

151 INDUSTRIAL DRIVE
ASHLAND, MISSISSIPPI 38603
<http://www.tciauto.com>

TELEPHONE: 662-224-8972
FAX LINE: 662-224-8255
E-MAIL: tech@tciauto.com

TCI® 386000 Trans-Scat® Kit

Installation Instructions for Turbo 2004R — 1981-1991

This kit will allow you to modify your 2004R transmission for your particular driving requirements.

Street Plus: This type of modification is the modifications TCI® used when building a StreetFighter® transmission. The shift feel is very positive and sharp.

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.

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

This Kit Contains:

Qty.	Description
One (1)	Separator Plate
Two (2)	Gaskets: One (1) Valve Body (marked VB or V)
One (1)	Case Gasket (marked C)
One (1)	1-2 Accumulator Plate Gasket
One (1)	Transmission Pan Gasket
One (1)	Purple Pressure Regulator Spring
One (1)	Tan Line Bias Spring
One (1)	Line Bias Blocker Rod
One (1)	Filter seal

Step 1 Drain transmission 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 in 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. Turbo 2004R 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 the transmission.

Step 2 Carefully remove the oil filter by pulling it straight down. Remove the pickup tube O-rings from the pump if they do not come out with the filter. Double check! Many transmissions came from the factory with two (2) O-rings on the filter. Inspect the oil filter. Replace the filter if it is dirty or has not been changed in over 25,000 miles. TCI® 386850 filter will fit this application, if needed.

Step 3 There are several different wiring arrangements that are found in the 2004R transmission valve body. Different engine sizes and emission standards dictate what wiring was needed for your particular application. Before you remove any wires or switches, take time to draw your own diagram of the location of your valve body wiring, terminal locations and connections. Some of the wiring is held in place by a retaining clip that is connected by valve body bolts. Remove these bolts first to remove wiring harness. Remove the converter clutch solenoid. The wiring harness does not have to be completely removed from transmission; just remove from the valve body area. You can let the harness hang loose since you are working only with the valve body.

Step 4 Remove the throttle lever and bracket assembly. Assembly is located near the torque converter clutch solenoid and is held in place with one bolt. Disconnect TV cable link from bracket assembly. (See **Photo 1**) If your transmission has a lifter wire and spring assembly (in area indicated by arrow), it may be discarded as it will not be reused.

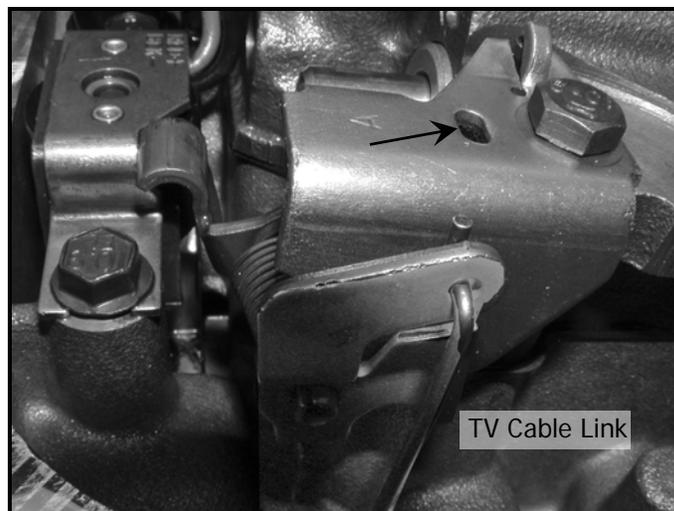


Photo 1

Step 5 Remove detent roller and tube bracket. Assembly is held in place with one bolt. (See **Photo 2**)



Photo 2

Step 6 Remove all remaining valve body bolts. Remove the center bolt last. After you have removed all but this one bolt, use your hand to steady the valve body. Remove bolt, and slowly lower valve body housing. The valve body contains check balls. This will help you keep the check balls in place not lose any parts.

