

# TURBO ACTION

1535 Owens Road, Jacksonville, FL 32218  
Phone (904) 741-4850 \*\*\* FAX (904) 741-4853  
www.turboaction.com



## CHEETAH ELECTRONIC-SHIFT VALVE BODY (PRN321)

Part #23254E (No Engine Braking in 1st)

**“This valve body requires a deep transmission pan!”**

**Fits: Turbo Hydro “350” & “375B” 1969-86 (Non-Lockup)**

FIRST, READ INSTRUCTIONS CAREFULLY, THEN PROCEED TO INSTALL VALVE BODY BY FOLLOWING EACH STEP INDIVIDUALLY.

Includes:	1	-	Valve Body	
	1	-	23093	Special Valve Body Spacer Plate
	1	-	23096P	2-3 Performance Plate
	1	-	23097	Spacer to Valve Body Gasket (Small)
	1	-	23098	Spacer to Case Valve Body Gasket (Large)
	1	-	23138	Set Screw
	1	-	23099C	Pan Gasket
	2	-	23103	Filter Gaskets
	1	-	U00691	1/4" Tap
	2	-	U17381	Super Solenoids (Installed)
	2	-	U17381R	Retainers (Installed)
	1	-	U17388E	Connector
	2	-	U17389	Snap Plugs
	2	-	U23174	Washers 5/16"
	2	-	U23175	Bolts 3" x 5/16"
	2	-	U23176	Manifold Spacers
	1	-	U23170	Manifold
	1	-	U23130	Modulator Plug

**STEP #1:** Transmission should be cool before installing. Also, place gear shift selector in neutral. If vehicle is on the ground, secure so it will not roll.

**STEP #2:** Remove drain plug in pan and drain oil. Olds., Buick and Pontiac do not have drain plug, and therefore, must be drained by dropping transmission pan. Recommend leaving a couple of bolts attached until most of the oil has drained.

**STEP #3:** Remove transmission oil filter by removing two screws.

**STEP #4:** Remove kickdown valve wire by pulling pin out of kickdown lever in valve body.  
**NOTE:** These pieces can be discarded as they are no longer used (Fig. #1).

**STEP #5:** Before removing valve body, note position of the gear shift linkage hooked to the valve body (Fig. #2). Remove 18 bolts from valve body. **CAREFULLY** lower valve body and at the same time slide angled shift pin lever from gear shift selector. **DO NOT** drop valve body or manual valve with angled shift pin.

