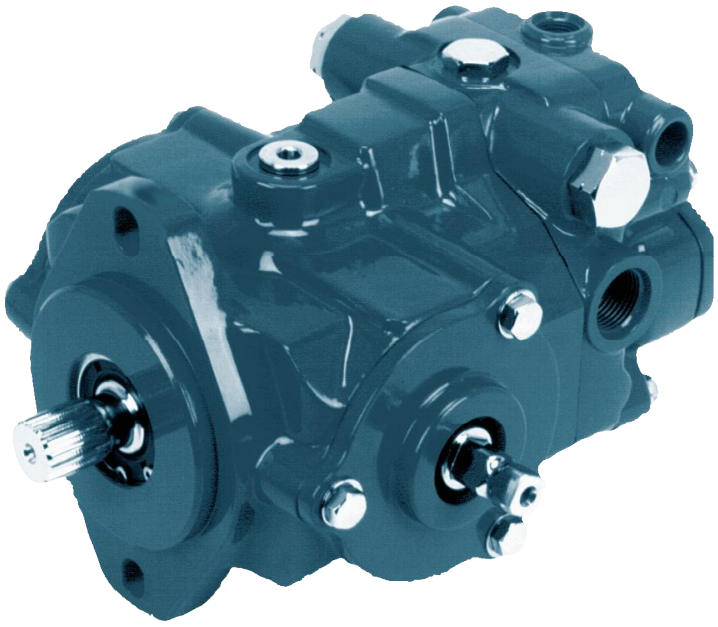
Model 70360 Specifications



Model 70360 Specifications - Piston Pump

Maximum Displacement	40,6 cm³/r [2.48 in³/r]	49,2 cm³/r [3.00 in³/r]
Input Mounting Flange	SAE "B" or "BB"	SAE "B" or "BB"
Flow @ Rated Speed & PSI	140 l/min [37.0 gal/min]	169 l/min [44.8 gal/min]
Maximum Rated Speed	3600 RPM	3600 RPM
Continuous Rated Pressure	210 bar [3000 PSI]	172 bar [2500 PSI]
Maximum Intermittent Pressure	345 bar [5000 PSI]	286 bar [4150 PSI]
Continuous Allowable Case Pressure	2 bar [25 PSI]	2 bar [25 PSI]
Maximum Case Drain Temperature	107° C [225° F]	107° C [225° F]
Weight per single pump	14,1 to 15,9 kg [31 to 35 lbs]	14,1 to 15,9 kg [31 to 35 lbs]

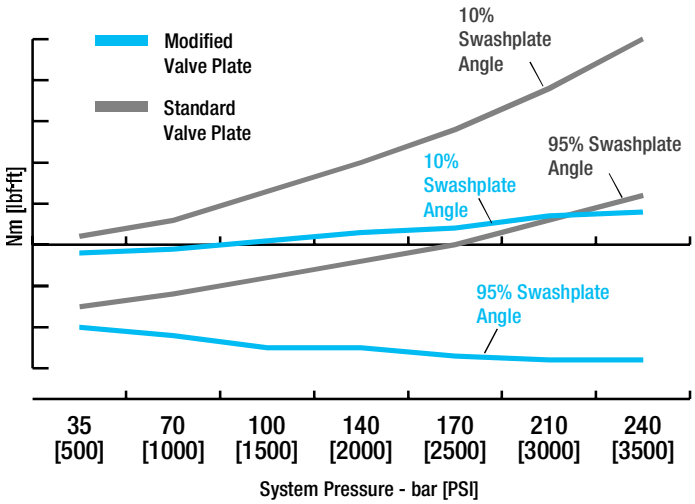
Specifications - Internal Gerotor Charge Pump

Displacement Options	
	6.9 cm³/r [.42 in³/r]
	13,8 cm³/r [.84 in³/r]
Operating Pressure Range (std.)	7 to 10 bar [100 to 150 PSI]
Maximum Charge Inlet Vacuum	0,80 bar Abs. [6 inHg]

Model 70360
Features & Benefits

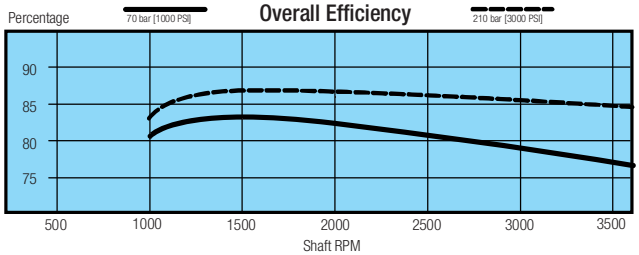
- Customized Valve Plate Designs & Porting
  - Reduces noise and swashplate moments.
- Tapered Trunnion Bearing Arrangement
  - Reduces noise and vibration.
  - Improves neutral return thrust load capabilities.
- Strengthened Mounting Flange
  - Reduces customer requirements for additional support brackets.
- Square Input Control Shaft
  - Eases the assembly of customer installed control lever and reduces wear on control shaft and control lever.
- Improved Swashplate Design
  - Reduces noise, and vibration.

