



## TCI® 376010

### Turbo 700R4/4L60 1982-1993 Full Manual Reverse Shift Valve Body Shifting Pattern: P-R-N-1-2-3-4 with No Engine Braking (will not work with 4L60E)

#### TCI® 376010 Kit Contains:

##### Qty. Description

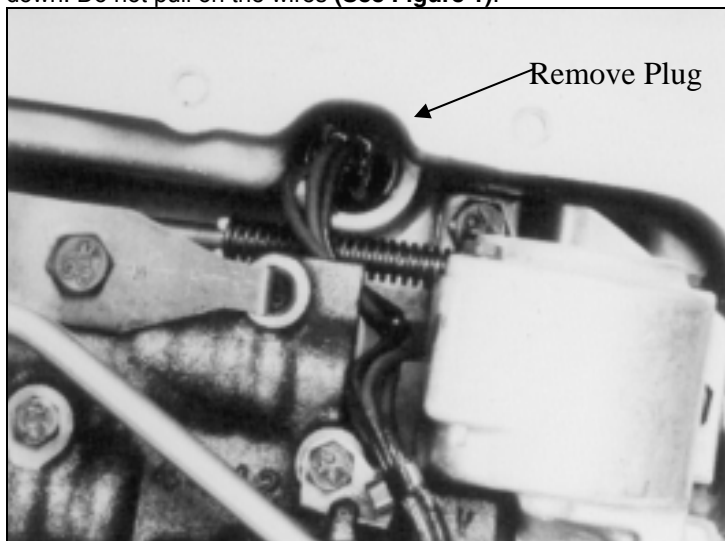
- |  |                                 |
|--|---------------------------------|
| (1) Full Manual Valve Body             | (1) Internal Wiring Harness     |
| (1) Separator Plate                    | (2) Wire Splice Connectors      |
| (2) Valve Body Gaskets                 | (1) Fourth Gear Pressure Switch |
| (1) Transmission Pan Gasket            | (1) Boost Valve                 |
| (1) Filter Seal Ring                   | (2) Pressure Regulator Springs  |
| (1) Heavy Duty Servo Kit               | (1) Pressure Regulator Shim     |
| (1) Second Apply Piston Housing        |                                 |
| (1) Second Apply Piston Retaining Ring |                                 |
| (1) Servo Housing Seal O-Ring          |                                 |

**NOTE:** On transmission components not being used, you can save/store pieces, if you wish, to convert your transmission back to O.E.M. specifications.

**Step 1** Drain oil pan. You will need a pan to catch fluid. Remove transmission oil pan bolts. When removing bolts, remove so pan will not drop completely off but will be held into place so that one side will allow the fluid to be drained. After the fluid has drained, remove the rest of the bolts and pour out the remaining fluid. Remove gasket and discard. If gasket material sticks to transmission pan or case, remove all material completely. A Turbo 700R4 transmission does not have a drain plug. You may want to install a TCI® 805800 universal drain plug kit into your pan now that you have the pan off.

**Step 2** Carefully remove the oil filter by pulling it straight down. Remove the pickup tube O-ring from the pump if it does not come out with the filter. Discard O-ring. There is a small gasket that fits on the filter tube. Make sure it is still on the filter tube. If not, remove it from the case. Inspect the oil filter. Replace the filter if it is dirty or has not been changed in over 25,000 miles. TCI® part number 378500.

**Step 3** Remove internal wiring harness. Carefully disconnect the wire connectors from the switches. Remove the wires from the clips and unplug the wiring harness from the connector near the detent roller spring. Pry connector tab away from the plug and pull the plug down. Do not pull on the wires (**See Figure 1**).



**Figure 1**

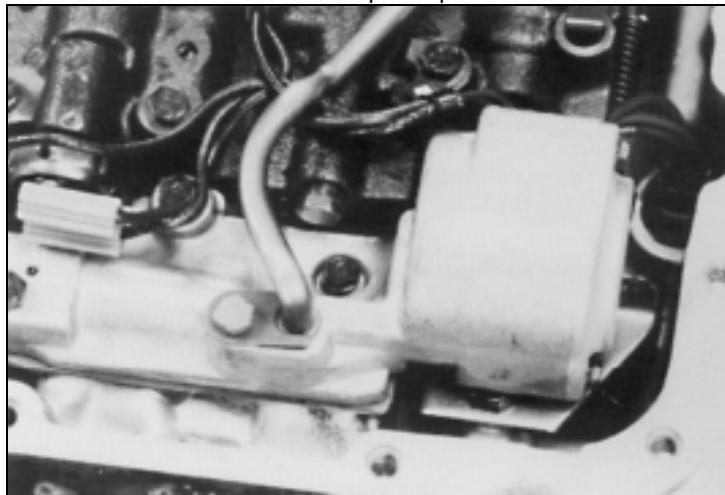
**Step 4** Remove the two valve body bolts holding the throttle pressure mechanism. Disengage the wire cable linkage while removing the mechanism. **NOTE:** This assembly will not be reused with the TCI® 376010.

