

**Eaton®**  
Medium Duty Piston Pump

No. 06-639  
December 1998



**Parts Information**



**Model 70360 Variable Displacement Piston Pump**

40,6 cm<sup>3</sup>/r [2.48 in<sup>3</sup>/r] or 49,2 cm<sup>3</sup>/r [3.00 in<sup>3</sup>/r] Displacements

Manual Controlled

**Identification Numbers - Manually Variable Displacement Piston Pump**

Identification label on control arm side of housing.

- A - Product Number Description  
 70360 = Single Piston Pump  
 78362 = Single Piston Pump with Gear Pump  
 78361 = Tandem Piston Pumps  
 78363 = Tandem Piston Pumps with Gear Pump
- B - Sequential Numbering
- C - Engineering Design Code

**Single Pump - Product Number:**

**7 0 3 6 0 - R A A - 0 2**

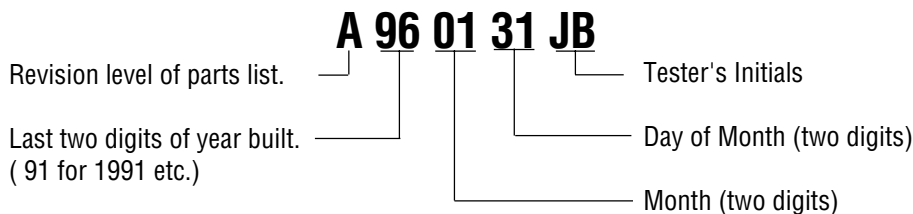
A
B
C

**Tandem Pumps - Product Number:**

**7 8 3 6 3 - R A B - 0 2**

A
B
C

**Serial Number Code:**



**Each order must include the following information.**

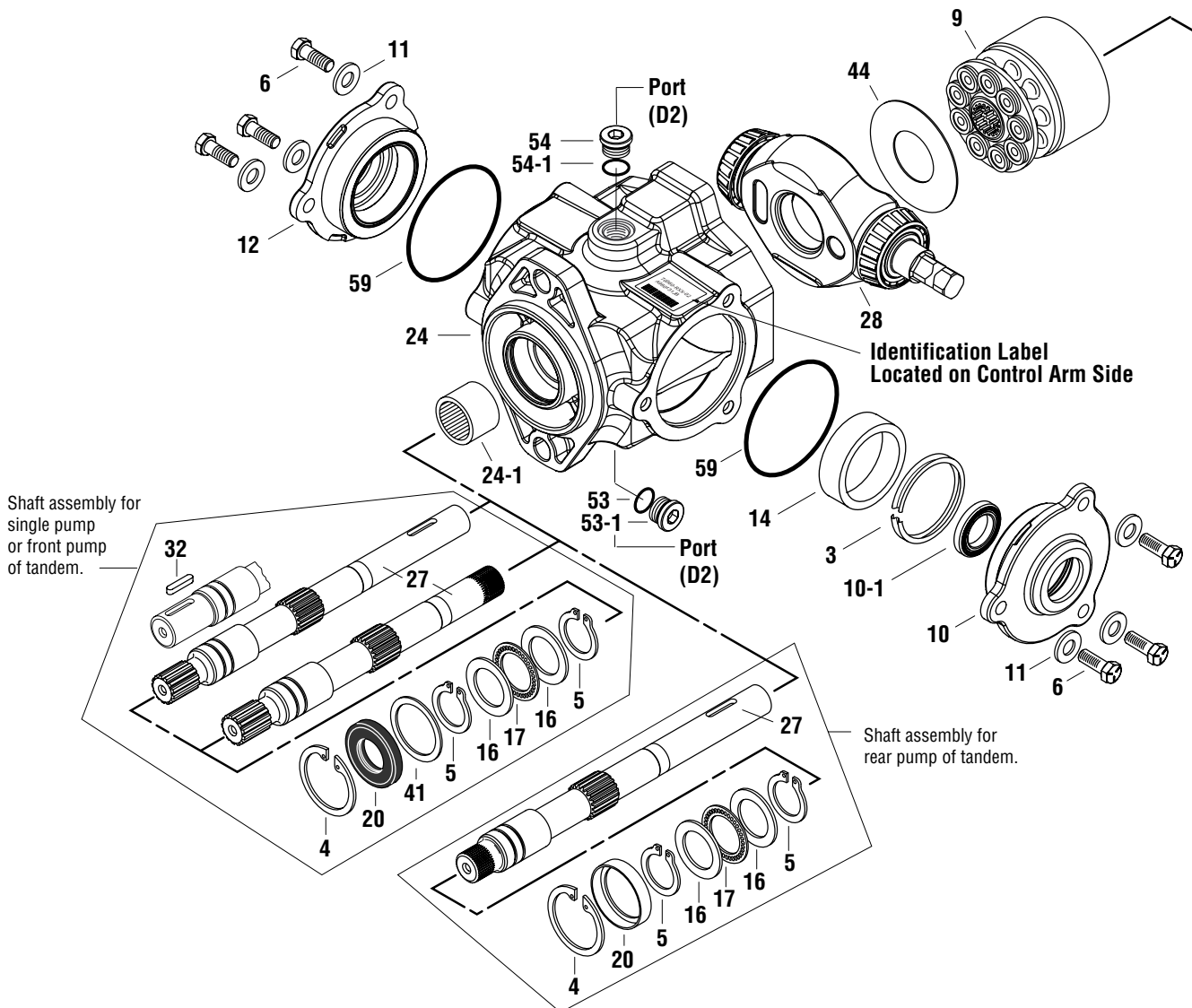
1. Product and/or Part Number
2. Serial Number Code
3. Part Name
4. Quantity

