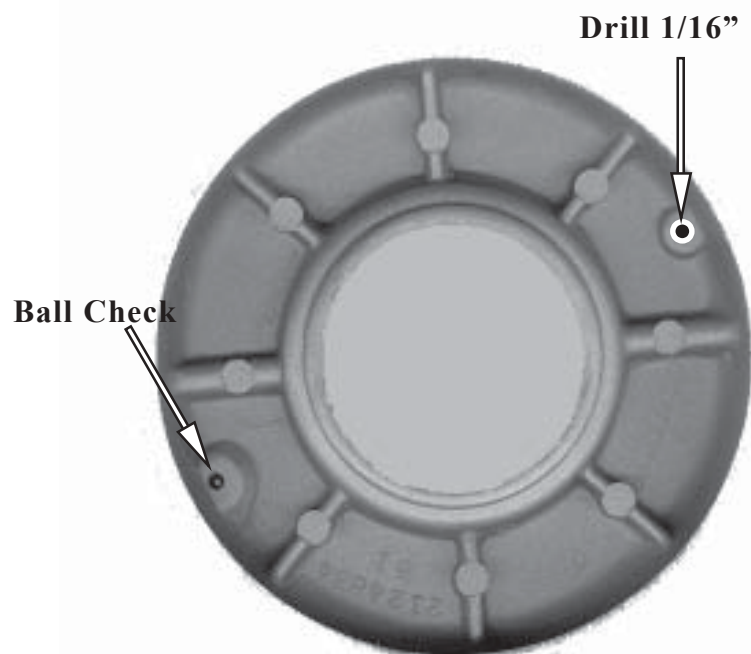


# Attention!

The following ***must be done*** to maintain consistent staging with all Tranz Brake Valve Bodies for Three (3) Speed Automatics: ***Before*** turning bottom final stage yellow light on, you should be at a minimum of 1500 rpm to 2000 rpm. It also helps to engage the tranz brake switch once before you begin to roll into the final stage light. If you do this, in the late rounds when the transmission is hot, it will have less tendency to roll in deep. Remember you must push the Tranz Brake button then release the foot brake. If you do both at the same time, your car will vary on the way it locks down, causing erratic reaction times. Transmission must be full! Deep pans still must maintain natural full on dip stick!

***Caution*** : Due to Higher Line Pressure some units will blow Rear Clutch Piston Seal or bend the piston return spring. The following should cure that problem.



# TURBO ACTION

1535 Owens Road, Jacksonville, FL 32218 - (904)741-4850 - FAX (904)741-4853

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## CHEETAH Pro Series Brake

(Positively Not For Street Use)

Fits Torqueflite "727" & "904" 1966-90 (Non Lock-Up)

Part #17999

PRN123

The Turbo Action CHEETAH Pro Series Brake gives you the same clean and positive shifts that you have come to expect from a CHEETAH Valve Body. In addition, you now have a Tranz Brake which will allow you to compete easily with or without a delay box. Special features include: Roller clutch protection due to a timed delay on the rear band release; Tranz Brake works in first gear only; no extra horsepower loss due to high line pressures; exclusive "Power Lock" brake system circuitry; quick release; high reliability; low current draw and easy installation (no internal modifications required).

**Deep Oil Pan Required w/proper pick-up (Must be single hole pick-up).**

Options that should be considered:

1. If "727", suggest 12-15 #17090 springs for front clutch piston.
2. If "727" & "904", suggest 3.8 Kickdown Lever or a 4.2.
3. If "904", be sure that "904" transmission core is a 1971 or newer. Part Number will be 35XXXXX or higher.

The following are the proper settings for your bands and clutches:

Front Band - "727" & "904": Adjust front band per the following specs - (a) Locate the adjustment on the driver side on the outside of the transmission, just ahead of the linkage. (b) You will need a 3/4" wrench and an open end 5/16" wrench. Break the locknut loose (3/4" nut). Now holding the locknut, turn the square lug in the center of the locknut with your 5/16" open end wrench. Turn wrench clockwise until wrench becomes snug (10 in./lbs.). Make sure the locknut doesn't move while tightening the square lug. (c) Now carefully turn 5/16" wrench counterclockwise 1 1/2 turns. Holding the 5/16" wrench, tighten the 3/4" wrench to 35 ft./lbs. (Very Tight). **DO NOT** allow the square lug to move while tightening the 3/4" locknut.

