



TCI® 376020 Kit Turbo 700R4 1987-1992

TCI® 376020 Kit Contains:

- | | |
|---|----------------------------------|
| (1) Valve Body | (1) Filter Seal Ring |
| (1) Valve Body Separator Plate | (1) Pressure Regulator |
| (1) Boost Valve Plug | (1) Allen Head Plug |
| (2) Valve Body Gaskets
(marked VB & C) | (2) Wiring Harness
Connectors |
| (1) Transmission Pan Gasket | (1) Wiring Harness |
| (2) Accumulator Spacers:
Black(thin) & Thick(silver) | (4) 1/4" Chrome Check
Balls |
| (1) TCI® 376003 HD Servo Kit | (1) Vacuum switch |

(3) Springs:

- (1) Orange 1-2 Accumulator Spring
- (2) Pressure Regulator Springs (Silver & Gold)
- (1) Pressure Regulator Shim

TCI's CONSTANT PRESSURE VALVE BODY eliminates an improperly adjusted throttle valve cable from lowering the line pressure of the transmission and causing premature failure. Only the shifts points are controlled by the throttle cable adjustment. However, TV throttle settings for up shifts still need to be properly adjusted. Stacked shifts or low shift points can cause transmission damage.

YEAR MODEL IDENTIFICATION:

Before you start with modification to valve body you must know year model of your transmission. If you are unsure of year, you can identify easily. On right hand side of transmission pan rail you will see a serial number. The first digit of that number will give you the year the transmission was in production. This information may also be located on the right side transmission-to-engine mounting flange.

This kit will allow you to modify your 700R4 transmission for your particular driving requirements.

HEAVY DUTY: This type of modification is used for towing, campers, motor homes, police, taxi and other vehicles that put a lot of stress on the transmission. The shift is firm but not harsh.

STREET: This type of modification is a step above the stock transmission shift feel and is ideal for street rods.

STREET PLUS: This type of modification is what TCI® uses when building a Street Fighter transmission. The shift feel is very positive and sharp.

NOTE: This kit is not intended for installation in a transmission in poor general condition. It will not correct a malfunctioning or slipping transmission.

STEP 1 Drain oil pan, using 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. Turbo 700R4 transmissions do 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 seal ring from the pump if it does not come out with the filter. Discard seal ring. Inspect the oil filter. Replace the filter if it is dirty or has not been changed in over 25,000 miles. TCI® part number is 378500.

STEP 3. Remove the 1-2 accumulator by removing the three bolts holding the piston housing. Keep these bolts separated from the valve body bolts. Remove the 1-2 accumulator assembly. This assembly has three parts: the accumulator piston housing, accumulator piston, and accumulator spring. **(See Photo 2)** You will be reinstalling the accumulator assembly later. **NOTE:** Located under the separator plate is the 3-4 assembly. It will be removed after the valve body has been removed. **(See Step 6)**

STEP 4. Remove the auxiliary valve body. **(See Photo 3)** The stock check ball in the auxiliary valve must be re-installed. **(See Photo 3A)** Remove the two valve body bolts holding the throttle pressure mechanism. Disengage the wire cable linkage while removing the mechanism. **(See Photo 4)** Remove the bolt holding the detent roller spring assembly.

STEP 5. 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 accumulator piston and 3-4 accumulator piston pin. **(See Photo 5)** 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. You will be re-installing four of these later. TCI® includes six check balls just in case some are lost during disassembly.

PRESSURE REGULATOR MODIFICATIONS (See Photo 8)

STEP 6. All Applications: Remove the pressure regulator assembly from the transmission pump. **(See Photo 7)** 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 valve may also drop out. If it does not, do not remove. Replace the pressure regulator spring with one of the springs supplied. Use the **Silver** spring for a firm style shift. For a street/strip style shift add the shim and for a hard strip shift the **Gold** spring without the shim. Reinstall the pressure regulator assembly with the new spring and the boost valve plug as shown. **(See Photo 8)** You will not re-use the stock boost valve assembly. Install the new retaining ring supplied with this kit.