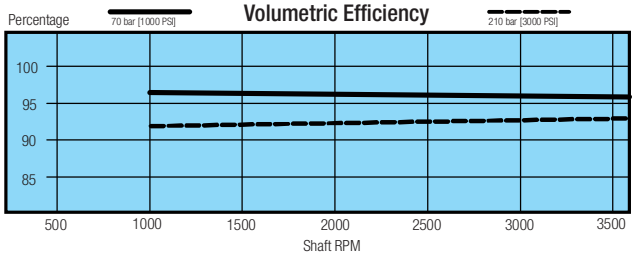
Lower Swashplate Moments

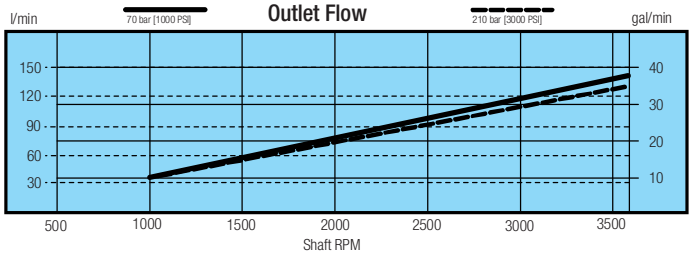


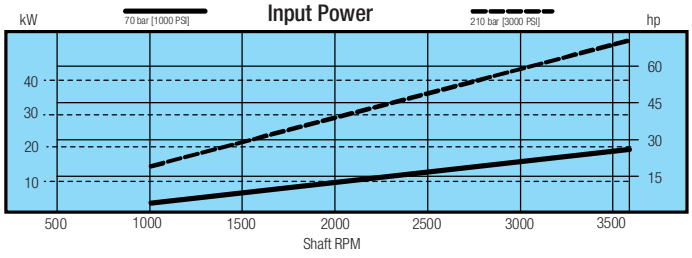
Performance Data

The charts below are representative of a single 40,6 cm³/r [2.48 in³/r] Variable Displacement Piston Pump. The tests were run at an oil temperature of 82°C [180°F] with viscosity at 9 - 12 cSt [54-66 SUS] and the pump at maximum displacement.









Model 70360 Code

Ordering Instructions

The Model 70360 piston pumps are specified by using the following model code system tailoring the pump configuration to the requirement. Once a pump is built from the model code, a product number will be assigned to that configuration and the pump identified.

Make sure all positions are selected within the 25 digit code for each pump order. Also state if the pumps making up a tandem are required to be mounted together or separately.

Code Example:	ACV	20	R	A	B	1	T	T	A1	C	1	11	1	0	00	CD	0	A
Position -	1, 2, 3	4, 5	6	7	8	9	10	11	12,13	14	15	16,17	18	19	20,21	22,23	24	25

Positions 1, 2, 3 - Code Title
ACV = Series 360 Manually Variable Displacement Axial Piston pump with SAE J744 Flange 101-2 (2 Bolt "B")

