

TCI[®] 221500

Turbo 400 Trans Brake[™] Valve Body

Shift Pattern: Park—Reverse—Neutral—1st— 2nd—3rd

This Valve Body will neutralize at shut-down by putting shifter In 2nd gear position

This Kit Contains:

- (1) Turbo 400 Trans-Brake[™] Valve Body
- (1) TCI 221300 Solenoid
- (1) Separator Plate
- (16) Direct High Gear Springs
- (1) Solenoid Brake Valve and Return Valve Spring
- (1) Pressure Regulator Spring
- (1) ¼" Steel Check Ball (For Rear Servo)
- (2) Gaskets - 1 marked case and 1 marked V/B

Attention

This 221500 Valve Body has been engineered with a special Reverse circuit. In order to apply Reverse, please follow these steps:

- Put shifter in Neutral.
- Push Trans-Brake button to back up.
- DO NOT use Reverse shifter position!

Even though it is possible to engage reverse by using the Reverse shifter position, clutch and band damage may occur.

STEP 1 Drain and remove transmission.

STEP 2 Disassemble transmission.

STEP 3 Remove high clutch drum from transmission.

STEP 4 Remove piston assembly from high clutch drum.

STEP 5 A bleed-off hole must be drilled into the high clutch drum. **(See Photo A.)**

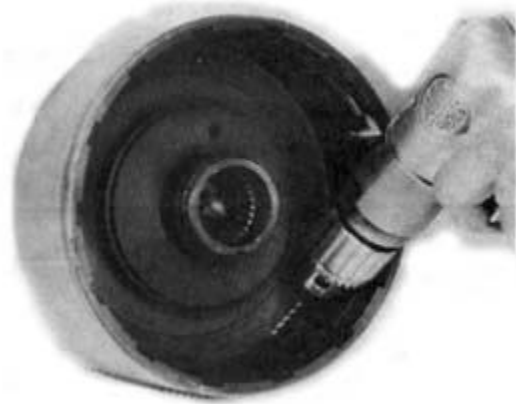


PHOTO A - HIGH CLUTCH DRUM

STEP 6 It is best to drill from the inside-out behind the piston area. The drill may be held at a slight angle for more drilling room. The bleed-off hole should be 1/16" or 0.0625".

STEP 7 Deburr and wash high clutch drum.

STEP 8 (See Photo B.) Using a 1/8' round rat-tail file, open passage area as shown in photo. At least half of the casting wall should be removed. Care should be taken not to scratch or nick the bore area where the brake valve enters. This passage area is the brake and high gear apply. This modification is necessary for the Trans Brake release.

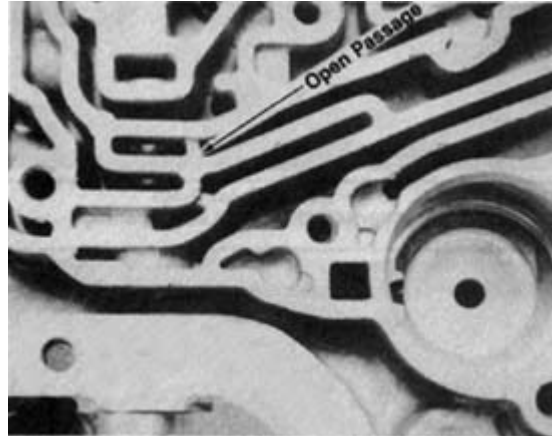


PHOTO B

NOTICE:

Modifications to the Turbo 400 Transmission are necessary for installation of the TCI® 221500 Trans-Brake™ Valve Body.

IMPORTANT: Before you begin installation, allow transmission to cool to avoid burns from hot fluid or parts. Select a well lighted work area and it is very important to keep all parts clean. Use a box or pan to keep transmission parts from getting misplaced. Wash parts thoroughly with a good solvent.

STEP 9 Wash transmission carefully. Any metal shavings left in transmission can cause the transmission to not operate properly.

STEP 10 You are now ready to reassemble high clutch drum. Using new seals, replace the inner and outer seal on the high clutch pack. Do not use center (cushion seal) on the high clutch drum. Discard this seal.

STEP 11 Re-install piston into high clutch drum.

STEP 12 Discard the 16 OEM Direct High Gear Springs. Replace with the special TCI® Direct High Gear Springs included in this kit.

NOTE: Set clutch pack clearance: .050" -.090".

STEP 13 Remove and discard Intermediate band and piston assembly. (See Photo C.)

STEP 14 Remove rear servo piston. Remove and discard the two rings from the reverse accumulator. (See Photo D.)

STEP 15 Tap 1/4" check ball supplied with this kit into accumulator drain. (See Photo E.)

STEP 16 Before installing rear servo air check servo to make sure it is working properly. Replace if necessary. Next, check surface of rear servo cover. Surface should be flat and smooth. Take sand paper, and attach to a flat surface. With even pressure sand servo cover. Cover surface should sand evenly all around mating surface. (if warped, replace.) Wash cover and re-install rear servo assembly.

