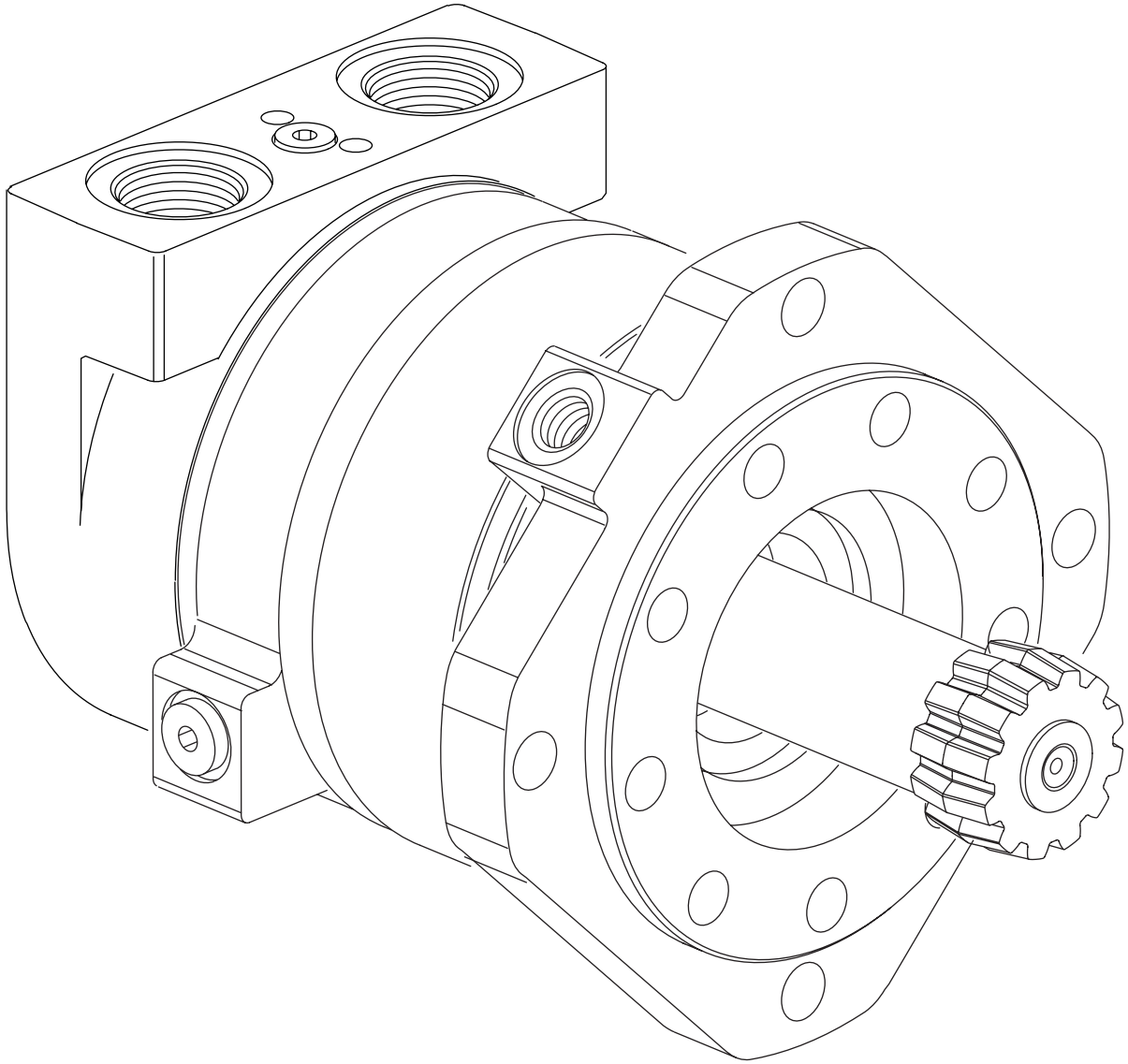
