

# TURBO ACTION

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## CHEETAH E-SHIFT Competition Electronic Valve Body - (PRN321)

### Part #27255ES

### Turbo Hydro 200 - 1979-86 Lockup (Metric Marked on Pan Fig. #1)

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

**Note: #70600 CHEETAH E-SHIFT Controller Required. TH200 Lockup Pan & Filter Required.**

#### **CAUTION:**

Working on this transmission will require the use of metric tools.  
The following tools and items will be required:

- 1 - Screwdriver
- 1 - Ratchet and 3" Extension
- 1 - 13mm Socket (sometimes 1/2" will work)
- 1 - 10mm Socket
- #14-#16 Gauge Wire (Length of wire will vary depending on your specific application).
- Suggest Amsoil or Dexron Transmission Fluid (Number of Qts. will vary depending on the size of your torque converter & depth of pan).

#### **Kit Includes:**

- 1 - 27255ES Valve Body
- 1 - 27088-2 Special Valve Body Plate
- 1 - 27099C Pan Gasket
- 1 - 27097 Spacer Plate to Valve Body Gasket (Marked V.B.)
- 1 - 27098 Spacer Plate to Case Gasket (Marked C)
- 1 - 27103 Filter Gasket
- 1 - 23138 Set Screw (3/8"-16 x 5/16")
- 1 - 24126 Set Screw (5/16"-18 x 1/4")
- 1 - 27170-1 Aluminum Manifold
- 2 - 17381 Super Solenoids
- 2 - 17381R Retainers for Solenoids
- 2 - 27171-1 3/16" Manifold Tubes
- 1 - 24390-1 Solenoid Connector
- 1 - 24158 O-ring
- 2 - 27133 Metric Bolts
- 2 - 5011 1/4" Washers
- 2 - 00781A Female Snapplugs
- 2 - 50103 Contingency Decals

This Valve Body can be installed while in the car, however, for maximum durability and performance we suggest taking the transmission apart. See Optional Steps section. Steps #12 thru #15.

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

- STEP #2:** Drain transmission by dropping pan at one end. Recommend leaving a couple of bolts attached until most of the oil has drained (bolts 13mm).
- STEP #3:** **Remove transmission** oil filter by removing two bolts (10mm socket). Also, these two bolts are longer than other valve body bolts. (Fig. #2)
- STEP #4:** Being very careful, remove bolt which holds throttle lever and bracket assembly. See Fig. #3. You will no longer need the throttle lever and bracket assembly.
- STEP #5:** Remove bolt holding manual detent roller and spring. See Fig. #4.
- STEP #6:** Remove remaining six valve body bolts. Lower valve body carefully. **Be careful to not drop manual valve (Fig. #5).** Also, there will be one (1) ball sitting on the plate (remove) and four (4) balls sitting in the valve body. In addition, there will be a large spring sitting in the valve body. (Fig. #6). Discard the one (1) ball sitting on the plate, the spring, #1, #2 and #4 balls. See Fig. #8. Do Not discard #3 ball.
- STEP #7:** Remove old spacer plate and gaskets. Be sure all gasket material is removed from the transmission case.
- STEP #8:** Tap governor hole 5/16-18 and install Set Screw (#24126). This hole must be deep enough so that the Set Screw is below the surface of the case. Suggest Loctite on Set Screw. Fig. #12.
- STEP #9:** **Carefully remove shipping retaining nuts & washers holding the aluminum manifold. Be very careful to not put pressure on the manifold causing it to break the epoxy loose!** Be sure #3 Ball is placed into new valve body. See Fig. #8.
- STEP #10:** Place valve body gasket on valve body (V.B. marked on gasket #27097). See Fig. #7. Now place valve body spacer plate on top of gasket.
- STEP #11:** Place case gasket #27098 on top of valve body spacer plate. This is the gasket marked C. Fig. #7.