	Code	Single Unit	Tandem Unit Front	Tandem Unit Rear
Positions 4, 5 - Displacement and Valve Plate				
20 = 40,6 cm³/r [2.48 in³/r]; Rotating Kit-Standard; Valve Plate - Type 1	20	Std	Std	Std
30 = 49.2 cm³/r [3.00 in³/r]; Rotating Kit-Standard; Valve Plate - Type 1	30	Std	Std	Std
Position 6 - Input Shaft Rotation *All left (CCW) or right (CW) directions given are viewed from the input shaft end of the pump.*				
L = Lefthand Rotation (CCW)	L	Std	Std	Std
R = Right-hand Rotation (CW)	R	Std	Std	Std
Position 7- Input Shaft				
A = 15 Tooth external spline, 16/32 pitch; 24,981 [.9835] Major Dia.; 46 [1.81] Shaft extension	A	Std	Std	NA
B = 41 Tooth external spline, 48/96 pitch; 22,2 [.875] Major Dia.; 24,4 [.96] Shaft extension	B	NA	NA	Std
C = 13 Tooth external spline, 16/32 pitch; 21,81 [.8585] Major Dia.; 41,1 [1.62] Shaft extension	C	Opt	NA	NA
D = .125 :1 Taper; 25.4 [1.00] Diameter; 6,1 [.25] W x 19,8 [.78] L keyway; 3/8 - 24 UNF -2B Thread; 35,1 [1.38] Shaft extension	D	Opt	Opt	NA
E = Straight 22,2 [.875] Diameter; 6,3 [.25] W x 24,6 [.97] L key; 41,3 [1.62] Shaft extension	E	Opt	NA	NA
G = Straight 25,4 [1.00] Dia.; 6,1 [.25] x 28,4 [1.12] L key, 46,0 [1.81] Shaft extension	G	Opt	NA	NA
Position 8 - Control Shaft and Location				
J = Right; 19 [.748] Square Shaft with bolt groove; 128 [5.04] from centerline to control shaft end	J	Std	Std	Std
K = Left; 19 [.748] Square Shaft with bolt groove; 128 [5.04] from centerline to control shaft end	K	Std	Std	Std
Position 9 - Main Ports (A and B), Size and Location				
1 = 1 - 1/16 - 12 SAE Straight Thread, Opposite Sides	1	Std	Std	Std
2 = 1 - 1/16 - 12 SAE Straight Thread, Same Side (without internal charge pump)	2	Opt	Opt	Opt
Positions 10, 11 - Relief Valve Setting for Main Ports (Select a Setting for port A in position 10 and port B in position 11)				
0 = Check Valve Only	0	Opt	Opt	Opt
B = 138 bar [2000 PSI]	B	Opt	Opt	Opt
E = 173 bar [2500 PSI]	E	Opt	Opt	Opt
H = 207 bar [3000 PSI]	H	Opt	Opt	Opt
L = 241 bar [3500 PSI]	L	Opt	Opt	Opt
N = 276 bar [4000 PSI]	N	Opt	Opt	Opt
Q = 310 bar [4500 PSI]	Q	Opt	Opt	Opt
T = 344 bar [5000 PSI]	T	Std	Std	Std
Positions 12, 13 - Auxiliary Mount and Output Shaft (rear)				
A1 = SAE J744 flange 82-2 (2 Bolt A); Accepts 9 Tooth 16/32 DP spline with 31,7 [1.25] shaft extension (No coupler required)	A1	Std	Opt	Std
A2 = SAE J744 flange 82-2 (2 Bolt A) with cover plate; Accepts 9 Tooth 16/32 DP spline with 31,7 [1.25] shaft extension (No coupler required)	A2	Opt	NA	Opt
A3 = SAE J744 flange 82-2 (2 Bolt A); Accepts 11 Tooth 16/32 DP spline with 31,7 [1.25] shaft extension (coupler required)	A3	Opt	NA	Opt
A4 = SAE J744 flange 82-2 (2 Bolt A) with cover plate; Accepts 11 Tooth 16/32 DP spline with 31,7 [1.25] shaft extension (coupler required)	A4	Opt	NA	Opt
B2 = SAE J744 flange 101-2 (2 Bolt B); Accepts 13 Tooth 16/32 DP spline with 41,1 [1.62] shaft extension (coupler required)	B2	Opt	Opt	Opt
B4 = Vertical Accepts a SAE J744 flange 101-2 (2 Bolt B); Accepts 41 Tooth 48/96 DP spline with 24,9 [.98] shaft extension (coupler required)	B4	NA	Std	Opt