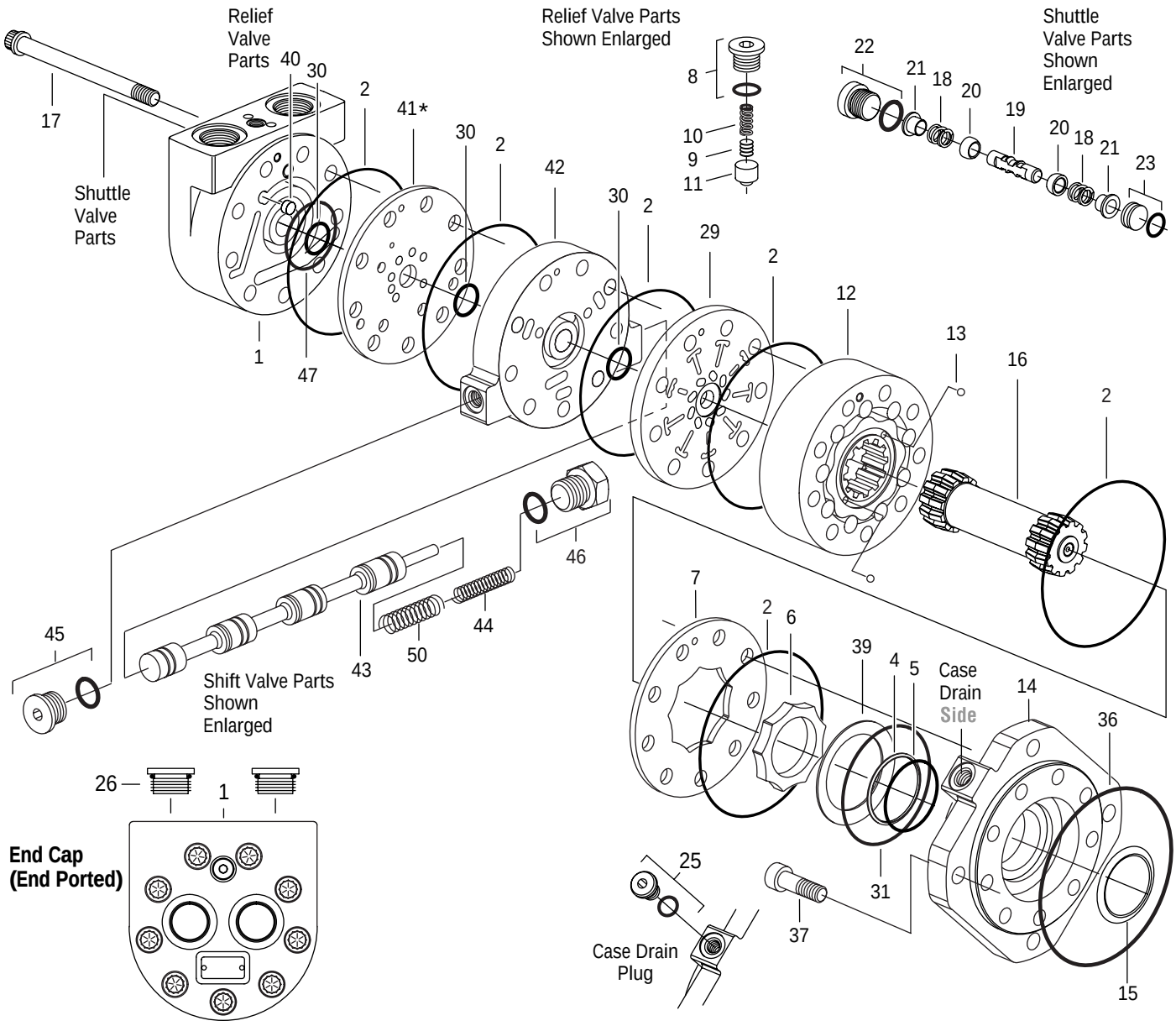
Eaton®
Hydraulic Motor