**SPECIAL NOTE:** Use petroleum jelly to keep gaskets from moving around.

***Maximum Performance and Durability Do Steps #12- #15, otherwise skip to Step #16.***

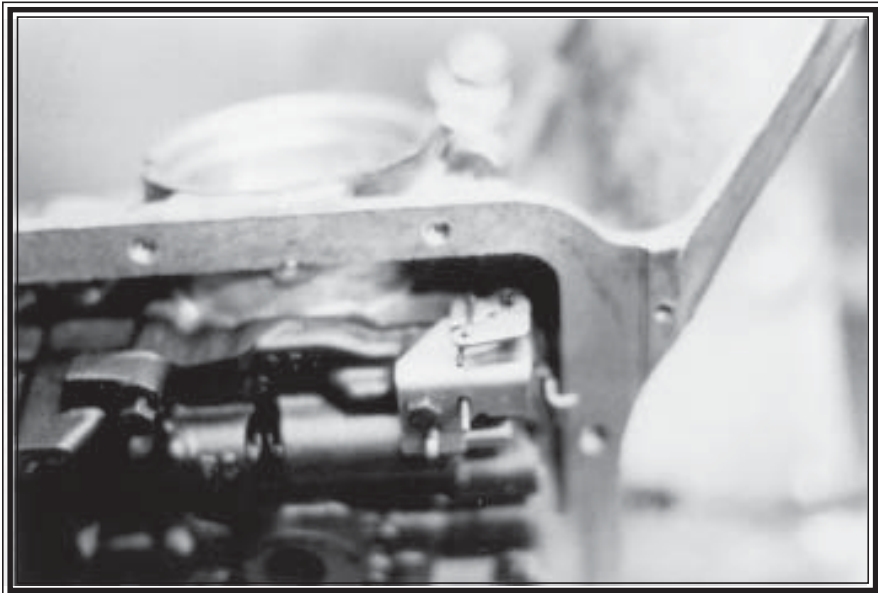
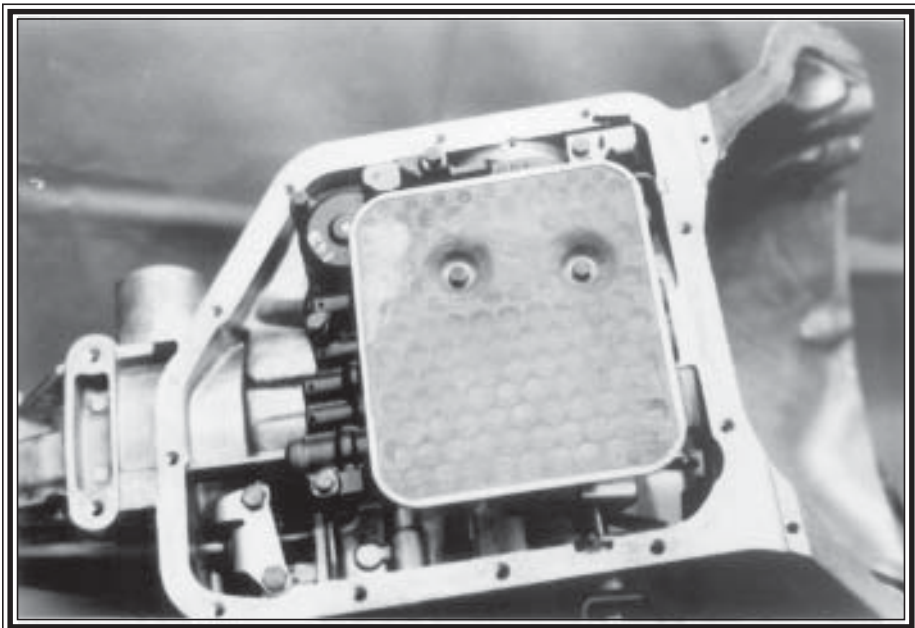
- STEP #12:** Remove front pump assembly and drum assemblies from transmission. **NOTE:** You should use lock-up transmission parts for best results.
- STEP #13:** Remove direct clutch drum lip seal. **CAUTION: DO NOT** remove any lip seals from the direct clutch piston.
- STEP #14:** Remove ball check that is located in the front pump assembly.
- STEP #14A** Tap **Reverse Port** hole 3/8"-16 and install Set Screw (#23138). This hole must be deep enough so that the Set Screw is flush or slightly below the surface of the case. Suggest Loctite on Set Screw Fig.13.
- STEP #15:** Reinstall all parts per General Motors specifications.
- STEP #16:** Raise valve body up carefully into transmission being sure that manual valve lines up properly with shift linkage. Fig. #5. **NOTE:** Do Not reinstall ball that set on plate or the big spring.
- STEP #17:** Install all valve body bolts including special manifold bolts finger tight, except manual detent roller spring bolt (Fig. #9). **Suggest using one special long bolt through manifold and one filter bolt through filter hole to guide valve body into place. This will keep gaskets lined up. Then install rest of bolts before tightening up any and be sure you keep manual valve lined up.**