STEP 7. 3-4 ACCUMULATOR ASSEMBLY:

(See Photo 5)

HEAVY DUTY: Install the thin spacer supplied (Black) into the accumulator piston with some grease to hold it into place. Install the 3-4 piston pin into the case. Install the accumulator piston/ spacer assembly into the case. Install the stock spring against the spacer.

STREET: Install the thick spacer supplied (Silver) into the accumulator piston with some grease to hold in place. Install the 3-4 piston pin into the case. Install the accumulator piston/spacer assembly into the case. Install the stock spring against the spacer.

STREET PLUS: Install the allen head plug into the hole located in the case of the transmission in the 3-4 accumulator piston bore. **(See Photo 10.)** Using the 1/4" x 20 allen head plug, screw the self tapping plug into the accumulator housing located in case. Install 3-4 piston pin into the case. Install the accumulator piston and spring without the (black) spacer.

STEP 8. All Applications: Put the new gaskets in position on the separator plate by using a little grease to hold them on the plate. The gasket with the "C" goes on the separator plate that fits to the case. The gasket with the "V or VB" goes on the separator plate that fits next to the valve body.

STEP 9. All Applications: CHECK BALL LOCATIONS

CASE: Install two check balls in the case as indicated. **(See Photo 9)** Use petroleum jelly to hold the check balls in the case.

VALVE BODY: Install two check balls in the valve body as indicated. **(See Photo 6)**

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. Install the throttle pressure mechanism. Attach the cable linkage to the large lever. Holding the large lever down and the small lever up, slip the mechanism over the roll pin on the valve body and install the two bolts. **(See Photo 4)**

STEP 12. 1-2 ACCUMULATOR ASSEMBLY: (Photo 2)

HEAVY DUTY: Install the piston into the housing. Install the large orange spring supplied with this kit.

STREET & STREET PLUS: Install the accumulator piston into the housing. Install the large orange spring and black spacer supplied with this kit. Now you are ready to reinstall accumulator housing assembly. Install using the housing bolts that were kept separated. Tighten the bolts to 8 foot pounds.

STEP 13. Install all the remaining valve body bolts, the detent roller spring and wire clips. Install the oil pipe which goes into the pump and auxiliary valve body with the hold down brackets. Refer to **(Photo 1)**. Tighten the valve body bolts, throttle pressure mechanism bolts and auxiliary valve body bolts to 8 foot pounds. Tighten detent roller spring bolt to 10 foot pounds.

Do Not Over Tighten.

STEP 14. Strip 1/4"- 1/2" insulation from the new wiring harness and attach the two wire connectors to these ends. Insert the plug end of the new wiring harness into the connector in the case. Cut the two wires coming from your TCC solenoid to a length of 3 inches. Strip 1/4"- 1/2" insulation from the wires. Connect the two wires with the spade connectors onto the two prong switch. Connect the ground(-) wire from your solenoid to the new harness wire which has two wires joined together. Connect the single wire from the new harness to the positive(+) wire from the TCC solenoid. The TCC solenoid is marked (+) and (-).

STEP 15. Install the Filter Seal Ring supplied onto the filler tube. Lubricate the seal with transmission fluid and install the filter into the pump. TCI® recommends using a new filter. Check pan fit by installing filter and without using a pan gasket. If pan does not fit flush with pan rails, make certain the filter is installed completely into the pump.

TCI® offers a deep aluminum pan (TCI® 378000) for this transmission.

STEP 16. Clean all old gasket material from oil pan and the case. Wash pan in solvent and install with new pan gasket supplied. Do not use any gasket sealer. Make sure the servo exhaust hole is not plugged or stopped up. When cleaning gasket material, some can accidentally get into this opening. Install pan bolt and tighten to 10 foot pounds.

STEP 17. 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 Photo 11)** Clean all parts thoroughly before reassembly.

STEP 19. Discard OE parts and replace with TCI® part supplied with kit. **(See Photo 11 for detail)**

STEP 20. Assemble and reinstall into transmission. Note that the two supplied O-rings have specific locations. The blue O-ring is to be placed on the outer servo cover and the red O-ring is for the second apply piston. Placing them in the wrong location may cause the servo to leak. **NOTE:** Make sure assembly is totally correct before reinstalling in case. Once the servo cover is in place, the servo cover seal O-ring would have to be cut for removal of assembly.