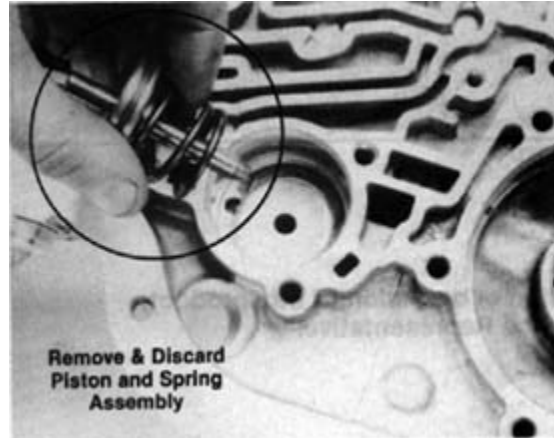


PHOTO C

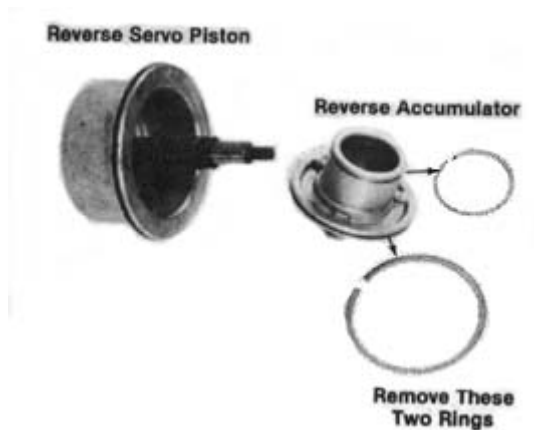


PHOTO D

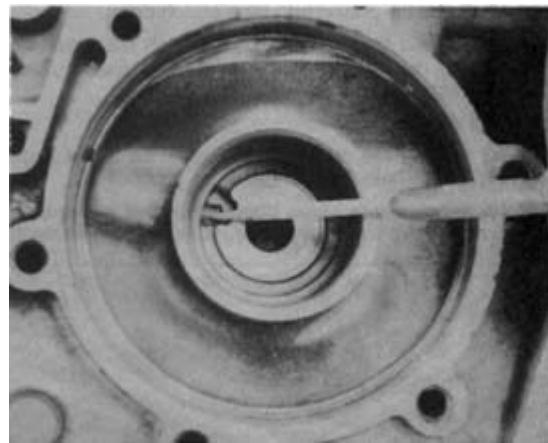


PHOTO E

STEP 17 Replace modulator with TCI® solenoid.

A. Remove modulator end OEM valve.

B. Slide return spring over the TCI® brake valve.

C. Insert brake valve and spring into the modulator valve bore. This should slide in and out freely.

D. Insert TCI® solenoid into modulator valve bore using modulator retainer and bolt to hold in place.

STEP 18 *Center Support Modifications.* (See Photo F.) You will not have to remove center support, we have removed only to show location of sealing ring. Remove and discard second sealing ring from top.

STEP 19 Remove pressure regulator from front pump. (See Photo G.) Push down on the aluminum sleeve and remove snap ring. Slowly remove booster sleeve assembly. **NOTE: UNIT HAS SPRING TENSION—DO NOT LET SPRING ASSEMBLY FLY OUT OF BORE.** If sleeve is stuck, tap on it lightly to free from bore. Remove the booster sleeve and valve pressure regulator spring, spring retainer, shims (some models have one) and the pressure regulator valve. Disassembly and assembly (See Photo H.) Replace OEM pressure regulator spring with TCI® spring supplied in kit. To install the assembly, slip the retainer in place with the tangs toward the

spring. Slip the spring over the small end so it comes in contact with the retainer. Push the entire assembly up into the pump. Push up on the booster sleeve and install the snap ring. Make sure it seats completely into its groove.



PHOTO F



PHOTO G

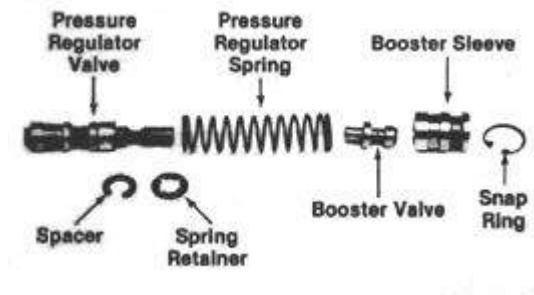


PHOTO H

STEP 20 *Valve Body:*

This Trans-Brake Valve Body has been modified along with the component pieces. **DO NOT MIX PARTS** Use **ONLY** the TCI® Modified Brake Valve that comes with this valve body. Use no check balls in valve body. Only the one check ball is used in rear servo. Use valve body gaskets supplied in this kit. Governor delivery tubes are not necessary, but one may be used to support early design filter and should be used if you have this type of transmission case. Governor may be omitted.

NOTE: Start all valve body bolts before tightening valve body to assure proper alignment.

STEP 22 Complete transmission assembly and install into vehicle.

STEP 23 *Wiring Solenoid/Micro Switch:*

Use #12 gauge wire and female wire end connectors, if you are using a TCI® shifter, the Trans.Brake micro-switch can be mounted into the shifter handle. Call TCI® for this replacement handle. From the micro switch run a hot wire to the battery and the other wire is run directly to the

solenoid. Be sure to use strapping to connect any loose wires to the frame of the vehicle. **NOTE:** DO NOT let wires come in contact with any moving parts.

IMPORTANT NOTICE CONCERNING TCI® 221500

Do not shut down motor while in second gear with engine rpm above 6000 rpm. Repeatedly doing this may cause severe damage to transmission and bodily harm. A TCI® 980000 Aluminum Trans.Shield is highly recommended for this application