- STEP #18:** Now place bolt and manual detent roller and spring into place, being sure that manual valve was lined up properly. See Fig. #4 and #9.
- STEP #19:** Tighten all bolts 6-8 ft. lbs. starting from the center of valve body out.
- STEP #20:** **If you have a Non-Lockup case, the following instruction will not apply and you will need to make up a case connector.** Remove old connector from case. Slide solenoid wires through the connector hole (Fig. #11A & 11B) in case. Install O-ring on connector. Now connect wires to solenoid connector. **BE SURE to hook the #1 solenoid wire** to the front terminal on the solenoid case connector. Slide solenoid connector into case being sure it is seated. Check that wires are clear of shift linkage and that they will not accidentally ground out.
- STEP #21:** **You must use a Lock-Up type filter and oil pan to allow clearance for the solenoids.**
- Install filter and filter gasket using the two long filter bolts. Tighten 6-8 ft. lbs.
- CAUTION:** If installing a new filter, there are two types, one for lockup transmissions and one for non-lockup. This valve body requires the lock-up type pan and filter or an extra deep pan with proper filter & extension.
- Non Lock-up pan** is approximately 2 1/8" deep. Filter sits approx. 2" above pan rail.
- Lock-up pan** is approximately 2 9/16" deep. Filter sits approx. 2 1/2 " above pan rail.
- STEP #22:** Be sure case is clean and then install pan gasket.
- STEP #23:** Install two different color, #14 - #16 wires to the **CHEETAH E-SHIFT Controller** #1 Shift and #2 Shift Solenoid Output terminals. The other end of the wires go to the solenoid connector on the transmission. The #1 Shift Solenoid Output wire must be connected to the **FRONT Terminal** of the case connector on the transmission (Fig. #11B). The #2 Shift Solenoid Output wire must be connected to the **Rear Terminal** of the case connector on the transmission (Fig. #11B). Install terminal connectors to the wires and then connect to the solenoid connector.
- STEP #24:** **Input to #70600 CHEETAH E-SHIFT Controller +/- Sol., must be 12-16 volts.**
- STEP #25:** **Refill transmission** with a name brand transmission fluid. Dexron, Type "F" or AMSOIL Synthetic oil will all work well. If converter still has oil, it will require 3-5 quarts.
- STEP #26:** Set RPM for the First Race Shift and Second Race Shift in **CHEETAH E-SHIFT Controller**. Suggest 1-2 (4200 rpm) and the 2-3 (4500 rpm) to test transmission on the return road or the jackstands. You will need to drag the rear brakes to feel the 1-2 shift on the jackstands.
- STEP #27:** Warm transmission up and **place in all gears**, then check to make sure transmission level is on the add mark. Take vehicle out and shift several times. Then **recheck** oil level. Add oil if necessary to bring up to the full mark. **DO NOT OVERFILL!** **NOTE: This valve body is PRN321.**
- STEP #28:** To race with this unit, place shifter in third gear and the **CHEETAH E-SHIFT Controller** electronics will shift the 1-2 and the 2-3 automatically. You can manually shift if you move the shifter at a higher rpm than is set in the **CHEETAH E-SHIFT Controller**.