STEP 21. Adjustment is made with engine not running.

Disconnect the Throttle Valve Cable at the Carburetor so the cable can be moved. You should be able to see a hook in the TV opening in the case. With needle nose pliers pull the TV Link hook out about half an inch. Next, take the end of the TV cable and hook the TV Linkage hook into the hole at the end of the cable. Now pull the cable at the other end, making sure that the Linkage hook and Cable hook fits under the Throttle Cable housing. Now push the end of the cable housing into the Throttle Valve Cable opening and install the cable. **(See Illustration 1)**

STEP 22. Now reconnect TV Cable to carburetor or injection lever.

STEP 23. Locate the adjust tab. **(See Illustration 2)** Depress tab and move slider through the fitting away from the lever assembly. When the slider stops against the fitting, release the adjust tab.

STEP 24. By hand, open the throttle lever to full or wide open throttle stop position. This will automatically adjust cable. Release the throttle lever and check the cable to see that it is not binding or sticking. **REMEMBER, DO NOT USE**

ACCELERATOR PEDAL TO ROTATE THE THROTTLE LEVER. YOU MUST ROTATE BY HAND AT THE

CARBURETOR. Failure to readjust the TV cable will result in improper shifts and/or transmission failure!

STEP 25. Pour 5 quarts of automatic transmission fluid into the transmission. Start engine and check transmission fluid level. Add additional fluid until fluid reaches full level. **Do Not Over Fill Transmission.**

STEP 26. With the adjustment complete, road test. With moderate acceleration your transmission should shift:

1st to 2nd 15-20MPH

2nd to 3rd 25-30MPH

3rd to 4th 40-45MPH

If the throttle Valve Cable is not adjusted properly, the transmission will shift into 1st, 2nd, and 3rd within seconds of acceleration. **DO NOT CONTINUE TO DRIVE VEHICLE IF THIS HAPPENS.** Readjust cable. If you continue to have problems, please contact TCI®'s tech department for assistance.

