

## Bypass Clutch Control Kit

### 73840-BK

1 OS Bypass Clutch Valve  
1 Plunger Valve  
1 Bypass Clutch Control Sleeve  
4 Lubrication Plugs (1 extra)



### 73840-BTL

Serves 73840-BK only

1 Reamer  
1 Reamer Jig  
3 Drill Bits (for lube modification)

Also Available:

### 73840-MK

Master Kit includes

73840-RK - Pressure Regulator Valve Kit  
73840-BK - Bypass Clutch Control Kit

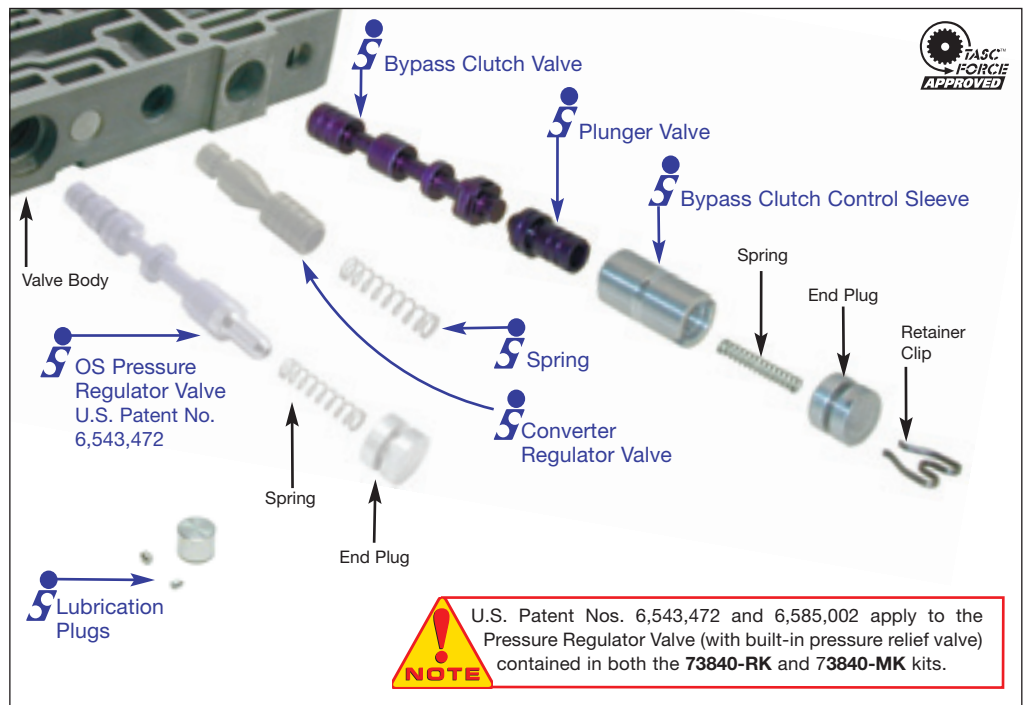


### 73840-MTL

Master Tool Kit includes

73840-RTL (services 73840-RK only)  
73840-BTL (services 73840-BK only)

**More technical information**  
is available at [www.sonnax.com](http://www.sonnax.com). Type  
in this part number under "Part Finder."



### Reaming

1. Remove valves from the bore to be reamed.
2. Clean valve body.
3. Clamp the valve body to bench with open circuits up.
4. Fill bore with cutting fluid (Tap Magic™, Bio-Tap, etc.).
5. Insert the reamer jig into bore.
6. Soak fluted end of reamer with cutting fluid.
7. Insert reamer into reamer jig until reamer tip contacts the first bore to be cut. Securely position the reamer against the bore to remove any reamer wobble. The chamfer at the reamer tip will help stabilize and center the reamer.
8. With the reamer carefully and securely positioned, use a speed handle to ream the bore. The reaming action should be clockwise in a smooth and continuous motion, at approximately 1 to 1½ revolutions per second.
9. The reamer should actually pull itself through the bore, so little or no back pressure should be applied to the reamer or speed handle.
10. Continue reaming until the tip of the reamer bottoms in the bore. Spin the reamer 5-10 more times after bore bottoming to allow for excess material removal and better surface finish.
11. Using low air pressure, blow free the chips before removing the reamer.

12. To remove the reamer, turn clockwise while slowly pulling outward on the reamer.
13. Remove any remaining debris from the bore with low air pressure and mineral spirits/degreaser.
14. Lubricate the replacement valve with ATF. Fit the valve into the reamed bore. If snug, repeat the reaming procedure with an air drill at 500 rpm.

### Cautions:

- Never turn the reamer backward.
- Pushing on the reamer will result in poor surface finish, inadequate and sporadic material removal, and material being left unremoved as the reamer exits a bore.
- Blow free any chips from the reamer after each use.
- Never use a crescent wrench to turn the reamer.

### Installation Instructions

Lubricate all parts prior to installation. Refer to the photos on Page 1 for valve order and orientation. All Sonnax parts in the photo are identified with the Sonnax logo.

### End Plugs

To prevent leakage at bore end plugs, a tubing cutter should be used to groove the outside diameter of all valve body end plugs.

**NOTE:** Repairing this sleeve or bore alone won't address:

- High line pressure runaway
- Harsh engagements
- Failsafe lube shutdown
- All lube concerns

A complete fix includes TCC and main pressure regulators, available in kit **73840-RK**. Both the bypass clutch control kit and pressure regulator kit are sold together in Sonnax Master Kit **73840-MK**.

### Notes

**Rebuilder note:** Excess bushing clearance, excess endplay, alignment of reverse clutch hub lube slots and engine ground straps are also critical to bushing and planet life.

**Critical Point!** Realign pump with E4OD case studs (valve body to case). The pilots used in pump are closest to speed sensor and 180 degrees across from sensor hole.

### Lube Circuit Modification

Note: This optional procedure can be performed using the drill bits included in the tool kit. The valve repair kit will function without this process. This procedure increases lube oil and converter pressure, and is suggested in transmissions with high bushing clearances.

1. Lightly countersink (see Figure 1) the CCX (regulated converter charge) hole approximately  $\frac{1}{2}$ " deep on both sides of the transfer plate with a  $\frac{5}{16}$ " drill bit. This will create a shoulder to wedge the aluminum plug onto. Insert the  $\frac{1}{4}$ " diameter x .225" long aluminum plug and drive into hole then peen into counter sink on both sides tightly. Verify case side of plate is flush, and stone or file if necessary. Drill a .042" orifice hole in this plug. Use a .062" drill bit to taper/countersink the entry side of the .042" hole.
2. On the transfer plate (see bottom left figure), drill a .062" hole through the indicated wall. This will connect the line pressure circuit to the differential lube circuit.
3. Drill orifices "S" and "T" on the control valve body separator plate (see Figure 2) to .062". Insert the small aluminum pegs (.062" diameter x .075" long) into the holes and peen over on both sides.
4. On the transfer plate (see bottom left figure), drill a .052" hole through the indicated wall. This will connect the differential and front lube circuits.