**Step 5** Remove the 1-2 accumulator by removing the three bolts holding the 1-2 accumulator piston housing. **NOTE:** Keep these bolts separated from the valve body bolts. Remove the 1-2 accumulator assembly. This assembly has four parts: the accumulator piston housing, accumulator piston, accumulator piston ring, and accumulator spring. Some earlier models will also have a thick support plate between the accumulator housing and the separator plate. If your transmission has this plate, remove it carefully. Be sure not to damage the gasket. This gasket must be reused. **NOTE:** Located under the separator plate is the 3-4

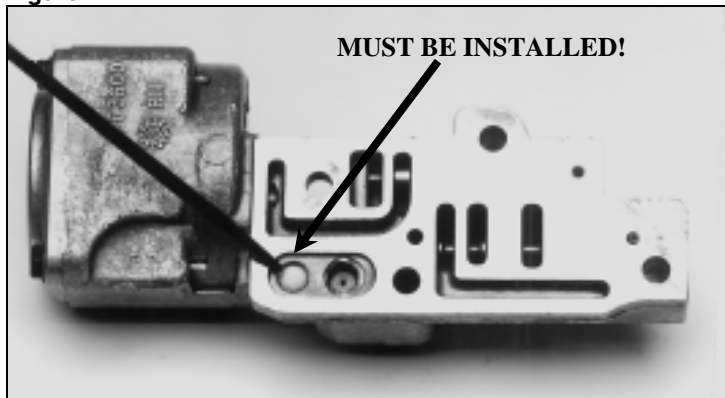
assembly. It will be removed after the valve body has been removed.

**Step 6** Remove the auxiliary valve body. Most 700R4 transmissions now have this auxiliary valve body (**See Figure 2**). During the removal of auxiliary valve body, the check ball located inside will drop out. When reinstalling valve body, this check ball must be used (**See Figure 3**). Some 700R4 transmissions do not have this auxiliary valve body but came with a small support plate. If you have this type of 700R4 transmission, remove the four bolts holding the small support plate to the case at the rear of the valve body. Remove the bolt holding the detent roller spring assembly.

**Step 7** Remove the remaining valve body bolts except for one near the center of the valve body. Holding the valve body securely, remove the last bolt and lower the valve body, separator plate and gaskets. Remove the 3-4 accumulator spring, 3-4 piston seal, 3-4 accumulator and 3-4 accumulator piston pin.