**Tools Required**

- 9/16, 7/8, 1-1/8 in. sockets and/or end wrenches
- Torque wrench (203 N·m [150 lbf·ft] capacity)
- Ratchet wrench
- 7/16 in. Allen wrench or bit socket
- Internal and external retaining ring pliers
- Small screwdrivers (2)
- Hammer (soft face)
- Light Petroleum Jelly
- Seal driver or similar tool

# Parts Drawing

Pump drawn below is typical of a righthand rotation pump.





# Parts List

Item	Part No.	Qty.	Description
2	16028-404	2	Dowel Pin
3	70360-526	1	Crush Ring
+ 4	16077-32	1	Retaining Ring
+ 5	16078-18	2	Retaining Ring
6	16032-610	6	Screw
7	17079-2	2	Spring
8	32060-8	2	Plug Assembly
+ 8-1	16015-18-90	2	O-ring, 2,38 mm Dia. x 22,23 mm I.D. [.0937 in. Dia. x .875 in. I.D.]
9	◆	1	Rotating Kit Assembly (parts list on page #8)
10	70360-528	1	Cover Plate SA
+ 10-1	16253-16	1	Seal, Trunnion Shaft
11	16048-113	6	Washer
12	70360-520	1	Cover Plate SA
	16321-122	1	Bearing Cup
14	16321-122	1	Bearing Cup
+ 15	70412-626	1	Housing Gasket
16	74308-100	2	Thrust Race
17	74308-101	1	Needle Thrust Bearing
18	◆	2	Cap Screws (Locations on page #8)
	16032-622		3/8-16, 57,2 mm [2.25 in.] Long
	16040-640		3/8-16, 101,6 mm [4.0 in.] Long
19	◆	2	Cap Screws (Locations on page #8)
	16032-616		3/8-16, 38,1 mm [1.5 in.] Long
	16032-620		3/8-16, 50,8 mm [2.0 in.] Long
	16032-632		3/8-16, 82,6 mm [3.25 in.] Long
+ 20	16253-18	1	Shaft Seal, Drive
20	16253-218	1	Shaft Seal, Drive (fluorocarbon rubber)
20	70400-620	1	Spacer (Used in rear pump of tandem in place of drive shaft seal.)
22	◆	1	Relief Valve for Port "A" (Identification drawing on page #9)
23	◆	1	Relief Valve for Port "B" (Identification drawing on page #9)
24		1	Housing Assembly
	70360-326	1	with drain port D1 and D2
	70360-330	1	with drain port D1, D2, and D3
24-1	16238-11816	1	Bearing (press fit)
25	◆	1	Backplate Assembly (Identification drawing and parts list on page #10 & #11)
26		1	Valve Plate (Identification drawing on page #5)
	70344-51		Righthand (CW) Rotation
	70344-52		Lefthand (CCW) Rotation
27	◆	1	Drive Shaft (Identification drawing on page #14)
28	70360-621	1	Camplate - Square End Trunnion
	16320-122	2	Bearing Cone
29	◆	1	Charge Pump Adaptor (Identification drawing and parts list on page #12 & #13)
30		1	Inner Gerotor
	79004-611		6,9 cm <sup>3</sup> /r [.42 in <sup>3</sup> /r] displacement, 6,35 mm [.25 in.] width
	79004-605		13,8 cm <sup>3</sup> /r [.84 in <sup>3</sup> /r] displacement, 12,7 mm [.5 in.] width
31		1	Outer Gerotor
	79004-612		6,9 cm <sup>3</sup> /r [.42 in <sup>3</sup> /r] displacement, 6,35 mm [.25 in.] width
	79004-606		13,8 cm <sup>3</sup> /r [.84 in <sup>3</sup> /r] displacement, 12,7 mm [.5 in.] width
32		1	Key, Drive Shaft
	16246-516		Used with 25,4 mm [1.00 in] dia. drive shaft.
	24500-619		Used with 22,2 mm [.875 in] dia. drive shaft.
+ 33	16007-14	1	O-ring (In K2 & K3 kit)
34	70411-613	1	Coupler
35	70411-605	1	Mounting Bracket
36	70142-600	1	Cover Plate (In K3 kit)

