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TCI® 376500

Installation Instructions for

Turbo 700R4 1982-1986 & Turbo 700R4 1987 and Up

This TCI® 376500 Kit Contains:

Qty. Description

One (1) Reusable Transmission Pan Gasket
Two (2) Accumulator Spacers: Black (Thin) & Silver (Thick)
One (1) 1/8″ Drill Bit
One (1) Pressure Regulator Retaining Ring
Four (4) Springs: Orange 1-2 Accumulator Spring
Purple Pressure Regulator Spring
Black Converter Clutch Spring
Green Line Bias Valve Spring

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.

NOTE: If you have not removed the transmission from the vehicle when removing the valve body, some of the internal parts will fall out. It may be easier for you to remove the transmission from the vehicle to install this kit.

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. You will need 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 0-ring tram the pump if it does not come out with the filter. Inspect the oil filter. Replace the filter it is dirty or has not been changed in over 25,000 miles. TCI® part number 378500.

Step 3 There are at least ten (10) different wiring arrangements that are found in the 700R4 transmission valve body. Different engine sizes and emission standards dictate what wiring was needed for a 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. Most of them will be color-coded and can be easily drawn and located. **(See Photo 1)** 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 Photo 2)**

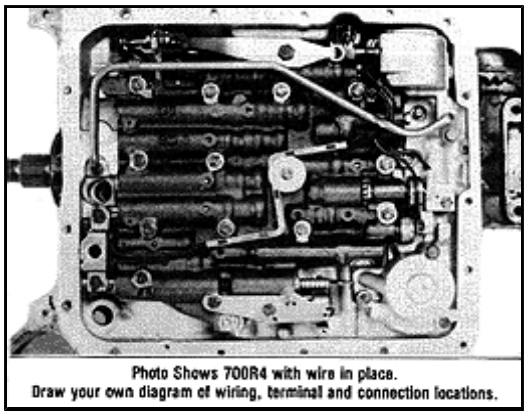

Photo 1

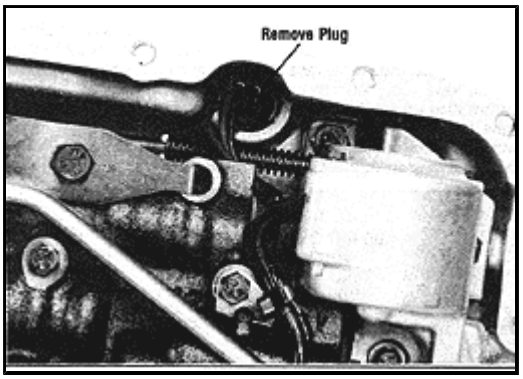

Photo 2

Step 4 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 (3) parts: (1) the accumulator piston housing; (2) accumulator piston, and (3) accumulator spring. **(See Photo 3)** 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. **(See Step 6)**

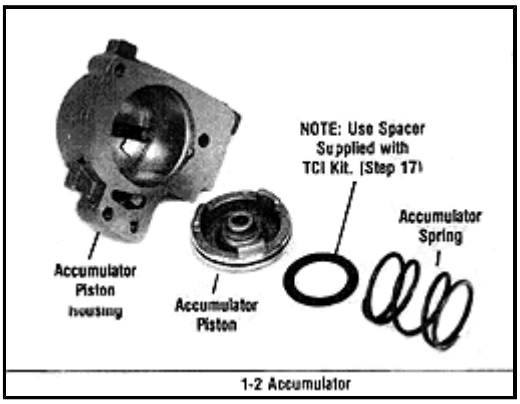

Photo 3

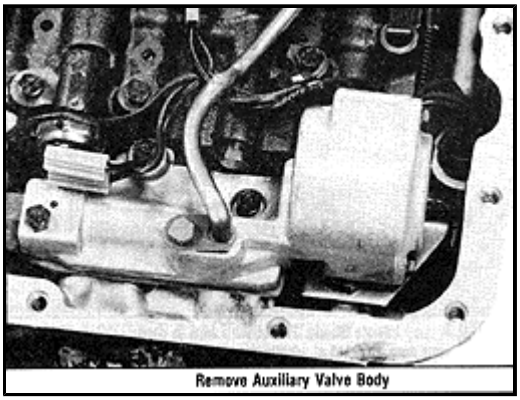

Photo 4

Step 5 Remove the auxiliary valve body. Most 700R4 transmissions now have this auxiliary valve body. **(See Photo 4)** 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 (4) bolts holding a small support plate to the case at the rear of the valve body. When reinstalling valve body, this check ball **(See Photo 4A)** must be used. The transmission will not shift properly if check ball is omitted. Remove the two valve body bolts holding the throttle pressure mechanism. Disengage the wire cable linkage while removing the mechanism. Remove the bolt holding the detent roller spring assembly. **(See Photo 5)**