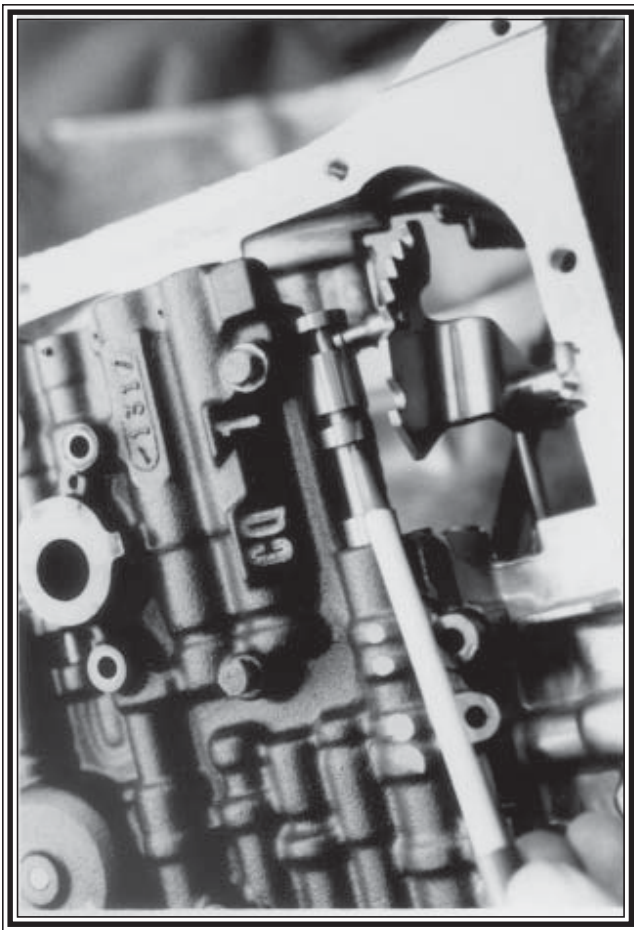


**Fig. #1**  
**Pan Marked Metric**

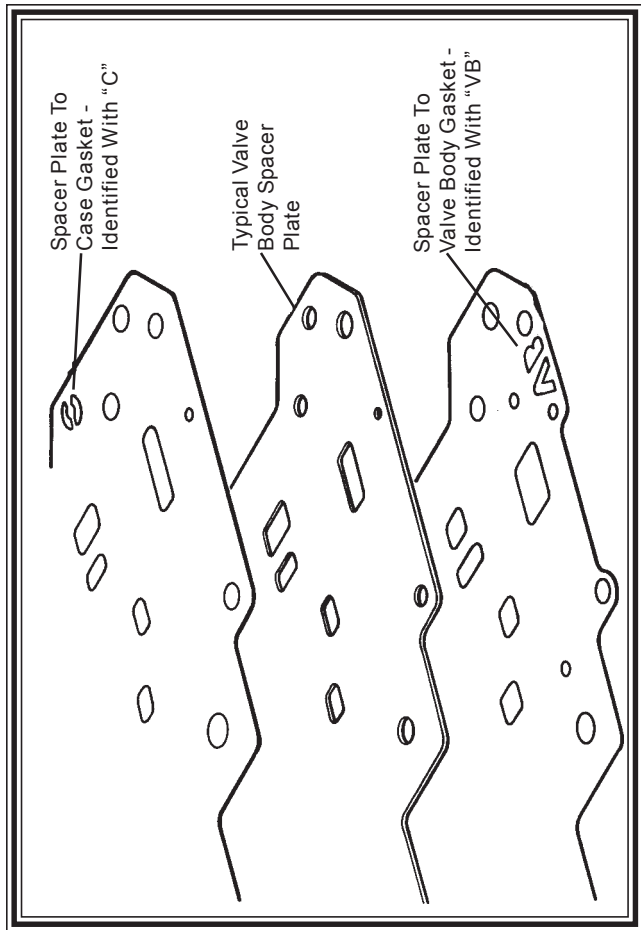
**Fig. #2**  
**Filter Bolts & Filter**



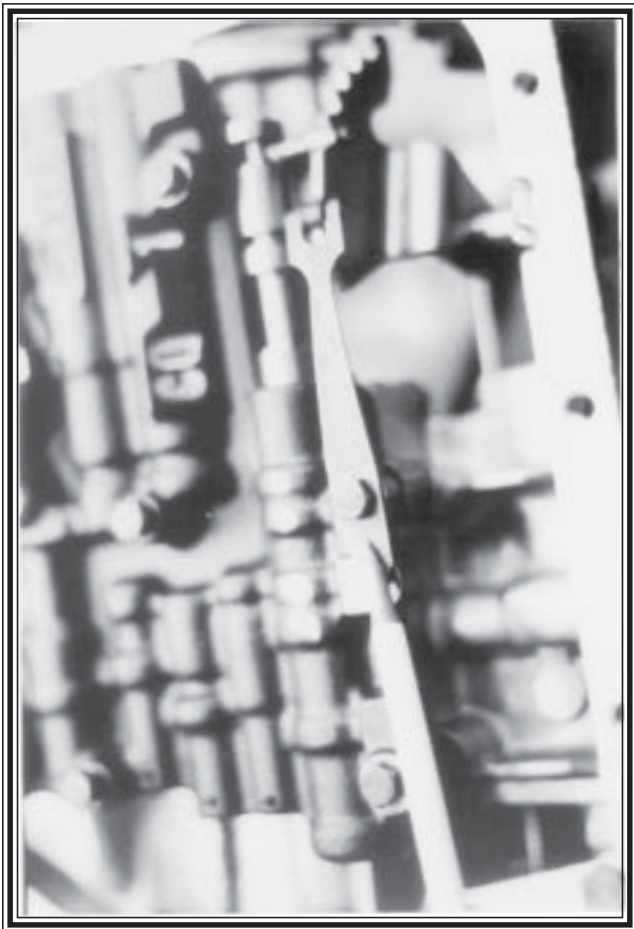
**Fig. #3**  
**Throttle Lever**  
**Bracket Assembly**