Rear Band "727": Tighten adjustment lug 10 in./lbs., back off 2 turns and tighten locknut.

Rear Band "904": Tighten adjustment lug 10 in./lbs., back off 4 turns and tighten locknut.  
1971 - UP CORES ONLY.

Front Clutch "727" & "904": Four Clutches - Clearance = 0.050-0.060  
Five Clutches - Clearance = 0.060-0.070

Rear Clutch "727" & "904": Four Clutches - Clearance = 0.030-0.040

Special characteristics about your CHEETAH Valve Body:

1. First Gear - no gear braking.
2. First to second shift on jackstands will not be noticeable.
3. Line pressure can be read at the middle plug on passenger's side. Suggest a 200. PSI gauge, our Part #00107.

**Positively Do Not** make any modifications other than those suggested in these instructions. See page #10 for additional info for Pro Light Racing.

**CAUTION:** Do Not Neutral Transmission till under 2500 RPM.

Very Important!!

You must use a single hole type filter with this valve body.

Deep pan:

Must be a single hole pick-up.

### **Installation Instructions**

**FIRST, READ INSTRUCTIONS CAREFULLY, THEN PROCEED TO INSTALL VALVE BODY PER THESE INSTRUCTIONS.**

Kit Includes: 1 - 17999 Valve Body

- 1 - 17387-4 Solenoid (Installed on Valve Body)
  - 1 - 17388 Case Connector
  - 1 - 17389 Wire Snap Plug Connector
  - 1 - 17390 Wire Restraint
  - 1 - 00690 7/16" Drill w/1/4" Shank
  - 1 - 00691 1/4" Pipe Tap
  - 1 - 17270C Pan Gasket "727"
  - 1 - 19063C Pan Gasket "904"
  - 1 - 17013 Dacron Filter Single Hole 1966-91
- Note: Must use single hole filter**
- 1 - 17014 Filter Gasket (Use with deep pan filter extension. )
  - 1 - 17131A ACC. Piston Blocker
  - 1 - 17396 Rear Servo Shim

**STEP #1:** If vehicle is on the ground, secure so it will not roll, (Preferably, vehicle should have all four wheels off the ground.) Place vehicle shift selector in park range. Remove throttle pressure linkage and gear selector linkage located on the driver's side of the vehicle. Disconnect only at the shaft coming out of the transmission case. You will note the two linkage levers on the shaft are fastened by a bolt in each case. Loosen these bolts completely. After loosening bolts, carefully pry levers upward with a screwdriver. The top throttle pressure lever is no longer needed.

STEP #2: Remove all pan bolts but two on one end. This way you will be able to drain the transmission without getting soaked with oil. These two bolts can be gradually loosened off after most of the oil has been drained.

STEP #3: Carefully remove the ten 7/16" bolts which hold the valve body in place. \*Slowly pull valve body out of transmission, noting the hole that the long swinging rod came out of. The rod controls your car's park function. Most Torqueflites will have a large spring between one end of the valve body and the case. This spring should not be put back in the vehicle when using this valve body. \*May be necessary to turn drive shaft to release long swinging rod.

STEP #4: The transmission valve body is a very intricate piece of your transmission and therefore care should be taken to keeping it clean while working on it. Lay old valve body on a bench or table so that the swinging rod is laying towards you. Remove small clip that holds the swinging rod in place. Install this swinging rod on the new valve body. Secure by reinstalling clip. This swinging rod should fit the same as it did on the old valve body.

STEP #5: Remove the three screws that hold the old filter on the old valve body. If installing deep pan, follow instructions for pickup installation. Install new filter #17013 directly against deep pan pickup. Install the thick gasket supplied between the valve body and deep pan pick-up. **Note: Be sure the deep pan pick-up has only one hole. If you replace filter in the future, be sure it has only one pick-up hole.**

STEP #6: If transmission is out of the vehicle, the governor valves can be removed.

STEP #7: Cut out the templet, Fig. #1. Mark spot to be drilled with a small punch. Drill small 1/8" pilot hole. Then take #00690 special 7/16" drill and drill hole in case as shown in Fig. #2.

STEP #8: Using #00691 special 1/4" pipe tap, tap the case **till the case connector will just show through inside the case, Fig. #3.**

STEP #9: Install case connector into case.