07-01-162
EN-0101

Repair Information



VIS 45 Series Two Speed — Bearingless -001



Ref. No.	Description
1	End Cap Assembly
2	Seal, Square Cut
4	Ring, Back-up
5	O-ring
6	Plate, Balance (Inner)
7	Plate, Balance (Outer)
8	Plug/O-ring Sub Assembly
9	Shim
10	Spring
11	Poppet

Ref. No.	Description
12	Geroler®
13	Ball
14	Flange, Mounting
15	Seal, Face
16	Drive
17	Screw, Cap
18	Spring
19	Piston, Shuttle
20	Poppet
21	Sleeve Dash Pot

Ref. No.	Description
22	Plug/O-ring Sub Assembly
23	Plug/O-ring Sub Assembly
25	Plug/O-ring Sub Assembly
26	Plug/O-ring Sub Assembly
27	Ball
29	Valve, Plate
30	O-ring
31	Seal
36	O-ring
37	Screw

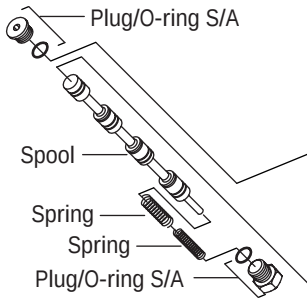
Ref. No.	Description
39	Spring, Belleville Disc
40	Disc
41	Plate, Spacer
42	Plate, Selector
43	Spool Control
44	Spring Compression
45	Plug/O-ring Sub Assembly
46	Plug/O-ring Sub Assembly
47	O-ring
50	Spring Compression

Tools Required

- 1/4 inch Hex Key
- 3/16 inch Hex Key
- 5/8 inch Hex Key (End Ported Motor Only)
- Torque wrench - 200 Nm [150 lb-ft] capacity

Disassembly

1 Cleanliness is extremely important when repairing hydraulic motors. Work in a clean area. Before disconnecting the hydraulic motor thoroughly clean the exterior. Remove motor from application and drain the oil from the motor before disassembly.



2 Remove the 9 cap screws and disassemble the motor in the vertical position as shown in figures 1. **Note placement of small ball checks in Geroler.**

3 Remove shuttle valve (and relief valve if applicable) from end cap.

4 Remove two plugs from end cap, end ported motors only.

5 Remove two plugs,spring, and spool from selector plate.

6 Check all mating surfaces. To reduce the chance of leakage, replace any parts that have scratches or burrs. Wash all metal parts in clean solvent. Blow them dry with pressurized air. Do not wipe parts dry with paper towels or cloth as lint in a hydraulic system will cause damage.

