GM 6T70/75
PRELIMINARY INFORMATION

The new Hydra-matic 6T70/75 (6 Speed) is a fully automatic, six speed, front wheel drive, electronically controlled transmission that features clutch to clutch shifting. It is also all-wheel drive capable. It was first introduced in the 2007 GMC Acadia and Pontiac G6, and is shown in Figure 1. It consists primarily of a four element torque converter, three planetary gear sets, five clutch packs, one mechanical one-way clutch and a hydraulic pressurization and control system. Three planetary gear sets provide the seven forward gear ratios and reverse. Changing gear ratios is fully automatic and is accomplished through the use of a Transmission Control Module (TCM), that is ***located within the transmission.*** The TCM receives and monitors various electronic sensor inputs, and uses this information to shift the transmission at the optimum time. The TCM commands shift solenoids and variable bleed Clutch Pressure Control (CPC) solenoids within the transmission to control shift timing. The TCM controls shift feel through the CPC solenoids. The TCM also controls the apply and release of the torque converter clutch which allows the engine to deliver the maximum fuel efficiency without sacrificing vehicle performance. This manual contains procedures necessary to diagnose, overhaul and/or repair the new 6T70 (6 Speed) transmission from General Motors.

A very special thanks to Robbie Ferguson at Alto Products for the loan of the 6T70 transmission.

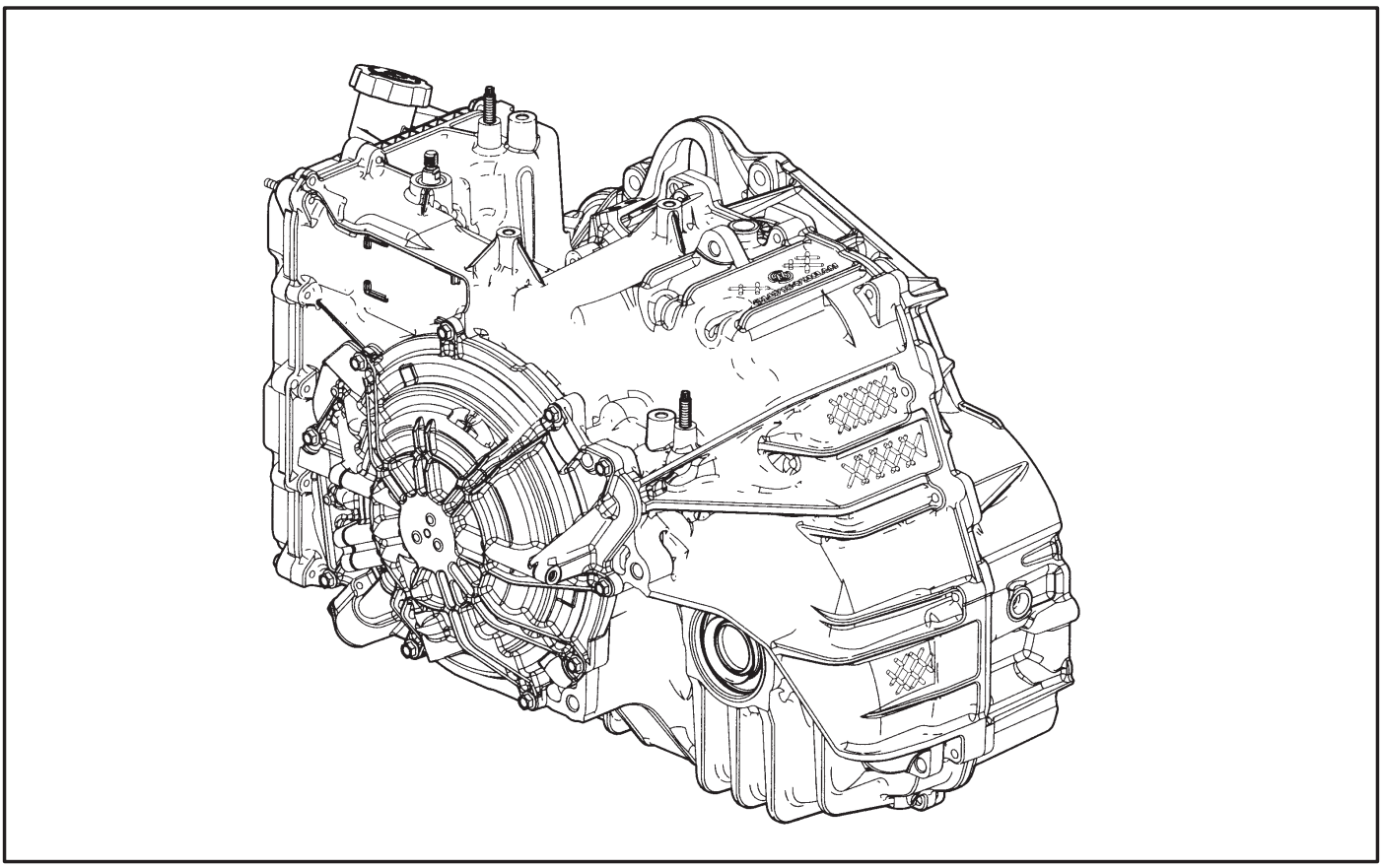

Figure 1

SHIFT QUADRANTS

Figure 2

Standard Shift Quadrant

P - Park position enables the engine to be started while preventing the vehicle from moving. For safety reasons, the vehicle's parking brake should always be used in addition to the "Park" position. Park position should not be selected until the vehicle has come to a complete stop.

R - Reverse enables the vehicle to be operated in a rearward direction.

N - Neutral position enables the engine to start and operate without driving the vehicle. If necessary, this position should be selected to restart the engine while the vehicle is moving.

D - Drive range should be used for all normal driving conditions for maximum efficiency and fuel economy. Drive range allows the transmission to upshift and downshift in each of the six forward gear ratios, according to the normal shift pattern that is programed in the TCM.

Manual Shift Gear Ranges

Some vehicles are equipped with a shift quadrant that allow manual range selection. For example, "M" manual range and/or manual range "2" or "1", as shown in Figure 2 These ranges can be used for conditions where it may be desirable to control the selection of gear ratios. These conditions include trailer towing, driving on hilly terrain, and are also helpful for engine braking when descending slight grades.

M - When manual mode is selected, the current gear range will be the highest attainable range with all of the lower gears available. Plus/Minus buttons may be used to select the desired range of gears for the current driving conditions.

2 - Manual 2nd just adds more performance for congested traffic and hilly terrain. It has the same starting ratio (1st gear) as the Drive range, but prevents the transmission from shifting above 2nd gear. Manual 2nd can be used to retain 2nd gear for acceleration and engine braking as desired. Manual 2nd can be selected at any vehicle speed, but will downshift into 2nd gear, only if vehicle speed is low enough not to over-rev the engine. This speed is calibrated in the TCM.

1 - Manual 1st has the same starting ratio as Drive range but prevents the transmission from shifting above 1st gear. Manual 1st can be used for heavy towing and engine braking as desired. Manual 1st can be selected at any vehicle speed but will downshift into 1st gear, only if vehicle speed is low enough not to over-rev the engine. This speed is calibrated in the TCM.

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Standard Shift Quadrant...continued

P - Park position enables the engine to be started while preventing the vehicle from moving. For safety reasons, the vehicle's parking brake should always be used in addition to the "Park" position. Park position should not be selected until the vehicle has come to a complete stop.

R - Reverse enables the vehicle to be operated in a rearward direction.

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D - Drive range should be used for all normal driving conditions for maximum efficiency and fuel economy. Drive range allows the transmission to upshift and downshift in each of the six forward gear ratios, according to the normal shift pattern that is programed in the TCM.

Driver Shift Control (DSC) Quadrant

Some vehicles are equipped with Driver Shift Control (DSC) version of the selector system, as shown in Figure 2. This configuration allows the driver to manually shift between forward gears.

M - In the M/S (Manual or Sport) position, the driver may manually select the range of gears by tapping the selector lever towards "+" or "-" to cause an upshift or downshift, as shown in Figure 2. The transmission will shift up or down depending on the request that is made by tapping the selector lever.

DRIVER SHIFT CONTROL QUADRANT

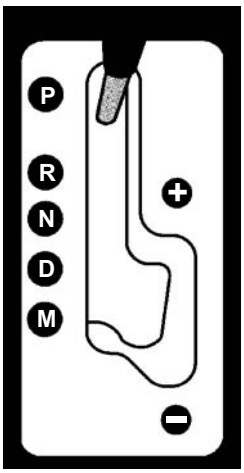


Figure 3

General Operation

The new Hydra-matic 6T70/75 (6 Speed) is a fully automatic, six speed, rear wheel drive, electronically controlled transmission that features clutch to clutch shifting. It consists primarily of a four element torque converter, three planetary gear sets, five clutch packs, one mechanical one-way clutch and a hydraulic pressurization and control system.

The four element torque converter contains a pump, a turbine, a pressure plate splined to the turbine, and a stator assembly. The torque converter acts as a fluid coupling to smoothly transmit power from the engine to the transmission. It also hydraulically provides additional torque multiplication when required. The pressure plate, when applied, provides a mechanical "direct drive" coupling of the engine to the turbine shaft of the transmission.

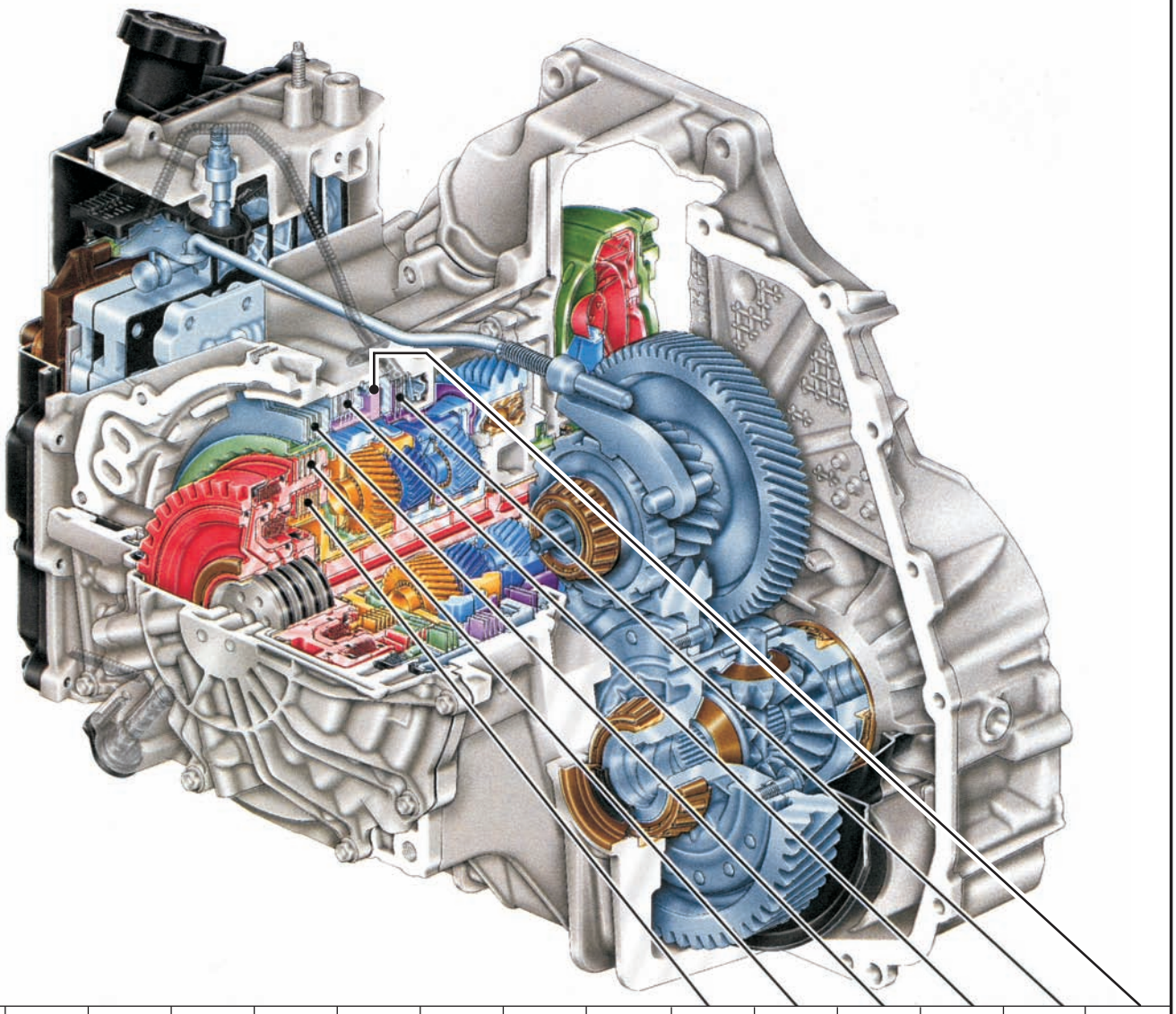
The two planetary gear sets provide the six forward gear ratios and reverse. Changing gear ratios is fully automatic and is accomplished through the use of a Transmission Control Module (TCM) located within the transmission. The TCM receives and monitors various electronic sensor inputs, and uses this information to shift the transmission at the optimum time.

The TCM commands shift solenoids and variable bleed Clutch Pressure Control (CPC) solenoids within the transmission to control shift timing. The TCM controls shift feel through the CPC solenoids. The TCM also controls the apply and release of the torque converter clutch which allows the engine to deliver the maximum fuel efficiency without sacrificing vehicle performance.

The hydraulic system primarily consists of a vane type pump, two control valve bodies, converter housing and case. The pump maintains the working pressures needed to apply the clutch pistons that apply or release the friction components. These friction components, when applied or released, support the shifting qualities of the transmission.

The friction components used in this transmission consist of five multiple disc clutches. The multiple disc clutches combine with one mechanical sprag clutch, to deliver seven different gear ratios through the gearsets that then transfer torque through the output shaft. Refer to Figure 4 for the component application chart for this transmission.