- STEP #6: Holding stock valve body plate with your hand, remove spacer support plate bolts. **CARE FULLY** lower plate as there are four small teflon balls sitting on plate. Also, watch that the governor screen and oil pump screen do not fall out. These screens are located in case under neath the stock valve body spacer plate. See Fig. #3 & #4.Olds., Buick and Pontiac have two governor screens in rear of case, one in each passage. Chevy has only one governor screen.
- STEP #7: Remove the governor screen or screens from transmission case and discard (Fig. 3). Hole Letter "A" in Fig. #3 must be drilled to 19/64" (Note some models this hole is already 5/16"). DO NOT DRILL HOLE OVER 3/4" deep.
- STEP #8: Take Set Screw #23138 and very carefully with a broad, blunt-pointed punch tap into hole Letter "A". If you tap too hard, the punch will go straight through the bottom of the plug, be extremely careful.
- STEP #9: Remove Kickdown Cable Assembly from case. Tap hole with Special 1/4" Tap enclosed. Fig. #13 & 14.
- STEP #10: Install in case the connector, Fig. #13 & 14.
- STEP #11: Install Aluminum Modulator Plug. **You must leave modulator valve in place.** You may have to fit plug. It should not allow valve to move more than 0.050".
- STEP #12 Sometimes the front servo will fall out when lowering the spacer plate in STEP #6. If so, be sure to reinstall per Fig. #5.
- STEP #13: Using petroleum jelly, place oil pump screen into place (Fig. #4).
- STEP #14: Install Special Valve Body Spacer Plate #23093 with Spacer to Case Gasket #23098 (large gasket). Use vasoline to hold #3 ball (Fig. #15) on the plate, no other balls used (See enclosed drawing). Carefully raise Special Valve Body Spacer Plate with gasket up into transmission with one hand and with the other hand, raise 2-3 Performance Plate #23096P and the original Spacer Support Plate into position. Note: 2-3 Performance Plate must go between Special Valve Body Spacer Plate and Spacer Support Plate. Start all seven bolts in plate, but do not tighten as these bolts must be loose in order to line up valve body bolts. **CAUTION:** Be sure that the Spacer Support Plate has no rough edges and is the type shown in Fig.#6 & 7. If it does,file smooth.
- STEP #15: Before lifting new Valve Body into transmission, remove bolts holding the soleniod pack. Place manual valve into it using the manual valve from your old valve body. Be very careful to not push to hard on the pipes to solenoid pack.
- STEP #16: Lift Valve Body and Spacer to Valve Body Gasket #23097 (small gasket) up into place being sure to line up gear shift selector pin. Start all bolts making sure valve body is in its proper location. Tighten valve body bolts and **spacer support plate bolts from the middle out.** Tighten to 8-10 ft./lbs. Install the two spacers and the two 3" bolts and tighten down. **Becareful with the pipes to the pack!**
- STEP #17: If you have any doubt about the pipes, you can remove solenoids and air check, but careful to not cut o-rings during reinstallation, Fig. #10 & 11.
- STEP #18: Connect case connector wires, Fig. #12. Note how wires are routed around the spacer to prevent interference with dip stick. The front solenoid wire (converter side of manifold), goes to the case connector Red, Yellow or Black wire (Over the years Color changed.). This is your 1-2 Shift wire connection.

**YOU MUST DO THIS RIGHT OR YOUR TRANSMISSION WILL NOT WORK PROPERLY.**

- STEP #19: Connect the case connector Brown or White wire to 2-3 Shift solenoid , Fig. 13 & 14.

- STEP #20:** Replace transmission oil filter or clean old filter. Install the filter extension, 2 gaskets (one each side of extension) and the filter. **This valve body must use a deep pan!** Filter installed properly will have the word "Front" stamped on it (towards motor).
- STEP #21:** Install a Turbo Action pan gasket #23099C and bolt up the oil pan. Refill transmission with a good brand of Dexron or Type "F" transmission fluid. Warm transmission up and place in all gears. Then check to make sure transmission level is on the add mark. The shift pattern for #23254E is PRN321 and requires a **#70600 CHEETAH E-SHIFT Controller**. Push Pit Road Momentary toggle switch, put into third or Drive position. Valve Body **has no engine braking in low (first) gear.** Take vehicle out and drive. Then recheck oil level. Add if necessary. **BUT NEVER FILL OVER THE FULL MARK.**
- STEP #22:** These options can be made if transmission is being overhauled and using this valve body:  
1.Remove center seal located in the direct clutch drum.This will make the 2-3 shift better.  
2.Remove governor assembly.

## **WATER BURNOUT INSTRUCTIONS**

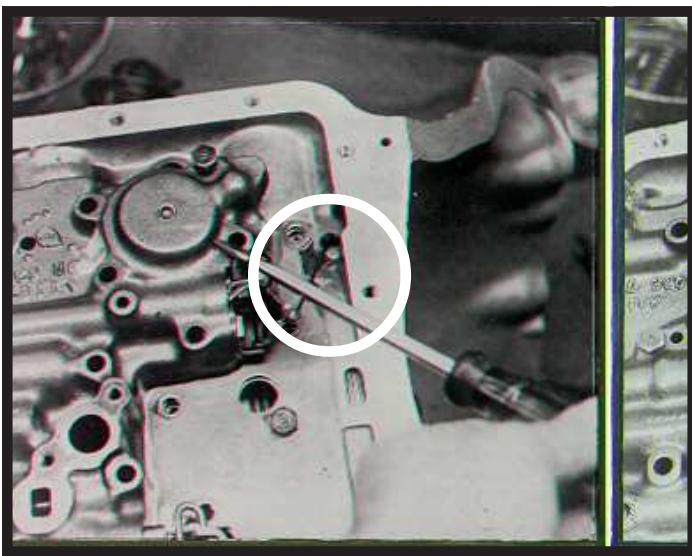
Tire development brought about the need to get tires hot in order to get maximum traction. This started the use of water to get tire speed up quickly. Now tires are getting hot, but automatic transmissions are subject to destruction if not careful! **These suggestions will extend the life of the roller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

