



Technical Service Information

THM 4L60-E ELECTRICAL DIAGNOSIS

DIAGNOSTIC TROUBLE CODES:

1. Transmission Diagnostic Trouble Codes are listed in numerical order in Figures 6 and 7.

SHIFT SOLENOID STATES:

1. Solenoid locations are shown in Figure 11.

GEAR	SOL A	SOL B
1ST	ON	ON
2ND	OFF	ON
3RD	OFF	OFF
4TH	ON	OFF

FORCE MOTOR:

1. Volt/Ohmmeter set to Ohms, leads terminal to terminal on Force Motor, Ohmmeter should read 3.5-8 ohms resistance, at 70°F.
2. If checking from outside the transmission, Ohmmeter leads from terminal "C" to terminal "D", Ohmmeter should read 3.5-8 ohms resistance (See Figures 4 & 5).
3. Line pressure readings at specific force motor amps is shown in Figure 9.

SHIFT SOLENOID "A"

1. Volt/Ohmmeter set to Ohms, leads terminal to terminal on Shift Solenoid "A", Ohmmeter should read 20-40 ohms resistance, at 70°F.
2. If checking from outside the transmission, Ohmmeter leads from terminal "E" to terminal "A", Ohmmeter should read 20-40 ohms (See Figures 4 & 5).
3. Should hear "Click" when 12V and ground are applied.

SHIFT SOLENOID "B"

1. Volt/Ohmmeter set to Ohms, leads terminal to terminal on Shift Solenoid "B", Ohmmeter should read 20-40 ohms resistance, at 70°F.
2. If checking from outside the transmission, Ohmmeter leads from terminal "E" to terminal "B", Ohmmeter should read 20-40 ohms (See Figures 4 & 5).
3. Should hear "Click" when 12V and ground are applied.

3-2 DOWNSHIFT SOLENOID

1. Volt/Ohmmeter set to Ohms, leads terminal to terminal on 3-2 Solenoid, Ohmmeter should read 9-14 ohms resistance, at 70°F.
2. If checking from outside the transmission, Ohmmeter leads from terminal "E" to terminal "S", Ohmmeter should read 9-14 ohms (See Figures 4 & 5).

OUTPUT SPEED SENSOR

1. Volt/Ohmmeter set to Ohms, leads terminal to terminal on Output Speed Sensor, Ohmmeter should read 1000-1500 ohms resistance, at 70°F.
2. The Output Speed Sensor generates AC voltage, the faster it turns the more AC voltage it generates. The PCM uses this voltage signal to determine how fast the vehicle is traveling.

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PRESSURE SWITCH ASSEMBLY

1. Two of the five switches in the Pressure Switch Assembly are normally closed (N/C), and the other three are normally open (N/O), as shown in Figure 1.
2. Set your Ohmmeter so that it emits a "Tone" when the leads are connected.
3. Place the ohmmeter leads on the pins on each side of the D4 switch (N/O). No tone should be heard (See Figure 1).
4. With the leads still in place, using a small flat punch, close the switch by carefully pushing down in the center of the switch. If the switch is good a tone will now be heard from the ohmmeter.
5. Check the Lo switch (N/O) and Reverse switch (N/O) in the same manner.
6. Place the ohmmeter leads on the pins on each side of the D2 switch (N/C). A tone should be heard from ohmmeter until you push down in the center of the switch with a small flat punch, and the tone will then stop.
7. Check the D3 switch (N/C) in the same manner as the D2 switch (See Figure 1).
8. To check the resistance values for the Transmission Oil Temperature (TOT) sensor, see Figure 2.