Model 70360 Code

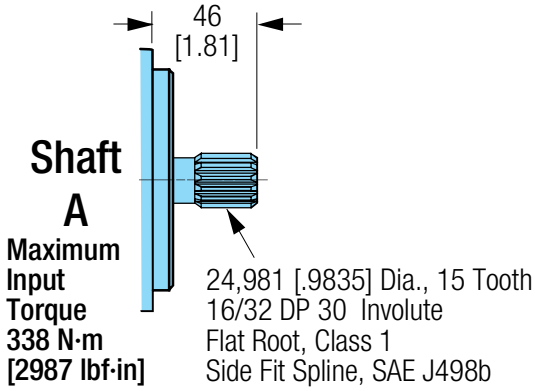
Position 14 - Auxiliary Port and Bypass Valve	Code	Single Unit	Tandem Unit Front	Tandem Unit Rear
No Bypass Valve Installed				
0 = No auxiliary port	0	Opt	NA	NA
A = 3/4 - 16 UNF - 2B SAE O-ring port, Top (C1)	A	Opt	Opt	Std
B = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex plug (C1)	B	Opt	NA	Opt
F = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex plug (C1); Rear (C3)	F	Opt	NA	Opt
G = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex plug (C1); Rear-Left 45° (C4)	G	Opt	Std	Opt
H = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex socket plug (C1); Rear (C3)	H	Opt	NA	Opt
J = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex socket plug (C1); Rear- Left 45° (C4)	J	Opt	Opt	Opt
K = 3/4 - 16 UNF - 2B SAE O-ring port, Top (C1); Rear - Left 45° w/ hex plug (C4)	K	Opt	Opt	Opt
L = 3/4 - 16 UNF - 2B SAE O-ring port, Top (C1); Rear w/ hex socket plug (C3)	L	Opt	NA	Opt
M = 3/4 - 16 UNF - 2B SAE O-ring port, Rear (C3)	M	Opt	NA	Opt
N = 3/4 - 16 UNF - 2B SAE O-ring port, Top (C1), Top - Rearward w/ hex socket plug (C2), Left side w/ hex socket plug (C6), Right side w/ hex socket plug (C7)	N	Opt	NA	Opt
P = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex plug (C1), Rear - Right 45° (C5)	P	Opt	Opt	Opt
V = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex plug (C1), Top - Rearward (C2)	V	Opt	NA	Opt
Bypass Valve installed in Top port (C1)				
C = 3/4 - 16 UNF - 2B SAE O-ring port, Top rearward (C2)	C	Opt	Opt	Opt
E = 3/4 - 16 UNF - 2B SAE O-ring port, Top (C1); Rear left 45° (C4)	E	Opt	Opt	Opt
R = 3/4 - 16 UNF - 2B SAE O-ring port, Rear (C3)	R	Opt	NA	Opt
S = 3/4 - 16 UNF - 2B SAE O-ring port, Top w/ hex plug (C2)	S	Opt	NA	Opt
T = 3/4 - 16 UNF - 2B SAE O-ring port, Top - Rearward (C2), Left side w/ hex socket plug (C6), Right side w/ hex socket plug (C7)	T	Opt	NA	Opt
Bypass Valve installed in rear port (C3)				
D = 3/4 - 16 UNF - 2B SAE O-ring port, Top (C1)	D	Opt	NA	Opt
U = 3/4 - 16 UNF - 2B SAE O-ring port, Top (C1)	U	Opt	NA	Opt
Position 15 - Charge Pump				
0 = No charge Pump	0	Opt	Std	Opt
1 = 6,9 cm^3/r [.42 in^3/r]; 3/4-16 UNF - 2B SAE O-ring port for suction inlet (S)	1	Std	NA	NA
2 = 13,8 cm^3/r [.84 in^3/r]; 3/4-16 UNF - 2B SAE O-ring port for suction inlet (S)	2	Opt	NA	Std
Position 16, 17 - Charge Pump Relief Setting and Routing				
00 = None	00	Opt	Std	Opt
01 = No charge relief (Requires external relief set between 6,89 bar [100 PSI] 17,24 bar [250 PSI])	01	Opt	Opt	Opt
For Units with Charge Pump				
11 = 6,89-10,34 bar [100-150 PSI]; Recirculated	11	Std	NA	Std
12 = 10,34-13,79 bar [150-200 PSI]; Recirculated	12	Opt	NA	Opt
13 = 13,79-17,24 bar [200-250 PSI]; Recirculated	13	Opt	NA	Opt
14 = 17,24-20,68 bar [250-300 PSI]; Recirculated	14	Opt	NA	Opt
For Units without Charge Pump				
21 = 6,89-10,34 bar [100-150 PSI]; Relieved to case	21	Opt	NA	Opt
22 = 10,34-13,79 bar [150-200 PSI]; Relieved to case	22	Opt	NA	Opt
23 = 13,79-17,24 bar [200-250 PSI]; Relieved to case	23	Opt	NA	Opt
Position 18 - Drain Port Size and Location				
0 = 3/4 - 16 UNF - 2B SAE o-ring port, Top (D1); Bottom plugged (D2); Thru drain in front mounting flange (D4)	0	NA	NA	Std
1 = 3/4-16 UNF-2B SAE o-ring port, Top (D1); Bottom, Plugged (D2)	1	Std	Std	Opt
Position 19 - Additional Functions				
0 = None	0	Std	Std	Std
Positions 20, 21 - Special Features				
00 = None	00	Std	Std	Std
0A = Fluorocarbon Rubber Drive shaft seal and control shaft seal	0A	Opt	Opt	Opt
0C = Bottom Mounting Bracket with 13,7 [.54] diameter hole	0C	NA	NA	Std
0D = Coupling and o-ring included for rear mount	0D	Opt	Opt	Opt
Positions 22, 23 - Paint				
0A = Primer	0A	Std	Std	Std
0B = Black	0B	Opt	Opt	Opt
Position 24 - Identification				
0 = Standard (Nameplate)	0	Std	Std	Std
Position 25 - Design Code				
A = A	A	Std	Std	Std