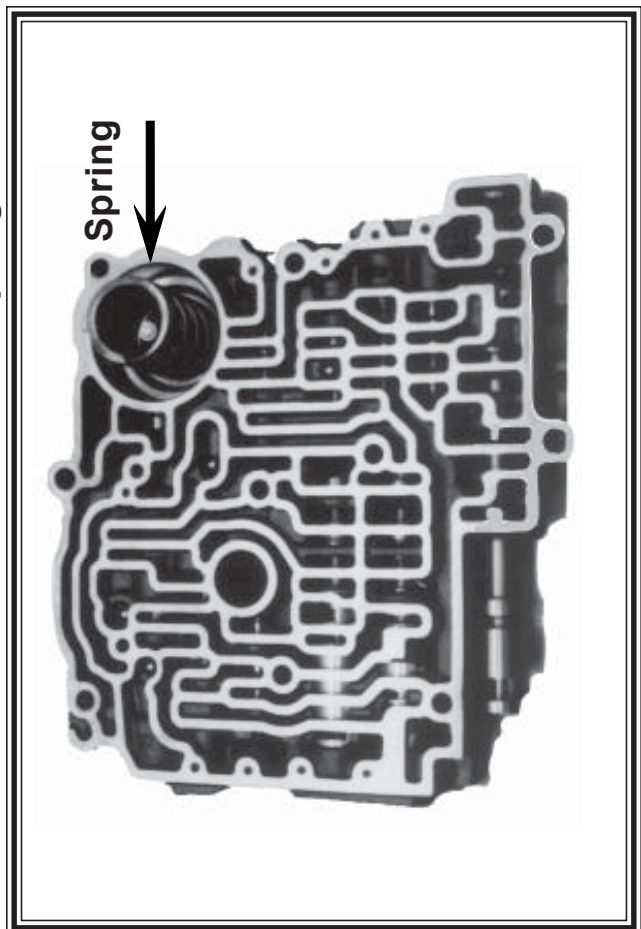
**Fig. #5**  
**Manual Valve**



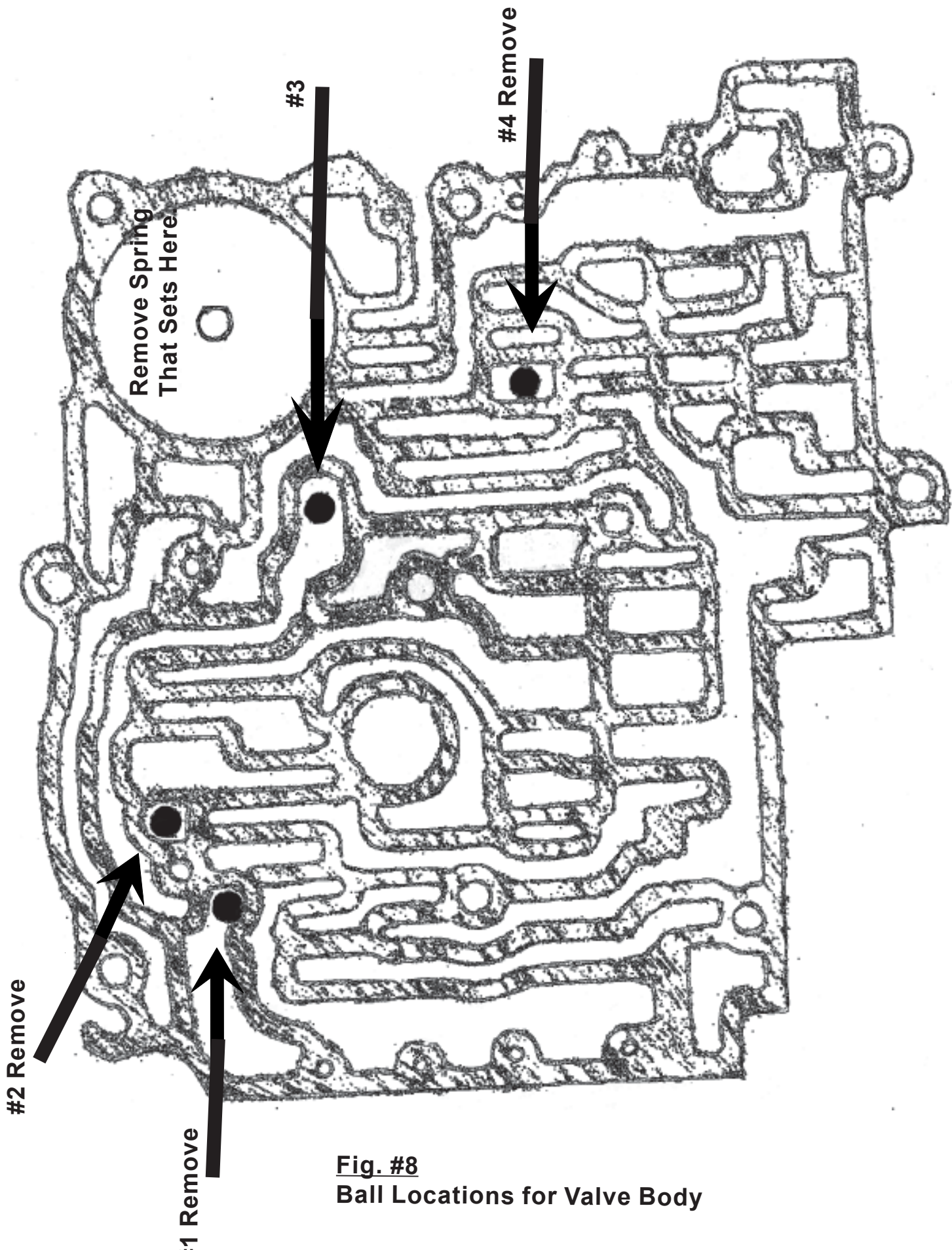
**Fig. #7**  
**Valve Body Gasket Identifications**