INTERNAL COMPONENT IDENTIFICATION AND LOCATION

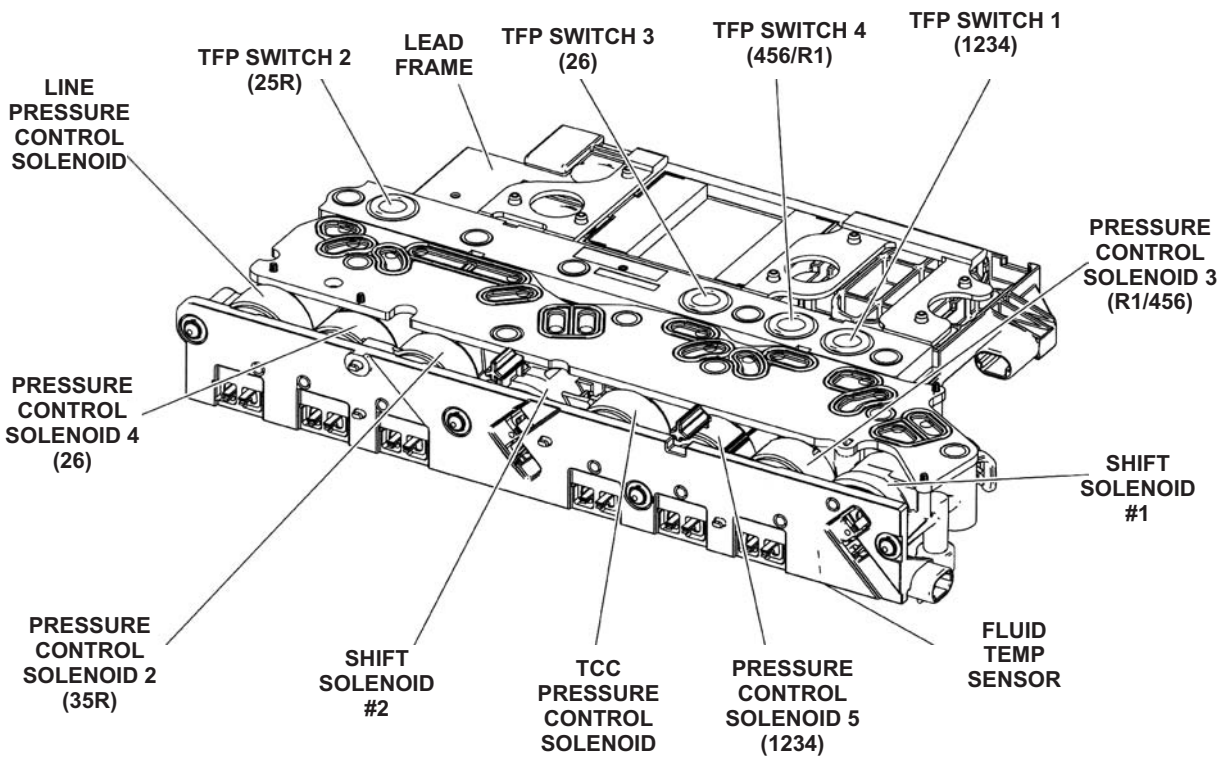


RANGE	GEAR	RATIO	SHIFT SOL #1	SHIFT SOL #2	1-2-3-4CL PC SOL 5 N.L.	2-6 CL PC SOL 4 N.L.	3-5 REV CL PC SOL 2 N.H.	LO/REV 4-5-6 CL PC SOL 3 N.H.	4-5-6 CLUTCH	3-5 REV CLUTCH	2-6 CLUTCH	LO/REV CLUTCH	1-2-3-4 CLUTCH	LOW ONE-WAY CLUTCH
PARK	P		ON	ON	OFF	OFF	ON	OFF				APPLIED*		
REV	R	2.880	ON	OFF	OFF	OFF	OFF	OFF		APPLIED		APPLIED		
NEU	N		ON	ON	OFF	OFF	ON	OFF				APPLIED*		
DRIVE	1ST BRAKING	4.484	OFF	ON	ON	OFF	ON	OFF				APPLIED	APPLIED	
	1ST	4.484	OFF	ON	ON	OFF	ON	ON					APPLIED	HOLD
	2ND	2.872	OFF	ON	ON	ON	ON	ON			APPLIED		APPLIED	
	3RD	1.842	OFF	ON	ON	OFF	OFF	ON		APPLIED			APPLIED	
	4TH	1.414	OFF	ON	ON	OFF	ON	OFF	APPLIED				APPLIED	
	5TH	1.000	OFF	ON	OFF	OFF	OFF	OFF	APPLIED	APPLIED				
	6TH	0.742	OFF	ON	OFF	ON	ON	OFF	APPLIED		APPLIED			

* APPLIED WITH NO LOAD

Figure 4

CONTROL SOLENOID BODY AND TCM ASSEMBLY



SOLENOID APPLICATION CHART

RANGE	Shift Sol. 1	Shift Sol. 2	N.L. CPC Sol. 5 1-2-3-4 CL.	N.L. CPC Sol. 4 2-6 CL.	N.H. CPC Sol. 2 3-5 Rev CL.	N.H. CPC Sol. 3 4-5-6, Low/Rev CL.	TCC PC Sol. Torq Conv CL.	LINE PC Sol. Line Pres Cont	GEAR RATIO
Park	ON	ON	OFF	OFF	ON	OFF	OFF	ON**	——
Reverse	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON**	2.880
Neutral	ON	ON	OFF	OFF	OFF	ON	OFF	ON**	——
"D"-1st Braking	OFF	ON	ON	OFF	ON	OFF	OFF		4.484
"D"-1st	OFF	ON	ON	OFF	ON	ON	OFF	ON**	4.484
"D"-2nd	OFF	ON	ON	ON	ON	ON	ON*	ON**	2.872
"D"-3rd	OFF	ON	ON	OFF	OFF	ON	ON*	ON**	1.842
"D"-4th	OFF	ON	ON	OFF	ON	OFF	ON*	ON**	1.414
"D"-5th	OFF	ON	OFF	OFF	OFF	OFF	ON*	ON**	1.000
"D"-6th	OFF	ON	OFF	ON	ON	OFF	ON*	ON**	0.742

FOR SHIFT SOLENOIDS 1 AND 2: "ON" = ENERGIZED (PRESSURIZED), "OFF" = DE-ENERGIZED (NO PRESSURE).
FOR CPC SOLENOIDS 2, 3, 4, 5: "ON = PRESSURIZED, "OFF" = NO PRESSURE.
** TCC IS AVAILABLE IN 2ND THRU 6TH GEAR, BASED ON THROTTLE POSITION, FLUID TEMP AND VEHICLE SPEED.*
*** CONSTANTLY VARIES LINE PRESSURE BASED ON THROTTLE POSITION, FLUID TEMP, AND GEAR STATE.*

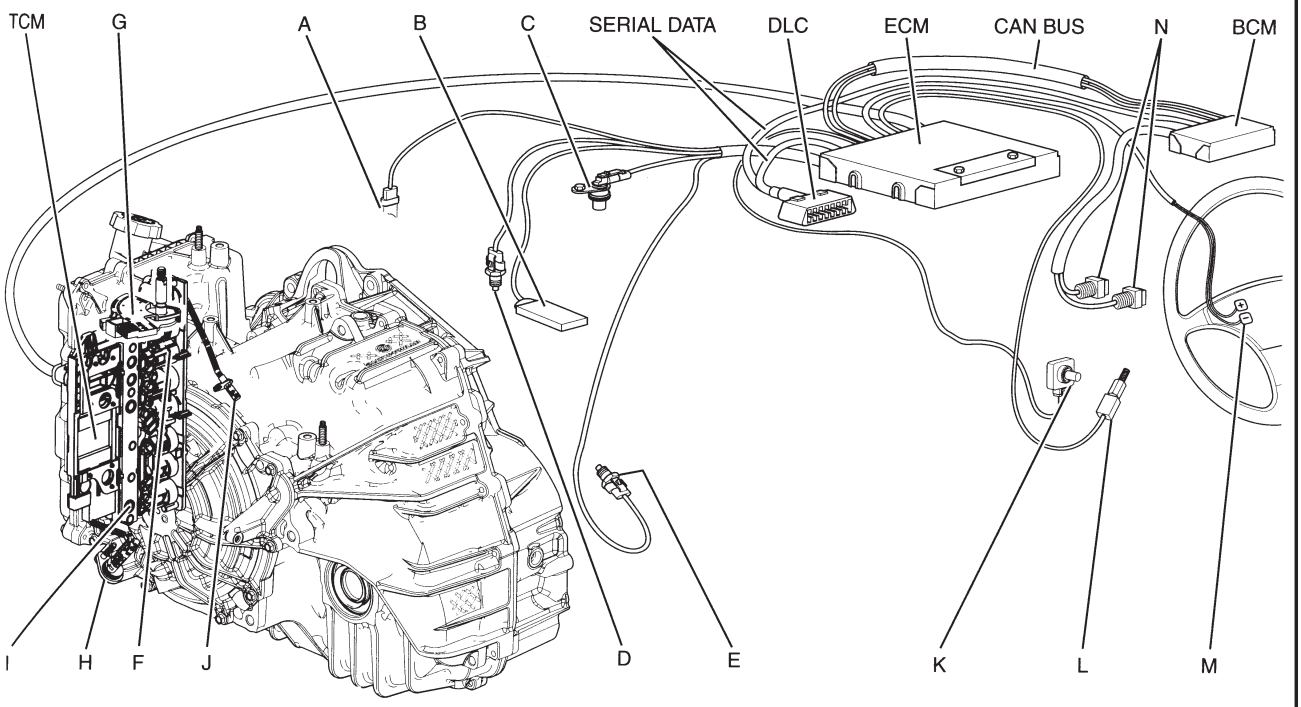
Figure 5

ELECTRONIC COMPONENTS

In the 6T70/75 transmission, the TCM, both shift solenoids, all 6 of the pressure control solenoids, the TFT sensor and fluid pressure switches are contained in one unit, the Control Solenoid Body and TCM Assembly, which is behind the side cover pan, as shown in Figure 6.

Electrical signals from various sensors provide information to the TCM about vehicle speed, throttle position, engine coolant temp, fluid temp, range selector position, engine speed, turbine speed and operating mode. The TCM uses this information to determine the precise moment to upshift or downshift, apply or release the TCC, and what pressure is needed to apply the clutches. This type of control provides consistent and precise shift points and shift quality based on the actual operating conditions of the vehicle.

Adaptive shift control technology enables the TCM to continually monitor and compare shift performance to the optimum shift, and make adjustments to the factory settings to continually deliver excellent shift quality.



INFORMATION SENSORS

A THROTTLE POSITION SENSOR
B MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
C ENGINE SPEED SENSOR
D MANIFOLD AIR TEMP (MAT) SENSOR
E ENGINE COOLANT TEMP (ECT) SENSOR
F TRANSMISSION FLUID TEMP (TFT) SENSOR
G TRANSMISSION MANUAL SHIFT SHAFT POSITION SWITCH ASSEMBLY
H INPUT SPEED SENSOR (ISS)
I TRANSMISSION FLUID PRESSURE SWITCHES
J OUTPUT SPEED SENSOR (OSS)
K ACCELERATOR PEDAL POSITION (APP) SENSOR
L BRAKE SWITCH
M DRIVER SHIFT CONTROL (DSC) SWITCHES
N OPERATING MODE SELECTION SWITCHES

ELECTRONIC CONTROLLERS

TRANSMISSION CONTROL MODULE (TCM)

ENGINE CONTROL MODULE (ECM)

BODY CONTROL MODULE (BCM)

ELECTRONIC BRAKE & TRACTION CONTROL MODULE (NOT SHOWN)

DIAGNOSTIC LINK CONNECTOR (DLC)

ELECTRONICALLY CONTROLLED TRANSMISSION COMPONENTS

LINE PRRESSURE CONTROL SOLENOID

CLUTCH PRES CONTROL SOLENOID 2

CLUTCH PRES CONTROL SOLENOID 3

CLUTCH PRES CONTROL SOLENOID 4

CLUTCH PRES CONTROL SOLENOID 5

TCC PRESSURE CONTROL SOLENOID

SHIFT SOLENOID 1

SHIFT SOLENOID 2

Figure 6

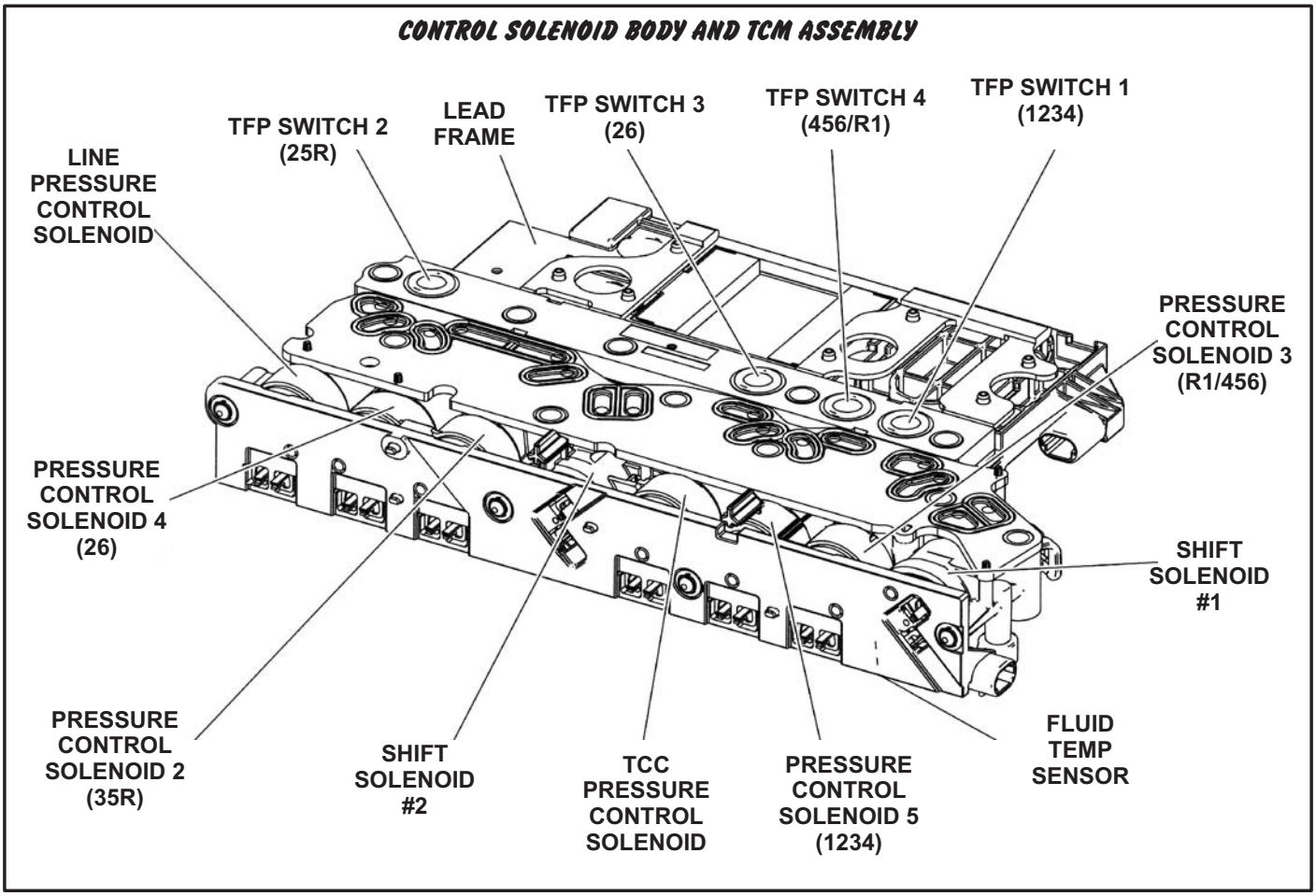


Figure 7

ELECTRONIC COMPONENTS (CONT'D)

Control Solenoid Body And TCM Assembly

The Control Solenoid Body and TCM Assembly bolts directly to the lower and upper valve body assemblies inside the transmission. The solenoid assembly utilizes a lead frame system to connect the components to the TCM, as shown in Figure 7. There are no wires used for these components. The Control Solenoid Body and TCM Assembly connect to the external harness 20 way connector using a pass-thru sleeve. All fluid passages to the switches and solenoids are protected from debris by a serviceable filter plate assembly, as shown in Figure 7. In addition to the components shown in Figure 7, there is a transmission fluid temperature sensor that is an integral part of the control solenoid body and TCM assembly.

