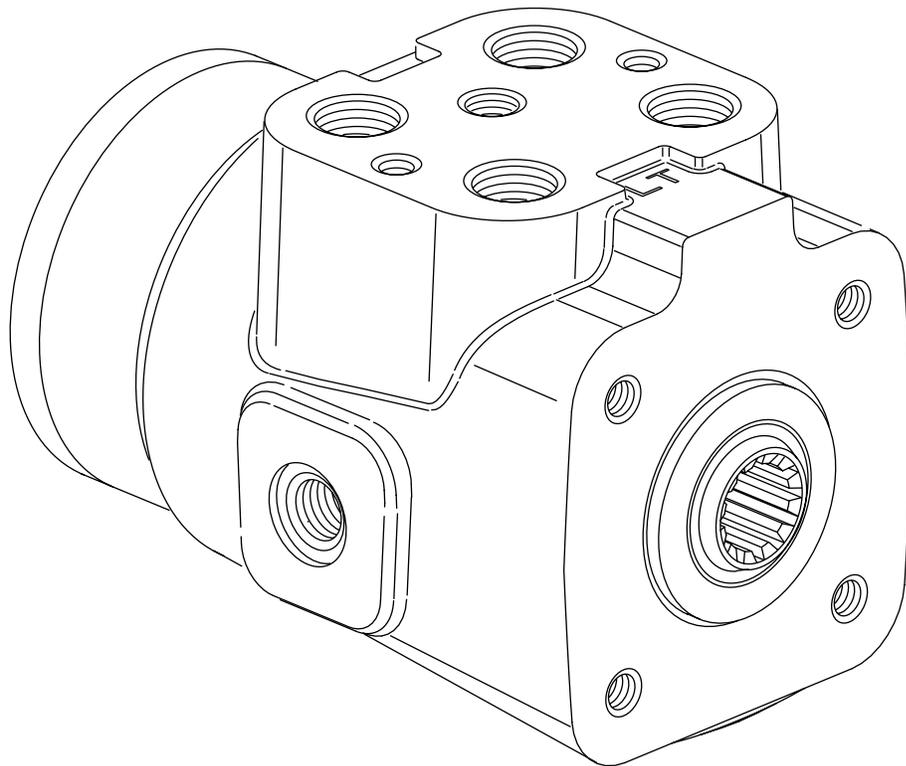




## Repair Information



# Disassembly/Reassembly

**Note:** All housing valves are factory adjusted on assembled units to a code designation and **are not to be changed**. This housing (with specified valve settings), the mating spool, and the sleeve are not practical replacement parts

