

NO. 7-139

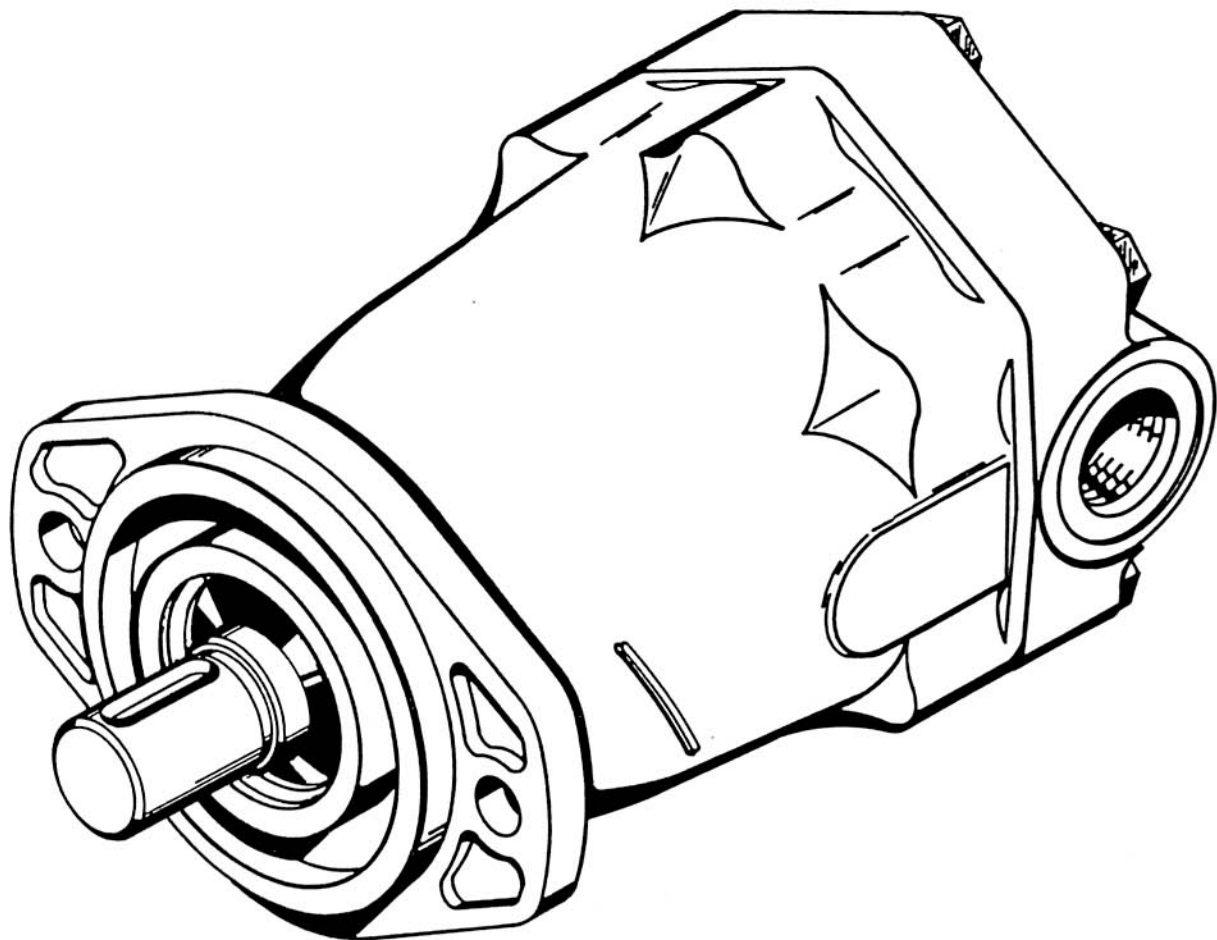
**Eaton  
Hydraulics  
Division**

# Repair Information

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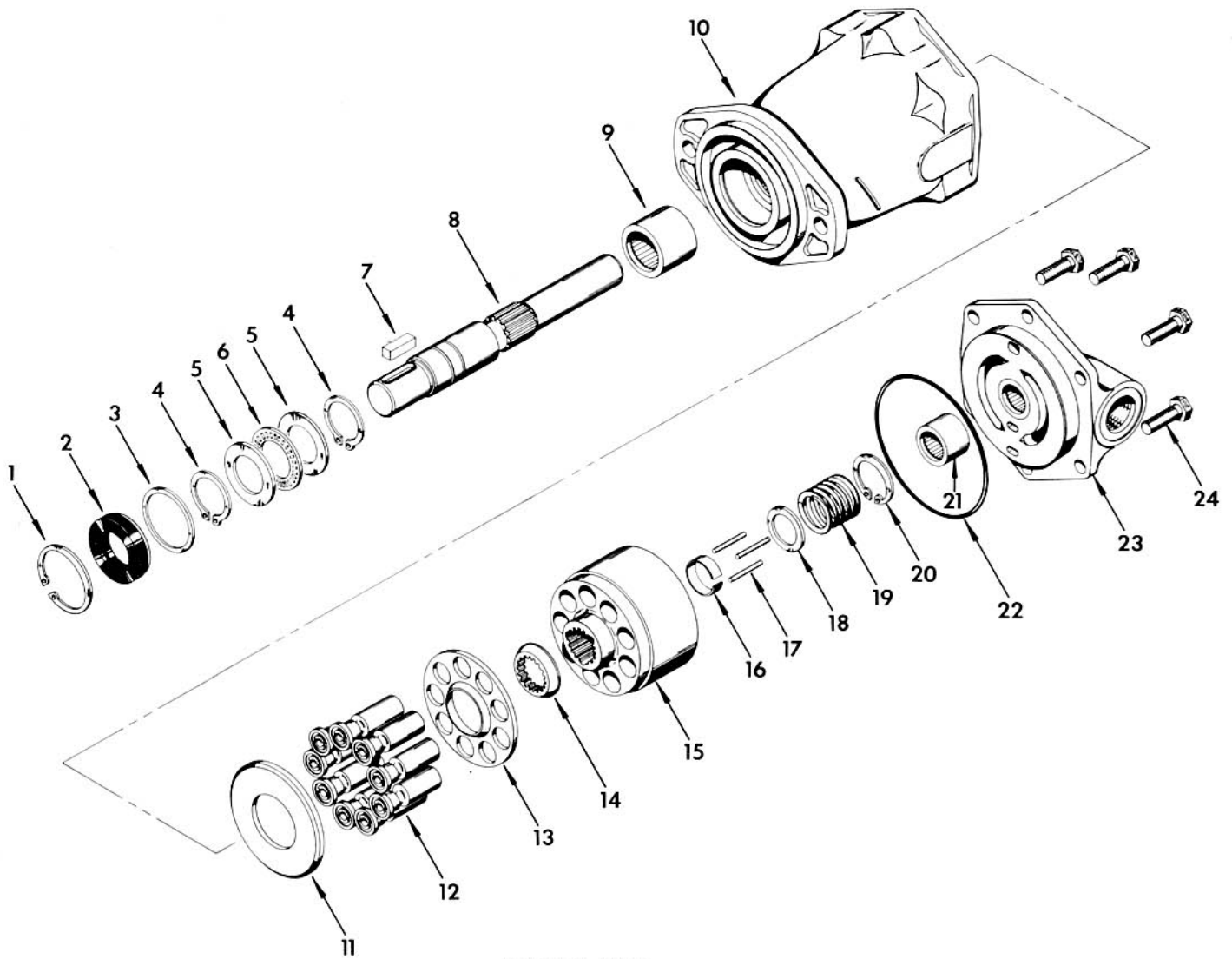
**Model 74111 & 74118 Fixed Axial Piston Motor**

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# PARTS IDENTIFICATION



## PARTS LIST

REFERENCE NUMBER	DESCRIPTION	REFERENCE NUMBER	DESCRIPTION
1	SNAP RING	13	SPIDER
2	SHAFT SEAL	14	PIVOT
3	SPACER	15	PISTON BLOCK
4	SNAP RING	16	PIN KEEPER
5	THRUST WASHER	17	PIN
6	THRUST BEARING	18	WASHER
7	KEY	19	SPRING
8	DRIVE SHAFT	20	SNAP RING
9	NEEDLE BEARING	21	NEEDLE BEARING
10	HOUSING ASSEMBLY	22	O-RING, 1/8 x 3-3/8 I. D.
11	THRUST RACE	23	BACKPLATE ASSEMBLY
12	PISTON ASSEMBLY	24	CAPSCREW

# INSTRUCTIONS

## DISASSEMBLY

1. Clean outside of unit thoroughly.
2. Remove snap ring (1) from housing assembly (10).
3. Clamp shaft in a protected jaw vise with backplate end up.
4. Remove the six capscrews (24) from backplate (23).
5. Use a plastic mallet and tap the backplate (23) to loosen it; then pull the backplate straight out.
6. Remove O-ring (22) from backplate.
7. Remove the complete piston block assembly from the housing assembly.
8. Remove piston assemblies (12), spider (13), and pivot (14) from the piston block assembly.
9. The piston block assembly need not be disassembled unless the internal pins (17) or spring (19) is damaged.

### CAUTION

The following procedure should be used if the spring (19) is to be removed from the piston block. The spring is highly compressed and the snap ring (20)

should not be removed without compressing the spring (19).