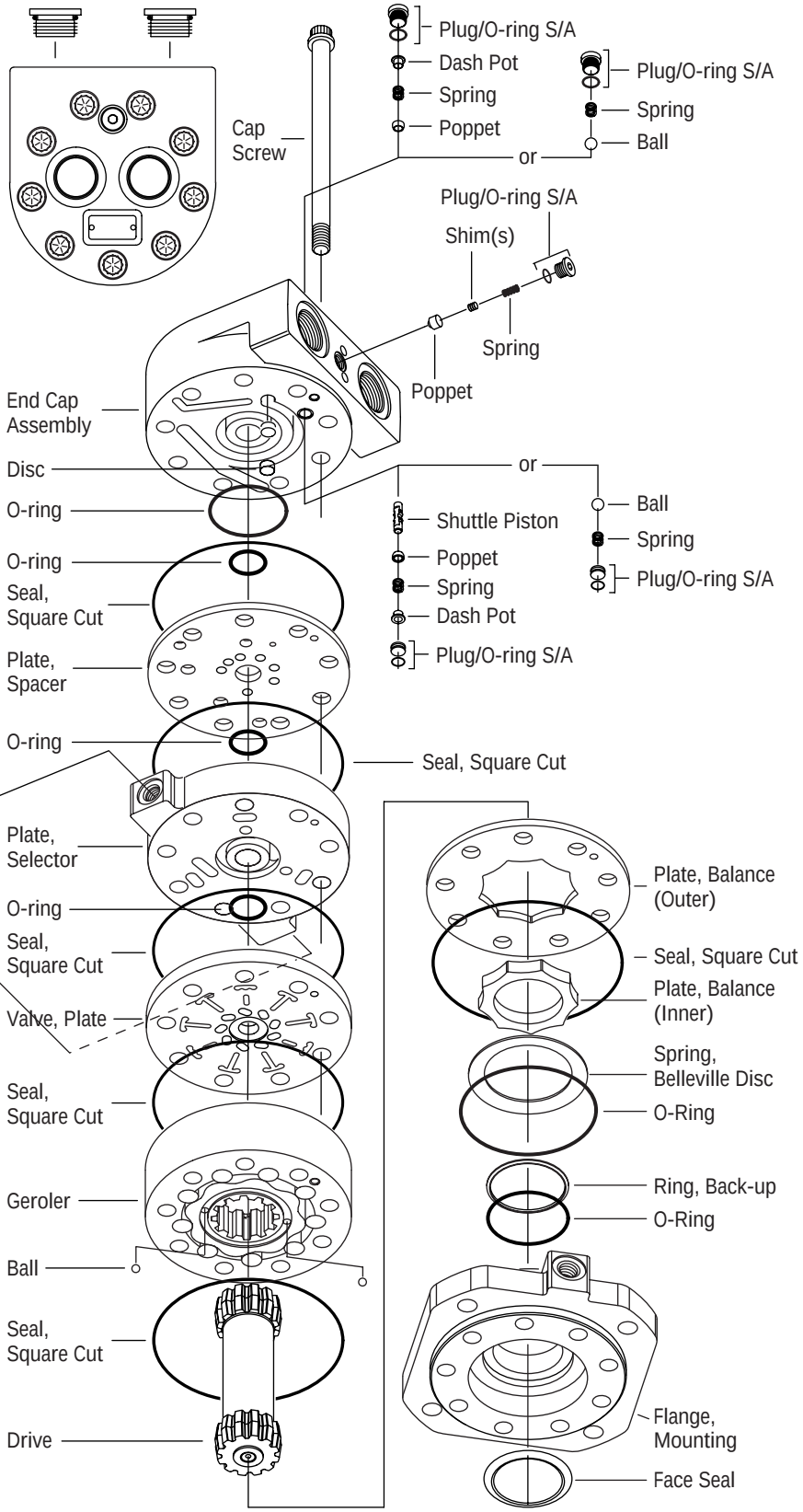


Figure 1

Reassembly

Check all mating surfaces. Replace any parts that have scratches or burrs that could cause leakage. Clean all metal parts in clean solvent. Blow dry with air. Do not wipe dry with cloth or paper towel because lint or other matter can get into the hydraulic system and cause damage. Do not use grit paper or file or grind these parts.

Note: Lubricate all seals with clean petroleum jelly (Vaseline). A good service policy is to replace all old seals with new seals.

Refer to parts lists covering your Series VIS 45 Two Speed Hydraulic Motor when ordering replacement parts.

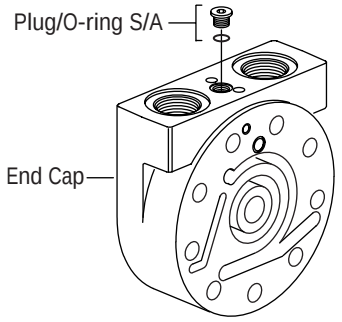


Figure 2

For Assemblies without a Back Pressure Relief Valve

1 Install plug with o-ring into end cap cavity. Torque plug to 18-22 Nm [162-198 lb-in]. Plug/o-ring may have light coat of oil or preservative.

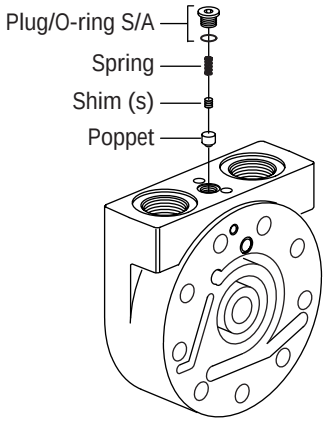


Figure 3

For Assemblies with a Back Pressure Relief Valve

2 Install poppet, shims, spring and plug assembly into end cap cavity. Torque plug/o-ring to 18-22 Nm [162-198 lb-in]. Plug/o-ring may have light coat of oil or preservative.

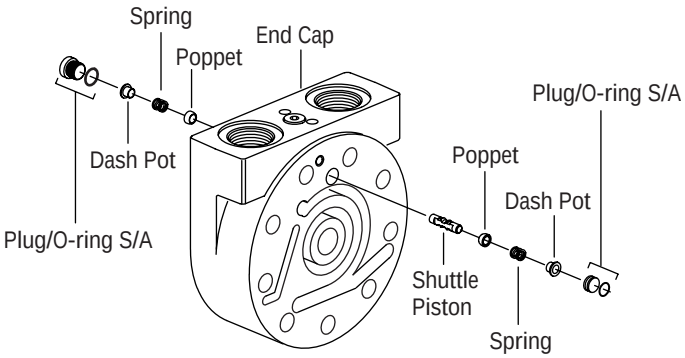


Figure 4

For Assemblies with Hot Oil Shuttle

3 Install one poppet, spring, and dash pot sleeve into threaded end cap cavity.

4 Install one o-ring plug and torque to 37-45 Nm [324-396 lb-in]. Shuttle valve plug threads may have light coat of oil.

5 Install shuttle piston from opposite end cap cavity.

6 Install one poppet, spring, and dash pot sleeve onto piston.

7 Install non-threaded o-ring plug flush with end cap mounting face. O-ring and plug are to be lightly greased to ease assembly.