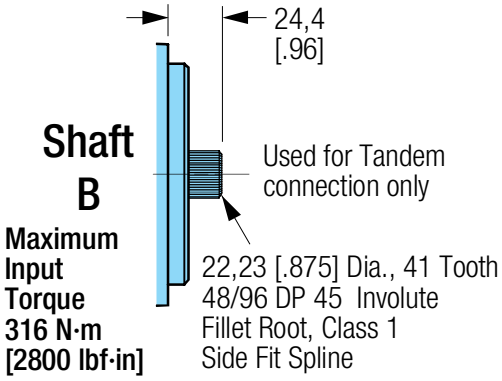
NA = Not Available
Std. = Standard
Opt. = Optional

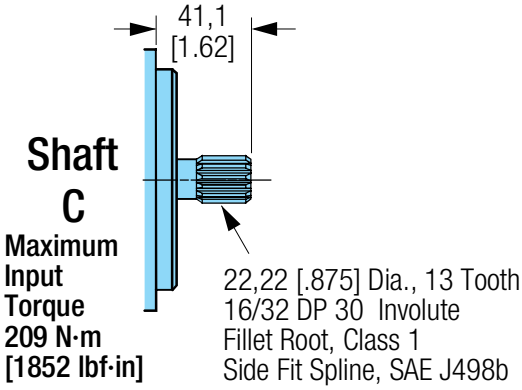
70360
Input Shafts

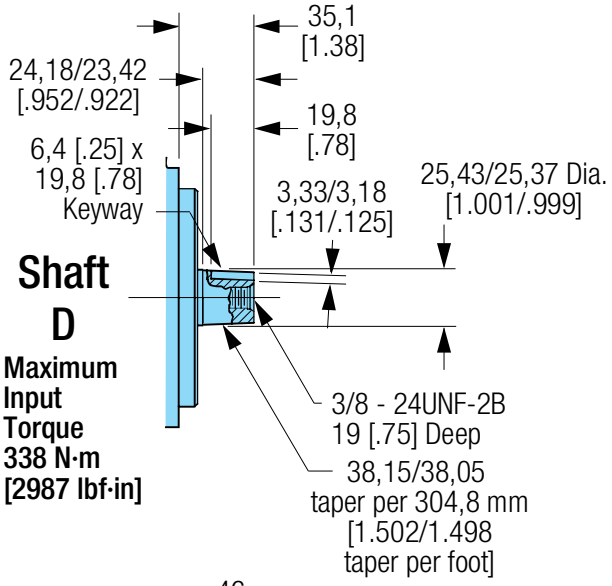
Dimensions are in millimeters [inches], unless otherwise specified.

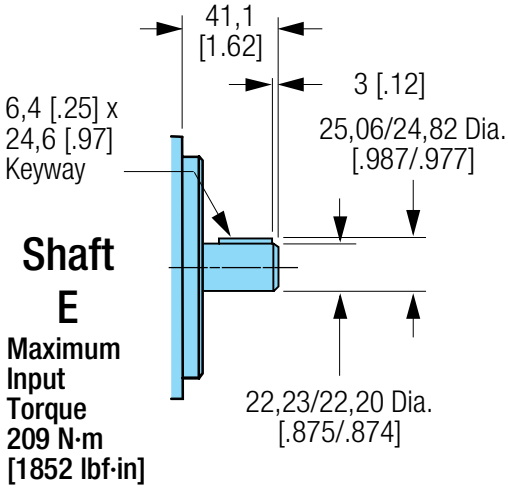
Code Position 7

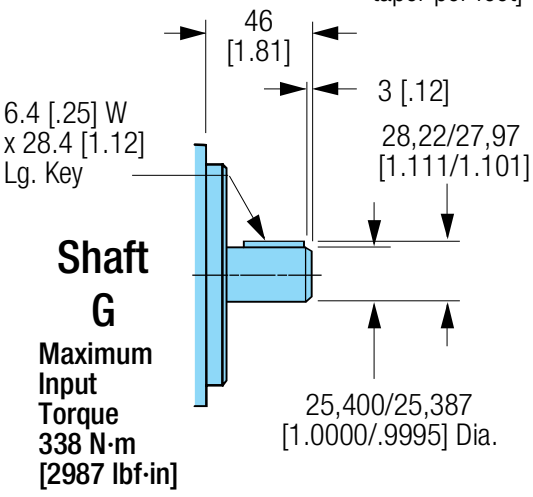












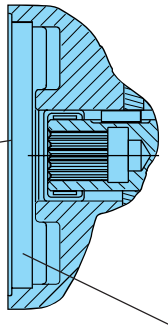
Torque Note:
The combined torque required to turn multiple pumps must not exceed the torque rating of the input drive shaft of the front piston pump. Consult an Eaton representative and/or Eaton engineering on side load recommendations.