STEP #10: Remove accumulator piston by pulling down the middle piston from the passenger side of the transmission, Fig. #6. Some units have a spring on top, some on bottom of piston and some none at all. Install #17131A ACC. piston blocker between case and piston. **CAUTION:** Be sure piston is below surface enough to install valve body and not hit piston. If rod is too long, cut or grind small amount off and recheck. Also, leave out spring if it had one.

### **SPECIAL NOTE**

If your transmission has part #35XXXXX or higher stamped on driver's side, just under shift linkage near pan rail, you have a 1971 or newer transmission. If you have a 1971 or newer, **YOU MUST** check under the accumulator to see if anyone has ever drilled a 3/16" hole in the upper small bore, Fig. #6. If your unit has the hole and has the 34XXXXX or higher, you must then plug the hole with a 1/4"-20 set screw. If unit is a 1970 or older part #34XXXXX or lower you do not have to plug hole.

**The following steps must be done for best brake action, both locking and releasing:**

If **727**, proceed with **STEP #11**.

If **904**, remove tail housing and band lever pin, then proceed.

**STEP #11:** Loosen lock nut on reverse band linkage and back off adjustment at least 6-8 turns, Fig. #7. If **904**, slide lever out of the way.

**STEP #12:** With a Scribe Hook, lift up on band strut and remove (**727 Only**).

**STEP #13:** Now with screwdriver remove snap ring that retains spring retainer on rear servo. **CAUTION: This section is under spring pressure. Be sure to secure with hand.** Remove piston, spring, retainer and snap ring. (Fig. #8)

**STEP #14:** Remove plug spring and install shim, Fig. #8.

**STEP #15:** Reinstall servo piston, spring, retainer and snap ring. **Be sure snap ring is in groove all the way.**

**STEP #16:** Carefully place strut back into position. It must be seated properly (**727 Only**). If **904**, slide lever in place and install pin. Reinstall tail housing.

**STEP #17:** Re-adjust rear band. If **727**, turn in adjustment finger tight (10 in./lbs.), back off two (2) turns and then holding adjustment, lock the locknut. If **904**, install tail housing, band lever pin and then adjust band to four (4) turns.

**STEP #18:** Before re-installing valve body into transmission, take note of the plastic half ball shaped neutral-switch on the driver's side of the transmission inside of the transmission case. When installing the valve body, make sure this ball does not get damaged. Either remove the switch or merely slide the valve body carefully over the ball. The ball will retract as the valve body puts pressure on it. Also, **do not** install large spring which was between valve body and case.

**STEP #19:** Carefully connect solenoid wire to case connector. Make sure wire connection does not get close to the park rod or the valve body and short out, Fig. #4.

**STEP #20:** Place valve body back into transmission pushing the rod into hole that was mentioned in STEP #3. The rod should be angled towards the center of the transmission in the front. Push rod firmly towards rear while turning drive shaft. **BUT DO NOT FORCE ROD OR VALVE BODY.**

**STEP #21:** With valve body in place, install 10 valve body bolts and tighten to 8-10 ft./lbs. Note position of #17390 wire restraint, Fig. #5.

**STEP #22:** Adjust front band at this time (see instructions page #1).

**STEP #23:** Clean pan and install with a new gasket.

**STEP #24:** Replace shift linkage (large piece) and tighten bolt. Adjust linkage to be sure that shifter is selecting all gears properly. Especially critical is the 2 to 3 shift adjustment. **CAUTION: This unit is PRN123.**

STEP #25: Remove all kickdown linkage from carburetor down to the transmission.

STEP #26: Connect a #16 wire to the #17389 wire snap plug connector and connect it to case connector. Run the other end of the wire to delay box or direct to a quality momentary switch such as the Turbo Action #00774 switch on a special stretch cord for mounting on the steering wheel. Now run a 12 Volt supply to the switch. Check at transmission to be sure you have 12 Volts. NOTE: Sometimes you cannot hear solenoid so check with a test light or volt meter. (Fig. #1A)

STEP #27: Refill transmission with a good type "F" ATF or Dexron Mercon fluid. It will usually take about 5 quarts of oil. **DO NOT OVERFILL!** Warm transmission up, select all gears, and then recheck oil level. Always check level of transmission fluid when in neutral, but put parking brake on as a safety measure or have someone hold foot brake while checking. Shift Pattern is PRN123.