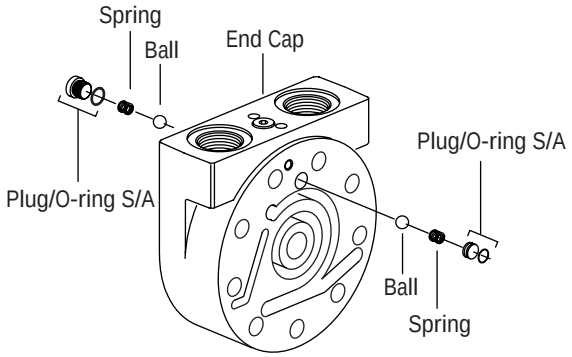


Figure 5

For Assemblies with Check Ball System

8 Install one check ball and spring into threaded end cap cavity.

9 Install one o-ring plug and torque to 37-45 Nm [324-396 lb-in]. Shuttle plug threads may have light coat of oil.

10 Install check ball and spring into unthreaded end cap cavity.

11 Install plug with o-ring (non-threaded) flush with end cap mounting face. Plug and o-ring are to be lightly greased to ease assembly.

Units with Rear Ports

12 Install o-ring plug (2) in top ports and torque to 145-178 Nm [107-131 lb-ft]. O-ring plugs may have light coat of oil or preservative.

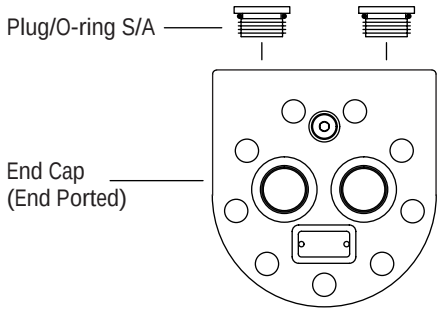


Figure 6

Units with Rear Ports

13 Install o-ring plug (2) in top ports and torque to 145-178 Nm [107-131 lb-ft]. O-ring plugs may have light coat of oil or preservative.

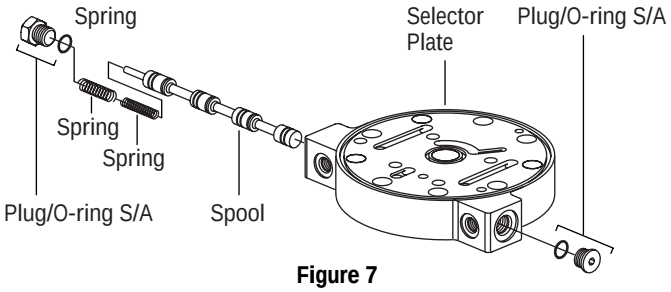


Figure 7

Selector Plate Assembly

14 Orient the selector plate with spacer plate side up and spool ports in the front. Spool bore should be parallel to assembler.

15 Insert the spool into the bore with the spring end of the spool on the assembler's left.

16 Install two springs (nested) and plug with o-ring into left side of selector plate torque plug to 18-22 Nm [162-198 lb-in]. Plug threads may have light coat of oil or preservative.

17 Install o-ring plug into right side of selector plate. Torque plug to 18-22 Nm [162-198 lb-in]. Plug threads may have light coat of oil or preservative.