**Figure 2**

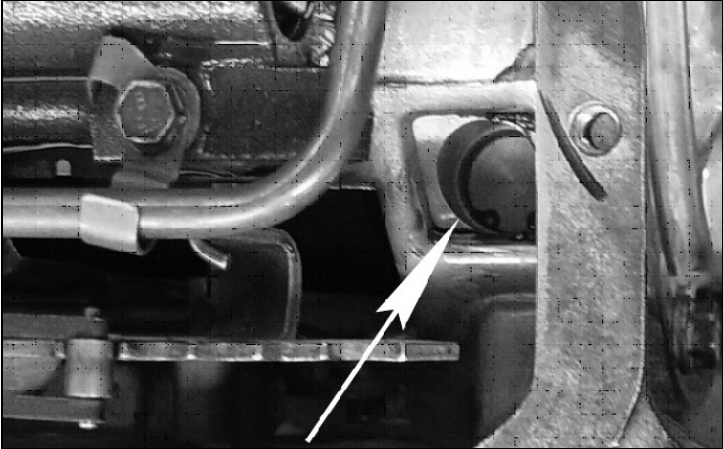


**Figure 3**

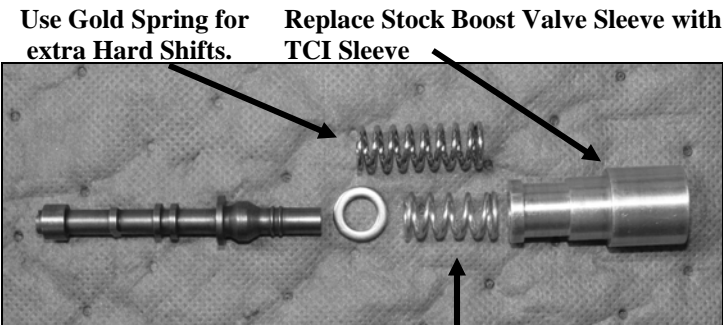
Some of the accumulator assembly parts will drop out of the valve body as it is lowered. There are several check balls above the separator plate and in the valve body. Be careful not to lose them if you are intending to return transmission to O.E.M. specifications at a later date. Before removing any check balls from the valve body, note their locations for future reference. **NOTE:** The check balls will not be reused with this valve body.

**Step 8** Pressure Regulator Modifications (**See Figure 4**). Remove the pressure regulator assembly from the transmission pump. Push down on the TV boost valve sleeve while removing the retaining ring. Be careful as there is heavy spring tension behind it. Slowly lower the sleeve to relieve spring tension. Remove the TV boost valve sleeve and valve, the reverse boost sleeve and valve, and the pressure regulator spring. The pressure regulator may also drop out during disassembly. If so, coat with transmission gel or petroleum jelly and put back up inside pump GENTLY. DO NOT FORCE. Reinstall the pressure regulator assembly with the new spring and TV boost valve (**See Figure 5**). **NOTE:** Incorrect assembly will cause the transmission to function improperly.

**BE SURE** these parts are installed in the correct order, facing the right direction. Reinstall the new retaining ring supplied with kit.



**Pressure Regulator Location** **Figure 4**



**Figure 5**

**Replace Stock Pressure Regulator Spring with TCI Silver Spring for mild shift. Add the shim for firm shifts. Only for use with Silver Spring!**

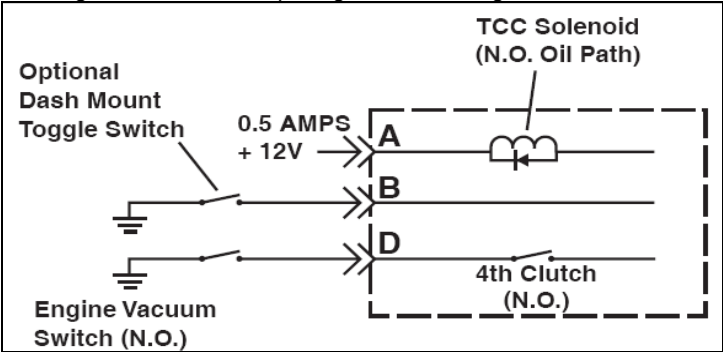
**Step 9** Place the separator plate with gaskets against the transmission case. Install the small support plate (1982-1986) or auxiliary valve body (1987 and later) making sure that the check ball is in the proper location (**See Figure 3**). Insert two valve body bolts into alignment holes in the separator plate. Tighten the support plate bolts and remove two valve body bolts from the alignment holes.

**Step 10** Install Valve Body. Be sure to engage manual valve with linkage properly. Do not force the valve or bend the linkage during assembly. Install one valve body bolt to hold the valve body into place. Do not tighten bolt.

**Step 11** 1-2 Accumulator Assembly: Reinstall accumulator housing assembly using the housing bolts that were kept separated. Tighten the bolts to 8 foot pounds. **NOTE:** If your transmission came with an accumulator plate, reinstall. It is not necessary to use the accumulator piston and spring when using the TCI® full manual reverse valve body.

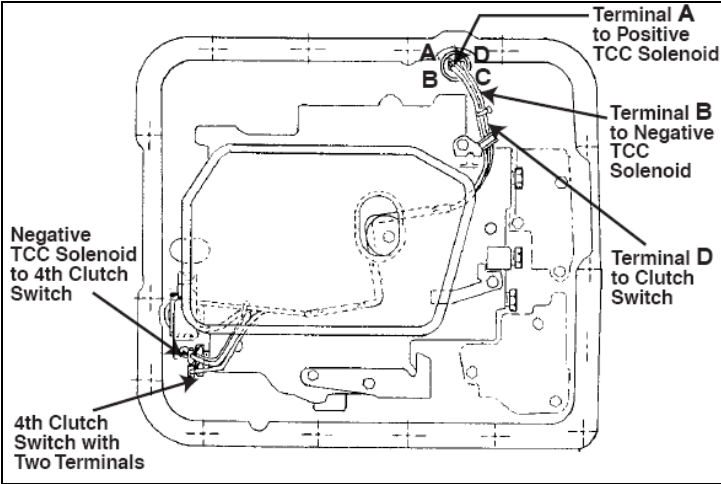
**Step 12** Install all the remaining valve body bolts, the detent roller spring and wire clips. The throttle pressure mechanism can be left out when using the TCI® full manual reverse shift valve body. Tighten the valve body bolts and small support plate bolts to 8 foot pounds. Tighten detent roller spring bolt to 10 foot pounds. Do not over tighten.