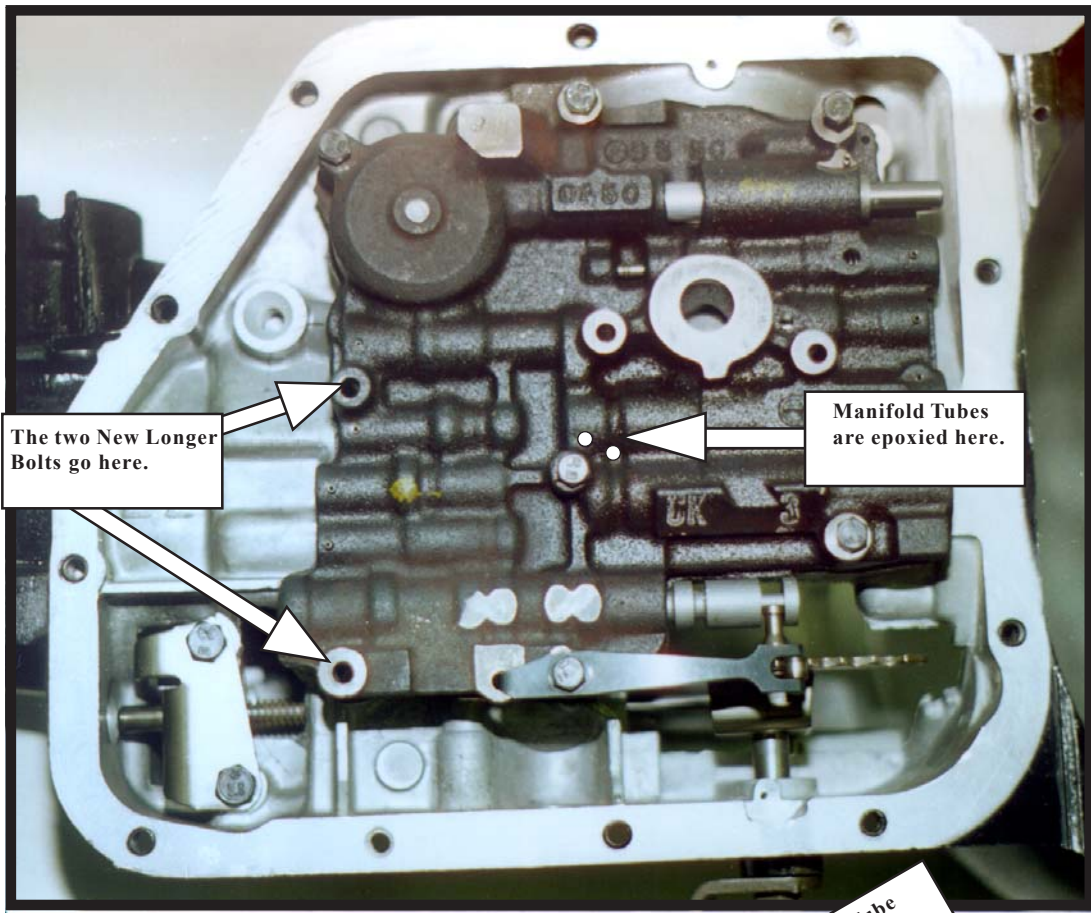
**Fig. #4**  
**Manual Detent Roller & Spring**