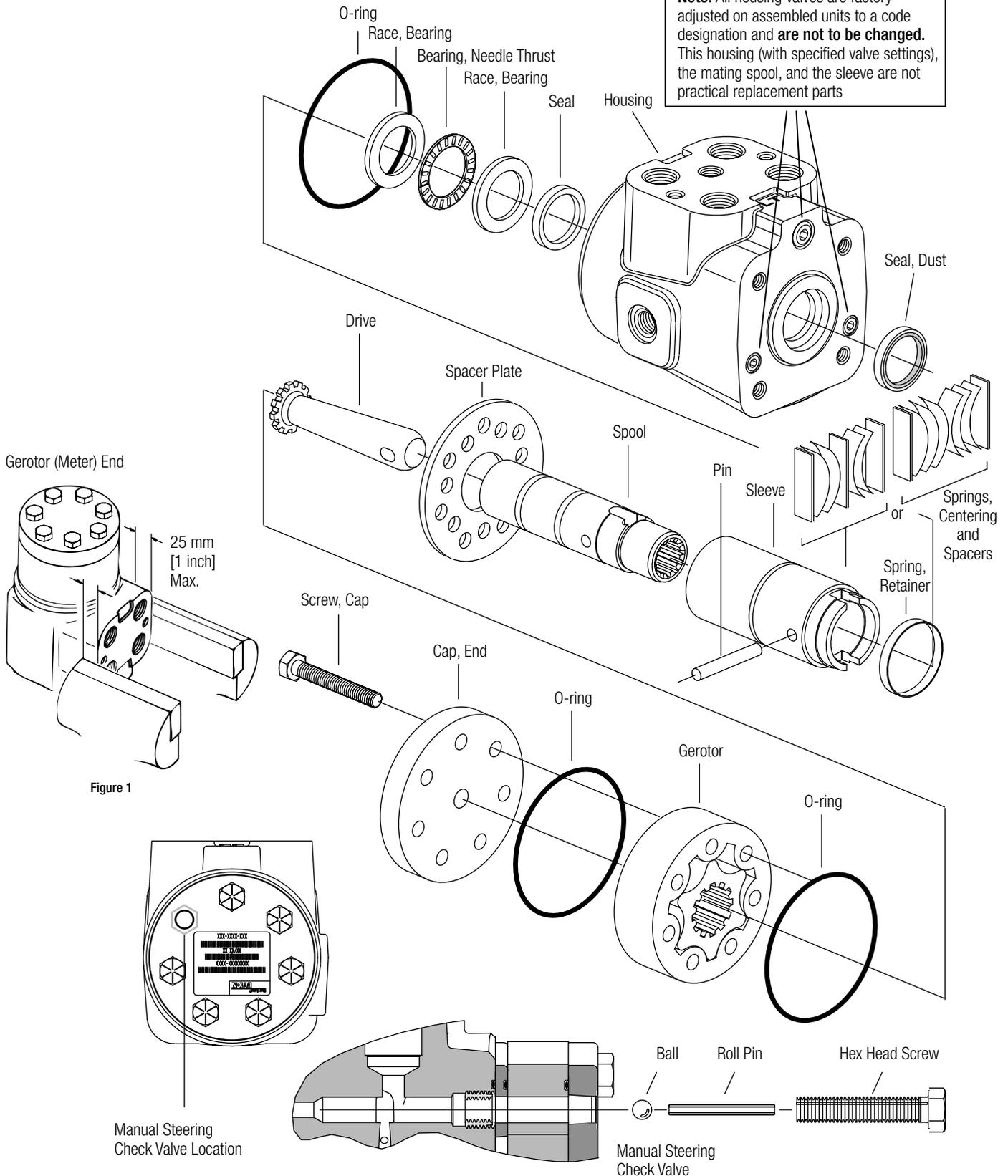


Figure 1

Figure 2

## Disassembly/Reassembly

**Cleanliness is extremely important when repairing a steering control unit. Work in a clean area. Before disconnecting lines, clean port area of unit thoroughly. Use a wire brush to remove foreign material and debris from around exterior joints of the unit.**

Although not all drawings show the unit in a vise, **we recommend** that you keep the unit in a vise during disassembly and reassembly. Follow the clamping procedures.

**Notice placement of check ball and roll pin (manual steering check valve), the cap screw that retains these parts should be removed first. Safely retain these parts and remember to reinstall these parts last at reassembly.**

1 Clamp unit in vise, meter end up. Clamp lightly on edges of port face sides (see figure 1). Use protective material on vise jaws. Housing distortion could result if jaws are overtightened.

2 Carefully disassemble steering control unit in this vertical position as shown in figure 2 (if not kept vertical), the pin that links the sleeve, spool, and drive could possibly slip and like a dead bolt it will lock these parts in the housing before it is completely out.

### Requirement

Assure that all parts are free from rust, other contaminants, nicks and burrs at time of reassembly.

Lubricate o-ring seals with Mobilith SCH 220 high temperature grease. (If the o-ring seals used in meter section are lubricated with petroleum jelly for assembly purpose, the amount of petroleum jelly used should be minimal to avoid spreading the grease on the surfaces that form the interfaces between end cap and gerotor ring and between gerotor ring and spacer plate).

### Reassembly Requirements

3 Sealing lips/surfaces of shaft seal shall be protected against deforming, cutting or abrasion during installation. Sealing surface area of shaft must be free from scratches, dents, and other defects detrimental to seal performance and life.

4 Spool must rotate smoothly inside sleeve with less than 0,11 Nm [1 lb-in] torque (fingertip force) when both parts are lubricated with hydraulic fluid.

5 Installation of spring spacers and springs, hold spring retainer at an angle as shown (see figure 3 reference number 1), insert spring spacers and springs one at a time in sequence noted by reference numbers 2 - 9 (Standard torque), 2 - 8 (medium torque), then position spring retainer correctly over all these parts. Adjust alignment of spring parts with a small screwdriver.

6 Timing of drive with respect to gerotor star is critical. Pin slot in drive must be aligned with valley (minor diameter) of gerotor star contour.

7 Sleeve must rotate smoothly inside housing with less than 0,17 Nm [1.5 lb-in] torque when both parts are lubricated with hydraulic fluid.

### Recommended Torquing Procedure

8 Torque all cap screws to 11-17 Nm [100-150 lb-in] evenly, then to final torque in sequence shown (figure 5) to 31-37 Nm [275-325 lb-in].

**Note:** Seven cap screws for meter section should be torqued evenly with less than 5% variation (see figure 5). Tightening torque variation between 31-37 Nm [275-325 lb-in] to satisfy travel limit slip rate and input torque requirements (see figure 6) is permissible.

9 When input drive at spline is rotated, gerotor star shall rotate smoothly with less than 60% of torque specified in figure 6 after reassembly and tightening of the seven cap screws to final torque level per Step 8.

10 Completed assembly should rotate smoothly with less input torque than the values specified in the final test specifications (see figure 6) when warmed to 60-66° C [140-150° F].

11 Housing meter (gerotor) end, spacer plate, gerotor ring and end cap shall form pressure tight (zero leakage at 275 bar [4000 PSI]) interfaces after reassembly and tightening of the seven cap screws to final torque level per Step 7.