The components shown in Figure 7 are diagnosed seperately, but serviced as an assembly.

The TFT sensor is part of the control solenoid body and TCM assembly, and is not serviced separately, as shown in Figure 7 and 8. The TFT sensor is a thermistor, which changes value based on temperature. The sensor has a negative-temperature coefficient, which means as the temp increases, the resistance decreases, and as the temp decreases, the resistance increases. The TCM supplies a voltage reference signal to the sensor and measures the voltage drop in the circuit. The TCM uses this information to maintain shift quality and torque converter clutch apply quality over the entire operating temperature range. If the TCM detects an improper signal from the TFT sensor, a DTC will be activated.

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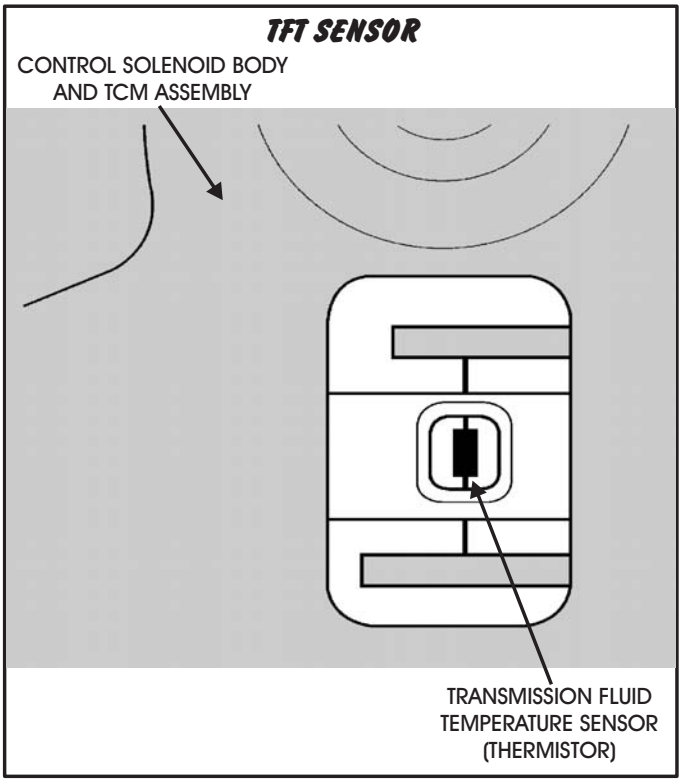
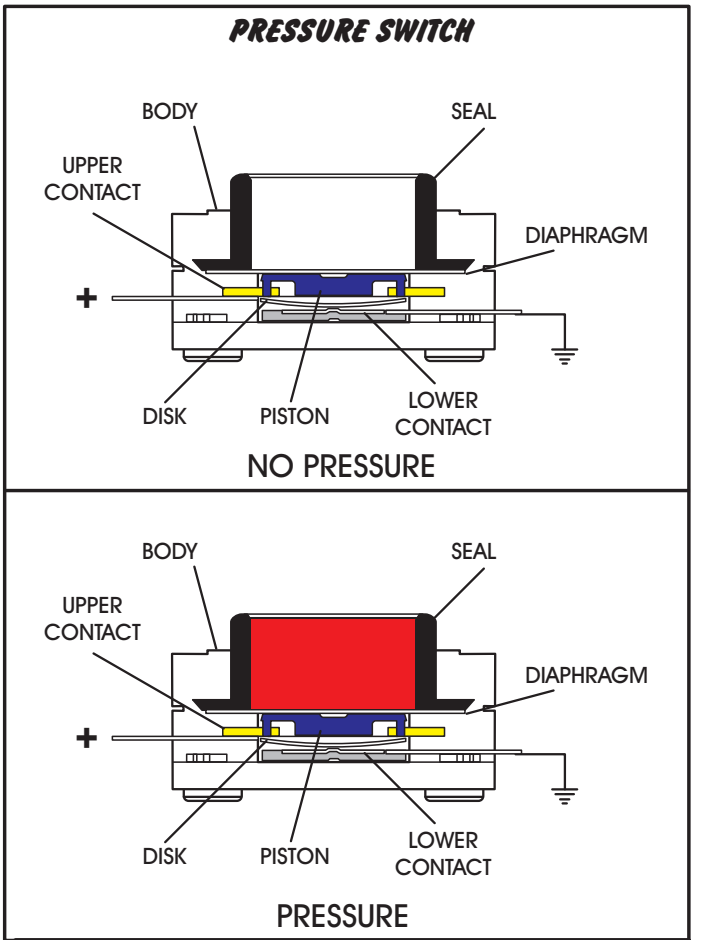


Figure 8



ELECTRONIC COMPONENTS (CONT'D)

Fluid Pressure Switches

The transmission fluid pressure switches located in the control solenoid body and TCM assembly are normally closed. When closed, these switches allow current flow through the switch. When fluid pressure is routed to the switch, pressure moves the diaphragm, piston and disk such that the circuit opens and there is no current flow. See Figure 9 for a cut-away view and a pressure switch logic chart.

TFP switch 1 sends a signal to the TCM to indicate the state of the 1-2-3-4 clutch regulator valve.

TFP switch 2 sends a signal to the TCM to indicate the state of the 3-5-reverse clutch regulator valve.

TFP switch 3 sends a signal to the TCM to indicate the state of the 2-6 clutch regulator valve.

TFP switch 4 sends a signal to the TCM to indicate the state of R1/4-5-6 clutch regulator valve.
(R1 = Clutch Braking 1st)

The fluid pressure switches are part of the Control Solenoid Body and TCM Assembly, and are not serviced separately.

Pressure Switch Logic				
Selector Position	***Switch 1***	***Switch 2***	***Switch 3***	***Switch 4***
Park	***0***	***1***	***0***	***0***
Reverse	***0***	***0***	***0***	***0***
Neutral	***0***	***1***	***0***	***0***
1st Engine Braking	***0***	***1***	***1***	***0***
"D"-1st	***0***	***1***	***1***	***1***
"D"-2nd	***0***	***1***	***0***	***1***
"D"-3rd	***0***	***0***	***1***	***1***
"D"-4th	***0***	***1***	***1***	***0***
"D"-5th	***1***	***0***	***1***	***0***
"D"-6th	***1***	***1***	***0***	***0***
1 = Pressurized		***0 = Exhausted***		

Figure 9

Continued on next Page

ELECTRONIC COMPONENTS (CONT'D)

SHIFT SOLENOIDS 1 AND 2

Shift solenoids 1 and 2 are both identical, normally closed, 3 port, ON/OFF type solenoids controlled by the TCM. These shift solenoids work in combination with the clutch pressure control solenoids to control the various shift and clutch regulator valves in the valve body.

When the TCM provides a path to ground for the electrical circuit to energize (Turn ON) the solenoid, current flows through the coil assembly in the solenoid and creates a magnetic field. The magnetic field moves the plunger and metering ball assembly to the right, as shown in Figure 10, against the exhaust seat, thereby blocking the exhaust passage and creating solenoid control pressure.

Shift solenoids are de-energized (Turned OFF) when the TCM opens the path to ground for the solenoid's electrical circuit. With the solenoid OFF, solenoid spring force moves the plunger and metering ball assembly to the left, as shown in Figure 10, away from the exhaust seat and against the feed seat. This blocks actuator feed limit fluid from entering the solenoid and allows any existing solenoid control pressure to exhaust through the solenoid.

Shift Solenoids 1 and 2 are part of the Control Solenoid Body and TCM Assembly, and are not serviced separately.

Shift Solenoid 1

Actuator feed limit fluid feeds the shift solenoid 1 fluid circuit to control clutch select valve 2. When shift solenoid 1 is energized (ON), actuator feed limit fluid is allowed to pass through the solenoid, thereby creating solenoid 1 control pressure, as shown in Figure 10. Solenoid 1 control pressure acts against clutch select valve 2 spring force, to move the valve to the apply position.

When shift solenoid 1 is de-energized (OFF), actuator feed limit fluid is blocked from feeding the solenoid 1 circuit, and any existing solenoid 1 control pressure exhausts through the solenoid, as shown in Figure 10.

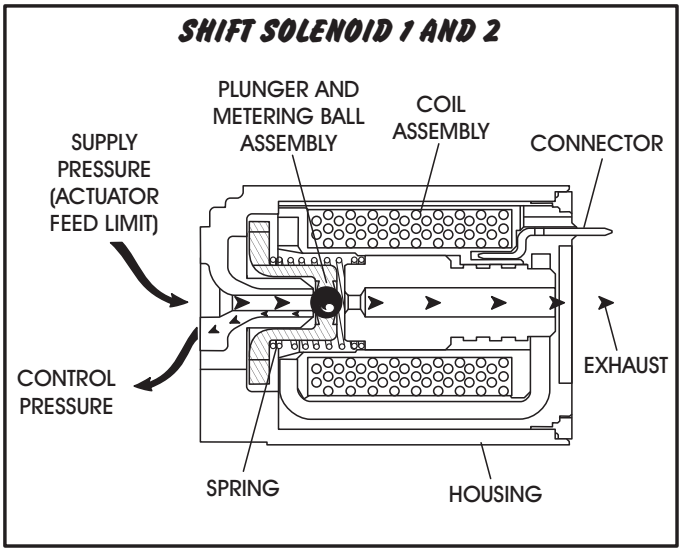


Figure 10

Shift Solenoid 2

Actuator feed limit fluid feeds the shift solenoid 2 fluid circuit to control clutch select valve 3. When shift solenoid 2 is energized (ON), actuator feed limit fluid is allowed to pass through the solenoid, thereby creating solenoid 2 control pressure, as shown in Figure 10. Solenoid 2 control pressure acts against clutch select valve 3 spring force, to move the valve to the apply position.

When shift solenoid 2 is de-energized (OFF), actuator feed limit fluid is blocked from feeding the solenoid 2 circuit, and any existing solenoid 2 control pressure exhausts through the solenoid, as shown in Figure 10.

Fail-Safe or Protection Mode

If for any reason, the entire electronic control system of the transmission, or any one of the electrical components within the Control Solenoid Body and TCM Assembly becomes disabled, the transmission will default to fail-safe mode. If the transmission is in 1st, 2nd or 3rd gear during an electrical failure, the transmission will default to 3rd gear. If the transmission is in 4th, 5th or 6th gear during an electrical failure, the transmission will default to 5th gear.

ELECTRONIC COMPONENTS (CONT'D)

PRESSURE CONTROL SOLENOIDS

Line Pressure Control (PC) Solenoid

The line pressure (PC) solenoid is a precision electronic pressure regulator that controls line pressure based on current flow through its coil windings. The TCM varies current to the ***"normally-high"*** amperage line pressure control (PC) solenoid from approximately 0.1 amp (maximum line pressure), to 1.0 amps (minimum line pressure). As current flow is increased, the magnetic field produced by the coil moves the solenoid's variable restriction further away from the exhaust port, as shown in Figure 11. Opening the exhaust port decreases the control pressure, which is routed to the isolator (boost) valve, as shown in Figure 11, which ultimately decreases line pressure. As the current flow is decreased, the reduced magnetic field allows the spring force to move the variable restriction to the left, as shown in Figure 11, closer to the exhaust port, increasing control pressure from the solenoid, which ultimately increases line pressure.

As the throttle position (engine torque) increases, the current flow is decreased by the TCM, which increases the pressure output of the line pressure (PC) solenoid. If the TCM detects a line pressure control solenoid electrical malfunction, a DTC will be activated.

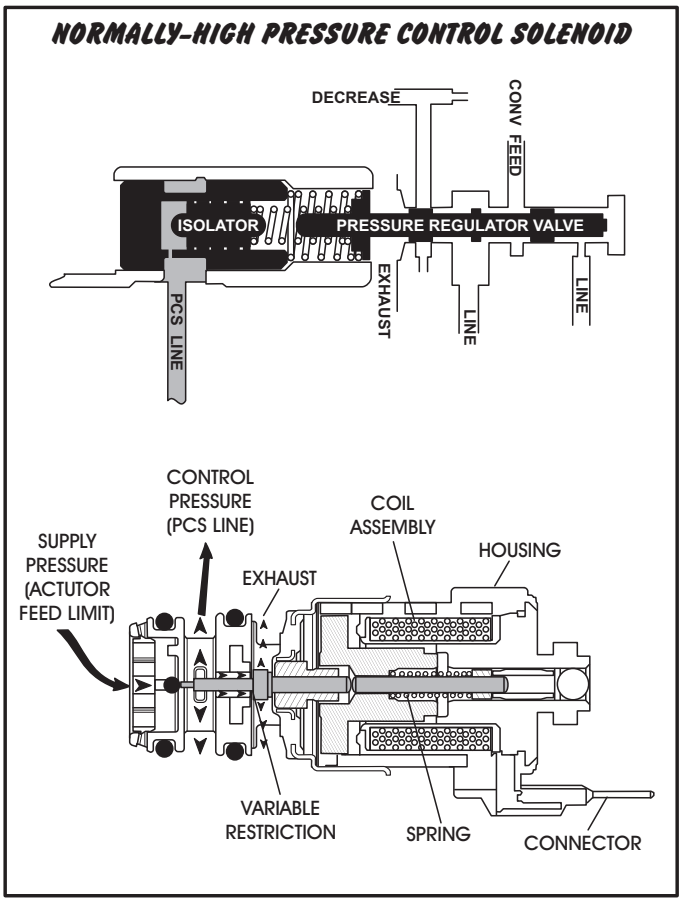


Figure 11

The line pressure control (PC) solenoid is part of the Control Solenoid Body And TCM Assembly and is not serviced separately.

If for any reason, the entire electronic control system of the transmission fails, the line pressure control solenoid will be OFF, and maximum line pressure will be the result. This will create harsh engagements and/or failsafe operation.

If the transmission is in 1st, 2nd or 3rd during an electrical failure, the transmission will default to 3rd gear. All solenoids will default to their normal state. If the torque converter clutch was applied, it will release.

If the transmission is in 4th, 5th or 6th during an electrical failure, the transmission will default to 5th gear. All solenoids will default to their normal state. If the torque converter clutch was applied, it will release.

The transmission will stay in 5th gear default range until the ignition has been turned off or the transmission has been shifted to Reverse. When the vehicle is restarted and shifted back into Drive, the transmission will then operate in the 3rd gear default range.