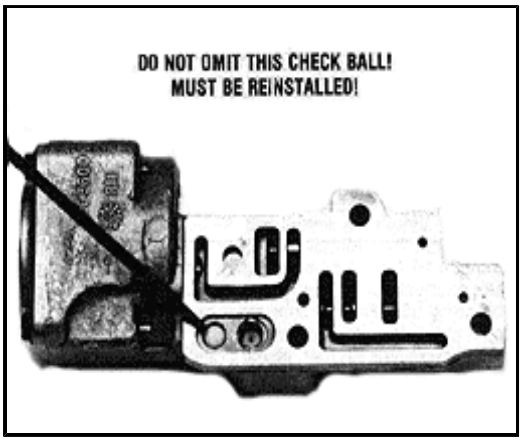

Photo 4A

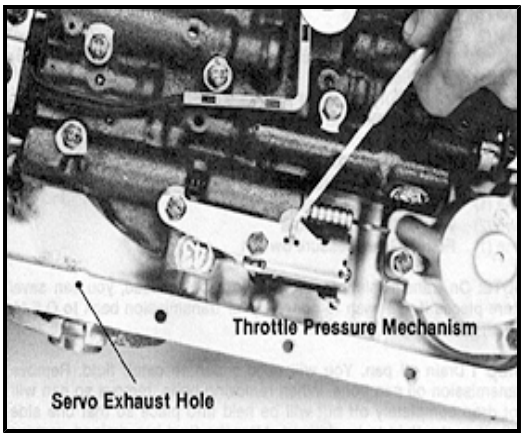

Photo 5

Step 6 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 gasket. Remove the 3-4 accumulator spring, 3-4 accumulator piston and 3-4 accumulator piston pin. **(See Photo 6)** 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. Before removing any check balls from the valve body, verify location of the check balls. **(See Photo 7)**

Photo 6

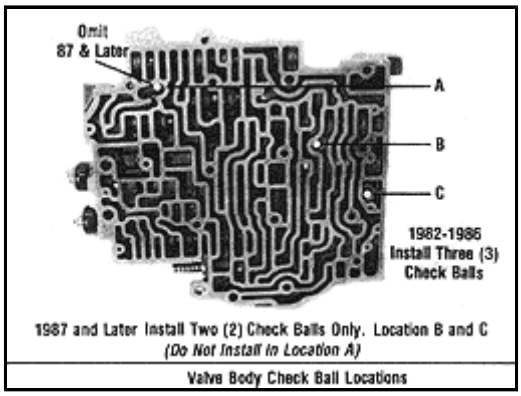

Photo 7

VALVE BODY MODIFICATIONS

Step 7 M.T.V. Up Valve: **(See Photo 8)** Remove the roll pin holding the M.T.V. Up Valve assembly. Remove aluminum plug, valve and spring. Discard spring. Reinstall the valve, aluminum plug and roll pin. The roll pin must fit flush with the casting.

Step 8 Converter Clutch Valve: **(See Photo 8) DIESEL APPLICATION:** *DO NOT MODIFY.* **Skip to Step *9*. NOTE:** Some 1984-1/2 and later models do not use this valve assembly. They will have aluminum plugs installed in this position. No modifications are necessary. **NOTE**: Do not install black spring on converter clutch throttle valve in 1987 and later models. Locate the converter clutch valve on the valve body. You can actually see the valve assembly in the bore. If you do not see a spring, no modifications are necessary. If you can see a spring then you must do the following modification. Use a small punch to push the roll pin out. Carefully remove the converter clutch throttle valve and sleeve assembly. Do not remove the converter clutch valve from the bore. Remove the throttle valve and spring from the sleeve. Replace the stock spring with the ***Black*** Spring supplied. Install the throttle valve and new spring into the sleeve. Install sleeve assembly into valve body. Replace roll pin. Tap it into place. Make sure the roll pin is completely inside. It should be flush with the casting.