Step 7 (See **Photo 3**) Remove four (4) 1-2 accumulator housing bolts (indicated by the stars) and remove the assembly. You must remove remaining bolt (indicated by the triangle) that holds the accumulator spacer plate to separator plate. When this bolt is removed, lower plate making sure that the check balls are not lost during removal. (See **Photo 3**)

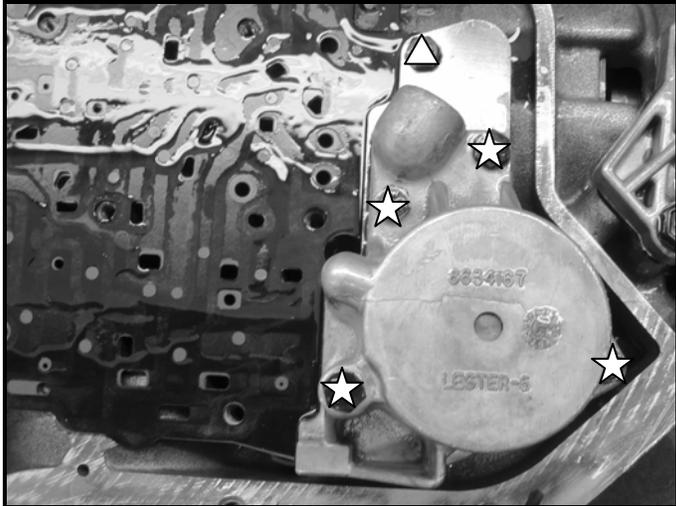


Photo 3

Step 8 After the separator plate has been removed the 3-4 accumulator may drop out. No modifications are needed. (See **Photo 4** for reassembly)

Step 9 Valve Body Modifications:

Street Plus: Locate line bias valve assembly. Remove roll pin by using a scribe or heavy wire to push it out. The line bias valve assembly has a spring that will push the assembly out of the bore when the roll pin is removed. Make sure that you catch hold of the assembly and remove. Remove OEM spring and discard. Replace spring with blocker rod supplied with kit.

Reassemble valve assembly and reinstall into valve body. (See **Photo 5A**)



Photo 4

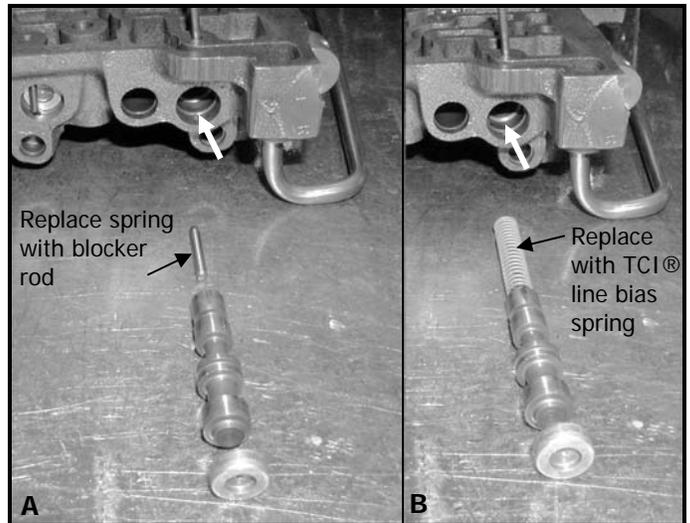


Photo 5

Heavy Duty: Locate line bias valve assembly. Remove roll pin by using a scribe or heavy wire to push it out. The line bias valve assembly has a spring that will push the assembly out of the bore when the roll pin is removed. Make sure that you catch hold of the assembly and remove. Remove OEM spring and replace with spring supplied with kit. Reassemble valve assembly and reinstall into valve body. (See **Photo 5B**)

Step 10 Pressure Regulator Modifications:

All Applications: (See **Figure 1**) Note: It is not necessary to remove the pump from the transmission. The figure shows a loose pump for clarity purposes. 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 low/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 the purple spring supplied. Reinstall the pressure regulator

assembly with the new spring as shown. Install the retaining ring making sure that it's fully seated in the groove.

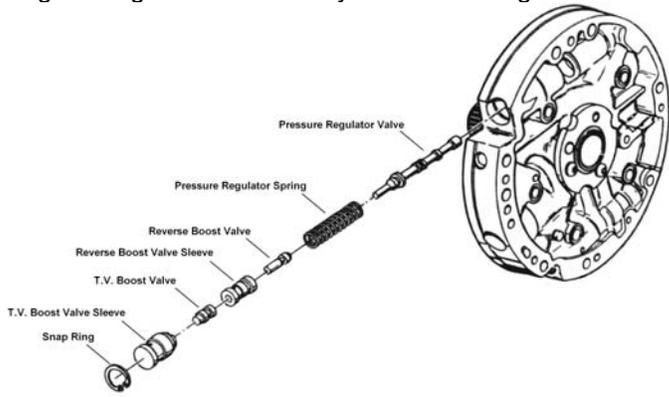


Figure 1

NOTE: The boost valves and low/reverse boost valves can easily be installed incorrectly. Incorrect assembly will cause the transmission to function improperly. BE SURE these parts are installed in the correct order, facing the right direction. The TV boost valve and sleeve may be replaced with a 0.500" diameter TCI® 374301 or a 0.570" diameter TCI® 374401 assembly to further increase pressures. Additionally, for more pressure in manual first and second gears replace your low/reverse boost valve with a 0.400" diameter TCI® 374410.