ELECTRONIC COMPONENTS (CONT'D)
TORQUE CONVERTER CLUTCH (TCC) SOLENOID

The Torque Converter Clutch (TCC) PC Solenoid is a ***"normally-low"amperage***, electronic pressure regulator used to control the apply and release of the torque converter clutch based on current flow through its coil windings. The TCC PC solenoid regulates actuator feed limit fluid pressure to the TCC regulator valve, located in the lower valve body, and provides a signal pressure to shift the TCC control valve, located in the pump, to the apply position, as shown in Figure 12. When the TCM determines to apply the TCC, the TCC PC solenoid is commanded to specific pressures, dependent on vehicle operating conditions, resulting in a smooth apply or release of the TCC. The solenoid's ability to "Ramp" the TCC apply and release pressures results in a smoother TCC operation.

When vehicle operating conditions are appropriate to apply the TCC, the TCM increases current flow to allow the TCC PC solenoid to increase PCS TCC fluid pressure, to move the TCC control valve to the apply position, as shown in Figure 12, and move the TCC regulator valve to the regulating position to regulate fluid pressure proportional to solenoid pressure. Release pressure is directed to exhaust, and regulated apply pressure is directed to the apply side of the converter clutch plate/damper assembly. The TCM then increases the pressure to control a slippage of 20-80 RPM between the clutch plate and converter cover. This "Ramping" procedure for improved dampening of engine vibrations and allows the TCC to apply at low engine speeds in 2nd, 3rd, 4th, 5th and 6th gear.

Release of the TCC is achieved by decreasing TCC solenoid pressure to a level low enough to allow spring force to move the TCC control valve and TCC regulating valve to the release position.

There are also some operating conditions that may prevent or enable TCC apply, such as engine temp, transmission temperature, brake switch activation.

If the TCM detects that the TCC system is stuck ON or OFF, a DTC will be activated.

The TCC PC Solenoid is part of the Control Solenoid Body And TCM Assembly and is not serviced separately.

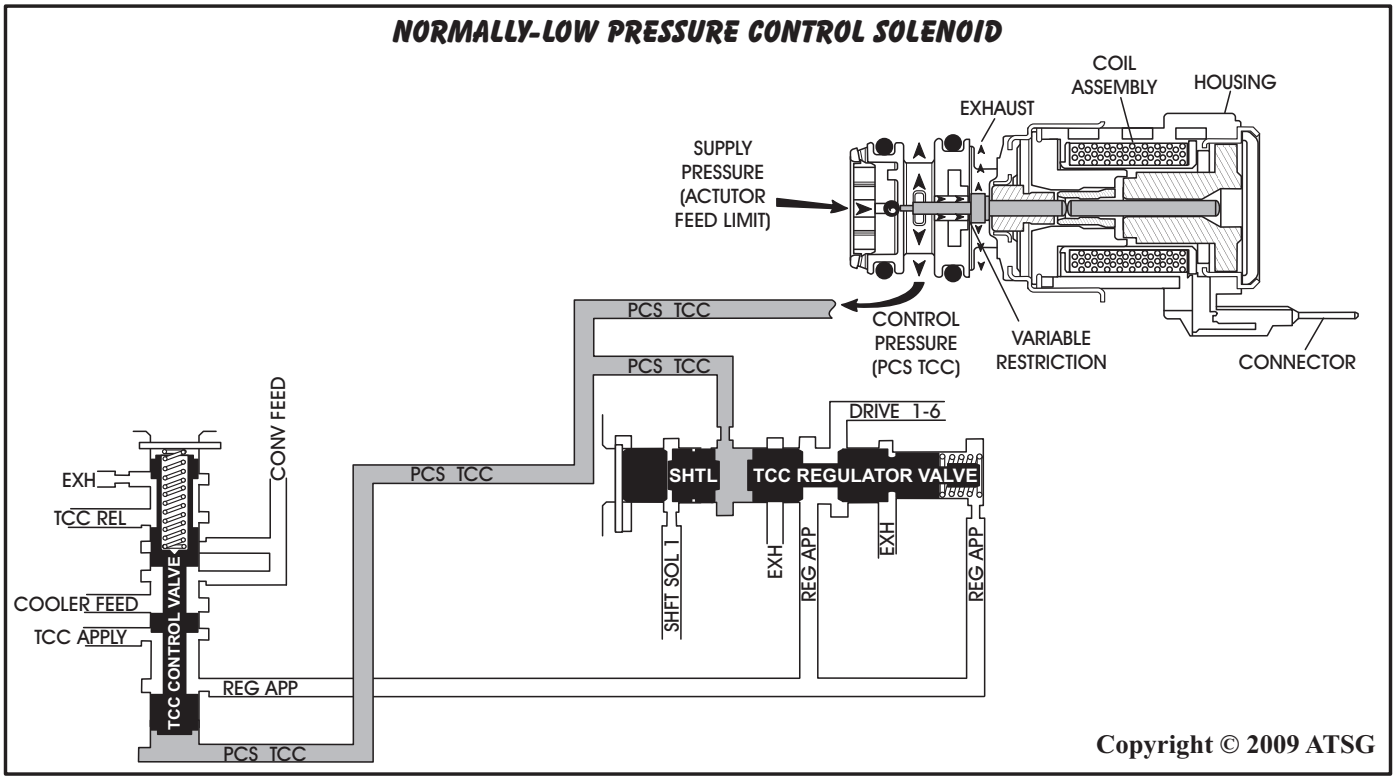


Figure 12

ELECTRONIC COMPONENTS (CONT'D)

CLUTCH PRESSURE CONTROL (CPC) SOLENOIDS 2,3,4 AND 5

There are two different types of clutch pressure control solenoids. Clutch pressure control (PC) solenoids 2 and 3 are ***"normally-high"*** amperage pressure control solenoids, as shown in Figure 14, and are identical to the line pressure control solenoid. Clutch pressure control (PC) solenoids 4 and 5 are ***"normally-low"*** amperage pressure control solenoids, as shown in Figure 13, and are identical to the TCC PC solenoid.

The Clutch Pressure Control PC Solenoids are part of the Control Solenoid Body And TCM Assembly and are not serviced separately.

Clutch Pressure Control Solenoid 2

Clutch pressure control (PC) solenoid 2 controls fluid flow to the 3-5/reverse clutch regulator valve and the 3-5/reverse boost valve. When commanded the solenoid controls the flow of exhaust fluid out of the solenoid to maintain a specific commanded control pressure. This allows the TCM to control the apply and release of the 3-5 and reverse clutch.

Clutch Pressure Control Solenoid 3

Clutch pressure control (PC) solenoid 3 controls fluid flow to the 4-5-6 clutch regulator valve and the 4-5-6 boost valve. When commanded the solenoid controls the flow of exhaust fluid out of the solenoid to maintain a specific commanded control pressure. This allows the TCM to control the apply and release of the 4-5-6 clutch.

Clutch Pressure Control Solenoid 4

Clutch pressure control (PC) solenoid 4 controls fluid flow to the 2-6 clutch regulator valve. When commanded the solenoid controls the flow of exhaust fluid out of the solenoid to maintain a specific commanded control pressure. This allows the TCM to control the apply and release of the 2-6 clutch.

Clutch Pressure Control Solenoid 5

Clutch pressure control (PC) solenoid 5 controls fluid flow to the 1-2-3-4 clutch regulator valve and the 1-2-3-4 boost valve. When commanded the solenoid controls the flow of exhaust fluid out of the solenoid to maintain a specific commanded control pressure. This allows the TCM to control the apply and release of the 1-2-3-4 clutch.

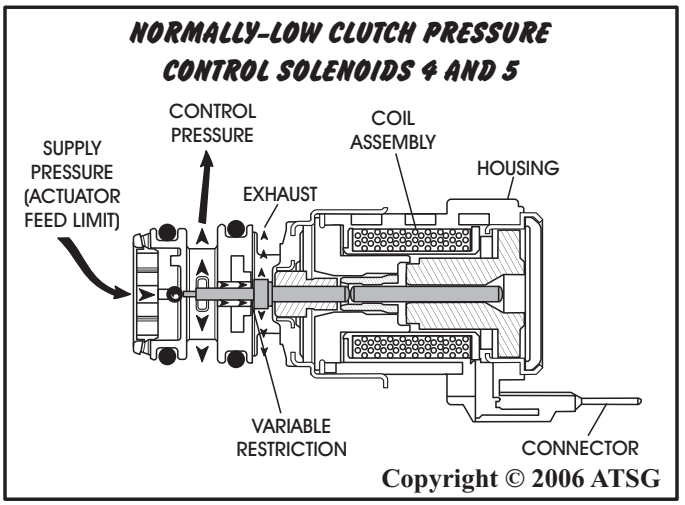


Figure 13

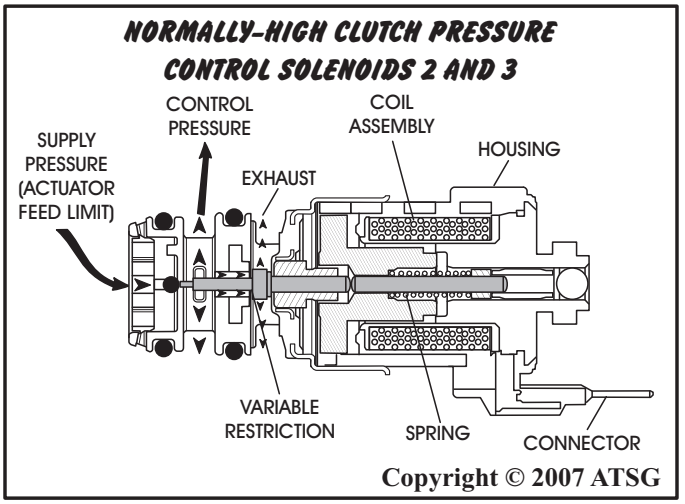


Figure 14

Transmission Adapt Function

Programming within the TCM also allows for automatic adjustments in shift pressure that are based on the changing characteristics of the transmission components. As the apply components within the transmission wear or change over time, the time required to apply a clutch increases or decreases. In order to compensate for these changes, the TCM adjusts the pressure commands to the various pressure control solenoids, to maintain the original calibrations. The automatic adjusting process is referred to as "Adaptive Learning" and is used to ensure consistent shift feel and increase the transmission's durability.

ELECTRONIC COMPONENTS (CONT'D)

TRANSMISSION MANUAL SHIFT POSITION SWITCH ASSEMBLY

The Transmission Manual Shift Position Switch Assembly, sometimes referred to as Internal Mode Switch (IMS), is a sliding contact switch that connects to the manual valve, with a connector that plugs into the control solenoid body and TCM assembly, and is shown in Figure 16.

There are four inputs to the TCM from the position switch assembly, that indicate which transmission gear range has been selected. The state of each input is available for display on the scan tool. The four input parameters represented are Signal A, Signal B, Signal C, and Signal P (Parity).

A fifth input signal "N" (P/N Start), does not input to the TCM, but goes directly to the ECM to determine a Park/Neutral state and allow the engine to be started. Routing Signal N to the ECM will allow the engine to be started, even with a dead TCM. Signal N is not a signal used by the TCM for manual shift selector position logic. A logic chart has been provided for you in Figure 15.

The Transmission Manual Shift Position Switch assembly is serviced separately.

If the TCM detects an improper signal from the transmission manual shift position switch (IMS) assembly, a DTC will be activated.

MANUAL SHIFT DETENT LEVER SWITCH LOGIC

Gear Selector Position	Signal A	Signal B	Signal C	Signal P
Park	LOW	HI	HI	LOW
Park/Reverse	LOW	LOW	HI	LOW
Reverse	LOW	LOW	HI	HI
Reverse/Neutral	HI	LOW	HI	HI
Neutral	HI	LOW	HI	LOW
Neutral/Drive 6	HI	LOW	LOW	LOW
Drive 6	HI	LOW	LOW	HI
Drive 6/Drive 4	LOW	LOW	LOW	HI
Drive 4	LOW	LOW	LOW	LOW
Drive 4/Drive 3	LOW	HI	LOW	LOW
Drive 3	LOW	HI	LOW	HI
Drive 3/Drive 2	HI	HI	LOW	HI
Drive 2	HI	HI	LOW	LOW
Open	HI	HI	HI	HI
Invalid	HI	HI	HI	LOW
Invalid	LOW	HI	HI	HI

HI = 12 Volts
LOW = 0 Volts

Manual Shift Detent Lever Switch Terminal Identification

Terminal	Function
A	12 Volt Feed From TCM
B	Mode Switch Switch Signal "P"
C	Mode Switch Switch Signal "C"
D	Mode Switch Switch Signal "B"
E	Mode Switch Switch Signal "A"
F	Park/Neutral Start Signal "N" (Direct to ECM)