STEP #28: In an area where you can safely check Tranz Brake, apply switch while in low gear. When switch is applied, car should not move at any RPM.

**CAUTION: When vehicle is staged and Tranz Brake applied, always be alert and ready in case the brake should release accidentally.**

#### **Staging Procedures and Other Information:**

Staging can be done many ways. You can bump in with Tranz Brake Switch or with foot brake. If foot brake is used, we find coming in at about 1800-2000 RPM works best, but each individual and race car is different so you be the judge. It is suggested that you use your brake at 3000-3500 RPM for maximum life of your drive train. However, our valve body has been tested to 6200 RPM behind a 440 cu.in. engine. The choice is yours. Be sure your converter is tranz brake ready.

**CAUTION:** First gear dry burnouts with or without tranz brake should be **AVOIDED!** Light chirps may be okay, but you still are playing a risky game with a Torqueflite. We suggest burning the tires to the staging line in high gear, pre-stage, clean out engine and then stage as instructed above.  
**Do Not** neutral car in the traps.

For your own safety and others be sure to run a transmission blanket or transmission shield per IHRA and NHRA rules.

#17998 Templet to drill hole in the  
"727" or "904" case for the solenoid  
case connector.

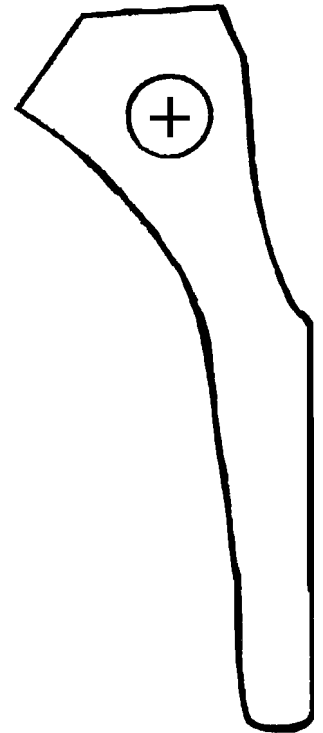


Fig. #1

### Torqueflite Tranz Brake Wiring

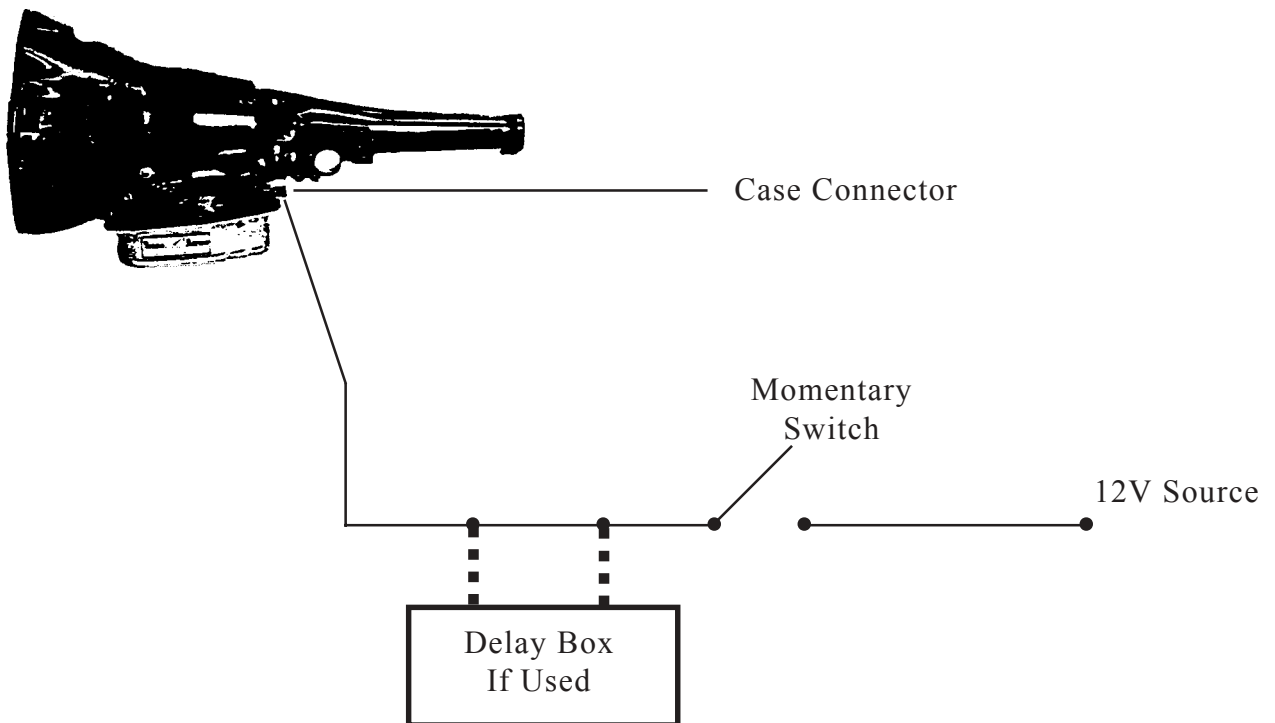


Fig. #1A



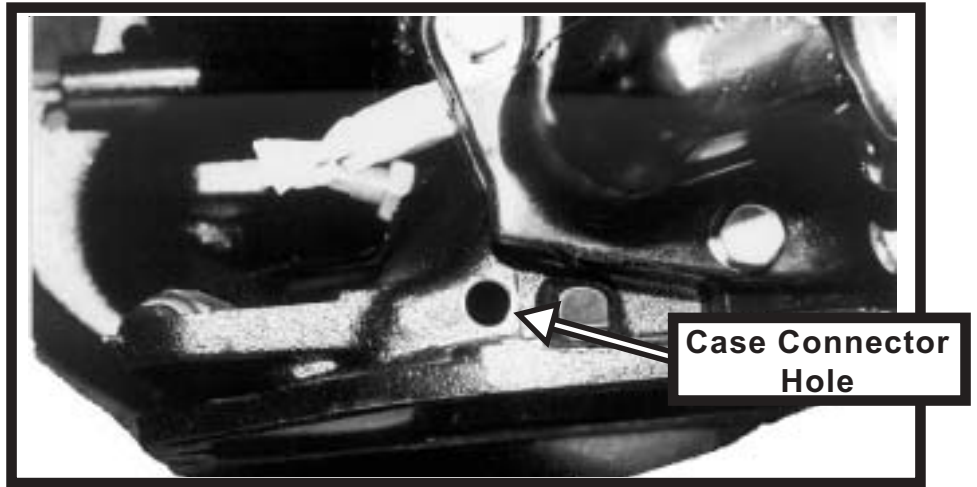


Fig. #2

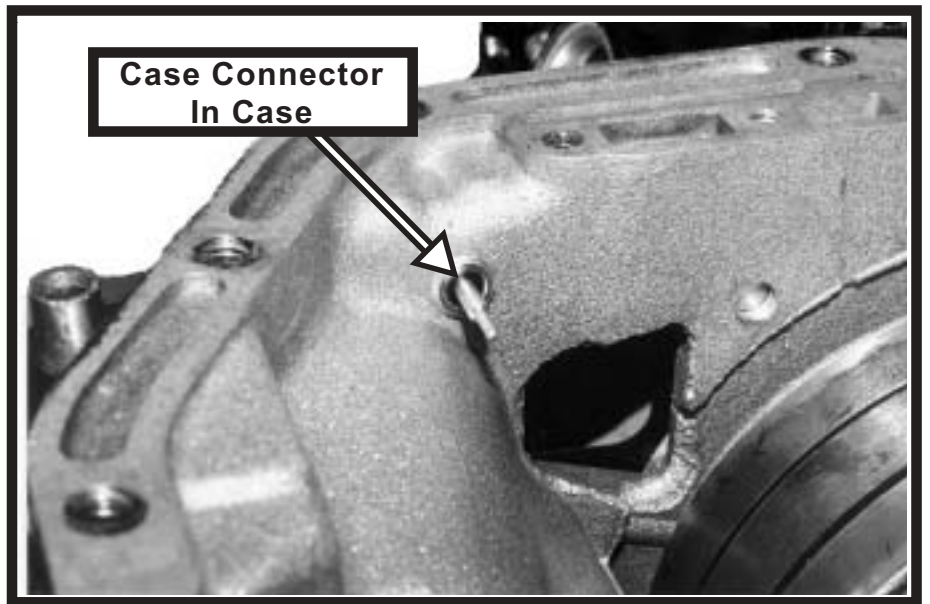


Fig. #3

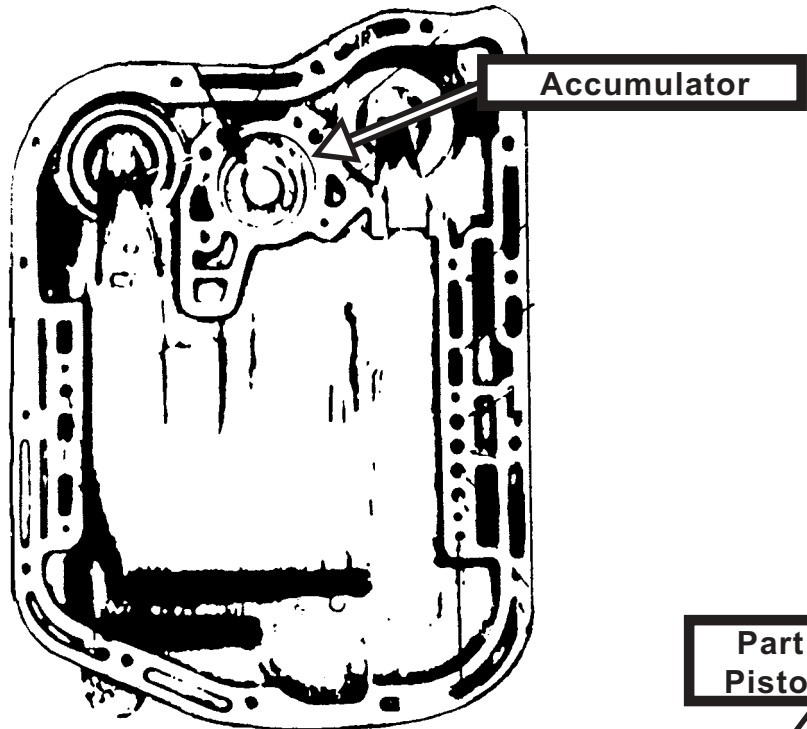


Fig. #4



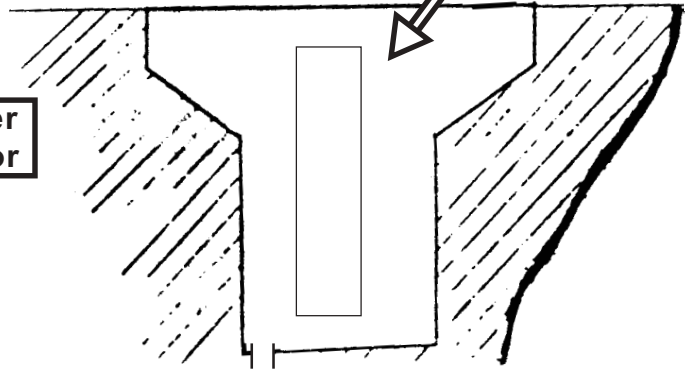
Fig. #5





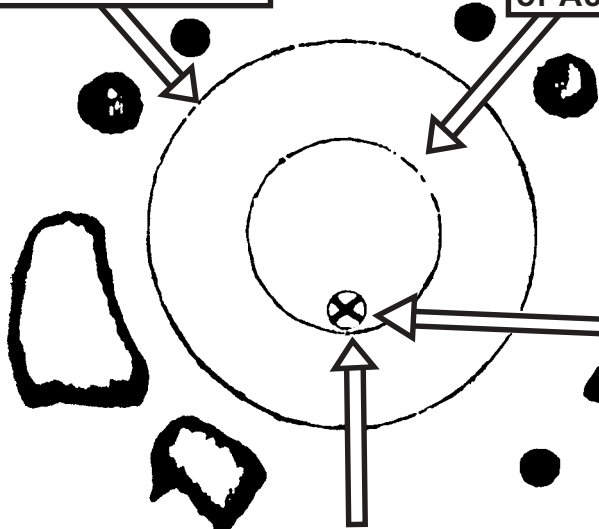