Step 11 Servo Modifications: Locate the servo on the passenger side of the transmission case. Since, the transmission has not been removed from the vehicle, you may have to remove and reinstall the catalytic converter before you can get to the servo. Remove the snap ring holding the servo cover in place. Remove cover and servo assembly from case. Remove and discard small servo spring. Remove Teflon® ring and discard from inner piston assembly. (See **Photo 6**) Now you are ready to reinstall servo assembly.

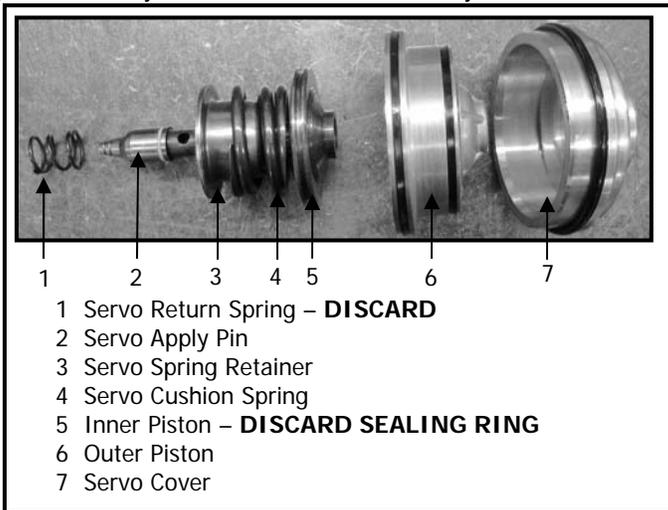


Photo 6

Step 12 Separator Plate Modifications: (See **Photo 7**)

Street Plus: The separator plate supplied with this kit will need to have one hole drilled. Match your OEM plate with the TCI® plate and mark location of torque converter clutch hole. Size the hole in your OEM plate and drill TCI® plate to same diameter. Deburr and wash plate.

Heavy Duty: Match the separator plate supplied with this kit with your OEM plate. You will need to drill two (2) new holes. Drill the converter relief hole and the 1-2 accumulator hole. Drill the accumulator hole to 3/16" in the TCI® plate. Deburr and wash plate. (See **Photo 7**)

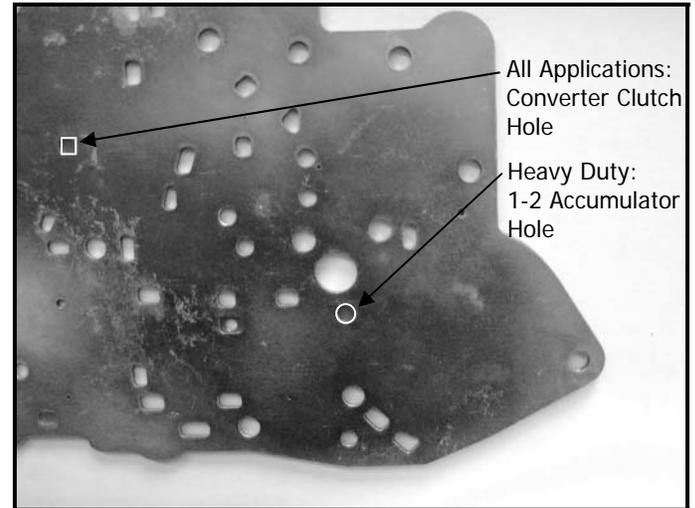


Photo 7

Step 13 Check Ball Locations in Case:

Street Plus: Install check balls in case as indicated. (See **Photo 8**) You may use grease to hold check balls in place. Install four (4) check balls only. You will not be using three (3) remaining check balls, just discard.

Heavy Duty: Install check balls in case as indicated. (See **Photo 8**) You may use grease to hold check balls in place. Install five (5) check balls in the case. You will not be using the two (2) remaining check balls, just discard.