Figure 15

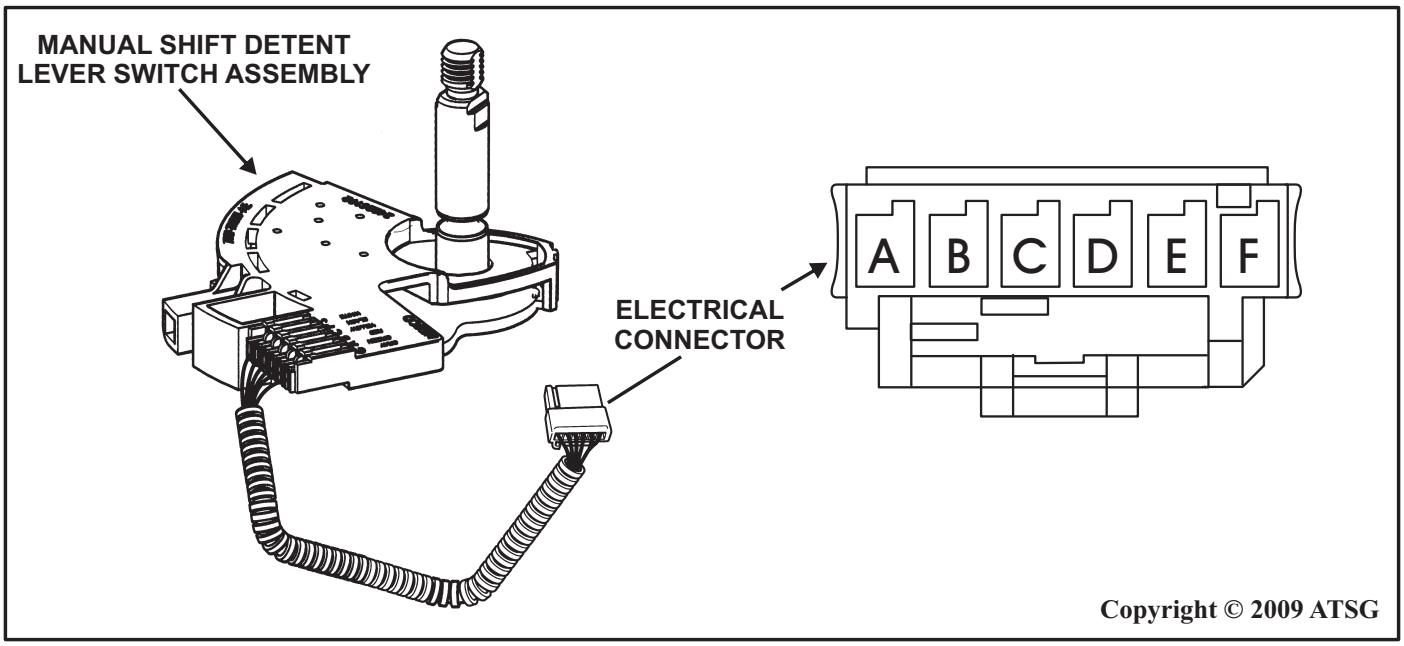
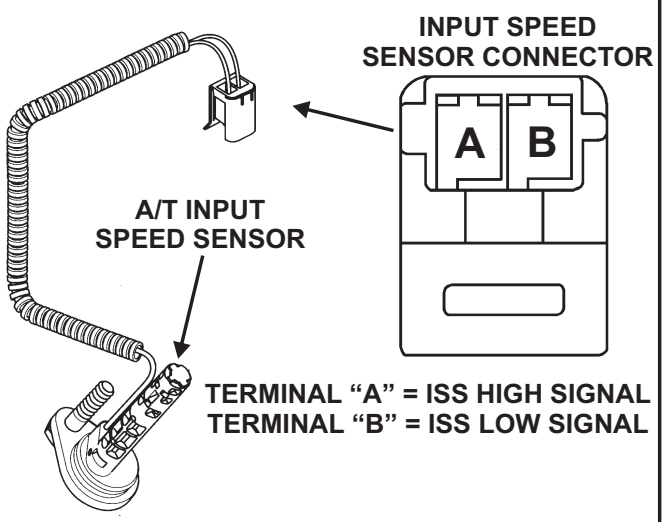
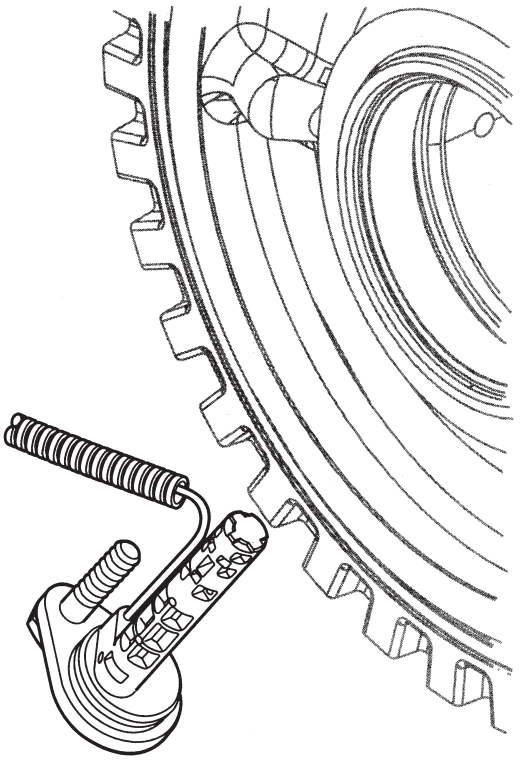


Figure 16

ELECTRONIC COMPONENTS (CONT'D)

A/T INPUT SPEED SENSOR





The A/T Input Speed Sensor Is Excited By The 3-5/Reverse & 4-5-6 Clutch Housing Assembly

Figure 17

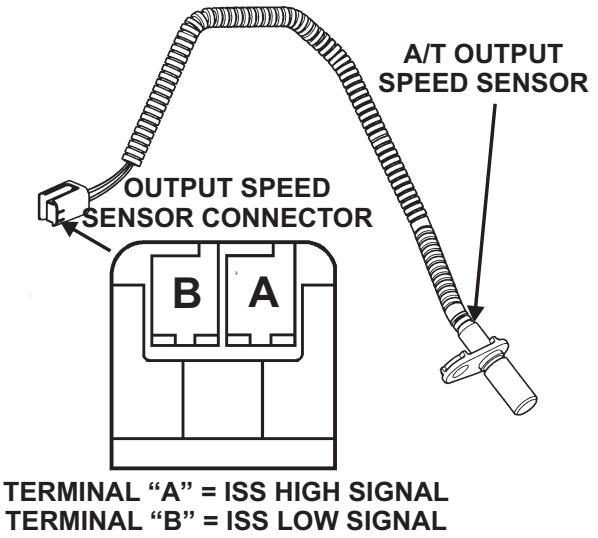
A/T Input Speed Sensor Assembly

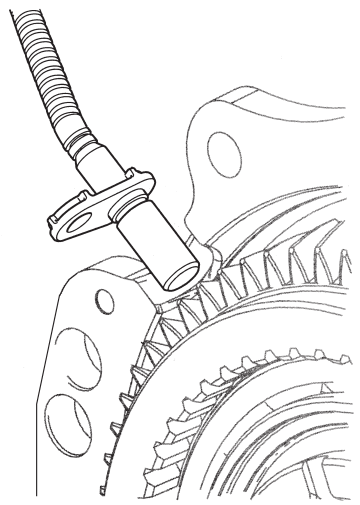
The A/T Input Speed Sensor is a 2 wire Hall Effect type speed sensor. It is mounted in the transmission case cover and is excited by the 3-5-Reverse and 4-5-6 clutch housing assembly as shown in Figure 17.

Input Speed Sensor Assembly...continued

The sensor receives 8.3 to 9.3 volts on the A/T ISS/OSS supply voltage circuit from the TCM. The TCM uses the ISS signal to determine line pressure, transmission shift timing, TCC slip speed and gear ratio.

A/T OUTPUT SPEED SENSOR





The A/T Output Speed Sensor Is Excited By The Front Differential Transfer Gear Support Assembly

Figure 18

A/T Output Speed Sensor Assembly

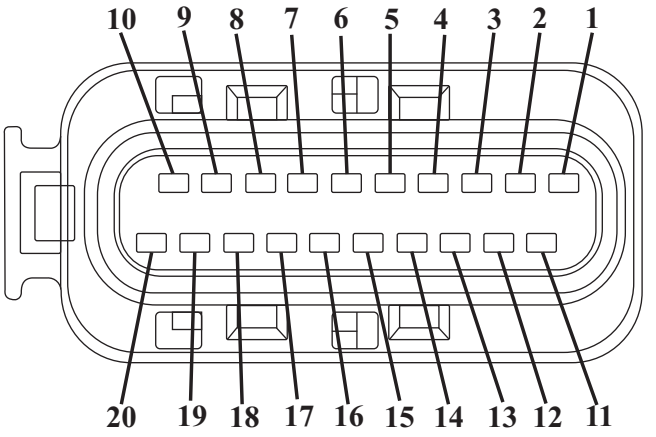
The A/T Output Speed Sensor is a 2 wire Hall Effect type speed sensor. It is mounted in the transmission case cover and is excited by the front differential transfer gear support assembly as shown in Figure 18.

ELECTRONIC COMPONENTS (CONT'D)

A/T Output Speed Sensor Assembly...continued

The sensor receives 8.3 to 9.3 volts on the ISS/OSS supply voltage circuit from the TCM. The TCM uses the OSS signal to determine line pressure, transmission shift timing, vehicle speed and gear ratio.

20-WAY CASE CONNECTOR TERMINAL IDENTIFICATION



View Looking Into 20-Way Case Connector

Pin No.	*Function*
1	*PSM Ground*
2	*CAN HI*
3	*I CAN HI - Termination*
4	*Not Used*
5	*CAN HI*
6	*Tap Up/Tap Down Switch*
7 - 9	*Not Used*
10	*Battery Positive Power*
11	*I CAN LO - Termination*
12	*CAN LO*
13	*Ignition 1 Voltage Power*
14	*CAN LO*
15	*Accessory Voltage*
16	*Stop Lamp Switch Signal*
17	*Not Used*
18	*Ground*
19	*Battery Positive Voltage (Optional)*
20	*Park/Neutral Signal*

Figure 19

20-Way Case Connector

The 20-way transmission case connector is also part of the control solenoid body and TCM assembly, as shown in Figure 20, and ***is not*** serviced separately. The case connector and the terminal identification chart are both illustrated in Figure 19, for diagnostic purposes. We have also provided a full wiring schematic in Figure 20.

Since the case connector is part of the TCM and is located internally, there is an oval rubber seal required to seal the control unit 20-way connector to the valve body cover which it pass through, as shown in Figure 20.

CONTROL VALVE BODY CONNECTOR & SEAL

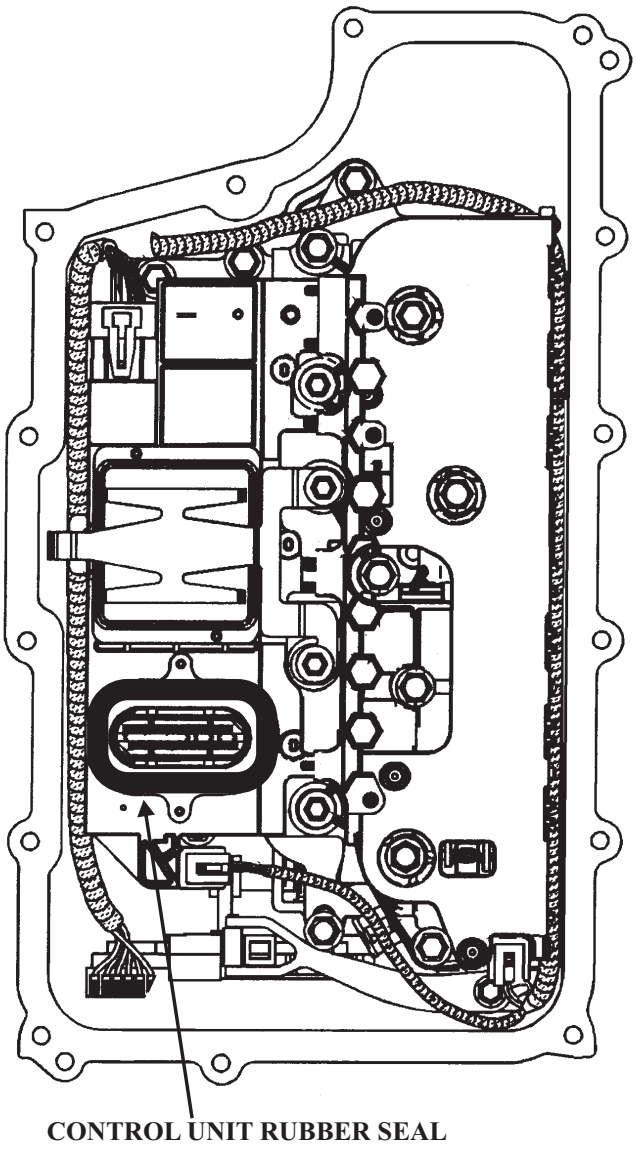


Figure 20

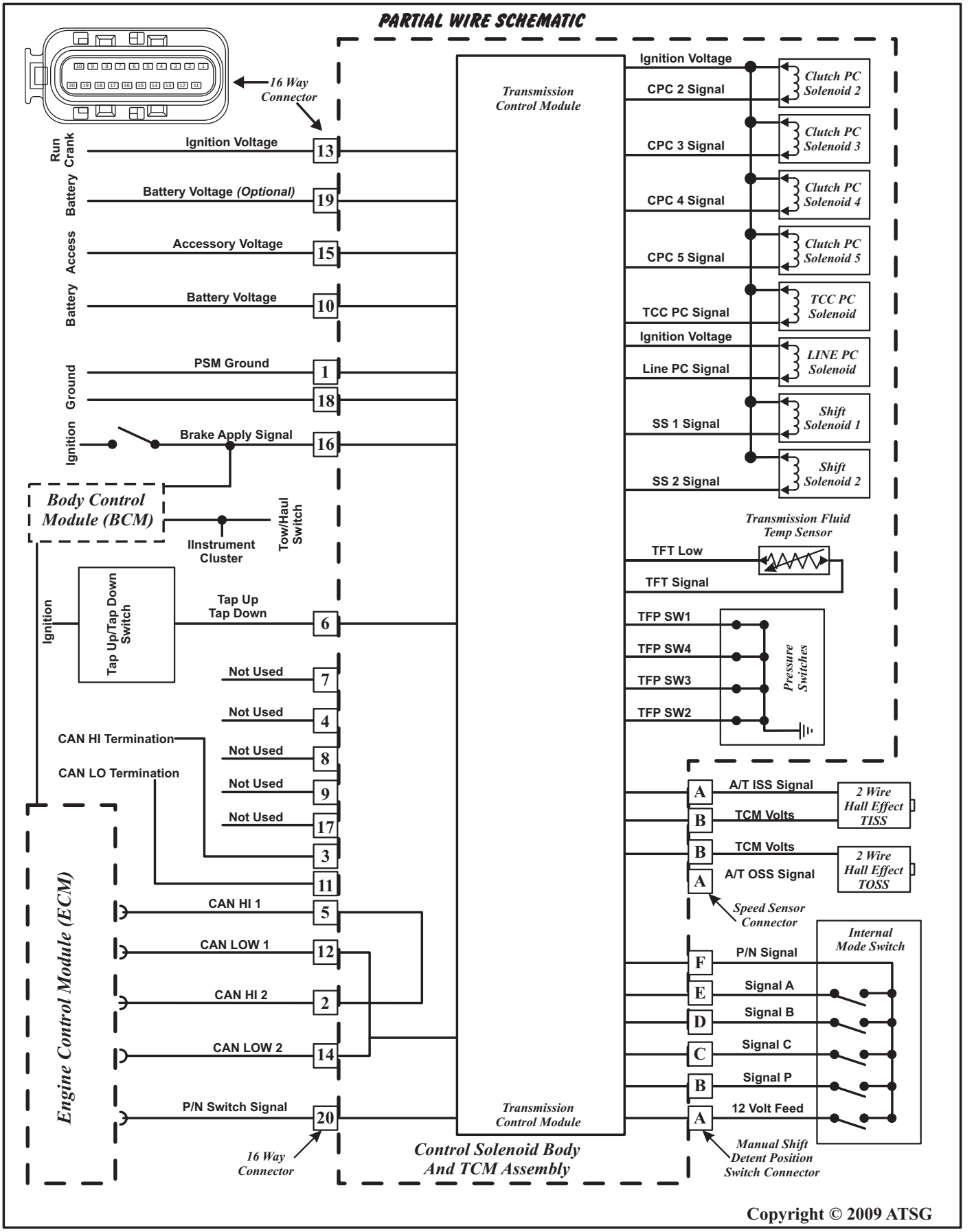


Figure 21

DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION		
DTC	**DESCRIPTION**	**DTC TYPE***
P0218	*Transmission Fluid Overtemperature, Over 270°F for 10 minutes.*	C
P0562	*System Voltage Low, 11 volts or less for 10 seconds.*	C
P0563	*System Voltage High, Greater than 18 volts for 12 seconds.*	C
P0601	*TCM (Internal), Read Only Memory (ROM).*	A
P0602	*TCM, Not Programmed.*	A
P0603	*TCM (Internal), Long term memory reset.*	A
P0604	*TCM (Internal), Random Access Memory (RAM).*	A
P0634	*TCM (Internal), Overtemperature.*	A
P0667	*TCM (Internal), Temperature Sensor Performance.*	C
P0668	*TCM (Internal), Temperature Sensor circuit voltage low.*	C
P0669	*TCM (Internal), Temperature Sensor circuit voltage high.*	C
P0703	*Brake Switch Circuit, signal is invalid for 4 seconds.*	A
P0711	*Transmission Fluid Temperature (TFT), Sensor performance.*	C
P0712	*Transmission Fluid Temperature (TFT), Sensor circuit voltage low.*	C
P0713	*Transmission Fluid Temperature (TFT), Sensor circuit voltage high.*	C
P0716	*Input Speed Sensor (ISS), Sensor performance.*	A
P0717	*Input Speed Sensor (ISS), Sensor circuit voltage low.*	A
P0719	*Brake Switch Circuit, Circuit voltage low.*	A
P0722	*Output Speed Sensor (OSS), Sensor circuit voltage low.*	A
P0723	*Output Speed Sensor (OSS), Sensor intermittent.*	A
P0724	*Brake Switch Circuit, Circuit voltage high.*	A
P0729	*Incorrect 6th Gear Ratio.*	C
P0731	*Incorrect 1st Gear Ratio.*	A
P0732	*Incorrect 2nd Gear Ratio.*	A
P0733	*Incorrect 3rd Gear Ratio.*	A
P0734	*Incorrect 4th Gear Ratio.*	A
P0735	*Incorrect 5th Gear Ratio.*	A
P0736	*Incorrect Reverse Gear Ratio.*	A
P0741	*Torque Converter Clutch (TCC), System Stuck OFF.*	B
P0742	*Torque Converter Clutch (TCC), System Stuck ON.*	B
P0751	*Shift Solenoid (SS) 1 Valve Performance, Stuck OFF.*	C
P0752	*Shift Solenoid (SS) 1 Valve Performance, Stuck ON.*	A

***DTC TYPES**

A - Emission-related, turns the MIL "ON" immediately after the 1st failure.