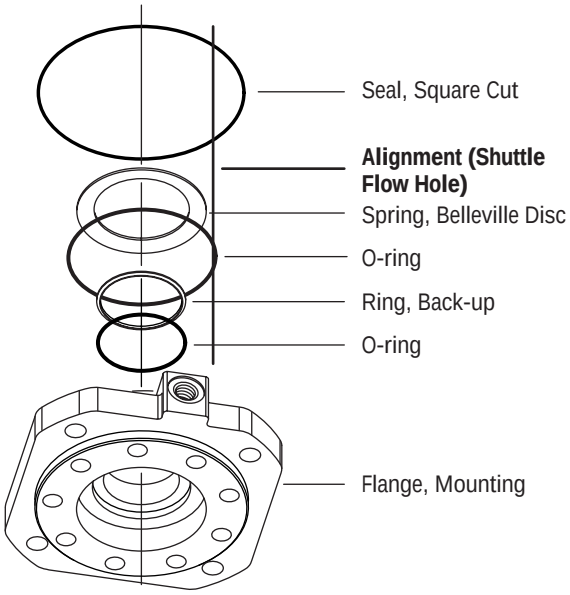


Figure 8

Flange Assembly

18 Install two o-rings into flange face. Assemble back-up ring with flat side up. Back-up ring and o-rings may be greased to assist in retaining parts.

19 Install one square cut seal into groove of flange. Seals may be greased to assist in retaining parts.

20 Install spring, bellevile disc with the outer diameter touching the bottom of the groove in the flange. The inner diameter of the spring, bellevile disc will be raised towards the balance plate (balance plate shown in figure 9).