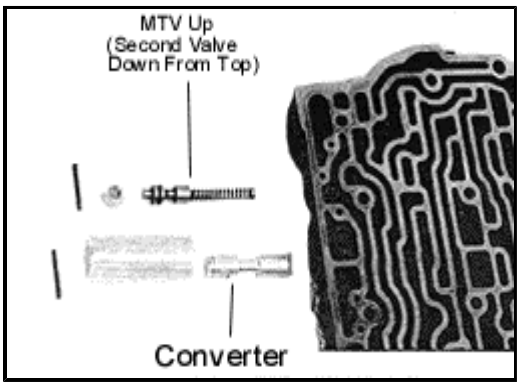

Photo 8

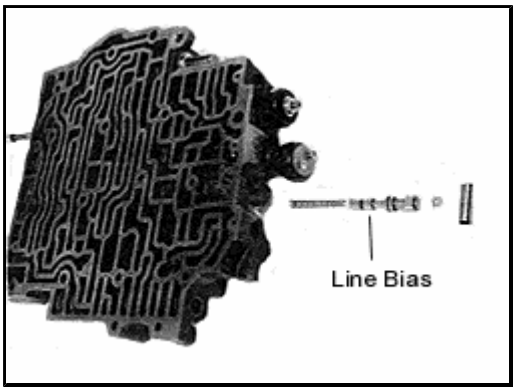

Photo 9

Step 9 Line Bias Valve: **(See Photo 9)** Remove the large roll pin holding the line bias valve assembly. Be careful not to damage this pin. Remove the aluminum plug, valve and spring. Replace the stock spring with the ***Green*** Spring supplied. Install new spring, valve and aluminum plug into the valve body. Reinstall roll pin being sure it fits completely into the bore. The roll pin should be flush with the casting.

Step 10 *All Applications:* 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 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. **(See Photo 11)** Install the new retaining ring supplied with this kit. **NOTE:** The boost valves and reverse boost sleeve 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.

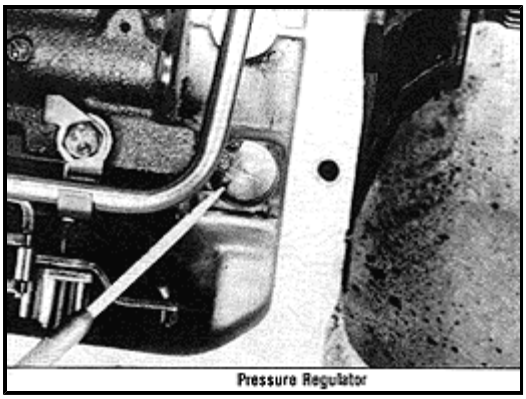

Photo 10

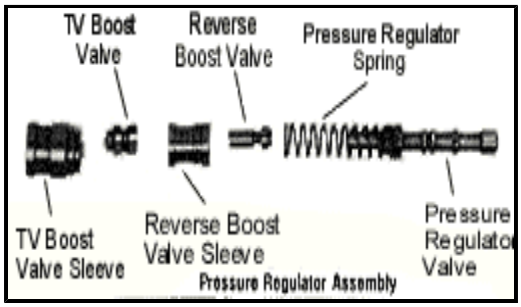

Photo 11

Step 11 3-4 ACCUMULATOR ASSEMBLY: **(See Photo 3)** Install the thick spacer supplied **(*silver*)** 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.

Step 12 SEPARATOR PLATE: *All Applications:* **(See Illustration #3)**

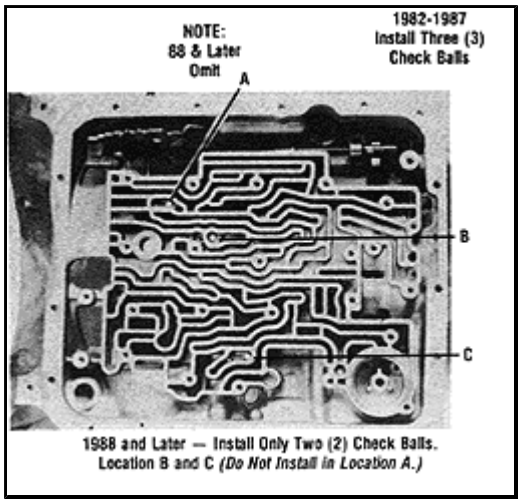

Photo 12

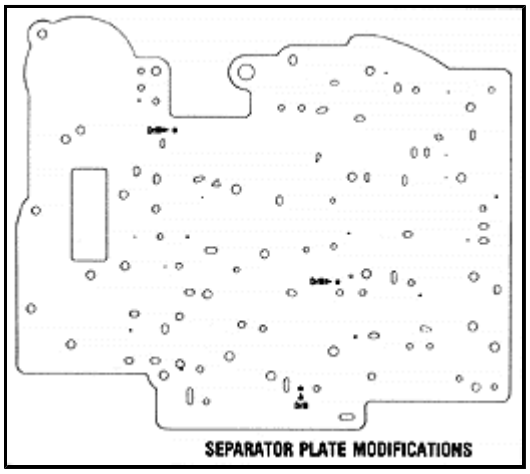

Illustration 3

Using 1/8" drill bit supplied with kit, enlarge the three (3) holes indicated on illustration. Deburr and clean before reinstalling plate.