70360
Auxiliary Mounts & Output Shafts

Code Position 12 and 13

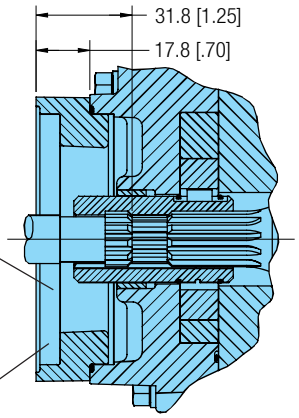
9 Tooth, 16/32 DP Int., 15,88 [.6250] O.D., Accepts 31,8 [1.25] Shaft Ext., SAE "A" Mount J744

Torque limit on internal rear spline of piston pump with internal charge pump must not exceed 54 N•m [480 lbf•in]. Piston pump without internal charge pump must not exceed 76 N•m [672 lbf•in]



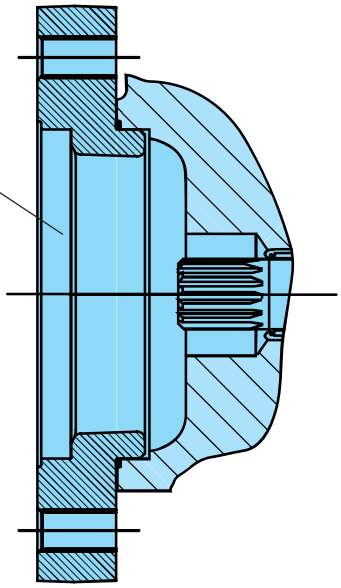
11 Tooth, 16/32 DP Int.; 19,33 [.761] O.D.; Accepts 31,8 [1.25] Shaft Ext., "A" Auxiliary Mount SAE J744
(Used on piston pump with internal charge pump)

Maximum Torque
119 N•m [1050 lbf•in]



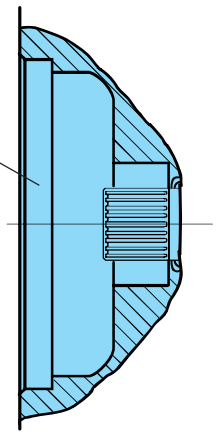
SAE "A" Auxiliary Mount with Charge Pump Shown

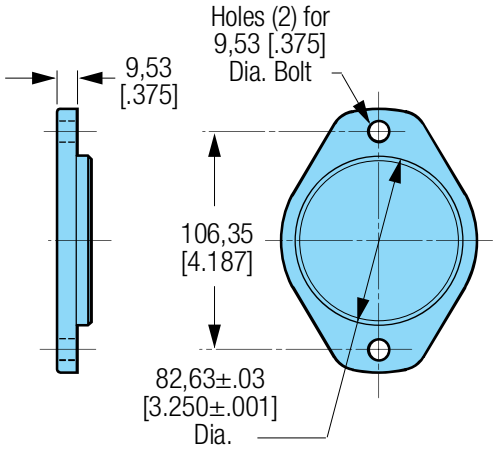
13 Tooth, 16/32 DP Ext.; 21,81 [.8585] O.D., Accepts 41,1 [1.62] Shaft Ext.; **"B" Auxiliary Mount** SAE J744
(Used on piston pump without internal charge pump)



41 Tooth, 48/96 DP Ext., 22,23 [.8750] O.D., Accepts 24,9 [.98] Shaft Ext.; **"B" Auxiliary Mount** SAE J744
(Used for Tandem Connections)

Maximum Torque
316 N•m [2,800 lbf•in]





Cover Plate
Fits "A" SAE Auxiliary Mounting Flange. Cover Plate Kit #70142-915: Includes plate, cap screws (2), and o-ring