**Step 13** Installation of TCI® Wiring Harness for torque converter lock up (**See Figure 6 and Figure 7**). Most applications will accept the OE solenoid. All two wire solenoids are acceptable. If you have a solenoid with only one wire, it cannot be used. You may purchase the proper solenoid from TCI® or from a GM dealer (part number 8654126). Using your OE solenoid with two wires, cut both wires allowing about 2-1/2" for splicing to TCI® wiring harness.



**Figure 6**

To connect your solenoid with the TCI® wiring harness use the splice connectors provided. Connect the positive wire from the solenoid to the positive position marked on the wiring harness, then connect the negative wire to the negative position on the solenoid. Install wiring harness and solenoid into the transmission. Torque the solenoid bolts to 8 foot pounds. Plug the two pressure connectors into the pressure switch on the valve body. Reinsert the black plastic transmission case connector into the transmission. You may need to transfer the plastic wiring retainer from your O.E. harness to protect the wires.



**Figure 7**

**Step 14** External Wiring Instructions. Using 18 gauge wire run a 12 volt source to Terminal A (red). Terminal D (black) will need to be grounded (use 18 gauge wire). The TCC is now set to engage automatically in 4<sup>th</sup> gear only. The converter clutch will release when the transmission is downshifted out of 4<sup>th</sup> gear. **If you desire more control over the TCC you have two options. Option 1** will allow you to lock up the torque converter in 2nd, 3rd and/or 4th by running wire B (green) to a ground dash mounted toggle switch. **Option 2** is for drivers that may want to shut down the TCC system completely. You will need to only run the 12 volt source through a second dash mounted toggle switch. Now you may manually turn the lock up system on and off (**See Wiring Figure 6**).

**Note:** Terminal A must be connected for lock up function Terminal B does not.

**Step 15** Install the filter seal ring supplied, onto the filter tube. Lubricate the seal ring with transmission fluid and install the filter into the pump.

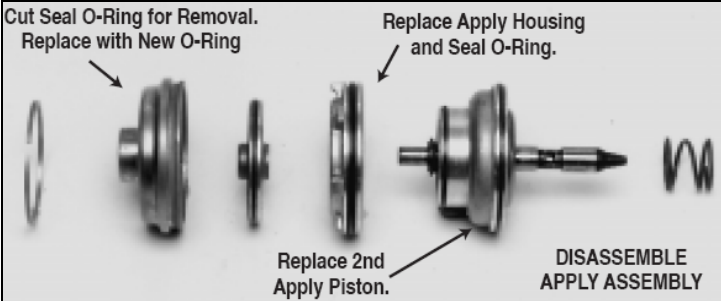
**Step 16** Clean all old gasket material from the oil pan and the case. Wash pan in solvent and install with new pan gasket supplied. Do not use any gasket sealer. Make sure servo exhaust hole is not plugged or stopped up (**See Figure 8**). When cleaning gasket material, some could have accidentally gotten into this opening. Install pan bolts and tighten to 10 foot pounds. TCI® offers a deep aluminum pan (TCI® 378000) for this transmission.



**Figure 8**

**Step 17** Corvette and F. Body transmissions: Servo modifications not necessary. **All other transmissions:** Locate servo and remove the servo cover retaining ring. Pry the servo housing seal O-ring out and cut ring. Pull seal out and remove servo assembly from case.

**Step 18** Disassemble the servo assembly (**See Figure 9**). Clean all parts thoroughly before reassembly.



**Figure 9**

**Step 19** Discard O.E.M. parts and replace with TCI® parts supplied with kit (**See Figure 9 for detail**). Assemble and reinstall into transmission. **NOTE:** make sure assembly is totally correct before reinstalling in case. Once the servo housing is in place, the servo housing seal O-ring will have to be cut for removal of assembly.

**Step 20** Pour five quarts of automatic transmission fluid into the transmission. Start engine and check transmission fluid. Add additional fluid until fluid reaches full level. **Do Not Overfill Transmission.**