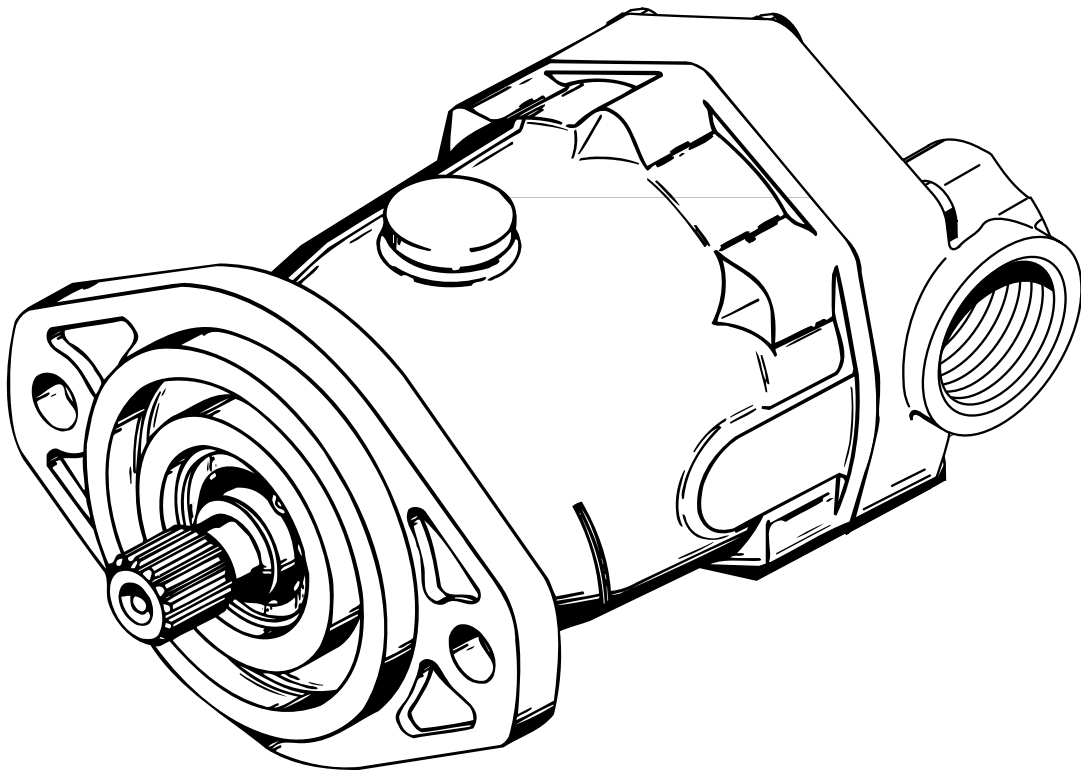


Eaton®
Medium Duty Piston Pump

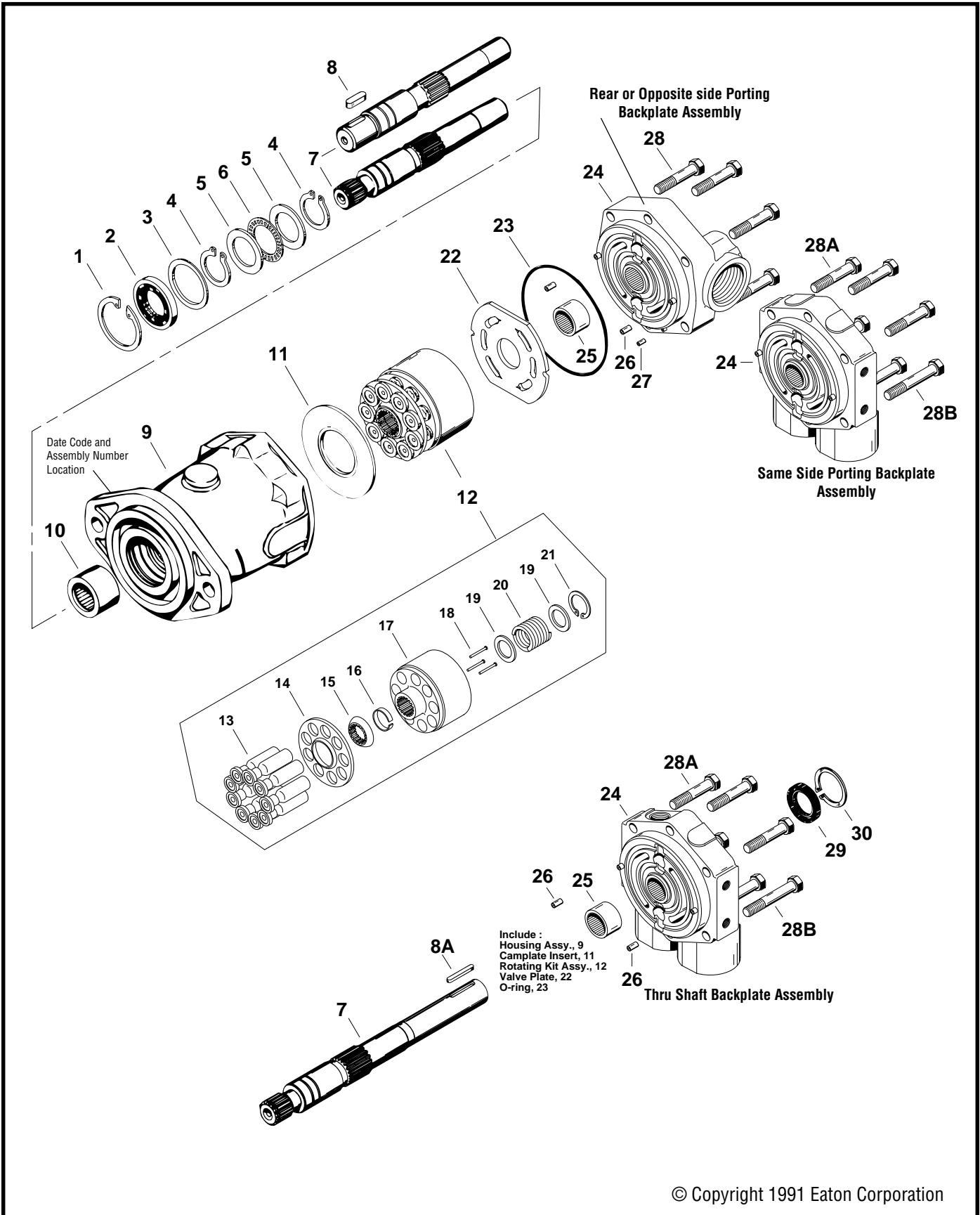


Repair Information



**Model 74318 and 74348 Piston Motors
Fixed Displacement, Valve Plate Design**

Parts Drawing



Parts List - 74318 and 74348 Piston Motor

Item No.	Description	Quantity
+	1 Retaining Ring	1
+	2 Shaft Seal	1
	3 Washer	1
+	4 Retaining Ring	2
	5 Thrust Race	2
	6 Thrust Bearing	1
	7 Drive Shaft	1
	8 Key	1
	8A Key (Used on thru shaft only)	1
	9 Housing Assembly (Includes item #10)	1
	10 Needle Bearing	1
	11 Camplate Insert	1
	12 Rotating Kit Assembly (Includes item # 13 thru #21)	1
	13 Piston Assembly	9
	14 Spider	1
	15 Spider Pivot	1
	16 Pin Keeper	1
	17 Piston Block	1
	18 Pins	3
	19 Washer	2
	20 Spring	1
	21 Retaining Ring	1
	22 Valve Plate	1
+	23 O - ring, 2.38 mm x 101.6 mm [3/32 in. x 4 in.]	1
	24 Backplate Assembly (Includes item #25 thru # 27)	1
	25 Needle Bearing	1
	26 Roll Pin	2
	27 Roll Pin	1
	28 Cap Screws	6
	28A Cap Screws (Use with same side porting)	3
	28B Cap Screws (Use with same side porting)	3
++	29 Shaft Seal (In thru shaft backplate)	1
++	30 Retaining Ring (In thru shaft backplate)	1
	• Seal Repair Kit (74418-904)	1
	• Seal Repair Kit (74448-900) (Used w/ thru shaft backplate)	1

+ Parts included in 74418-904 and 74448-900 seal repair kits.