# Parts List

37	16103-108	1	Plug Assembly
+ 37-1	16133-8	1	O-ring, 2,21 mm Dia. x 16,36 mm ID. [.087 in. Dia. x .644 in. ID.]
38	15222-20	1	Key, Gerotor Pump Adapter
+ 39	70342-600	1	Molded O-ring
40	16048-113	2	Washer
41	16048-319	1	Washer
42	16246-523	1	Key, Camplate Trunnion
43	16032-610	2	Cap Screws, Cover Plate (In K3 kit)
44	70300-604	1	Insert, Camplate
45	16048-113	6	Washer
53	16103-308	1	Plug Assembly
+ 53-1	16133-8	1	O-ring, 2,20 mm Dia. x 16,35 mm ID. [.087 in. Dia. x .644 in. ID.]
54	16103-308	1	Plug Assembly
+ 54-1	16133-8	1	O-ring, 2,20 mm Dia. x 16,35 mm ID. [.087 in. Dia. x .644 in. ID.]
+ 59	16015-53	2	O-ring, 2,38 mm Dia. x 88,9 mm ID. [.0937 in. Dia. x 3.5 in. ID.]

## Mounting Kits

K1	70342-905	1	Tandem Piston Pump Mounting Kit
K1-1	70411-622	1	41T Coupler, 33,02 mm [1.3 in.] long
+ K1-2	16007-17	1	O-ring, 1,59 mm Dia. x 101,6 mm ID. [.0625 in. Dia. x 4 in. ID.]
K1-3	16032-812	2	Cap Screws
K2	70442-929	1	Gear Pump Mounting Kit
+ K2-1	16007-14	1	O-ring, 1,59 mm Dia. x 82,55 mm ID. [.0625 in. Dia. x 3.25 in. ID.]
K2-2	16048-113	1	Washer
K2-3	16032-610	2	Cap Screws
K3	70142-915	1	Cover Plate Kit
+ K3-1	16007-14	1	O-ring, 1,59 mm Dia. x 82,55 mm ID. [.0625 in. Dia. x 3.25 in. ID.]
K3-2	70142-600	1	Cover Plate
K3-3	16032-610	2	Cap Screws