B - Emission-related, turns the MIL "ON" after two consecutive drive cycles with failure.

C - Non-emission-related, no lamps and may display message on driver information center.

Figure 22

DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION		
DTC	**DESCRIPTION**	**DTC TYPE***
P0756	*Shift Solenoid (SS) 1 Valve Performance, Stuck OFF.*	A
P0776	*Clutch Pressure Control (PC) Solenoid 2, Stuck OFF.*	A
P0777	*Clutch Pressure Control (PC) Solenoid 2, Stuck ON.*	A
P0796	*Clutch Pressure Control (PC) Solenoid 3, Stuck OFF.*	A
P0797	*Clutch Pressure Control (PC) Solenoid 3, Stuck ON.*	A
P0815	*Upshift Switch Circuit Error.*	C
P0816	*Downshift Switch Circuit Error.*	C
P0826	*Upshift and Downshift Switch Circuit Error.*	C
P0842	*Transmission Fluid Pressure (TFP) Switch 1, Circuit Voltage Low.*	C
P0843	*Transmission Fluid Pressure (TFP) Switch 1, Circuit Voltage High.*	C
P0851	*Park/Neutral Position (PNP) Switch, Circuit Voltage Low.*	C
P0852	*Park/Neutral Position (PNP) Switch, Circuit Voltage High.*	C
P0872	*Transmission Fluid Pressure (TFP) Switch 3, Circuit Voltage Low.*	C
P0873	*Transmission Fluid Pressure (TFP) Switch 3, Circuit Voltage High.*	C
P0877	*Transmission Fluid Pressure (TFP) Switch 4, Circuit Voltage Low.*	C
P0878	*Transmission Fluid Pressure (TFP) Switch 4, Circuit Voltage High.*	C
P0961	*Line Pressure Control (PC) Solenoid, System Performance.*	A
P0962	*Line Pressure Control (PC) Solenoid, Circuit Voltage Low.*	A
P0963	*Line Pressure Control (PC) Solenoid, Circuit Voltage High.*	A
P0965	*Clutch Pressure Control (PC) Solenoid 2, System Performance.*	A
P0966	*Clutch Pressure Control (PC) Solenoid 2, Circuit Voltage Low.*	A
P0967	*Clutch Pressure Control (PC) Solenoid 2, Circuit Voltage High.*	A
P0969	*Clutch Pressure Control (PC) Solenoid 3, System Performance.*	A
P0970	*Clutch Pressure Control (PC) Solenoid 3, Circuit Voltage Low.*	A
P0971	*Clutch Pressure Control (PC) Solenoid 3, Circuit Voltage High.*	A
P0973	*Shift Solenoid 1 (SS), Control Circuit Voltage Low.*	A
P0974	*Shift Solenoid 1 (SS), Control Circuit Voltage High.*	A
P0976	*Shift Solenoid 2 (SS), Control Circuit Voltage Low.*	A
P0977	*Shift Solenoid 2 (SS), Control Circuit Voltage High.*	A
P0989	*Transmission Fluid Pressure (TFP) Switch 5, Circuit Voltage Low.*	C
P0990	*Transmission Fluid Pressure (TFP) Switch 5, Circuit Voltage High.*	C
P1621	*TCM (Internal), Long Term Memory Performance.*	A
P1684	*TCM (Internal), Power Up Temperature Sensor Performance.*	A

***DTC TYPES**

A - Emission-related, turns the MIL "ON" immediately after the 1st failure.

B - Emission-related, turns the MIL "ON" after two consecutive drive cycles with failure.

C - Non-emission-related, no lamps and may display message on driver information center.

Figure 23

DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION		
DTC	**DESCRIPTION**	**DTC TYPE***
P1685	*TCM (Internal), Power Up Temperature Sensor, Circuit Voltage Low.*	A
P1686	*TCM (Internal), Power Up Temperature Sensor, Circuit Voltage High.*	A
P1751	*Shift Valve 1, Performance of Clutch Select Valve 2.*	B
P1825	*Manual Shift Detent Position Switch, Invalid Range*	A
P1831	*TCM (Internal), Driver No. 2, (Controls Line Pressure & Shift Lock Solenoids).*	A
P1832	*TCM (Internal), Driver No. 2, (Controls Line Pressure & Shift Lock Solenoids).*	C
P1876	*Up and Down Shift Switch Performance, Range Switch Not In D3.*	C
P1915	*Manual Shift Detent Position Switch, Start In Wrong Range.*	A
P2534	*Ignition Switch, Start Circuit Voltage Low.*	A
P2714	*Clutch Pressure Control (PC) Solenoid 4, Stuck OFF.*	A
P2715	*Clutch Pressure Control (PC) Solenoid 4, Stuck ON.*	A
P2719	*Clutch Pressure Control (PC) Solenoid 4, System Performance.*	A
P2720	*Clutch Pressure Control (PC) Solenoid 4, Circuit Voltage Low.*	A
P2721	*Clutch Pressure Control (PC) Solenoid 4, Circuit Voltage High.*	A
P2723	*Clutch Pressure Control (PC) Solenoid 5, Stuck OFF.*	A
P2724	*Clutch Pressure Control (PC) Solenoid 5, Stuck ON.*	A
P2728	*Clutch Pressure Control (PC) Solenoid 5, System Performance.*	A
P2729	*Clutch Pressure Control (PC) Solenoid 5, Circuit Voltage Low.*	A
P2730	*Clutch Pressure Control (PC) Solenoid 5, Circuit Voltage High.*	A
P2762	*TCC Pressure Control (PC) Solenoid, System Performance.*	A
P2763	*TCC Pressure Control (PC) Solenoid, Circuit Voltage High.*	A
P2764	*TCC Pressure Control (PC) Solenoid, Circuit Voltage Low.*	A

***DTC TYPES**

A - Emission-related, turns the MIL "ON" immediately after the 1st failure.

B - Emission-related, turns the MIL "ON" after two consecutive drive cycles with failure.

C - Non-emission-related, no lamps and may display message on driver information center.

Figure 24

FAIL-SAFE OR PROTECTION MODE

If for any reason, the entire electronic control system of the transmission, or any one of the electrical components within the Control Solenoid Body and TCM Assembly becomes disabled, the transmission will default to fail-safe mode. If the transmission is in 1st, 2nd or 3rd gear during an electrical failure, the transmission will default to 3rd gear. If the transmission is in 4th, 5th or 6th gear during an electrical failure, the transmission will default to 5th gear.

If for any reason, the entire electronic control system of the transmission fails, the line pressure control solenoid will be OFF, and maximum line pressure will be the result. This will create harsh engagements and garage shifts. The TCC PC solenoid would also be OFF, resulting in no torque converter clutch apply.

6T70/75 CHECKBALL LOCATION AND FUNCTION

Number 1 Checkball

The number one checkball is located in the upper valve body, as shown in Figure 25. When the transmission is operating in Drive 1st, 2nd, 3rd, 4th, 5th or 6th gear, drive 1-6 fluid seats the checkball against the drive braking passage and enters the 2-6 clutch/1-2-3-4 clutch feed circuit to apply the 1-2-3-4 clutch.

Number 2 Checkball

The number two checkball is located in the upper valve body, as shown in Figure 25. This shuttle type checkball is seated against the reverse passage while the transmission is operating in Park, Neutral and Drive 1st. With the checkball in this position, shift solenoid 1 fluid enters the CSV2 enable circuit to the "clutch select valve 2". When the transmission is operating in Reverse, the checkball seats against shift solenoid 1 passage to allow reverse fluid to enter the CSV2 enable circuit and hold the "clutch select valve 2" in the applied position.

Number 3 Checkball

The number three checkball is located in the upper valve body, as shown in Figure 25. This shuttle type checkball is seated against the 4-5-6 clutch passage while the transmission is operating in Park, Reverse, Neutral, Drive 1st, 2nd and 3rd gear. With the checkball in this position, shift solenoid 2 fluid enters the CSV3 enable circuit to apply the "clutch select valve 3". When the transmission is operating in Drive 4th, 5th or 6th gear, the checkball seats against the shift solenoid 2 passage to allow 4-5-6 clutch fluid to enter the CSV3 enable circuit and hold the "clutch select valve 3" in the applied position.

Number 4 Checkball

The number four checkball is located in the upper valve body, as shown in Figure 25. This shuttle type checkball is seated against the 4-5-6 clutch passage by Pressure Solenoid 4 fluid, while the transmission is operating in Park, Reverse, Neutral, Drive 1st, 2nd and 3rd gear. With the checkball in this position, PS 4 fluid enters the CSV2 latch circuit to hold the "clutch select valve 2" in the released position. When the transmission is operating in Drive 4th, 5th or 6th gear, 4-5-6 clutch fluid seats the checkball against the PS 4 passage to allow 4-5-6 clutch fluid to enter the CSV2 latch circuit to hold the "clutch select valve 2" in released the position.

Number 5 Checkball

The number five checkball is located in the upper valve body, as shown in Figure 25. This shuttle type checkball is seated against the Drive 1-6 passage by 3-5/Reverse Feed fluid while the transmission is operating in Reverse. With the checkball in this position, 3-5/Reverse Feed fluid enters the 3-5/Reverse Supply circuit and is routed to the number 7 checkball. When the transmission is operating in Drive 1st, 2nd, 3rd, 4th, 5th or 6th gear, Drive 1-6 fluid seats the ball against the 3-5/Reverse Feed passage to allow Drive 1-6 fluid to enter the 3-5/Reverse Supply circuit.

Number 6 Checkball

The number six checkball is located in the upper valve body, as shown in Figure 25. This "one way orifice control" type checkball is used to differentiate the flow rate of fluid between applying and releasing the 1-2-3-4 clutch. 2-6 clutch/1-2-3-4 clutch feed fluid opens the checkball, while the transmission is operating in Drive 1st, 2nd, 3rd, 4th, 5th or 6th gear. With the ball in this position, 2-6 clutch/1-2-3-4 clutch feed fluid flows freely into the 1-2-3-4 clutch feed passage. When Park, Reverse or Neutral is selected after the transmission was operating in Drive, exhausting 1-2-3-4 clutch feed fluid seats the checkball, and forces exhausting fluid through orifice number 32, which allows for a controlled exhaust of the 1-2-3-4 clutch.

Number 7 Checkball

The number seven checkball is located in the upper valve body, as shown in Figure 25. This "one way orifice control" type checkball is used to differentiate the flow rate of fluid between applying and releasing the 3-5/Reverse clutch. 3-5/Reverse Supply fluid pressure seats the checkball against the 3-5/Reverse Feed passage, while the transmission is operating in Reverse, Drive 1st, 2nd, 3rd, 4th, 5th or 6th gear. With the checkball in this position, 3-5/Reverse Supply fluid is forced through orifice number 25 before entering the 3-5/Reverse Feed passage. The orifice helps control the apply rate of the 3-5/Reverse clutch when the transmission shifts into Reverse, 3rd or 5th gear. When Park or Neutral is selected after the transmission was operating in Drive, or Reverse, exhausting 3-5/Reverse Feed fluid unseats the checkball. This allows for a faster exhaust of 3-5/Reverse Feed fluid and a quick release of the 3-5/Reverse clutch.

Number 8 Checkball

The number eight checkball is located in the upper valve body, as shown in Figure 25. This "one way orifice control" type checkball is used to differentiate the flow rate of fluid between applying and releasing the Low/Reverse clutch. When the transmission is operating in Park, Reverse, Neutral and Drive Range 1st gear-Engine Braking, the number eight checkball which allows for a quick apply of the Low/Reverse clutch. When the transmission is operating in Drive Range First Gear, R1 fluid exhausts, seating the ball forcing R1 fluid past orifice #18. The orifice helps control the release of the Low/Reverse clutch.

