

110 Series

LSHT Hydraulic Motor Main Shaft Seal Replacement

Seal Kit

p/n SK000170

Bulletin 050039
Revised 4/03

Qty.	Description	p/n	Item
1	Quad Ring Seal	1062-15	3
1	Dust Seal	478078	1
1	Backup Ring	1142-14	2
1	Snap Ring (Thick)	1296	7
1	Snap Ring (Thin) (Thru-Shaft only)	1135	7
2	Square Ring Seal	1046	8
1	Seal Kit Bulletin Instructions	050039	-

Note: Prior to any motor disassembly, plug all open ports and clean all dirt from the outside of the motor. If thru-shaft seal is to be replaced, the appropriate thru-shaft seal kit will also be required. Prior to assembly, lightly oil all seals, rolls and threaded bolt ends.

* P/N SK000170 (050039) replace P/N 1158.

Procedure

1. Remove the key (11) from the shaft if there is a key.
2. Mount the motor in a vise or other holding device with the shaft facing down.
3. Remove the eight 5/16-24 bolts (10).
4. Remove the cover/bearing assembly (17) or (18) and the O-Ring (8).
5. Remove the IGR™ set components (6) starting with the outer locating ring 6.1) and rollers (6.5). **Note: the innermost IGR™ component and rotary valve (4) are retained on the shaft by the snap ring (7). Do NOT remove this snap ring. Special Note:** If you have a motor with an 1 1/4" output shaft the snap ring (7) must be removed and discarded so the shaft can be removed through the front of the body/bearing assembly (15). If your motor should have a 1 1/4" output shaft in combination with the thru-shaft option the snap ring (14) must also be removed and *retained* for reassembly.
6. Remove the two check valve balls (5). Note : the check balls frequently fall into the body tapped holes or into the body valve ports during disassembly. Be sure that the check balls are removed and accounted for.
7. Remove the shaft (12) or (13), IGR™ element, and the rotary valve (4) as one assembly.
8. With the shaft assembly removed from the body, inspect the IGR™ Inner component, the rotary valve (4) and the shaft (12) or (13) for wear or other damage. The shaft should have a smooth polished surface in the bearing and seal areas. If any of these components are damaged, the snap ring (7) must be removed and the appropriate component replaced. If the snap ring (7) is removed, discard it and install the new snap ring.
9. The quad ring seal (3) and the backup ring (2) can be removed using a dull pointed object such as a pencil point or the end of a paper clip. Do NOT use a sharp object such as a knife because the sealing surface in the body can be damaged.
10. Install a new backup ring first , push it against the sealing surface toward the outside of the motor. The backup ring can be seated with a dull object.
11. Next install a new quad ring seal (3), by pushing it against the inboard side of the backup ring. Then install the new dust seal (1) from the front side of the motor, being sure it is seated at the bottom of the bore.
12. Lubricate the inside diameter of the quad ring and backup ring with oil or vaseline.