## Seal Repair Kits

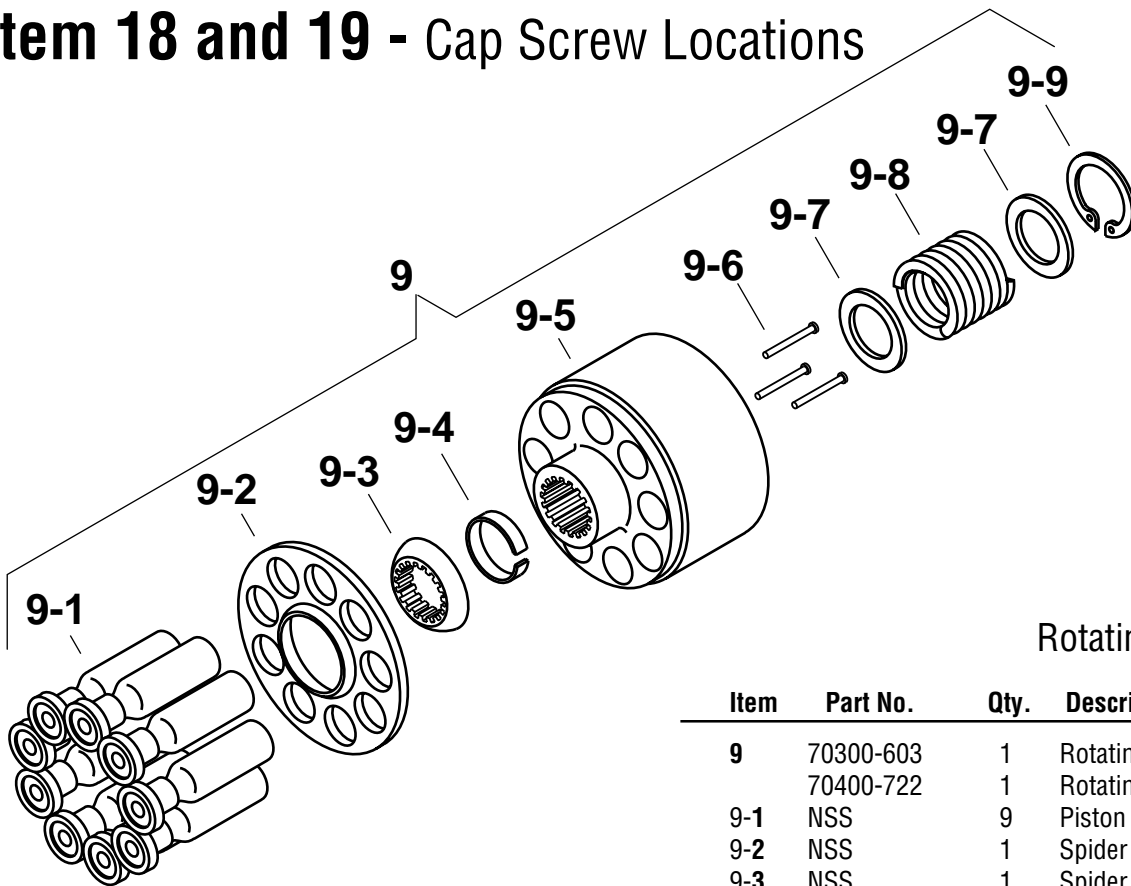
•	70360-900	1	Seal Repair Kit for 70360 piston pump (order two for tandem pumps).
•	70360-901	1	Control Shaft Bearing Shim Kit (to replace crush ring after replacement of major part).

### Legend

- ◆ Refer to specific item parts list.
- + Common parts to seal repair kits.

# Item 9 - Rotating Kit Assembly

## Item 18 and 19 - Cap Screw Locations



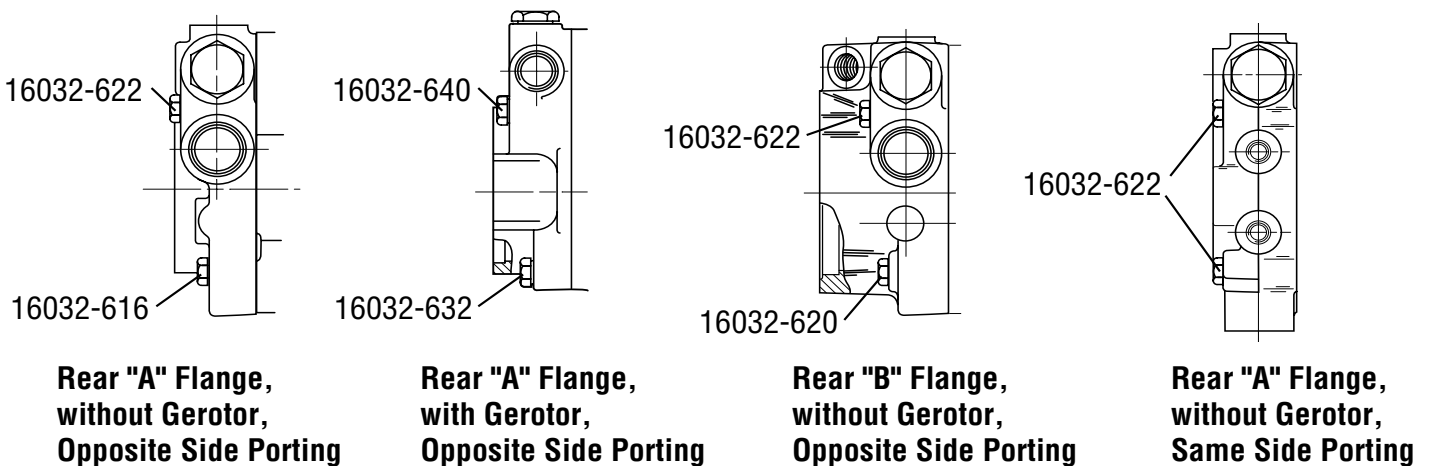
**Item 9**  
Rotating Kit Assembly

Item	Part No.	Qty.	Description
<b>9</b>	70300-603	1	Rotating Kit Assy. 2.48 in <sup>3</sup> /r
	70400-722	1	Rotating Kit Assy. 3.00 in <sup>3</sup> /r
9-1	NSS	9	Piston Assembly
9-2	NSS	1	Spider
9-3	NSS	1	Spider Pivot
9-4	NSS	1	Retainer
9-5	NSS	1	Piston Block
9-6	NSS	3	Pins
9-7	NSS	2	Washer
9-8	NSS	1	Spring
9-9	NSS	1	Retaining Ring