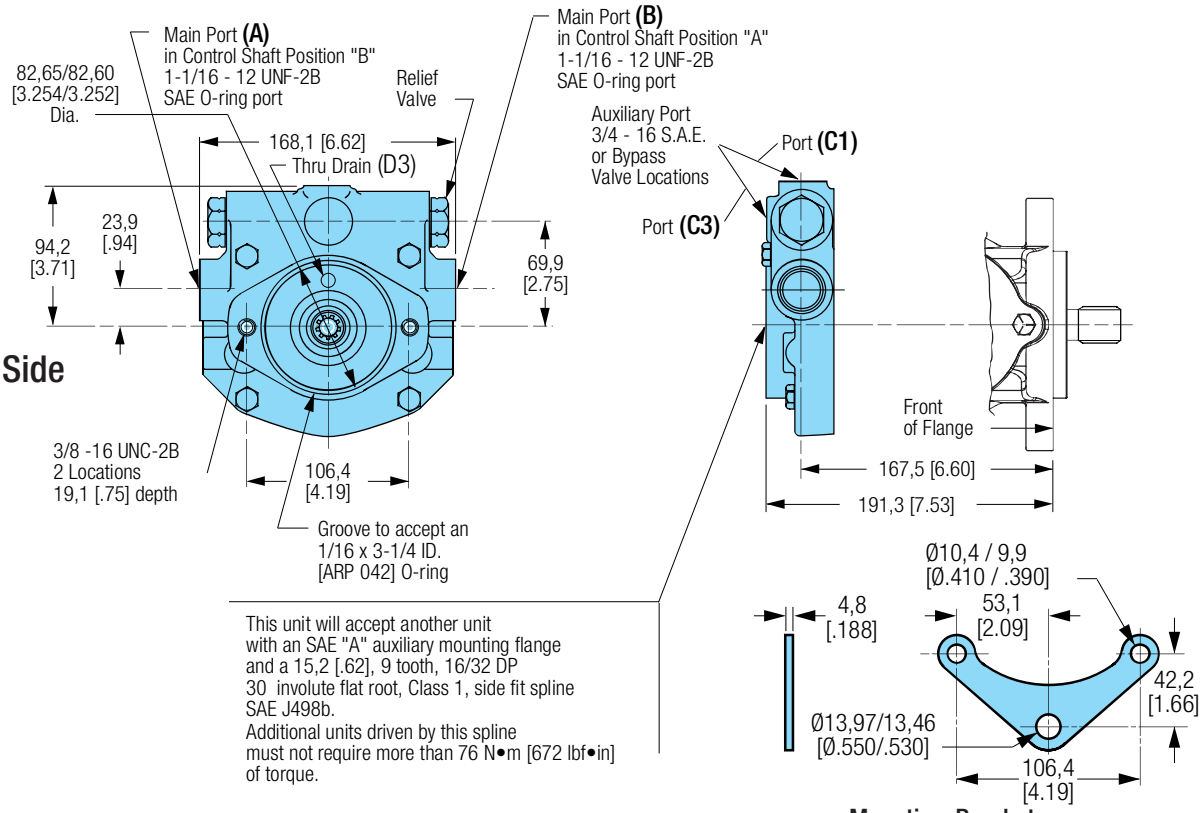
All left (CCW) or right (CW) directions given are viewed from the input shaft end of the pump.

70360 Port Locations

All left (CCW) or right (CW) directions given are viewed from the input shaft end of the pump.

Code Position 12 and 13

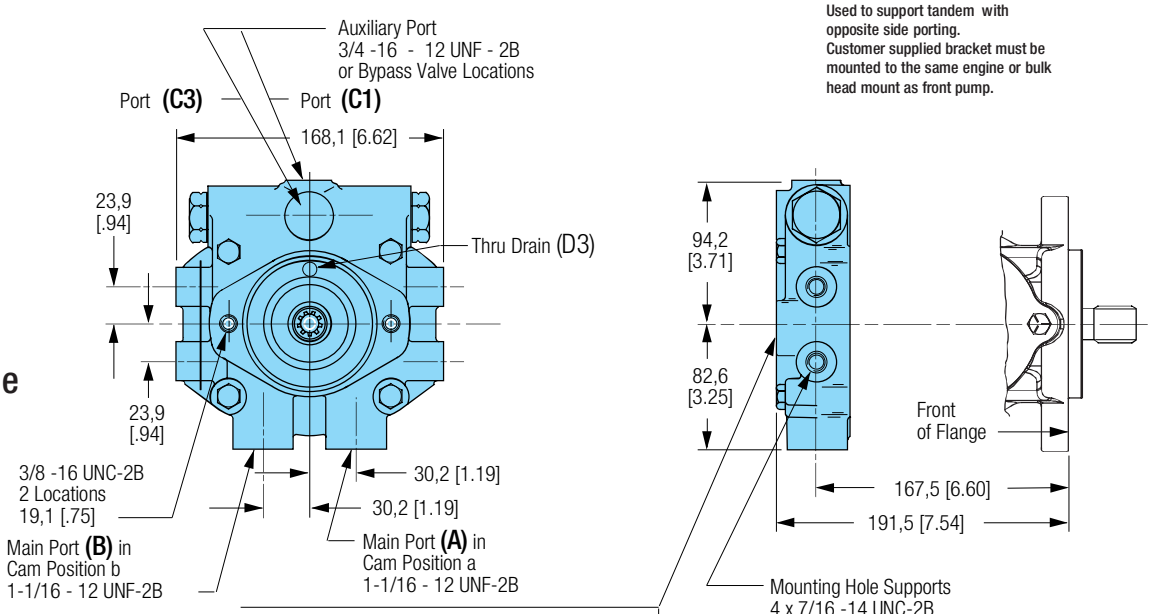
Opposite Side Porting (Selected in Position 9)