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Triple C Part #
PH-S1158

Description
110 SEAL KIT

USED ON
PH-11A-164-ASO

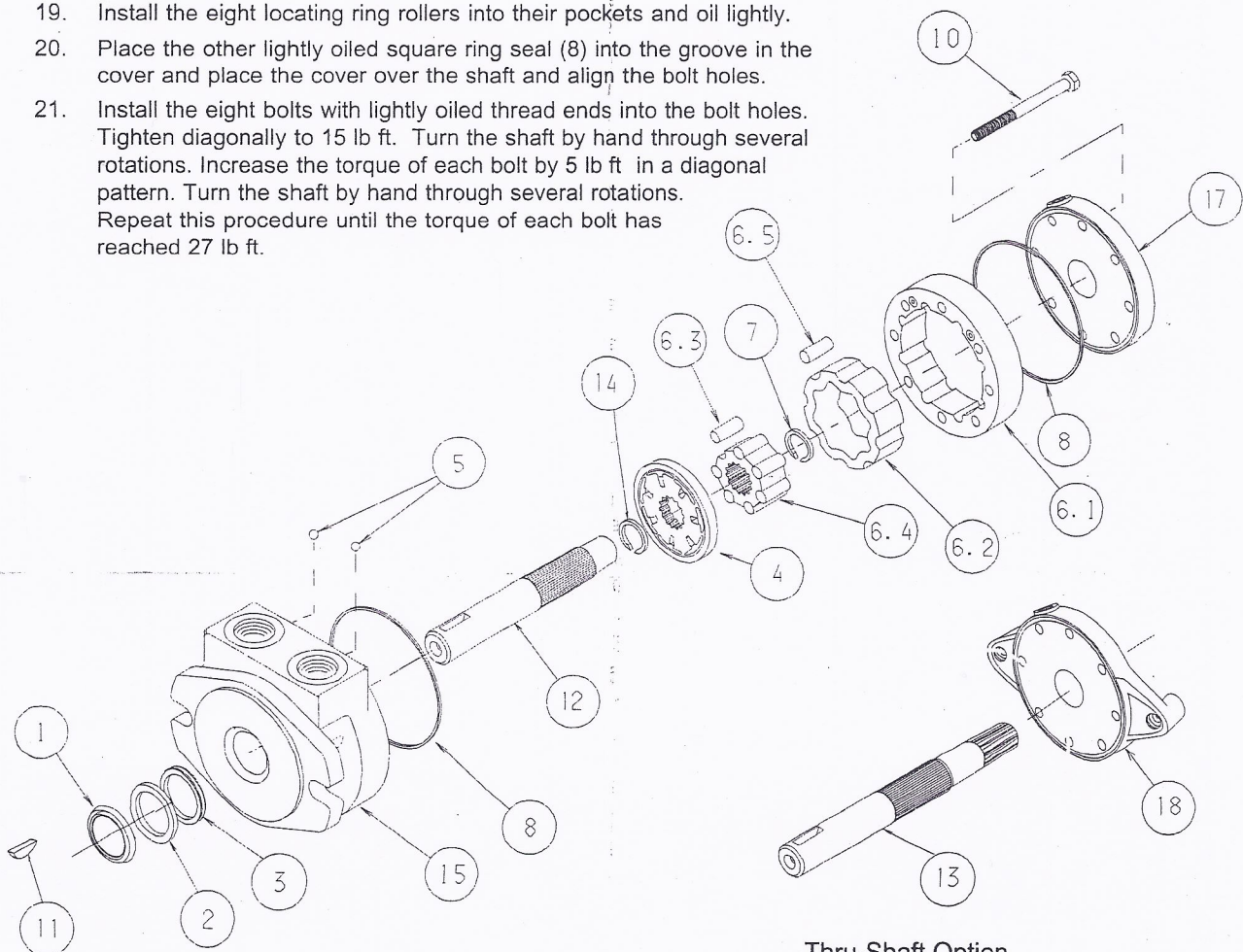
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13. If you did not have to remove snap ring (7, 14) proceed to step 14. In the event you removed snap rings (7, 14) continue with step 13A.
- 13A. When installing the shaft (12, 13) in the body / bearing assembly (15) use extreme caution not to cut the new seals with the splines of the shaft.

Thru-Shaft version only — With the shaft (13) installed in the body / bearing assembly (15) replace snap ring (14) in the snap ring groove closest to the body bearing assembly (15). Install the valve plate (4) and IGR™ inner (6.4) on the shaft spline. **Important:** Be sure the roll (6.3) will be between the ports in the valve plate. Install a new snap ring (7) in the snap ring groove behind the inner (6.4). Proceed to step 15.

Non Thru-Shaft version only — With the shaft (12) installed locate the valve plate (4) and IGR™ inner (6.4) slide both components on the shaft, valve plate (4) first. **Important:** Be sure the roll (6.3) will be between the ports in the valve plate. Install a new snap ring (7) in the snap ring groove behind the inner (6.4). Proceed to step 15.

14. Check the output shaft end for burrs and scratches, especially on a used keyed shaft. Deburr if necessary. The shaft must be free of burrs because when it slides through the quad ring and backup ring it can cut them. Install the shaft assembly into the body.
15. Place the contour member of the IGR™ over the inner and insert the seven rolls into the inner pockets. (The difference between Rolls and Rollers is distinguishable by eye. Rolls have square ends and Rollers have domed ends.)
16. Lightly oil the square ring seal (8) and place in the body groove.
17. Place the check balls (5) over the two 1/8 inch diameter holes in the body. Be sure the check balls do not fall into the tapped holes.
18. Place the locating ring section (4.5 inch diameter) of the IGR™ (6) onto the body with the check ball holes facing downward over the balls. Align the eight bolt holes in the locating ring with the eight holes in the body. The holes will align in only one position. **Note:** Be sure not to dislodge the body square ring seal while moving the locating ring.
19. Install the eight locating ring rollers into their pockets and oil lightly.
20. Place the other lightly oiled square ring seal (8) into the groove in the cover and place the cover over the shaft and align the bolt holes.
21. Install the eight bolts with lightly oiled thread ends into the bolt holes. Tighten diagonally to 15 lb ft. Turn the shaft by hand through several rotations. Increase the torque of each bolt by 5 lb ft in a diagonal pattern. Turn the shaft by hand through several rotations. Repeat this procedure until the torque of each bolt has reached 27 lb ft.



Thru-Shaft Option