NSS - Not Sold Separately

## Item 18 and 19

### Cap Screw Locations

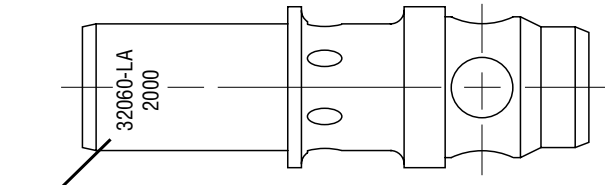


# Item 22 or 23 - Relief Valve

## Item 22 or 23

Internal Relief Valve Settings Available

Part Number	bar [PSI]
32060-LA	138 [2000]
32060-QA	172 [2500]
32060-UA	207 [3000]
32060-WA	241 [3500]
32060-ZA	276 [4000]
32060-XA	310 [4500]
32060-IA	345 [5000]
70111-518	Seat, Valve



Assembly Number  
and Pressure Setting



# Item 25 - Backplate Assembly Identification

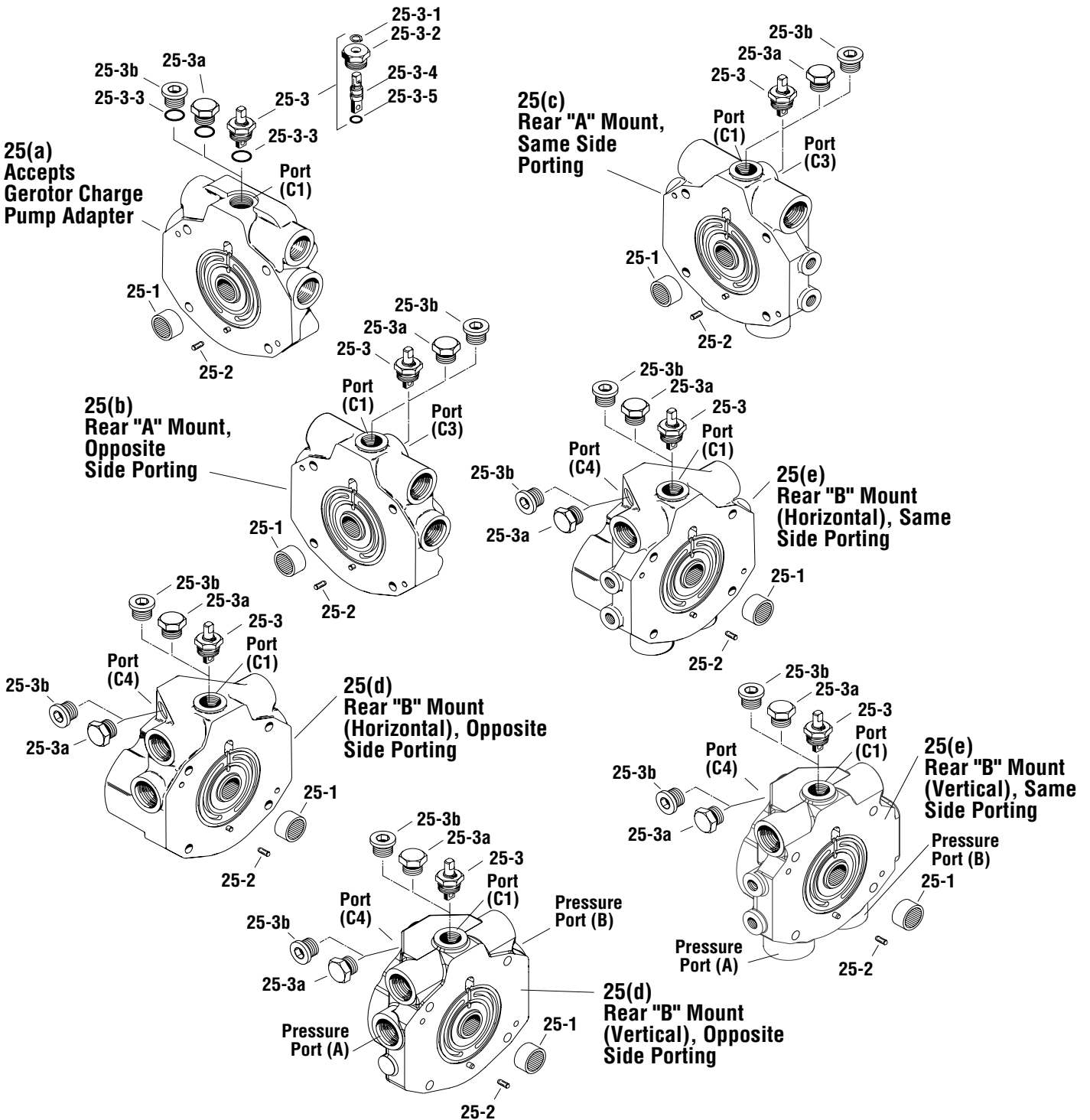
## Item 25 - Parts List (Refer to Identification chart and drawings)