Part #17131A  
Piston Blocker

Outside of Transmission



Large Diameter  
of Accumulator

Small Diameter  
of Accumulator



3/16" Hole

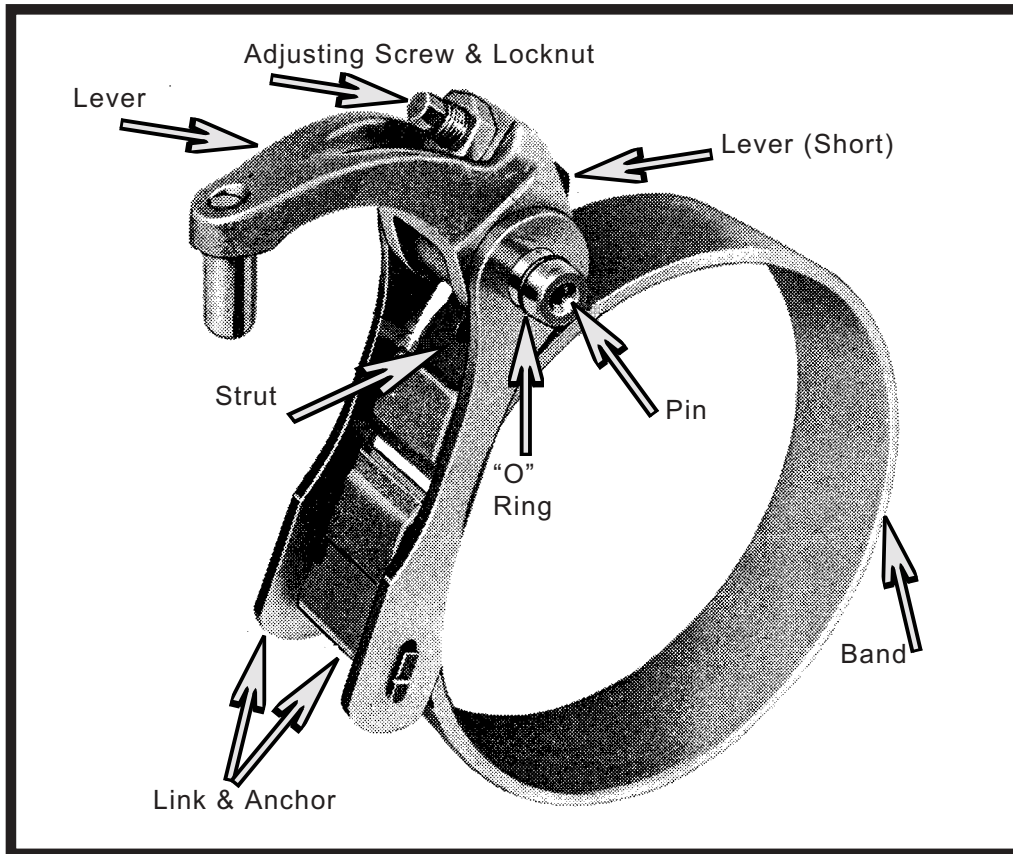
Center of Transmission

**CAUTION:**

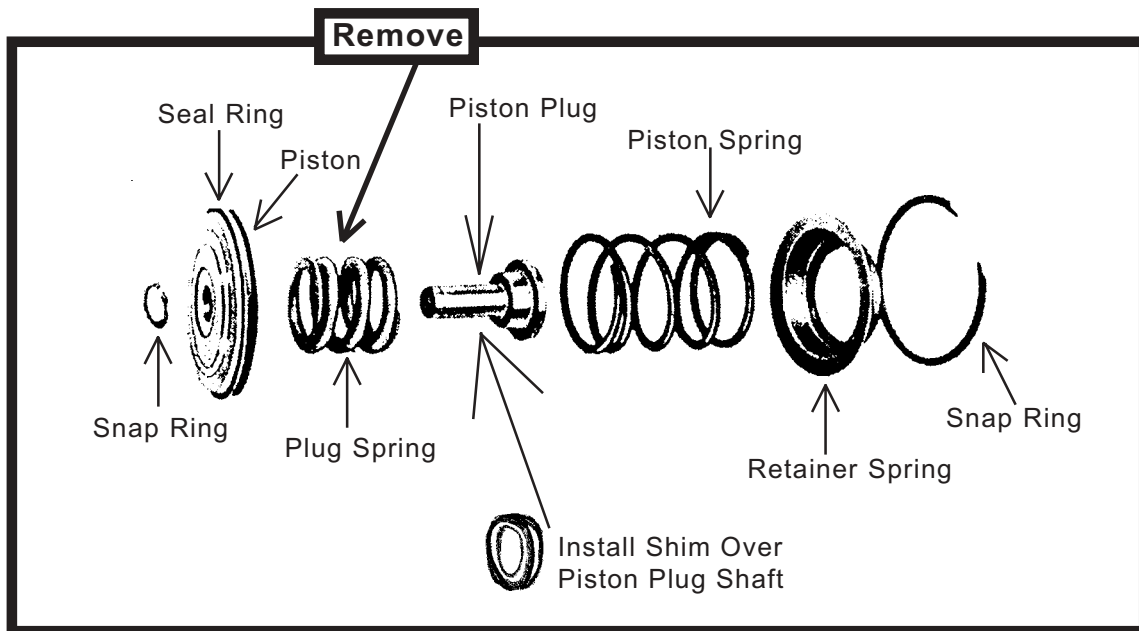
Transmissions manufactured in 1971 and later may have a hole drilled in the bottom of the accumulator bore. This hole must be blocked. Please note that some units have an elongated hole on the side of the bore which is fine to be left as is. 1971 or newer transmissions have a Part #PK35XXXXX or higher on the pan rail drivers side.