All water burnouts suggest starting in second, but get into high gear before coming out of the water. Normally, Turbo Hydros do not have roller clutch trouble, except occasionally in the Turbo "350", but for durability reasons it will pay to follow the suggestion as stated for preventative maintenance. **Be sure to deaccelerate** as you come out of water or power burnout to the line **being sure tires never grab dry pavement.**

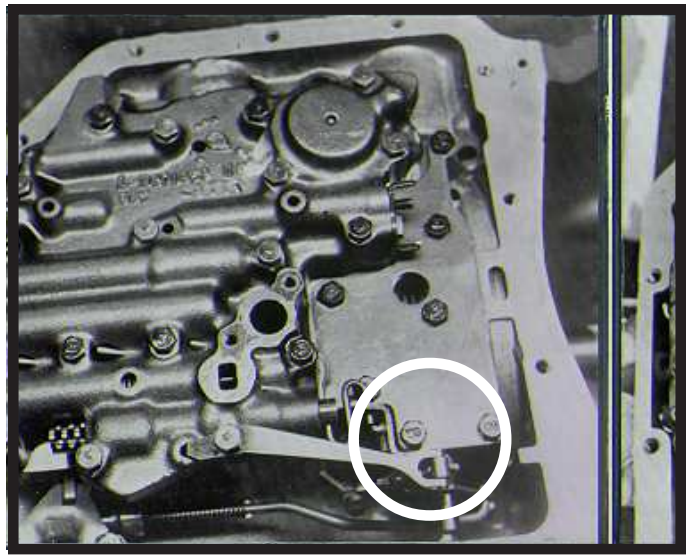
### **Electronic Shifting**

Set your **First Race Shift (1-2)** about 300-400rpm lower than the rpm you wish to shift at. The **Second Race Shift (2-3)** should be dead on the rpm needed.

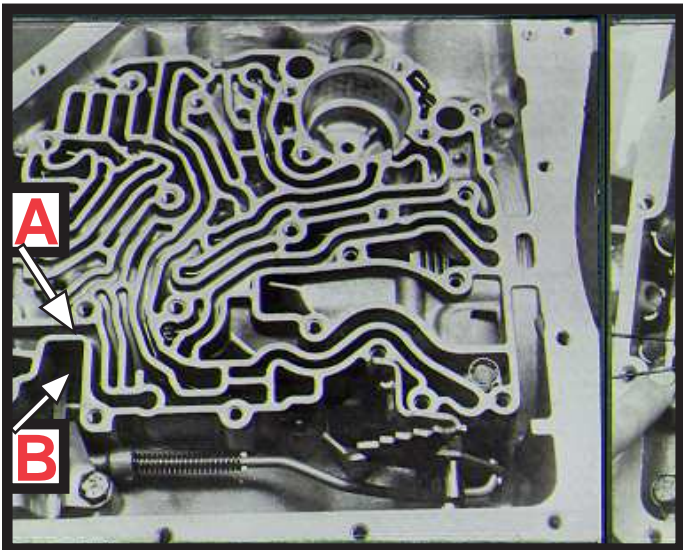
**Burnout start in second or third position, but leave the 1-2 rpm low (about 4000rpm). This will let car go to second quickly.**