Item	Part No.	Qty.	Description
<b>25</b>	See Chart Below		Backplate Assembly
25-1	52200-23	1	Bearing
25-2	16026-610	1	Dowel Pin
25-3	70300-610	1	Bypass Valve Assembly
25-3-1	16078-6	1	Retaining Ring
25-3-2	70300-609	1	Separator Plug
+ 25-3-3	16133-8	1	O-ring, 2,38 mm Dia. x 16,27 mm I.D. [.0937 in. Dia. x .6406 in. I.D. ]
25-3-4	70411-502	1	Spreader
+ 25-3-5	16003-7	1	O-ring, 1,59 mm Dia. x 9,53 mm I.D. [.0625 in. Dia. x .375 in. I.D. ]
25-3a	16103-108	1	Plug Assembly, Hex
+ 25-3-3	16133-8	1	O-ring, 2,38 mm Dia. x 16,27 mm I.D. [.0937 in. Dia. x .6406 in. I.D. ]
25-3b	16103-308	1	Plug Assembly, Internal Hex Socket
+ 25-3-3	16133-8	1	O-ring, 2,38 mm Dia. x 16,27 mm I.D. [.0937 in. Dia. x .6406 in. I.D. ]
<b>Legend</b>		+	Common parts to seal repair kits listed.

## Item 25 Backplate Assembly Identification (Refer to drawings on page #11)

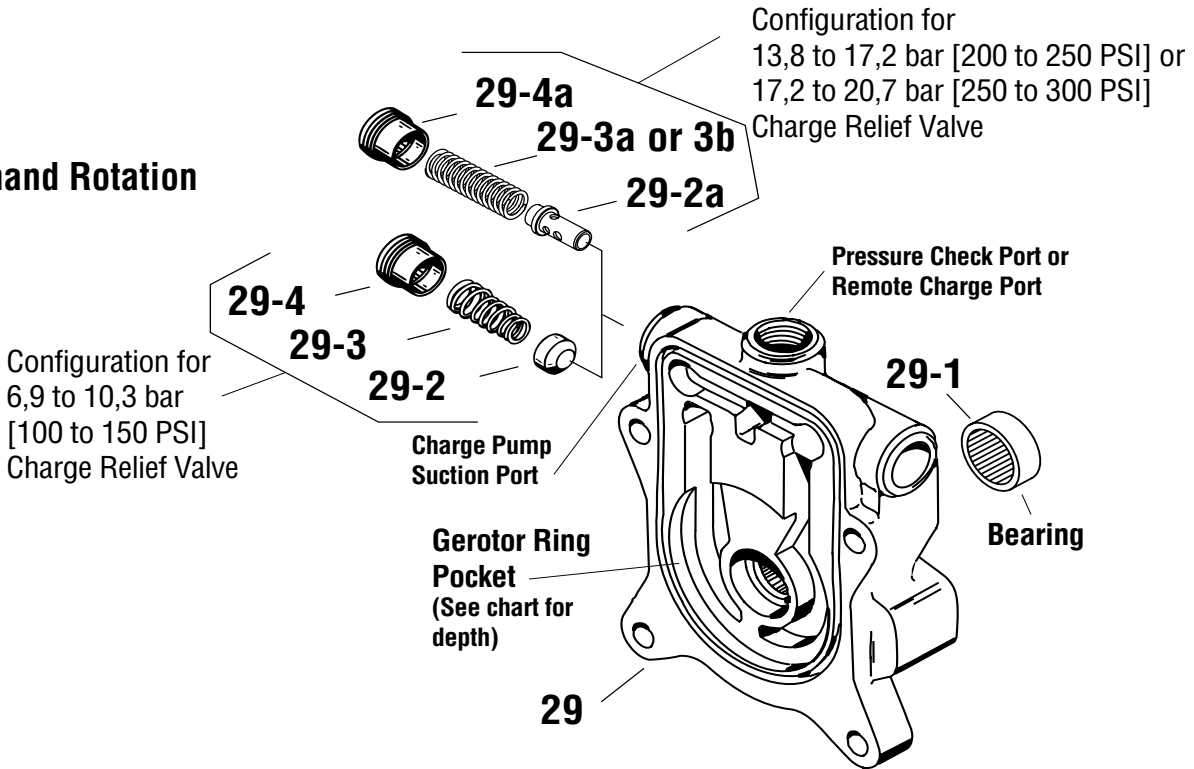
Description	Assembly Part Number	Aux. Port Machined	C1 Aux. Port Plug	C3 Aux. Port Plug	C1 Aux. Port Bypass Valve	C3 Aux. Port Bypass Valve	C4 Aux. Port Plug
25(a) - Accepts Gerotor Charge Pump	70300-413 70300-426	C1 C1	Item 25-3a		Item 25-3		
25(b) - Rear "A" Mount, Opposite Side Porting	70300-409 70300-415	C1 C1, C3				Item 25-3	
25(c) - Rear "A" Mount, Same Side Porting	70300-403 70300-421 70300-437	C1, C3 C1, C3 C1, C3	Item 25-3a Item 25-3b	Item 25-3b			
25(d) - Rear "B" Mount, Opposite Side Porting	Horizontal 70300-407 70300-411 70300-439 Vertical 70360-413	C1 C1, C4 C1, C4 C1, C4	Item 25-3a Item 25-3a		Item 25-3		
25(e) - Rear "B" Mount, Same Side Porting	Horizontal 70300-401 70300-418 Vertical 70360-411	C1, C4 C1, C4 C1, C4	Item 25-3a Item 25-3a				Item 25-3a