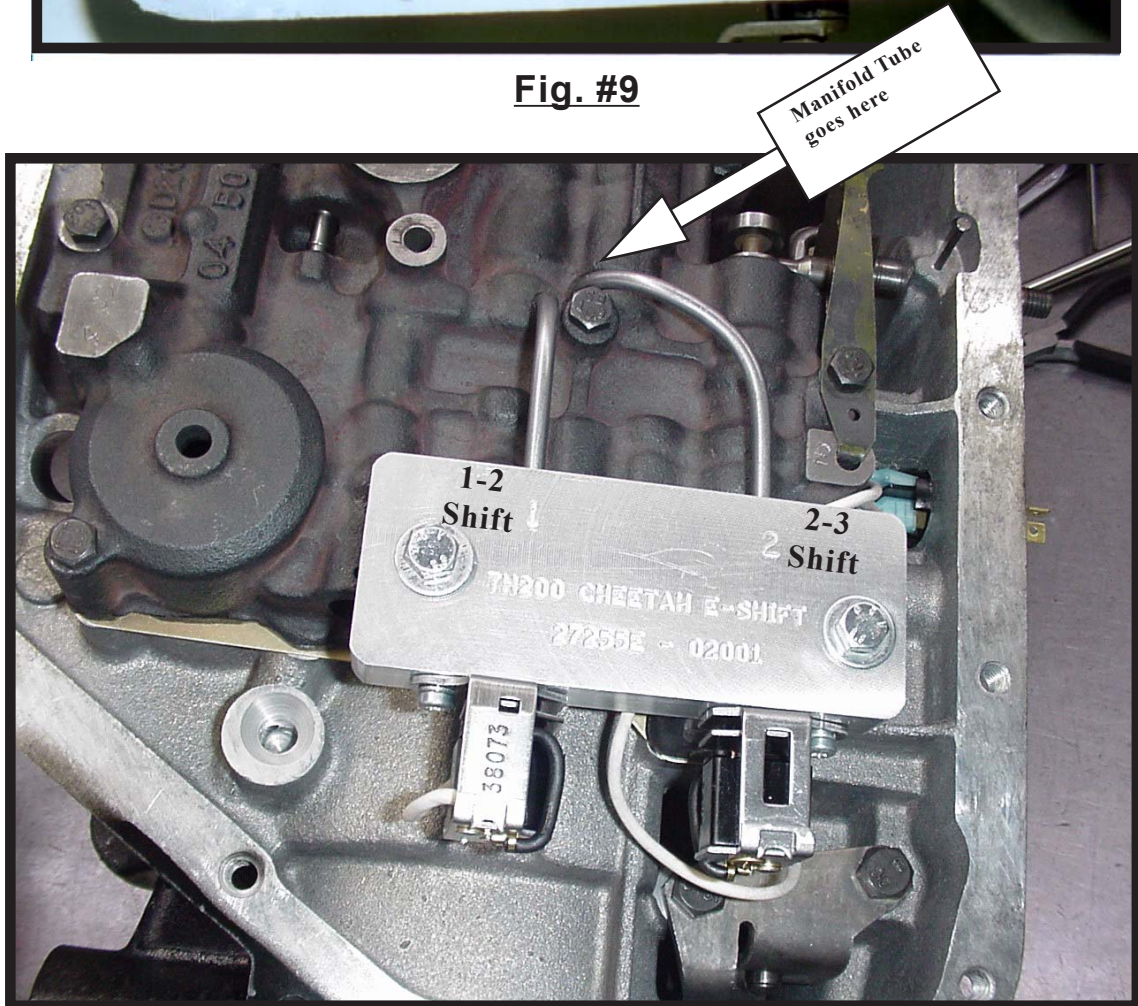
**Fig. #6**  
**Valve Body with Spring**