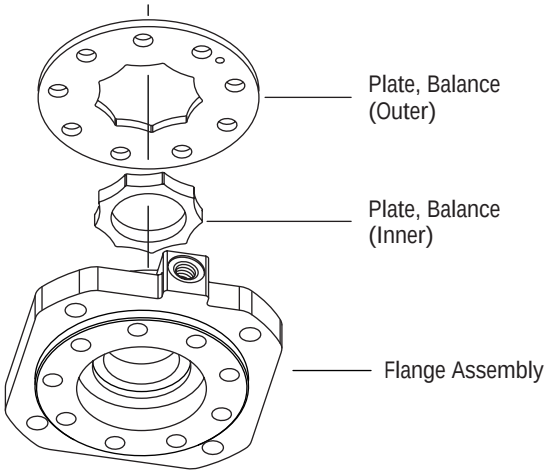


Figure 9

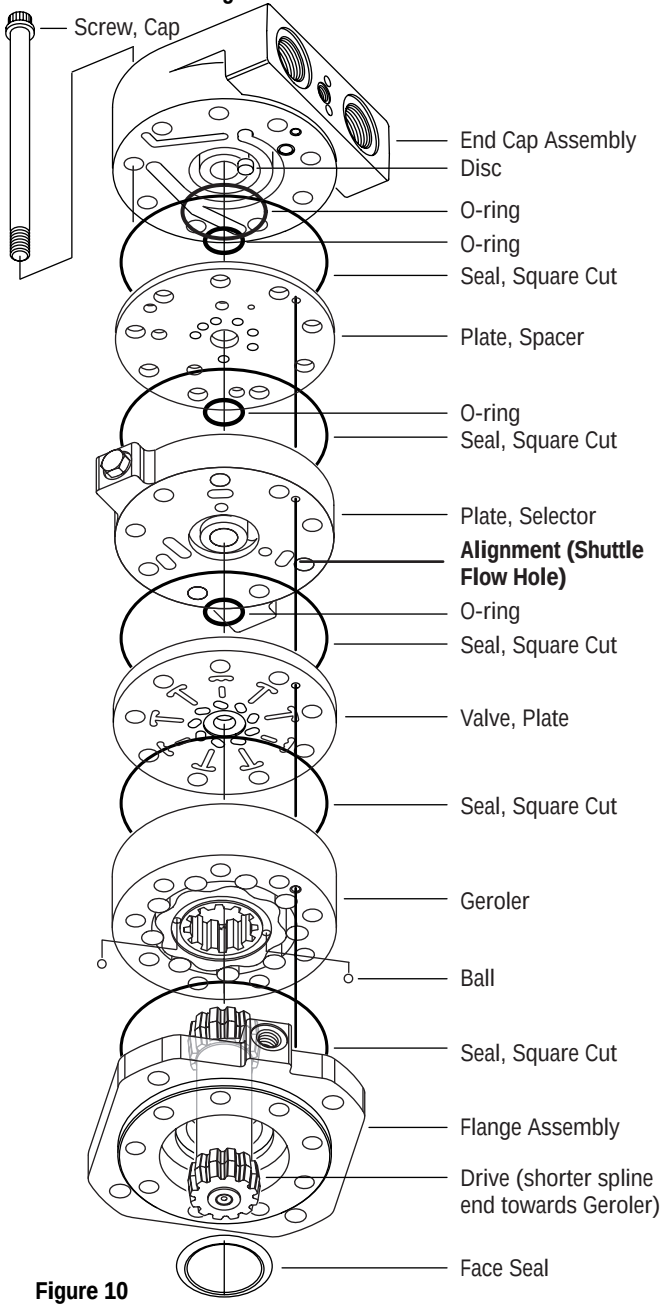


Figure 10

Final Unit Assembly

21 Place flange assembly onto build fixture with pilot facing down.

22 Install inner and outer or one piece balance plate onto mounting flange. Align shuttle flow hole of balance plate with shuttle flow hole of mounting flange (see figure 9).

23 Place main drive in center hole of balance ring with the large spline end up. Drive must be held in place so it does not drop through.

24 Place two steel balls into seats of Gerotor star. Grease to assist in retaining parts.

25 Install two square cut seals into grooves on each side of Geroler. Seals may be greased to assist in retaining parts.

26 Place Geroler over balance plate with counterbore side of Geroler star toward balance plate. Be careful not to displace square cut seals. Align shuttle flow hole of Geroler with shuttle flow hole of balance plate.

27 Install valve plate onto Geroler. Align shuttle flow cavity of valve plate with shuttle flow cavity of Geroler.

28 Install two square cut seals and two o-ring seals into grooves of selector plate. Seals may be greased to assist in retaining parts.

29 Place selector plate assembly over valve plate. Be careful not to displace seals. Align shuttle flow cavity of selector plate with shuttle flow cavity of valve plate.

30 Place spacer plate on selector plate. Align shuttle flow cavity of spacer plate with shuttle flow cavity of selector plate (sealing ring grooves will be up).

31 Install disc into end cap. Grease sufficiently to retain disc when endcap is assembled.

32 Install two o-rings and a square cut seal in sealing ring grooves of the spacer plate. Seals may be greased to assist in retaining parts in place.

33 Carefully invert end cap and install on spacer plate, do not displace disc. Verify alignment of shuttle flow cavity.

34 Place nine screws into flange, Geroler, end cap stack. Screw threads are to be lubricated with DTE-26. Verify screw alignment and then torque to 88-115 Nm [65-85 lb-ft] per the sequence in figure 11. Final torque each screw using the sequence in figure 11 to 176 Nm [130 lb-ft].

35 Install face seal in mounting flange cavity when applicable.

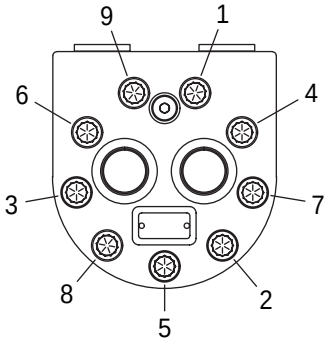


Figure 11

How to Order Replacement Parts

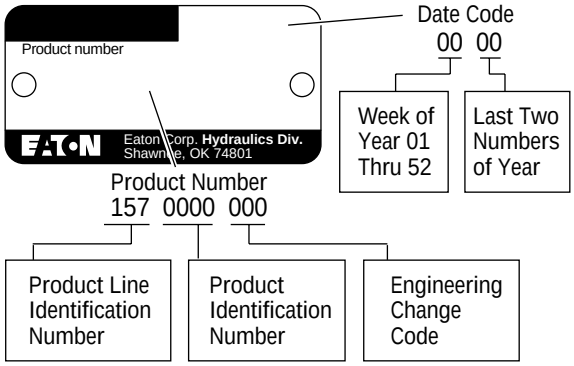
Each Order Must Include the Following:

1. Product Number
2. Date Code
3. Part Name
4. Part Number
5. Quantity of Parts

For more detailed information contact Eaton Hydraulics 14615 Lone Oak Road Eden Prairie, MN 55344.

- Specifications and performance data, Catalog No. 11-01-112*.
- Replacement part numbers and kit information — Parts Information No. 06-01-169.

* VIS 30, VIS 40 and VIS 45 Series Motor Catalog No. 11-01-112 does NOT include VIS 45 Series Two Speed information at this printing date.



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