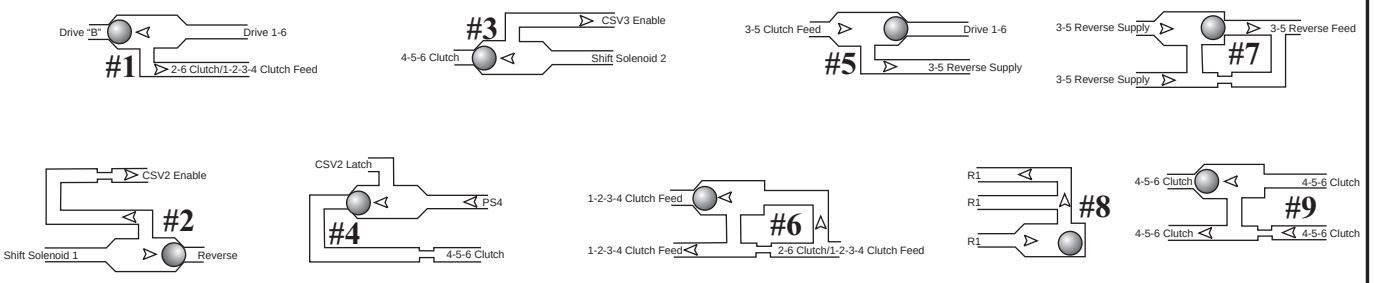
Number 9 Checkball

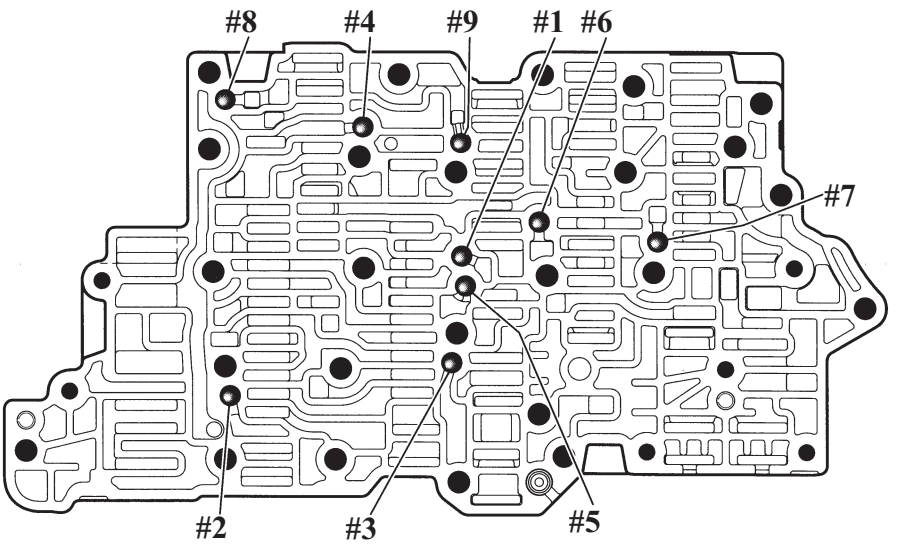
The number nine checkball is located in the upper valve body, as shown in Figure 25. This "one way orifice control" type checkball is used to control the flow rate of fluid when applying and releasing the 4-5-6 clutch. When the transmission is operating in Drive Range Fourth ,Fifth and Sixth gears, this clutch pressure seats the ball. At this time 4-5-6 fluid id forced through orifice #39 before going to the 4-5-6 clutch. The orifice helps control the rate of apply and release of the 4-5-6 clutch.

Actuator Feed Accumulator Piston

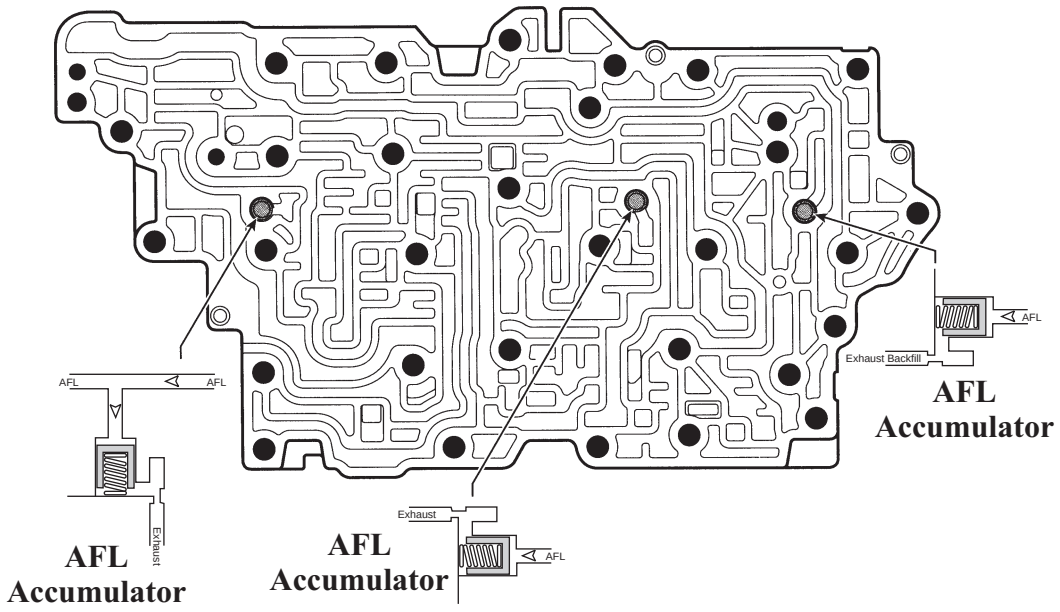
The Actuator Feed Accumulator Piston is located in the control valve channel plate, as shown in Figure 25. Three actuator feed accumulators are used to dampen any pressure irregularities occurrin the in actuator feed limit fluid circuit.

6T70/75 CHECKBALL LOCATION AND FUNCTION





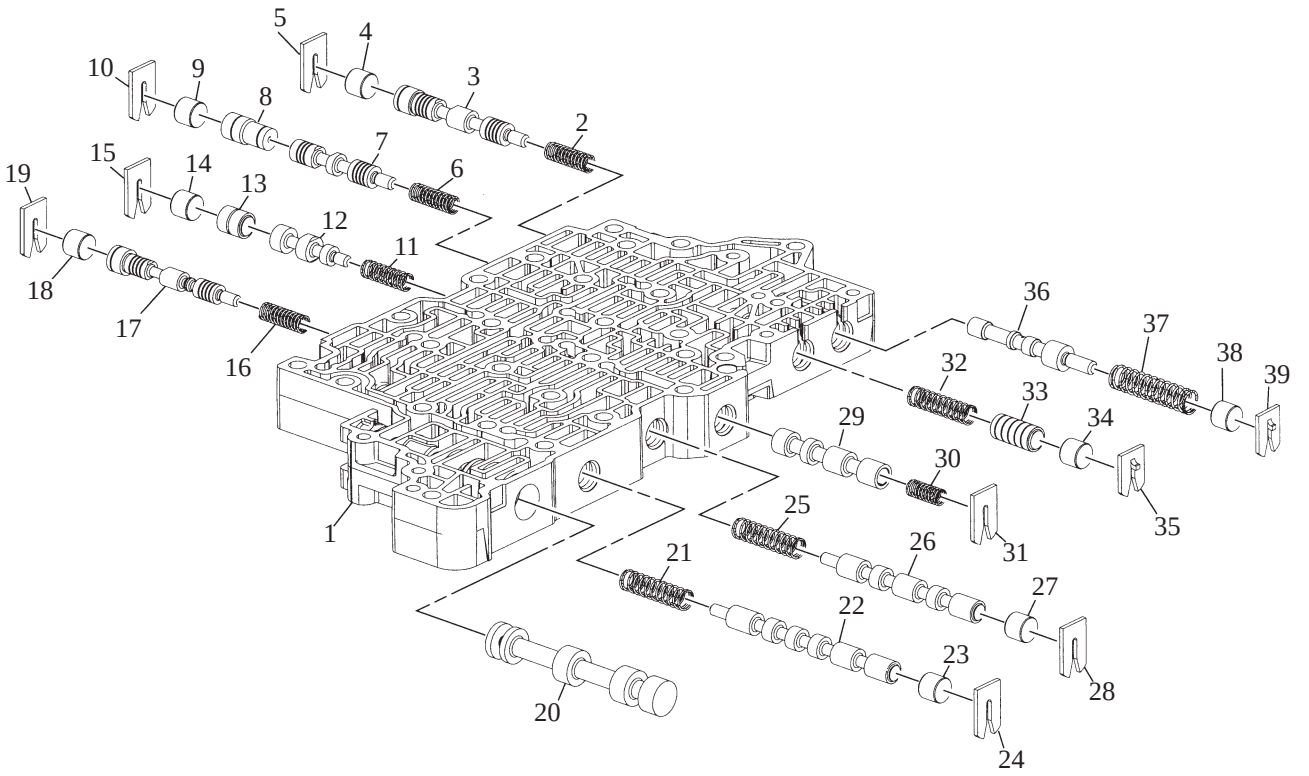
CONTROL VALVE UPPER VALVE BODY



CONTROL VALVE CHANNEL PLATE

Figure 25

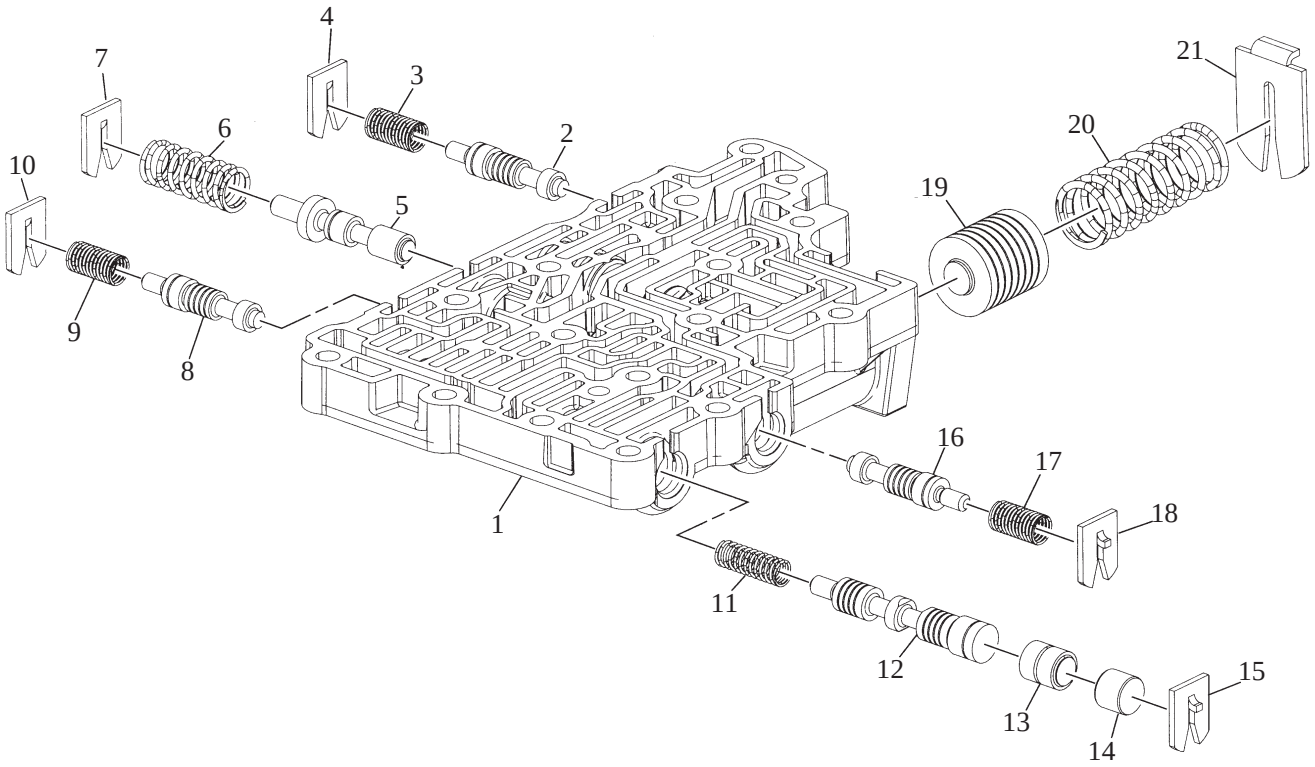
6T70/75 UPPER VALVE BODY IDENTIFICATION



1. Upper Control Valve Body
2. 3-5-Reverse Clutch Regulator Valve Spring
3. 3-5-Reverse Clutch Regulator Valve
4. 3-5-Reverse Clutch Regulator Valve Bore Plug
5. 3-5-Reverse Clutch Regulator Valve Retainer
6. 2-6 Clutch Regulator Valve Spring
7. 2-6 Clutch Regulator Valve
8. 2-6 Clutch Gain Valve
9. 2-6 Clutch Regulator/Gain Valve Bore Plug
10. 2-6 Clutch Regulator/Gain Valve Retainer
11. Torque Converter Clutch Regulator Apply Valve Spring
12. Torque Converter Clutch Regulator Apply Valve
13. Torque Converter Clutch Regulator Apply Shuttle Valve
14. Torque Converter Clutch Regulator Apply/Shuttle Valve Bore Plug
15. Torque Converter Clutch Regulator Apply/Shuttle Valve Retainer
16. Low/Reverse/4-5-6 Clutch Regulator Valve Spring
17. Low/Reverse/4-5-6 Clutch Regulator Valve
18. Low/Reverse/4-5-6 Clutch Regulator Valve Bore Plug
19. Low/Reverse/4-5-6 Clutch Regulator Valve Retainer
20. Manual Valve
21. Clutch Select Solenoid Valve #2 Spring
22. Clutch Select Solenoid Valve #2
23. Clutch Select Solenoid Valve #2 Bore Plug
24. Clutch Select Solenoid Valve #2 Retainer
25. Clutch Select Solenoid Valve #3 Spring
26. Clutch Select Solenoid Valve #3
27. Clutch Select Solenoid Valve #3 Bore Plug
28. Clutch Select Solenoid Valve #3 Retainer
29. Torque Converter Clutch Control Valve
30. Torque Converter Clutch Control Valve Spring
31. Torque Converter Clutch Control Valve Retainer
32. Isolator Valve Spring
33. Isolator Valve
34. Isolator Valve Bore Plug
35. Isolator Valve Retainer
36. Main Pressure Regulator Valve
37. Main Pressure Regulator Valve Spring
38. Main Pressure Regulator Valve Bore Plug
39. Main Pressure Regulator Valve Retainer