**Fig. #8**  
**Ball Locations for Valve Body**



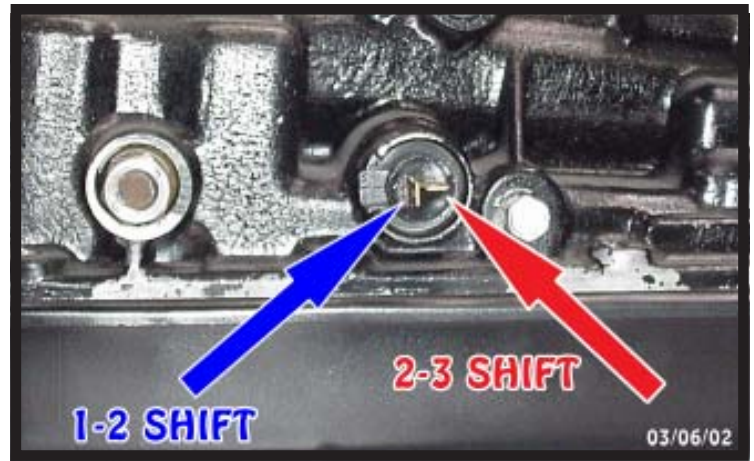
**Fig. #9**



**Fig. #10**

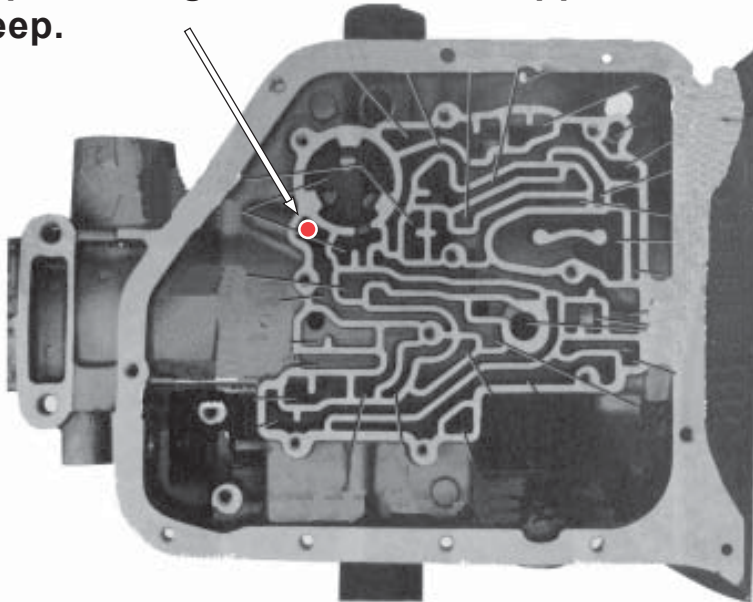


**Fig. #11A**  
Solenoid Connector



**Fig. #11B**  
Solenoid Connector  
12-16 Volts

Tap hole to governor 5/16-18 approximately 1/2" deep.



**Fig. #12**