++ Parts included in 74448-900 thru shaft backplate seal repair kit.

Dimensions are in Metric [U.S.].

Repair Information - Model 74318 and 74348 Piston Motors

Cleanliness is extremely important when repairing these motors. Work in a clean area. Before disconnecting the lines, clean port area of motor. Disconnect hydraulic lines, removing motor assembly from vehicle and plug ports. Thoroughly clean the outside of the motor. After cleaning, remove port plugs and drain oil.

Tools Required for Disassembly and Reassembly

- 1/2 in. Socket
- Ratchet Wrench
- Torque Wrench, 68 N•m [50 lbs. ft.]
- Soft Face Hammer
- Internal Retaining Ring Pliers
(Straight 2.3mm [.090 in.] Tip)
- External Retaining Ring Pliers
(Straight 1.8mm [.070 in.] Tip)
- Seal Driver or Similar Tool
- Petroleum Jelly (Such as Vaseline)

Disassembly

- 1** Clamp the drive shaft end of the piston motor in a protected jaw vise with the cap screws up. Remove the six cap screws (28, or 28A and 28B) from the motor assembly.
- 2** Use a mallet and tap the backplate (24) to loosen and remove from housing.
- 3** Remove valve plate (22) and O-ring (23) from backplate. It is not necessary to remove roll pins in backplate.
- 4** Remove motor from vise and remove rotating assembly (12) from motor housing.
- 5** If pistons (13) did not come out with piston block remove them along with spider (14) and spider pivot (15).
- 6** The disassembly of the piston block assembly (12) is not required unless the pins (18) or spring (20) are possibly damaged.

Caution

The following procedure should be used if the spring is to be removed from the piston block. The spring (20) is highly compressed and the retaining ring (21) should not be removed without compressing the spring (20).

The following parts will be needed to disassemble the piston block:

- 2 ea. 3/8 in. I.D. x 1-1/8 in. O.D. flat washers
- 1 ea. 3/8 in. x 3-1/4 in. N.C. cap screw, and
- 1 ea. 3/8 in. N.C. nut

Place one of the flat washers over the 3/8 in. x 3-1/4 in. cap screw and place this through the center of the piston block. Place the other washer over the cap screw and let it rest on the three pins. Screw the nut on and compress the spring inside the piston block. Use a pair of retaining ring pliers and remove the internal retaining ring (21). Remove the nut, bolt, and the two washers. Remove the washer (19), spring (20), washer (19), and three pins (18), and the pin keeper (16).

- 7** Remove the camplate insert (11) from housing (9). Caution not to mar the finish that makes contact with pistons.
- 8** Remove retaining ring (1) from housing. Press shaft (8) from housing (9) and remove shaft seal (2), and washer (3).
- 9** Remove retaining ring (4) from shaft and remove thrust washers (5) and thrust bearing (6).
- 10** On through shaft assembly, remove snap ring (30) and shaft seal (29) from backplate.
- 11** Discard the shaft seals, and o-ring and replace with new items upon reassembly.

Inspection

- 1** Check the condition of the needle bearing (25) in backplate (24) and replace if necessary.
- 2** Inspect valve plate (22) on the bronze side next to the piston block for wear. A smooth surface is required. **Do not lap valve plate bronze surface.** Replace valve plate if any wear exists.
- 3** Inspect the piston block (17) surface that makes contact with valve plate. This surface should be smooth and free of deep scratches. **Do not lap piston block.**
- 4** The pistons (13) should move freely in the piston block bore. If they are sticky in the bore, examine the bore for scoring or contamination.
- 5** Examine the O.D. of the pistons for finish condition. They should not show wear or deep scratches. Inspect the shoes for a snug fit on the ball end of the pistons and a flat smooth surface that comes in contact with the camplate. **Do not lap piston shoes.**
- 6** Examine the spider (14) for wear in the pivot area.
- 7** Examine the pivot (15) to insure smoothness and no signs of wear.