Figure 26

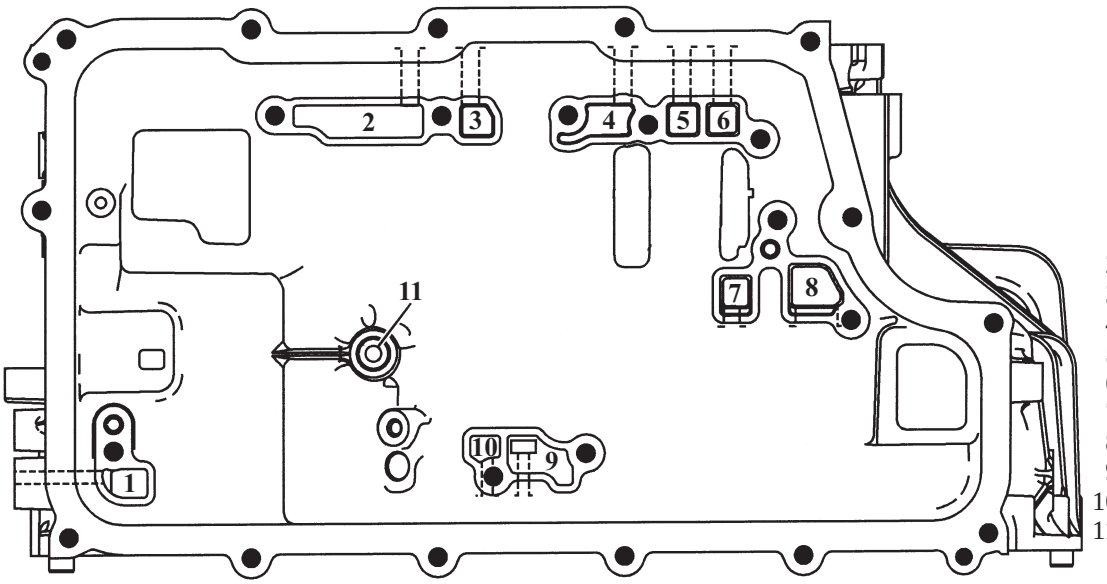
6T70/75 LOWER VALVE BODY IDENTIFICATION



1. Lower Control Valve Body
2. 3-5-Reverse Clutch Boost Valve
3. 3-5-Reverse Clutch Boost Valve Spring
4. 3-5-Reverse Clutch Boost Valve Retainer
5. Actuator Feed Limit Valve
6. Actuator Feed Limit Valve Spring
7. Actuator Feed Limit Valve Retainer
8. 4-5-6 Clutch Boost Valve
9. 4-5-6 Clutch Boost Valve Spring
10. 4-5-6 Clutch Boost Valve Retainer
11. 1-2-3-4 Clutch Regulator Valve Spring
12. 1-2-3-4 Clutch Regulator Valve
13. Default Override 1-2-3-4 Clutch Valve
14. 1-2-3-4 Clutch Regulator Valve/Default Override 1-2-3-4 Clutch Valve Bore Plug
15. 1-2-3-4 Clutch Regulator Valve/Default Override 1-2-3-4 Clutch Valve Retainer
16. 1-2-3-4 Clutch Boost Valve
17. 1-2-3-4 Clutch Boost Valve Spring
18. 1-2-3-4 Clutch Boost Valve Retainer
19. 4-5-6 Clutch Accumulator Piston
20. 4-5-6 Clutch Accumulator Piston Spring
21. 4-5-6 Clutch Accumulator Piston Retainer

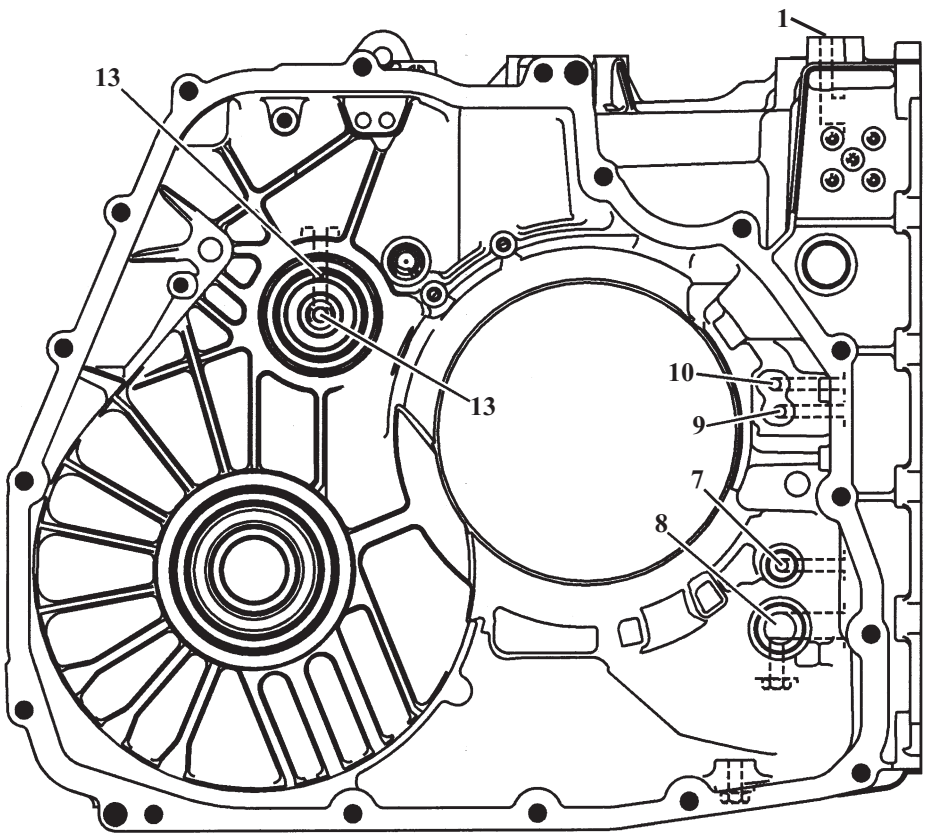
Figure 27

6T70/75 TRANSMISSION CASE -VALVE BODY SIDE PASSAGE IDENTIFICATION



1. Cooler Feed
2. R1
3. 4-5-6 Clutch
4. 2-6 Clutch
5. 3-5-Reverse Clutch
6. Compensator Feed
7. Decrease
8. Line
9. TCC Release
10. TCC Apply
11. 1-2-3-4 Clutch

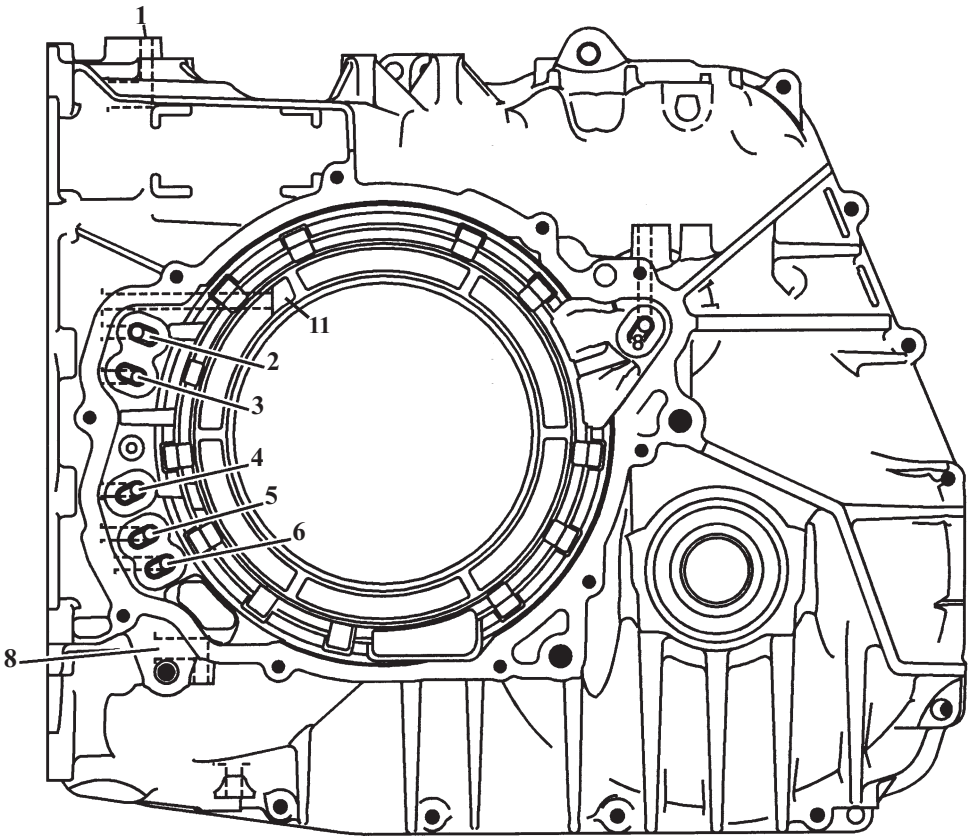
6T70/75 TRANSMISSION CASE -DIFFERENTIAL SIDE PASSAGE IDENTIFICATION



1. Cooler Feed
7. Decrease
8. Line
9. TCC Release
10. TCC Apply
13. Lube

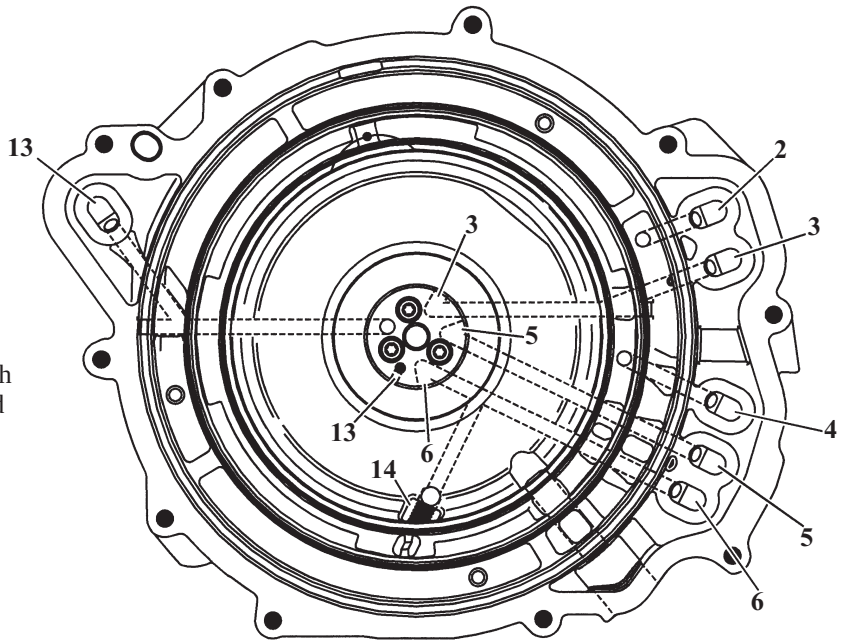
Figure 28

6T70/75 TRANSMISSION CASE -END COVER SIDE PASSAGE IDENTIFICATION



1. Cooler Feed
2. R1
3. 4-5-6 Clucth
4. 2-6 Clutch
5. 3-5-Reverse Clutch
6. Compensator Feed
7. Decrease
8. Line
9. TCC Release
10. TCC Apply
11. 1-2-3-4 Clutch

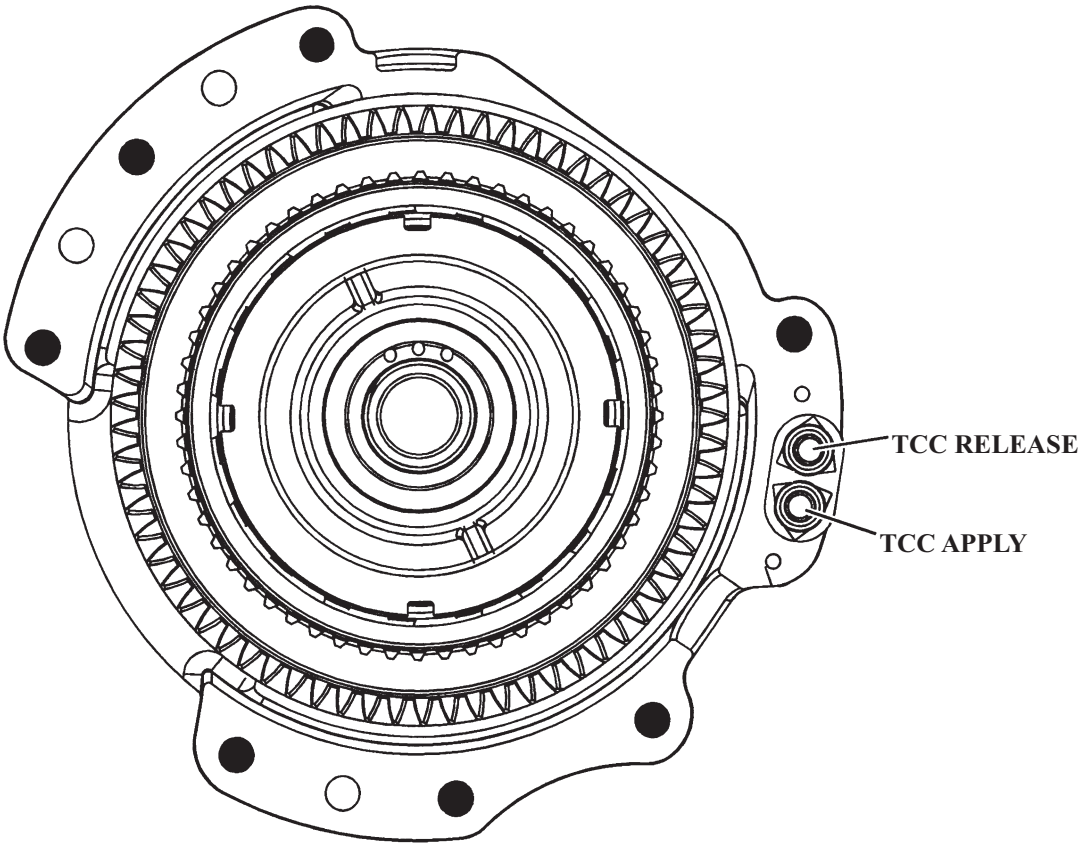
6T70/75 END COVER PASSAGE IDENTIFICATION



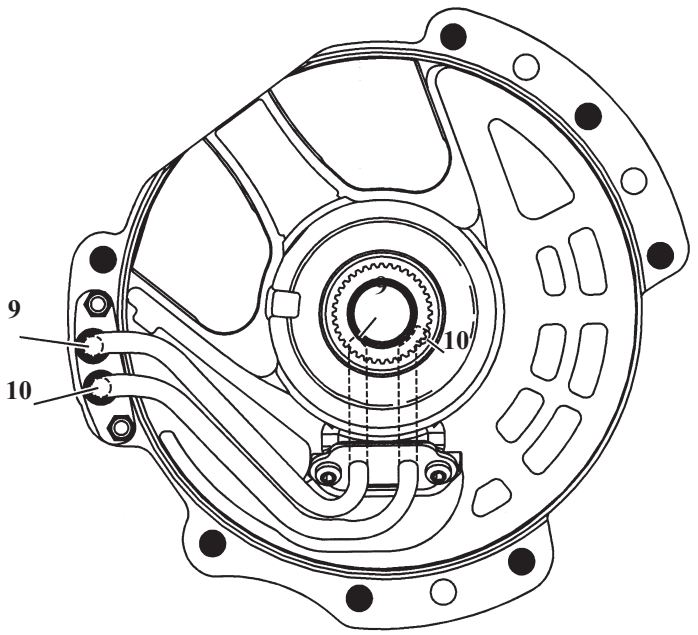
1. Cooler Feed
2. R1
3. 4-5-6 Clucth
4. 2-6 Clutch
5. 3-5-Reverse Clutch
6. Compensator Feed
7. Decrease
8. Line
9. TCC Release
10. TCC Apply
11. 1-2-3-4 Clutch
13. Lube
14. Exhaust

Figure 29

6T70/75 FRONT DIFFERENTIAL TRANSFER DRIVE GEAR SUPPORT –CASE SIDE PASSAGE IDENTIFICATION



6T70/75 FRONT DIFFERENTIAL TRANSFER DRIVE GEAR SUPPORT – DIFFERENTIAL HOUSING SIDE PASSAGE IDENTIFICATION



9. TCC Release
10. TCC Apply

Figure 30