# Item 25 - Backplate Assembly Identification



# Item 29 - Charge Pump Adapter Assembly Identification

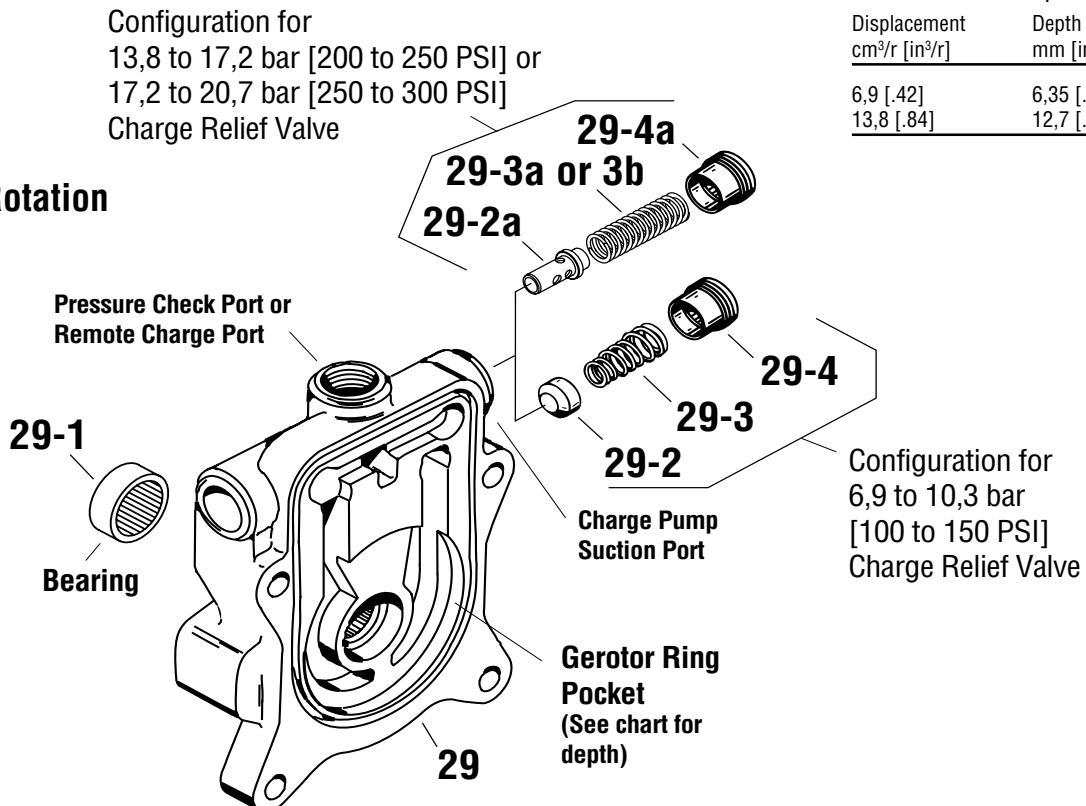
## Righthand Rotation



Gerotor Pocket Depth

Displacement cm <sup>3</sup> /r [in <sup>3</sup> /r]	Depth of Pocket mm [in.]
6,9 [.42]	6,35 [.25]
13,8 [.84]	12,7 [.50]