Mounting Bracket

Used to support tandem with opposite side porting.
Customer supplied bracket must be mounted to the same engine or bulk head mount as front pump.

Same Side Porting (Selected in Position 9)

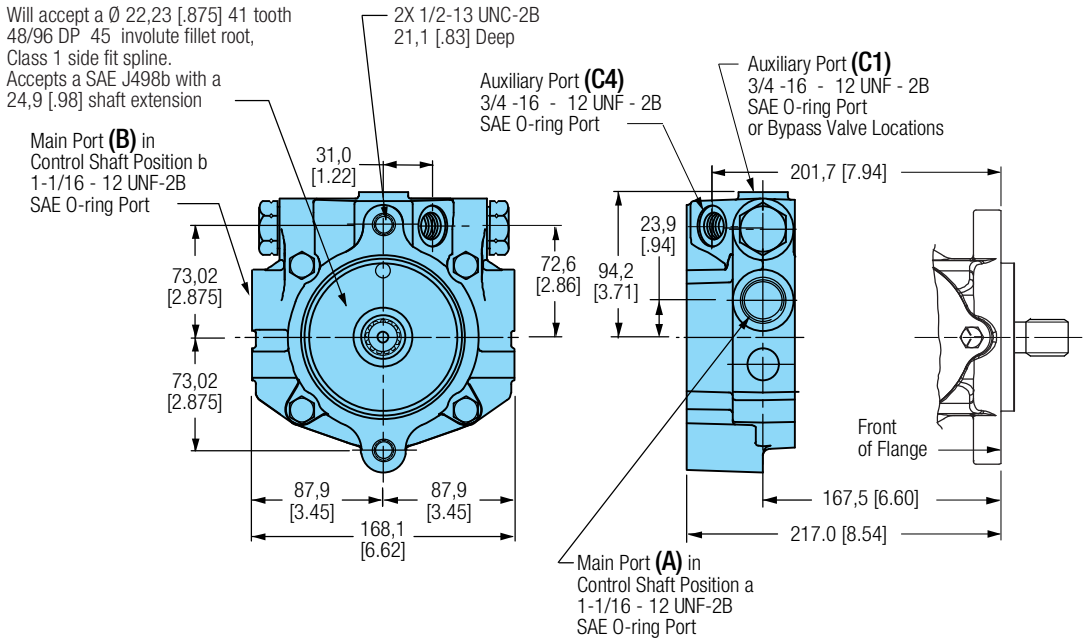


70360 Port Locations

Code Position 12 and 13

Opposite Side Porting
(Selected in Position 9)

Port ID	Type of Port	Size and Discription
A	Main Port	1-1/16 -12 UN-2B SAE O-ring
B	Main Port	1-1/16 -12 UN-2B SAE O-ring
C1	Auxiliary Port Top - Front or Bypass Valve	3/4 -16 UNF-2B SAE O-ring
C2	Auxiliary Port Top - Rear	3/4 -16 UNF-2B SAE O-ring
C3	Auxiliary Port Rear - Rear	3/4 -16 UNF-2B SAE O-ring
C4	Auxiliary Port Side - Left Side	3/4 -16 UNF-2B SAE O-ring
C5	Auxiliary Port Side - Right Side	3/4 -16 UNF-2B SAE O-ring
D1	Drain Port - Top	3/4 -16 UNF-2B SAE O-ring
D2	Drain Port - Bottom	3/4 -16 UNF-2B SAE O-ring
D3	Thru Drain - Rear	9,27 [.365] Dia.
D4	Thru Drain - Front	9,55 [.376] Dia.
S	Charge Suction Port	3/4 -16 UNF-2B SAE O-ring



Same Side Porting
(Selected in Position 9)