

## Kickdown Service Manual Assembly, Leak Testing, and Adjustment

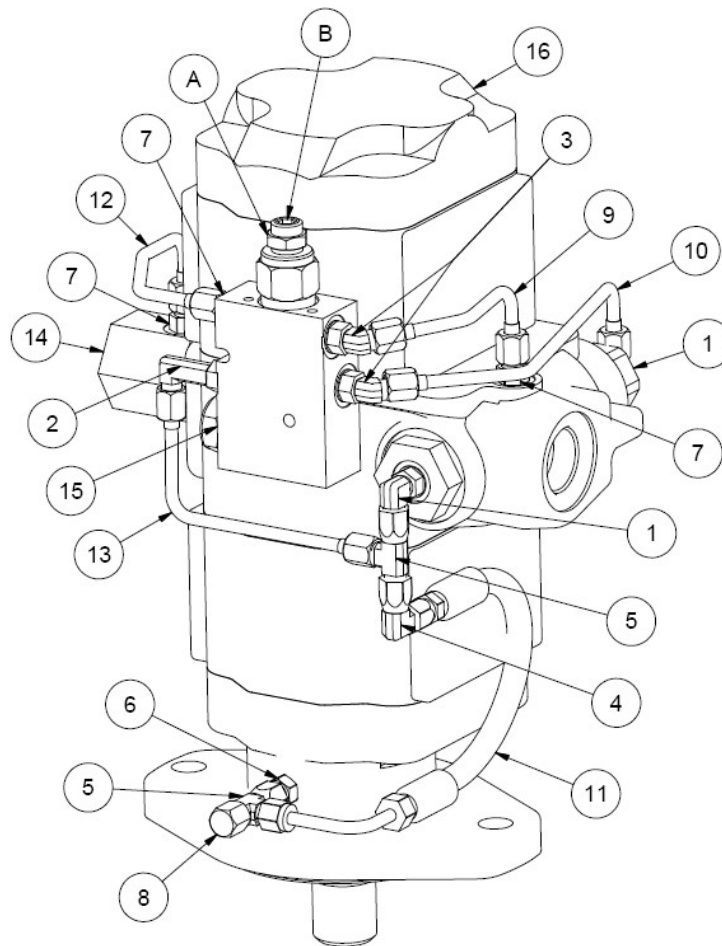


Figure 1: Kickdown Assembly and Leak Testing References

### Assembly Instructions

1. Remove plug from motor case drain port and allow oil to drain. Use a rag or absorbent pad to prevent spillage.
2. Install and tighten NPT-to-JIC fitting (6).
3. Install and tighten all o-ring-to-JIC straight fittings (7).

Do not tighten any connections from Steps 4 to 9 until instructed to do so. Snug down all connections by hand as they are installed.

4. Install large o-ring fitting (14). Orient so that straight fitting (7) is pointed in the direction shown.
5. Install 45 degree elbows (3) and extra long 90 degree elbow (2) onto valve body (15). Point fittings approximately in the directions shown.
6. Connect sense tubes (9, 12).
7. Install 90 degree elbow (1) and tee fitting (5) to near side of motor, and install tube (13).

8. Install 90 degree elbow (1) on back side of motor, as shown. Install tube (10) between this fitting and 45 degree elbow (3) on valve body (15). It may be necessary to adjust this tube with a bender. Do not attempt to force it into place, and do not attempt to bend it by hand.
9. Install elbow (4), connect tee fitting (5) to NPT-to-JIC fitting (6), install cap (8), and connect hose (11).

For installation on a Model 75 digger, all connections can now be tightened to 14 ft-lbs. Mark each connection with a paint pen as it is tightened. Install bail and tighten capscrews as specified. Continue to Leak Test.

For installation on a Model 78 digger, tighten all connections to 14 ft-lbs that do not need to be removed to install bail, as specified below. Mark each connection with a paint pen as it is tightened.

10. Remove tube (10) and 90 degree elbow (1) on back side of motor, as shown.
11. Remove tube (12) and large o-ring fitting (14).
12. Install bail and tighten capscrews as specified.
13. Re-install the components removed and tighten all fittings to 14 ft-lbs. Mark each connection with a paint pen as it is tightened.

### Leak Testing Instructions

The following is for leak testing at the Eskridge facility only. The tools used are not available to the general public. Remove adapter and plug after leak test is complete.

1. Install and tighten plug into motor port on right side next to the shift spool.
2. Install and tighten air test adapter into large o-ring fitting (14).
3. Connect air tester to air test adapter and perform a standard pressure test at 10 psi.
4. Remove adapter and plug after leak test is complete.

### Adjustment Instructions

The Kickdown system is set from the factory to shift the Hydrasync motor from high speed to low speed when it senses 2000 psi of pressure drop across the motor. If this setting does not suit the application, the valve can be adjusted to suit the customer's needs. Adjustments should be done while the drive head and hydraulic motor are under no load.

Supplies required:

1. Hydraulic pressure source up to 2500 psi
2. 2 gauges to read hydraulic pressure up to 2500 psi
3. Hydraulic fitting(s) to adapt from hydraulic pressure source to #4 JIC female swivel
4. Hydraulic fitting(s) to adapt from #4 JIC female swivel to pressure gauge

Adjusting the shift pressure:

1. Loosen reverse sense tube (12) from valve body (15), and remove it from the large o-ring fitting (14). Swing the free end up to where you can attach a pressure source, and tighten the end connected to the valve body.
2. Attach a hydraulic pressure source and pressure gauge to free end of reverse sense tube (12).

3. Loosen the shift tube (10) from the valve body (15), and remove it from the 90 degree elbow (1) on the back side of the motor. Connect pressure gauge to free end of shift tube and tighten all fittings on both ends.
4. Loosen locknut (A) on top of valve body (15), and turn adjustment screw (B) all the way clockwise.
5. Apply pressure from source and check all fittings for leaks. Increase source pressure to desired kickdown setting.
6. Turn adjustment screw (B) counterclockwise until there is pressure on gauge connected to shift tube (10). Tighten locknut (A).
7. Apply pressure from source again and verify that kickdown valve is at the desired setting.
8. Remove pressure source, gauges, and fittings. Reinstall tubes and tighten all fittings.

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-	7-2013	A	ORIGINAITON	JCA
3732	10-28-2014	B	UPDATED FOR REDESIGNED TUBE KIT; ADDED ADJUSTING INSTRUCTIONS	JCA