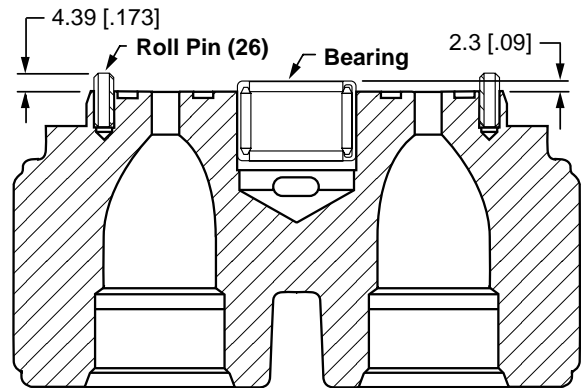
- 8 The polished finish on the shoe surface of the camplate insert (11) should show no signs of scoring.
- 9 Inspect the shaft (7) for wear in the seal, bearing and spline areas.
- 10 Inspect thrust bearing (6) and washers (5) for wear.
- 11 Check the condition of the needle bearing (10) in housing (9) and replace if necessary.

Reassembly

- 1 Clean all parts in suitable solvent and lubricate all critical moving parts before reassembly.
- 2 If necessary, install new needle bearing (10) in housing (9) with numbered end of the bearing outward.
- 3 Install retaining ring (4) on shaft (8). Install thrust washer (5), thrust bearing (6), and second thrust washer (5). Secure with second retaining ring (4).
- 4 Install shaft in housing. Install washer (3), new shaft seal (2), and retain with retaining ring (1).
- 5 Install camplate insert (11) with the lettering side of insert to the front of the housing. Use petroleum jelly to hold in place during assembly.
- 6 If piston block assembly was disassembled complete the following: Compress the pin keeper (16) and install in the spline of piston block. Install the three pins (18) with head end to the inside of the block and placed in the special grooves of the piston block spline.
- 7 Install the washer (19), spring (20), and second washer (19) in the piston block. Use the two 3/8 in. I.D. washers, nut, and 3/8 in. x 3-1/4 in. cap screw to compress the spring and retain with retaining ring (21). Remove the nut, cap screw and the two washers.
- 8 Install the pivot (15), spider (14), and the piston assemblies (13) on the piston block (17). Install rotating assembly (12) in to housing assembly over shaft. The piston shoes must make contact with the camplate insert. Be sure all parts are in their proper position before proceeding.
- 9 Clamp motor assembly in a protected jaw vise with the open end of the housing up.

10 If roll pins were removed install to dimension shown and with opening of roll pin oriented away from bearing within 5 degrees of bearing center line.

11 To replace bearing (25) in backplate (24). Press bearing down to the dimension shown protruding from backplate with number end of bearing facing up next to valve plate.



Roll Pin and Bearing Installation

12 Apply small amount of petroleum jelly to the steel side of valve plate (22) to hold in place for installation. Place the valve plate (22) in position onto the backplate (24), with steel side against backplate, bronze colored side against piston block.

13 Placing new o-ring (23) onto backplate, install backplate assembly (24) onto housing assembly (9). Make sure valve plate stays in position.

14 Insert the cap screws (28) and torque 20.3 to 24.4 N•m [15 to 18 lbs. ft.] in a criss-cross pattern.

15 If assembling a motor with a thru shaft install new shaft seal (29) into backplate and retain with retaining ring (30).

16 Fill case half full of hydraulic oil and install on vehicle.

Motor Trouble Shooting

In trouble shooting a pump and motor system it is necessary to isolate the pump from the motor. This will determine which unit is actually malfunctioning. A worn pump or motor will both give the same system indication. Therefore, it is advisable to first run a pressure and flow check on the pump. Making sure it is performing at its operating specifications. The following trouble shooting suggestions are based on the assumption that the pumps flow and pressure are found within operating specifications.