## Lefthand Rotation



# Item 29 - Charge Pump Adapter Assembly

## No Charge Relief

Item	Part No.	Qty.	Description	Rotation	Displacement
29	70440-369	1	Assembly, Charge Pump Adapter	Righthand	13,8 cm <sup>3</sup> /r [.84 in <sup>3</sup> /r]
29-1	16239-1148	1	Bearing (press fit)		

## 6.9 to 10.3 bar [100 to 150 PSI] Charge Relief Setting

Item	Part No.	Qty.	Description	Rotation	Displacement
29	70442-356	1	Assembly, Charge Pump Adapter	Righthand	6,88 cm <sup>3</sup> /r [.42 in <sup>3</sup> /r]
	70442-368	1	Assembly, Charge Pump Adapter	Lefthand	13,8 cm <sup>3</sup> /r [.84 in <sup>3</sup> /r]
	70442-374	1	Assembly, Charge Pump Adapter	Righthand	13,8 cm <sup>3</sup> /r [.84 in <sup>3</sup> /r]
	70442-389	1	Assembly, Charge Pump Adapter	Lefthand	6,88 cm <sup>3</sup> /r [.42 in <sup>3</sup> /r]
29-1	16239-1148	1	Bearing (press fit)		
29-2	70111-507	1	Poppet, Cup		
29-3	17000-48B	1	Spring, Tapered		
29-4	70400-505	1	Spring Retainer		

## 13.8 to 17.2 bar [200 to 250 PSI] Charge Relief Setting

Item	Part No.	Qty.	Description	Rotation	Displacement
29	70440-388	1	Assembly, Charge Pump Adapter	Lefthand	6,88 cm <sup>3</sup> /r [.42 in <sup>3</sup> /r]
	70440-389	1	Assembly, Charge Pump Adapter	Righthand	6,88 cm <sup>3</sup> /r [.42 in <sup>3</sup> /r]
	70440-385	1	Assembly, Charge Pump Adapter	Righthand	13,8 cm <sup>3</sup> /r [.84 in <sup>3</sup> /r]
29-1	16239-1148	1	Bearing (press fit)		
29-2a	70400-727	1	Poppet, Pin		
29-3a	17056-40	1	Spring, Color "Light Green"		
29-4a	70400-512	1	Spring Retainer		

## 17.2 to 20.7 bar [250 to 300 PSI] Charge Relief Setting

Item	Part No.	Qty.	Description	Rotation	Displacement
29	70440-381	1	Assembly, Charge Pump Adapter	Righthand	6,88 cm <sup>3</sup> /r [.42 in <sup>3</sup> /r]
	70440-390	1	Assembly, Charge Pump Adapter	Righthand	13,8 cm <sup>3</sup> /r [.84 in <sup>3</sup> /r]
29-1	16239-1148	1	Bearing (press fit)		
29-2a	70400-727	1	Poppet, Pin		
29-3b	17056-41	1	Spring, Color "Pink"		
29-4a	70400-512	1	Spring Retainer		

# Item 27 - Drive Shaft Identification

Part Number	Input Drive	Where Used	Output Drive
		Single Pump	9 Tooth Internal
70442-202 [15 Tooth] or 70442-209 [13 Tooth]		Single Pump	9 Tooth Internal
70442-248 [15 Tooth] or 70442-297 [13 Tooth]		Single Pump	9 Tooth Internal
70442-275 [1 in. Keyed] or 70440-200 [7/8 in. Keyed]		Single Pump	9 Tooth Internal
70440-206 [Tapered]		Tandem Front Pump	41 Tooth
70442-228 [15 Tooth]		Tandem Front Pump	41 Tooth
70442-232 [Tapered]		Tandem Middle Pump	41 Tooth
70440-203 [41 Tooth]		Tandem Rear Pump	9 Tooth Internal
70442-229 [41 Tooth]		Tandem Rear Pump	9 Tooth Internal
70442-299 [41 Tooth]			9 Tooth Internal



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