Step 13 CHECK BALL LOCATIONS: *All Applications:* **VALVE BODY:** Install check balls in the valve body as indicated. **(See Photo 7)**
CASE: Install three (3) check balls in the case as shown. **(See Photo 12)** Use grease to hold check balls in place. 1988 AND LATER: Install two (2) check balls in the case as shown. **(See Photo 12)** Use grease to hold check balls in place.

Step 14 Place the separator plate with gaskets against the transmission case. Install the small support plate (1982-1986) or auxiliary valve body plate (1987 and later). Install check ball **(See Photo 4A)** and four (4) OEM bolts loosely. Insert two (2) valve body bolts into the two (2) alignment holes in the separator plate. Tighten the support plate bolts. Remove two (2) valve body bolts from the alignment holes.

Step 15 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 16 Install the throttle pressure mechanism. Attach the cable linkage to the larger 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 (2) bolts. **(See Photo 5)**

Step 17 1-2 ACCUMULATOR ASSEMBLY: Install the thin spacer (*black*) into the accumulator piston. Install the piston into the housing. Install the large orange spring supplied with this kit. Now you are ready to reinstall accumulator housing assembly. Install using the housing bolts that were kept separated. Tighten bolts to 8 foot pounds. **NOTE:** If your transmission came with a accumulator separator plate, reinstall.

Step 18 Install the remaining valve body bolts, the detent roller spring and wire clips. Refer to your wiring diagram. Insert the plug end of the wiring harness into the connector in the case. Install the wire connector onto their proper switches. Tighten the valve body bolts, throttle pressure mechanism bolts and small support plate bolts to 8 foot pounds. Tighten detent roller spring bolt to 10 foot pounds. *DO NOT OVER TIGHTEN.*

Step 19 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. **(See Photo 5)** When cleaning gasket material, some can accidentally get into this opening. Install pan bolt and tighten to 10 foot pounds.

Step 20 THROTTLE CABLE ADJUSTMENT: Hold gas pedal to the floor and check to be sure the throttle is fully

wide open to wide open throttle position.

ADJUSTMENT OF THE THRO1TLE VALVE CABLE IN A GASOLINE ENGINE.

Failure to adjust properly can cause damage to your new transmission. ***Do not drive until adjustment is connected.***

Step 21 Adjustment is made with engine ***NOT*** running.

Step 22 Disconnect the Throttle Valve Cable at the Carburetor so the cable can be moved. Remove the plastic plug from the throttle valve opening in the transmission, you should be able to see a hook in the opening. 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)**

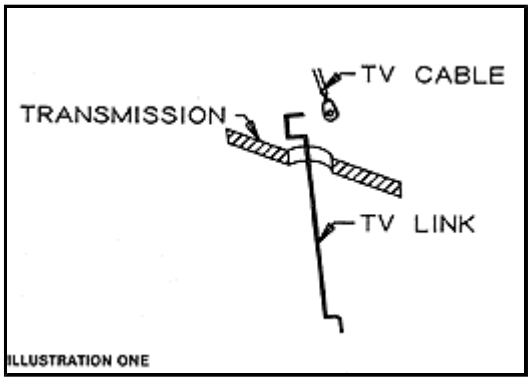

ILLUSTRATION ONE

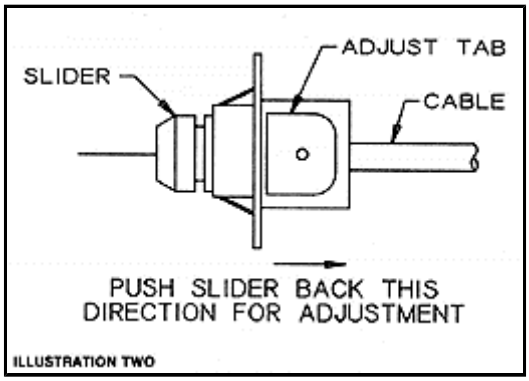

ILLUSTRATION TWO

Step 23 Now reconnect the TV cable to the carburetor or injection lever. Stop 24 Locate the readjust tab. **(See Illustration 2)** Depress tab and move slider through the fitting away for the lever assembly. When the slider stops against the fitting, release the readjust tab.

Step 25 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 26 Pour five (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 OVERFILL TRANSMISSION.***

Step 27 Now that the adjustment is complete, road test. With moderate acceleration your transmission should shift:

1st to 2nd	15-20 MPH
2nd to 3rd	25-30 MPH
3rd to 4th	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.

02/2000

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