**FIGURE #1**  
**KICKDOWN ASSEMBLY**

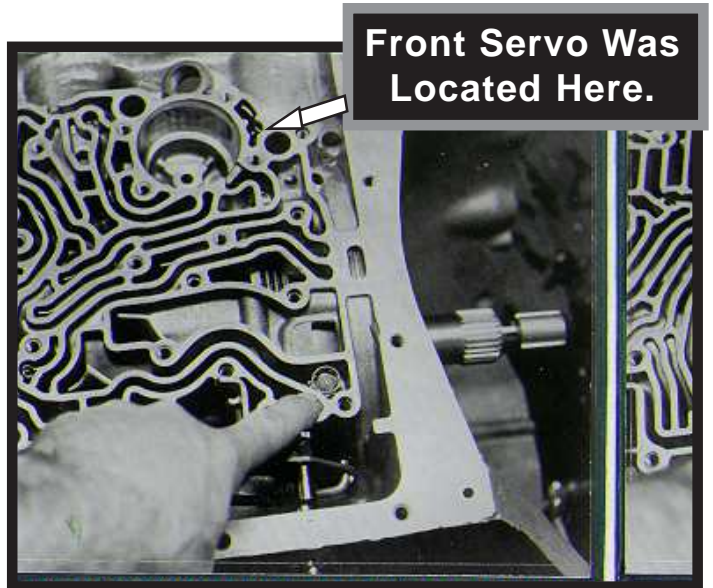


**FIGURE #2**  
**GEAR SHIFT LINKAGE**

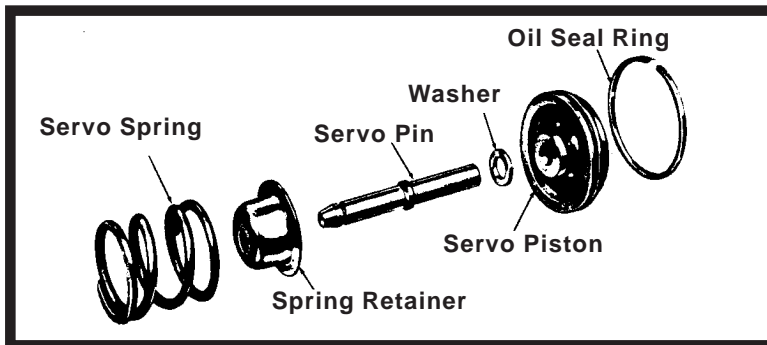


**FIGURE #3**  
**GOVERNOR SCREEN LOCATIONS**

A - Chevy Only  
A & B - Buick, Olds., Pontiac



**FIGURE #4**  
**OIL PUMP SCREEN**

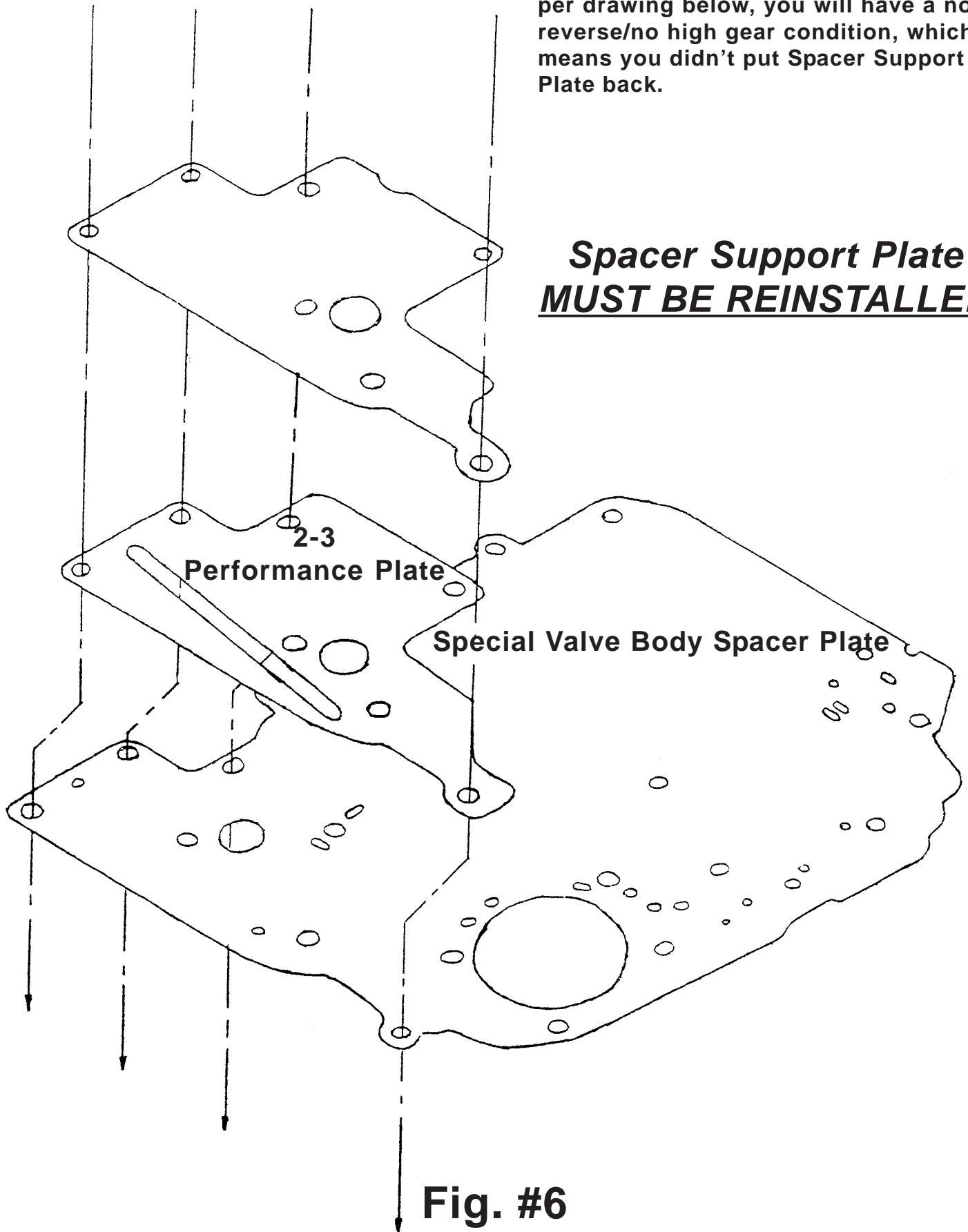


**FIGURE #5**

Sometimes the front servo will fall out when lowering the spacer plate in Step #6. If so, be sure to reinstall per above.

**CAUTION:** If Spacer Support Plate is not put back per drawing below, you will have a no reverse/no high gear condition, which means you didn't put Spacer Support Plate back.

