing and filtering, using an external slave pump.



Before the pump is started, fill the case through the uppermost drain port with hydraulic fluid. The case drain line must be connected directly to the reservoir and must terminate below the oil level.

Once the pump is started, it should prime within a few seconds. If the pump does not prime, check to make sure that there are no restrictions between the reservoir and the inlet to the pump, that the pump is being rotated in the proper direction, and that there are no air leaks in the inlet line and connections. Also check to make sure that trapped air can escape at the pump outlet.

After the pump is primed, tighten the loose outlet connections, then operate for five to ten minutes (unloaded) to remove all trapped air from the circuit.

If the reservoir has a sight gage, make sure the fluid is clear – not milky.