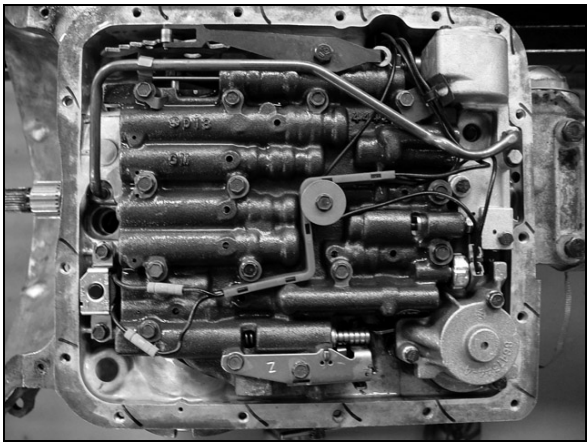


Photo 1

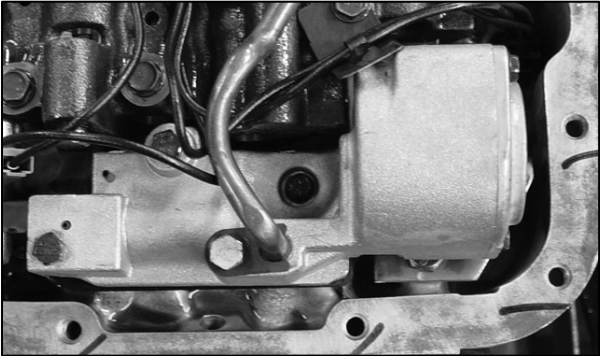


Photo 3



Photo 4

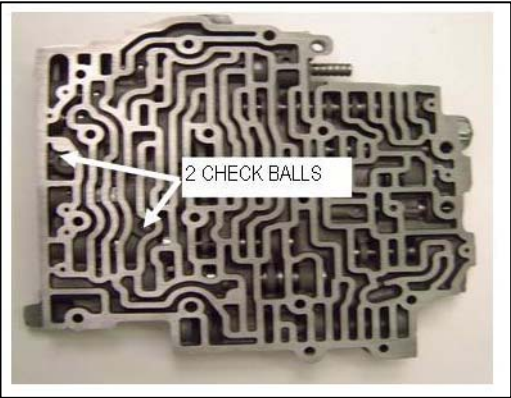


Photo 6



Photo 2

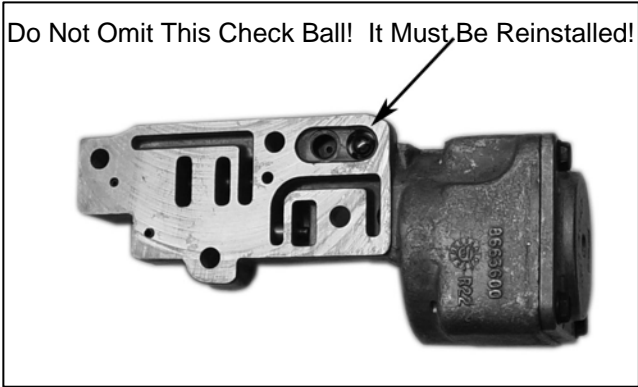


Photo 3A

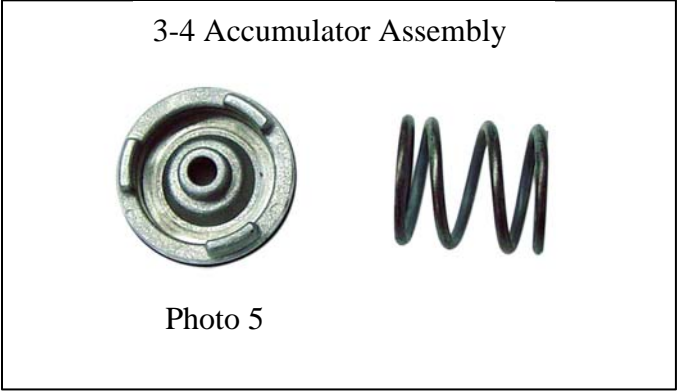


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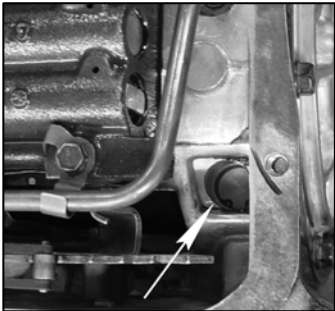


Photo 7 Pressure Regulator

Use Gold Spring for
extra Hard Shifts.

Replace Stock Boost Valve Sleeve with
TCI Sleeve

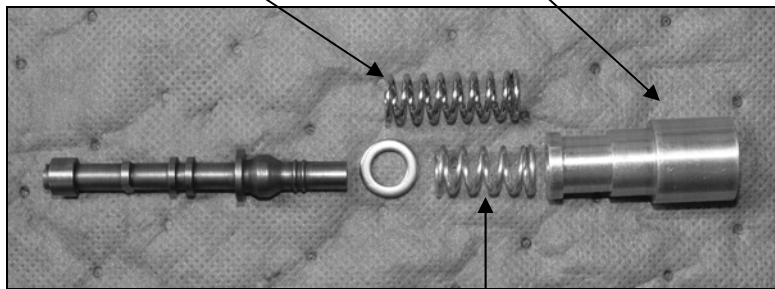


Photo 8 Replace Stock Pressure Regulator Spring with TCI Silver Spring for mild shift. Add the shim for firm shifts. Only for use with Silver Spring!