1970 or Older Transmissions Part #PK34XXXXX or lower will have a hole in the bottom of the bore, but does not require being blocked.

Fig. #6 - Accumulator



**Fig. #7 - Reverse Band & Linkage**



**Fig. #8 - Brake & Reverse Servo**

# Special Instructions for Pro light Racing

(Will also enhance performance on a full tree.)

1. Remove Transmission from Car.
2. Remove Front Clutch Drum.
3. Drill Front Clutch Drum Fig. #9. If you drill this hole, you then Must Block Front Pump Breather, Fig. #10. Then install a Rear Breather in Case or Tail Housing, Fig. 11.
4. Install 12-15 #17090 Springs in Front Clutch Drum. (Suggest this for Pro Tree and Full Tree).

## Front Clutch Drum



Fig. #9

Drill .063 (1/16) Bleed Hole



Block Breather with a 1/8th pipe set screw.

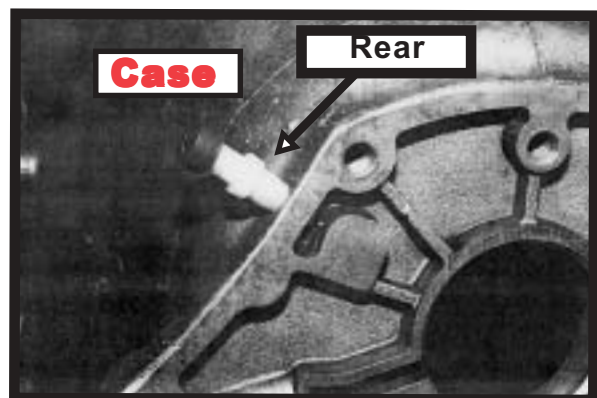
Fig. 10

Block Front Pump Breather



Rear

Tail Housing



Case

Rear

Fig. #11

Rear Breather

# Water Burnout Instructions

Tire development brought about the need to get tires hot in order to get maximum traction. This started the use of water to get tire speed up quickly. Now tires are getting hot, but automatic transmissions are subject to destruction if not careful! **Please read carefully the following suggestions for your transmission:**

## Chrysler/Amer. Mtrs. "727", "904", "998" & "999" Transmissions

All water burnouts should be started in second gear and shift to third if necessary. If you should start burnout in first, shift immediately to second before tires come out of water. No matter whether it be second or third gear you are in as you come out of the water, you should start to deaccelerate engine or do a power burnout directly to the staging line being sure tires never grab dry pavement. The power burnout provides the best E.T.'s if no dry burnouts are done. No matter if you have a tranz brake or not, we suggest ***not doing dry burnouts!***

**Note** - Rear End Breakage & Driveshaft Breakage: If rear end or driveshaft breaks while in first gear acceleration or burnout, **remove transmission and check rear roller clutch for damage.**



**Chrysler Flexplates**



**Transmissions**



**Chrysler Special Support**



**Torque Converters**



**Valve Bodies**



**Tranz Boxes**



**CHEETAH SCS Shifters**



**CHEETAH E-Shift Controller**