Problem	Possible Causes	Correction
1 Motor turns while unloaded but slows down or stops when load is applied.	A Scored Valve plate B Scored or worn piston shoes. C Low pressure.	A Remove backplate and examine bronze surface of valve plate; if scored, replace valve plate. B Disassemble motor, examine condition of shoes on pistons; replace rotating kit assembly as a complete set. Do Not Lap pistons. C Check relief valve for proper pressure setting; adjust or replace relief valve.
2 Motor will not turn.	A Severely scored internal parts	A Disassemble motor completely. Inspect all parts, clean all parts, replace all worn parts and flush hydraulic system.
3 Motor will not hold load when system is in neutral position.	A No make up fluid from charge pump. B Scored valve plate or piston shoes.	A Check charge pressure. B Disassemble motor and examine valve plate and piston shoes, replace as required.
4 Excessive case drain flow.	A Excessive internal wear in motor.	A Disassemble motor, inspect parts and replace as necessary. Case drain flow should not exceed 7.6 L/m [2 gal/m] at full pressure.

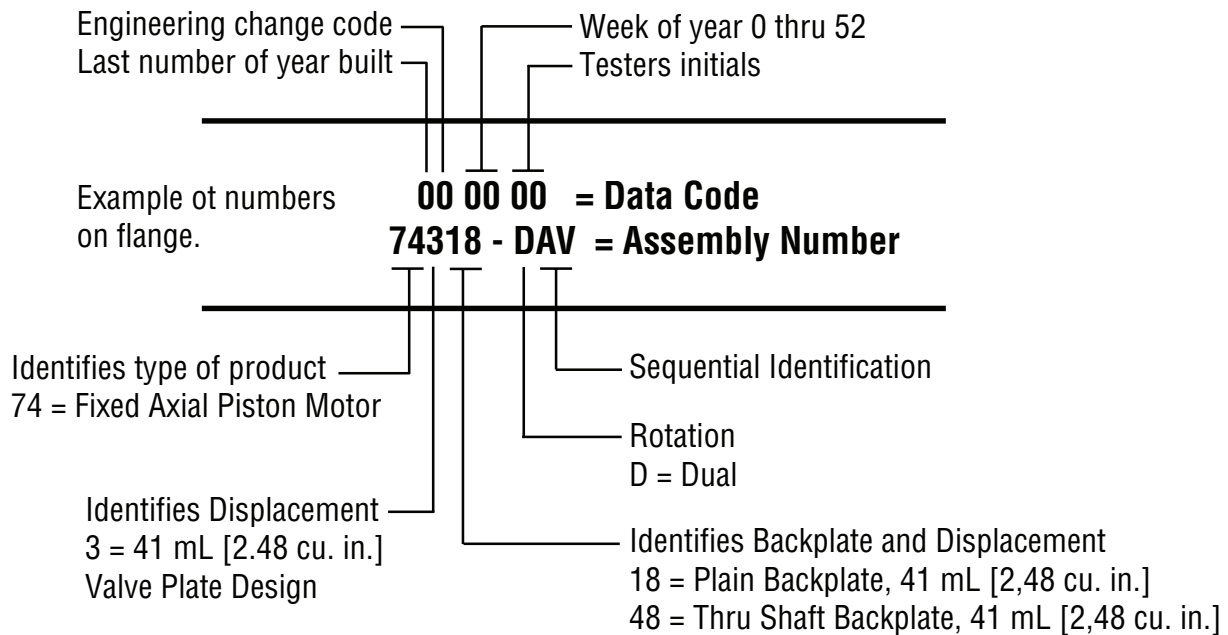
Order parts from number 6-142 Parts Information booklet.

Each order must include the following information.

1. Assembly Number and/or Part Number
2. Date Code
3. Part Name
5. Quantity

Identification Number

Stamped on each units mounting flange.



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