**Spacer Support Plate  
MUST BE REINSTALLED**



**Fig. #6**



Fig. #7



Fig. #8

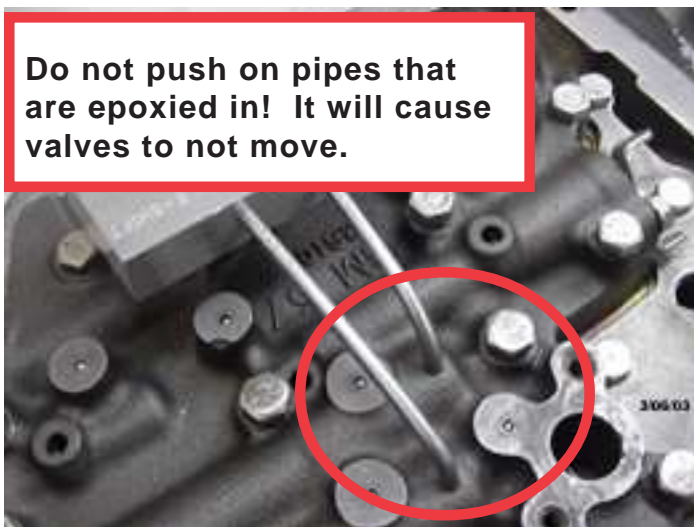


Fig. #9



Fig. #10



Fig. #11



Fig. #12

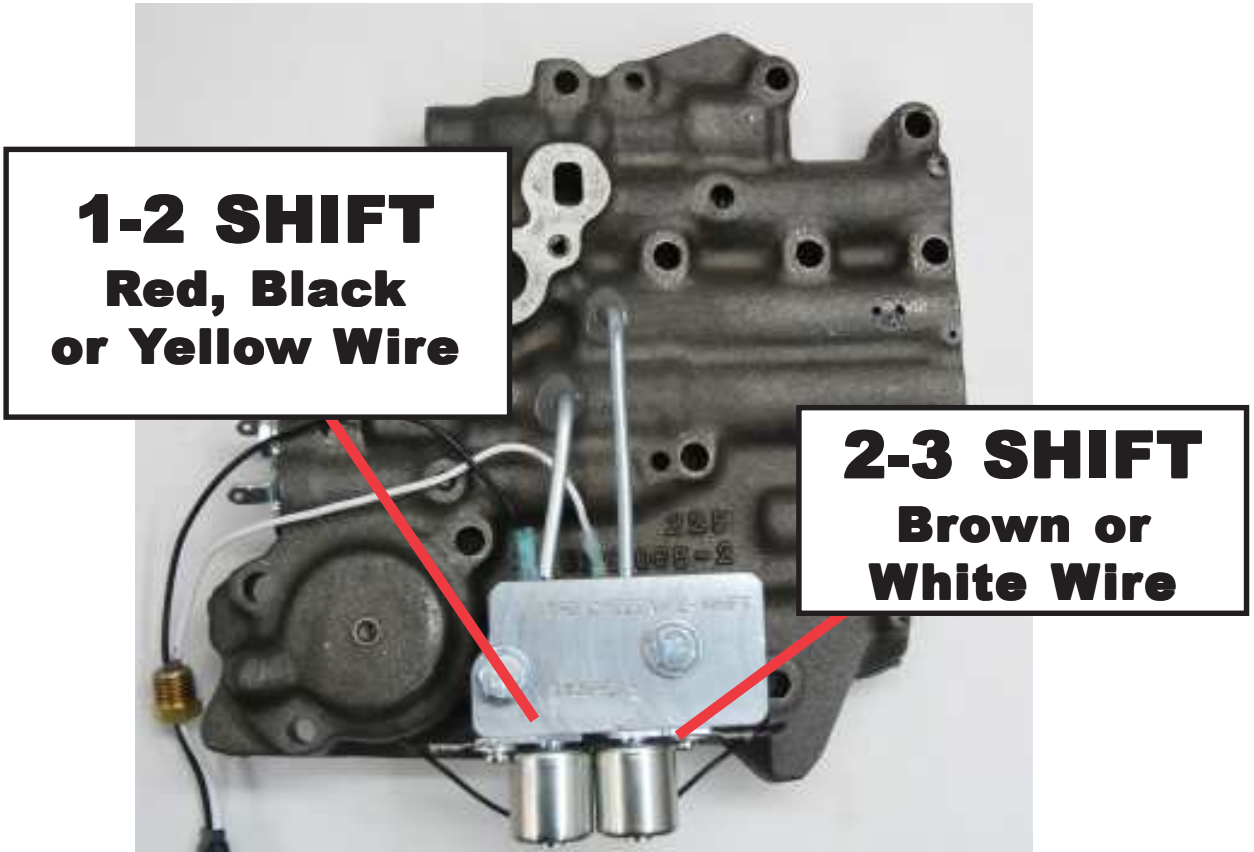


Fig. #13



Fig. #14

# Teflon Ball Location



Figure #15