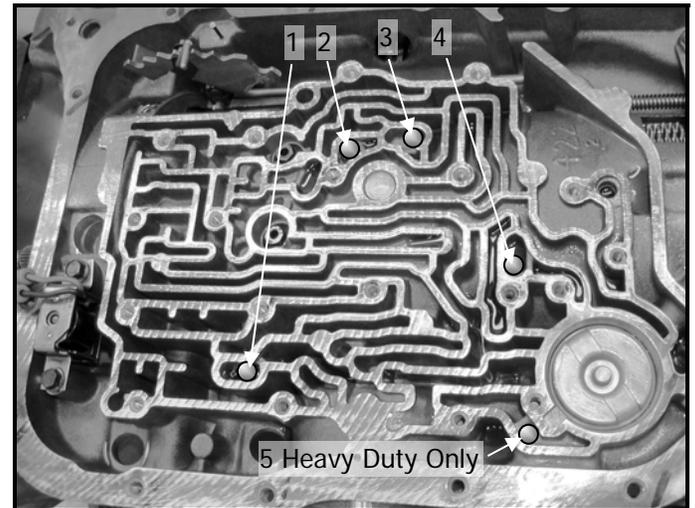


Photo 8

Step 14 1-2 Accumulator Modifications:

Street Plus: Do not reinstall 1-2 accumulator piston and spring.

Heavy Duty: Reinstall complete 1-2 accumulator piston and spring assembly.

Install case-side separator plate gasket, separator plate, valve body-side gasket and accumulator spacer plate. Note that the gaskets are stamped at the top with a 'C' for case and 'VB' for valve body side. Use the small bolt to hold the accumulator housing plate in place. (See **Photo 3**) Next install accumulator housing. Use the four (4) 1-2 accumulator bolts.

Step 15 Check Ball Location in Valve Body:

Street Plus and Heavy Duty: Install one (1) check ball and discard remaining two (2) check balls. (See **Photo 9**)

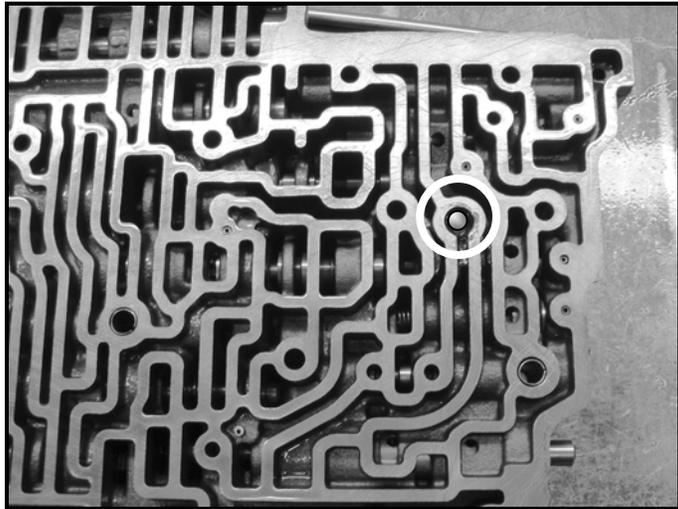


Photo 9

Step 16 Reinstalling Valve Body to Transmission Case:

When installing valve body you must connect manual valve to transmission linkage. (See **Photo 10**)



Photo 10

Step 17 After the valve body has been reassembled, torque, the valve body bolts to 10 foot pounds.

Step 18 Complete reassembly.

Step 19 Fill transmission to proper fluid level. Since the converter is already full, the transmission will need approximately 6 quarts of fluid. Do not over fill transmission. TCI® recommends the use of our RTF transmission fluid that is formulated for heat reduction and high stress applications.

Step 20 Adjustment of the Throttle Valve Cable in a Gasoline Engine. Adjustment is made with engine not running.

Locate the readjust tab. Depress tab and move slider through the fitting away for the lever assembly. When the slider stops against the fitting, release readjust tab.

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.

Step 21 Now that the adjustment is complete, road test. With moderate acceleration your transmission should shift:

- 1st gear15-20 MPH
- 2nd gear.....25-30 MPH
- 3rd gear.....40-45 MPH

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.

**WARNING! IMPORTANT NOTICE!
AFTER INSTALLATION ADJUSTMENT.**

It is imperative that after your new 2004R transmission has been installed that the Throttle Valve Cable (TV Cable) has been adjusted properly. If this adjustment has not been made properly, DAMAGE will occur to the transmission, voiding warranty. If you are unsure about the proper adjustment needed call our tech line for help or refer to a Motors or Service manual for additional information and reference.

Function of Throttle Valve Cable: Many people believe that this is an automatic downshift cable and that is the only function of this cable. In actuality, the Throttle Valve Cable controls line pressures, shift points, shift feel, part throttle downshifts and detent downshifts. The cable is very similar to the functions of both a vacuum modulator and detent downshift cable in other transmissions.

Throttle Valve Cable Connections: The transmission valve body is linked to the throttle lever and bracket assembly and from there the TV Cable is linked to the carburetor or injection of the vehicle. Between the carburetor and transmission a TV cable adjustment is used to set proper adjustment.