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

- 2 ea. 5/16 I. D. x 15/16 O. D. flat washers
- 1 ea. 5/16 x 2-7/8 N. C. capscrew, and
- 1 ea. 5/16 N. C. nut

Place one of the flat washers over the capscrew and place this through the center of the piston block. Place the other washer over the capscrew and let it rest on the three pins (17). Screw the nut on and compress the spring inside the piston block. Use a pair of snap ring pliers and remove the internal snap ring (20). Remove the capscrew and two washers. Remove the spring (19), washer (18), pin keeper (16), and the three pins (17).

10. Remove thrust race (11) from housing.
11. Remove shaft seal (2) from housing.
12. Remove spacer (3) and drive shaft (8) from housing.
13. Remove the two snap rings (4), thrust washers (5), and thrust bearing (6) from drive shaft.

## INSPECTION

1. Wash all parts thoroughly in a suitable solvent.
2. Examine needle bearings (9) and (21) in housing (10) and backplate (23). If the needles are free of excessive play and remain in the bearing cage there is no need to replace the bearing.
3. Inspect thrust washers (5) and thrust bearing (6). All surfaces should be free of any signs of wear or fretting.
4. Inspect spider (13) and pivot (14); conical surfaces should be free of wear and score marks.
5. Inspect the pistons (12); the O. D. surface should be smooth and free of scoring. The shoes should be snug fit to the piston. The face of the shoes should be flat and free of scoring and flaking. Do not lap piston shoes.
6. Inspect the piston block (15); the bores should be free of scoring. The surface that contacts the backplate should be smooth and free of grooves or metal build-up.
7. Inspect the thrust race (11); the surface opposite the chamfered side should show no signs of scoring.
8. Inspect the flat surface on the backplate (23); it should be free of excessive scoring or metal build-up.
9. Inspect the drive shaft (8) for fretting in the bearing areas. Check spline area for twisted or broken teeth. If keyed shaft, check for cracked or chipped keyway.

## REASSEMBLY

1. Use STP to lubricate all critical moving parts before assembly.
2. Install one snap ring (4) in rear groove on drive shaft (8). Install one thrust washer (5), thrust bearing (6), and second thrust washer (5) on drive shaft (8). Install second snap ring (4) in front groove on drive shaft.
3. Replace needle bearing (9) in housing (10) if necessary. Install shaft in housing assembly (10). Install washer (3), shaft seal (2) and retain with snap ring (1).
4. Compress pin keeper (16) and install in the spline I. D. of the piston block (15).
5. Install the three pins (17), washer (18), and spring (19) in piston block. Use the 5/16 I. D. washers and the 5/16 x 2-7/8 capscrew to compress the spring and retain with snap ring (20). Remove the 5/16 x 2-7/8 capscrew and the two washers.
6. Install the pivot (14), spider (13), and the piston assemblies (12) in the piston block assembly.
7. Lubricate thrust race (11) and install in housing assembly with chamfered edge of race against housing surface.
8. Install piston block assembly in housing assembly. The piston shoes must contact the thrust race (11). Be sure all parts are in their proper position.
9. Install new needle bearing (21) in backplate (23) if necessary.
10. Install new O-ring (22) on backplate.
11. Install backplate (23) on housing.
12. Install six capscrews (24) and torque 15-18 ft. lbs.

## MOTOR TROUBLE SHOOTING

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

POSSIBLE TROUBLE	CAUSES	REMEDIES
1. Motor turns while unloaded but slows down or stops when load is applied.	<p>A. Scored back plate.</p> <p>B. Scored or worn piston shoes.</p> <p>C. Low relief valve pressure.</p>	<p>A. Remove back plate and examine surface condition of flat area; if scored, replace back plate. Do not lap.</p> <p>B. Disassemble motor, examine condition of shoes on pistons; replace pistons as a complete set if necessary.</p> <p>C. Check relief valve for proper pressure setting; adjust or replace relief valve.</p>
2. Motor will not turn.	<p>A. Severely scored back plate.</p>	<p>A. Disassemble motor completely. Inspect all parts, clean all parts, replace all worn parts and flush hydraulic system.</p>
3. Motor free wheels.	<p>A. Oil flow and pressure shut off going to motor.</p>	<p>A. When the hydraulic system is shut off, either by shutting off the engine on a closed loop system or returning the control valve spool to neutral on an open center system, the motor will free wheel after it has leaked off. This is inherent in the design. On a closed loop or propulsion system, the motor will not free wheel as long as charge pressure is maintained to and from the motor.</p>
4. Excessive case drain flow.	<p>A. Excessive internal wear in motor.</p>	<p>A. Disassemble motor, inspect parts and replace as necessary. Case drain flow should not exceed 1.5 GPM at full pressure.</p>

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