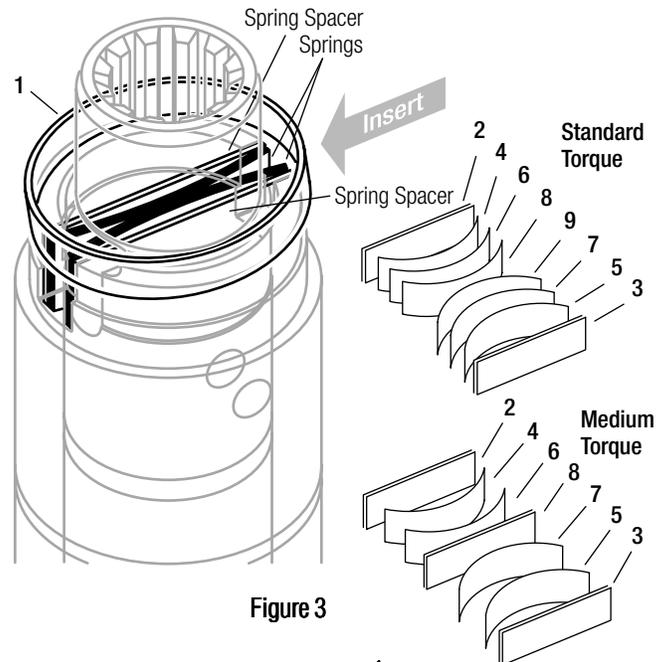


Figure 3

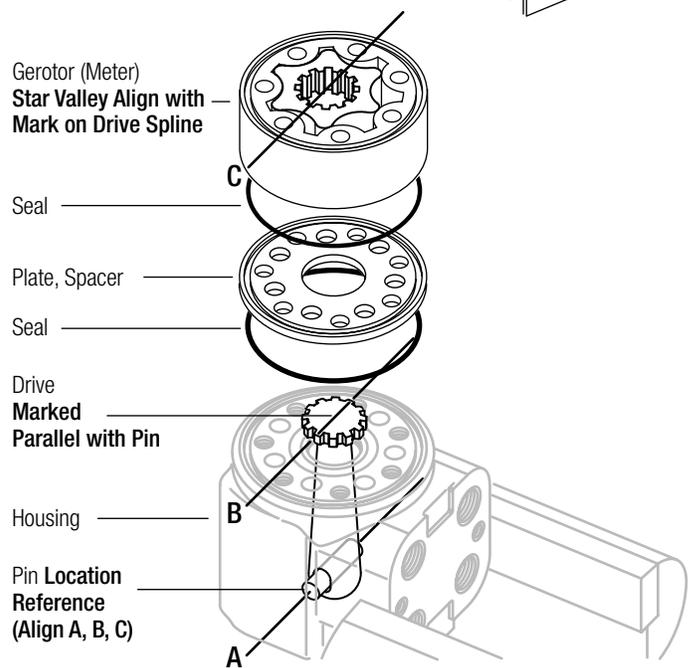


Figure 4

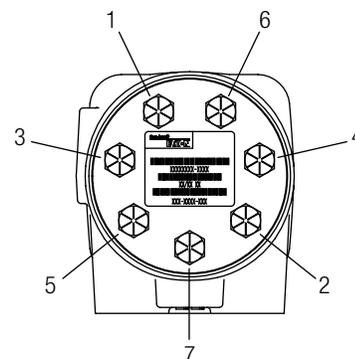


Figure 5

## Series 10 Steering Control Units

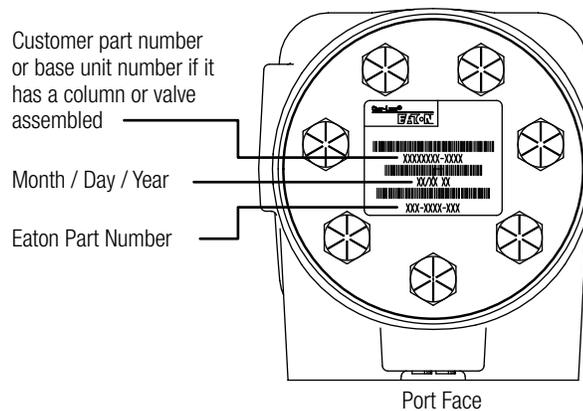
### Manual Input Torque Limits

Displacement cm <sup>3</sup> /r [in <sup>3</sup> /r]	Displ. Code	Maximum Input Torque Nm [lb-in]
60 [ 3.6]	40	3,4 [30]
75 [ 4.5]	43	3,4 [30]
95 [ 5.9]	45	3,4 [30]
120 [ 7.3]	48	3,4 [30]
146 [ 8.9]	50	3,9 [35]
159 [ 9.7]	51	3,9 [35]
185 [11.3]	52	4,5 [40]
231 [14.1]	54	5,1 [45]
293 [17.9]	57	5,6 [50]
370 [22.6]	59	7,9 [70]
462 [28.2]	61	9,0 [80]

Figure 6

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

- Specifications and performance data, see Series 10 Catalog No. 11-872 Supplement



Information contained in this catalog is accurate as of the publication date and is subject to change without notice. Performance values are typical values. Customers are responsible for selecting products for their applications using normal engineering methods.

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