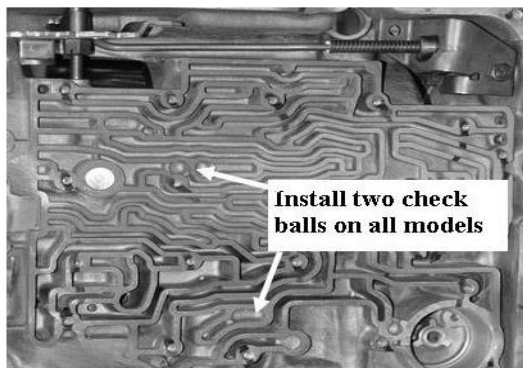


Photo 9



Photo 10

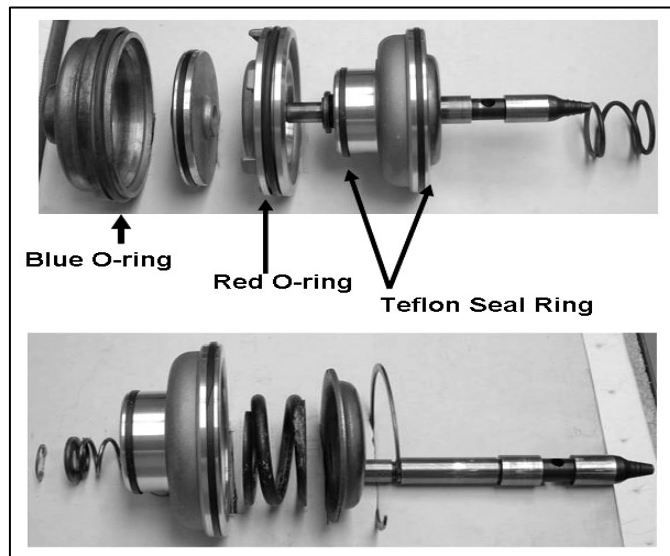


Photo 11

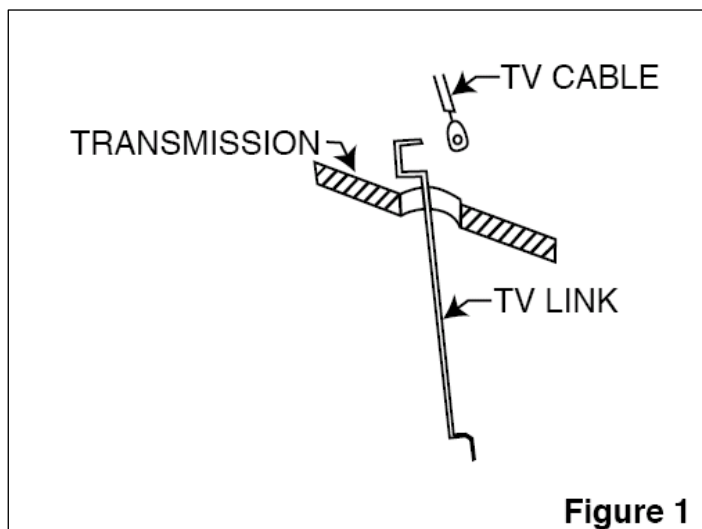


Figure 1

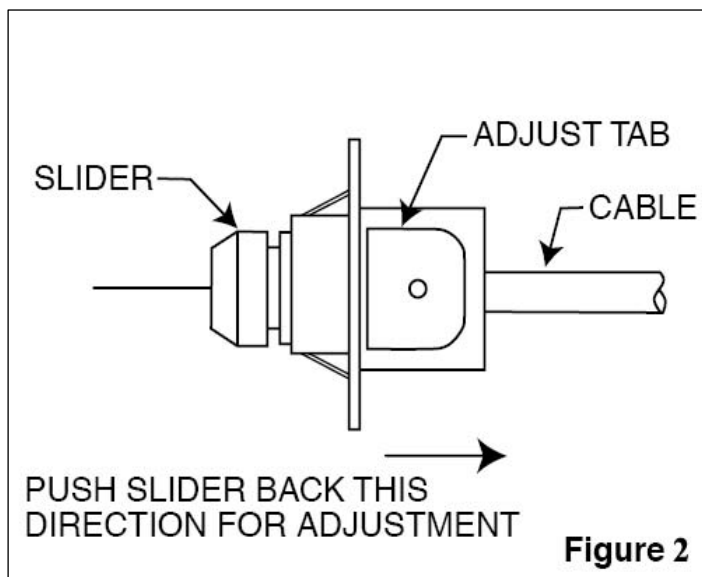


Figure 2