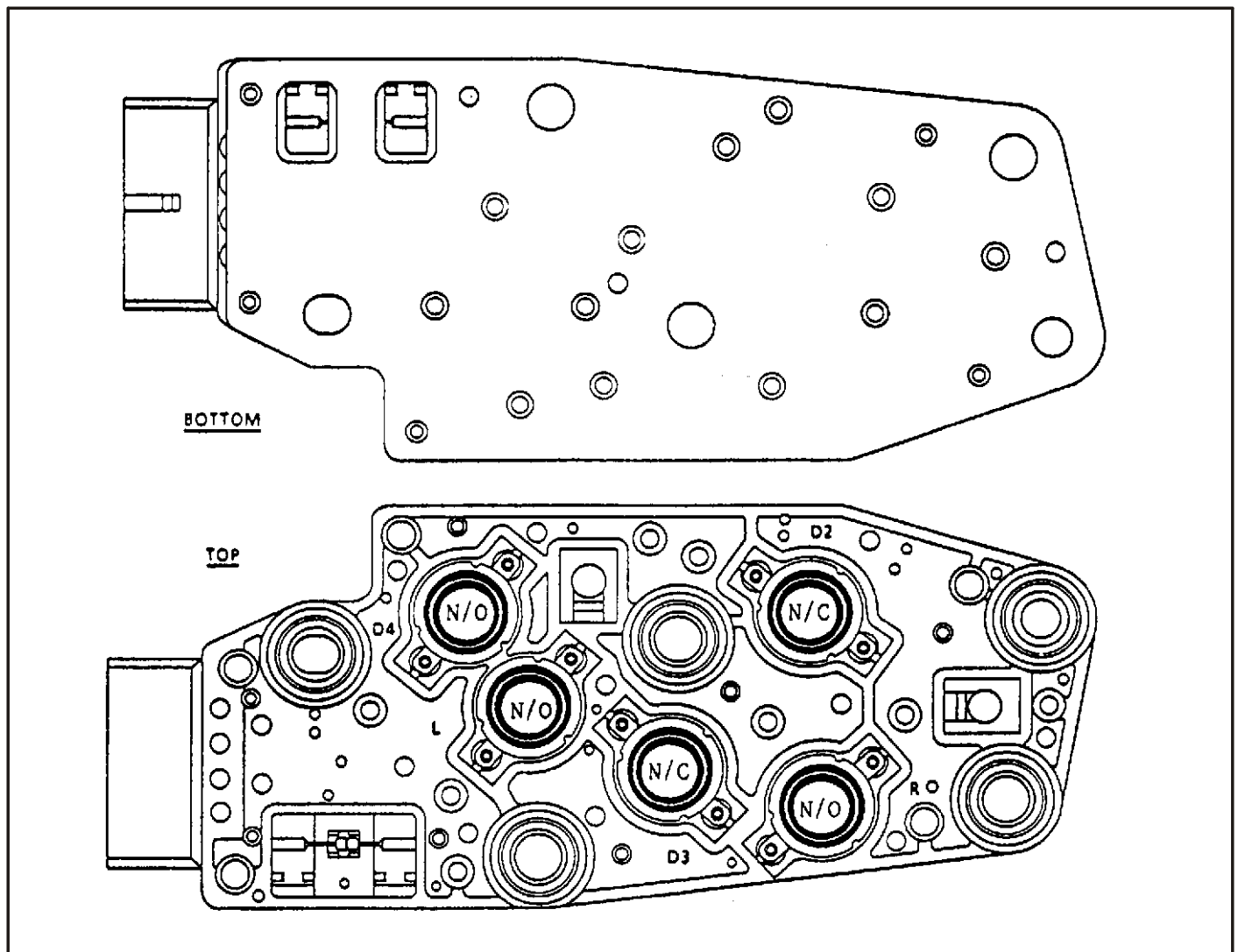


Figure 1

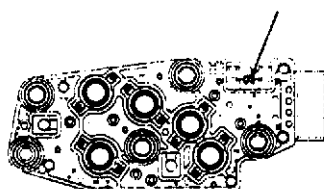
Transmission Fluid Temperature Sensor

The transmission fluid temperature sensor is part of the transmission fluid pressure switch assembly and is used to help control torque converter clutch apply and shift quality.

The temperature sensor is a resistor (thermistor) which changes value based on temperature. At low temperatures the resistance is high, and at low temperatures the resistance is low.

The PCM sends a 5 volt signal to the temperature sensor and measures the voltage drop in the circuit. This means you will measure a high voltage when the transmission is cold, and a low voltage when the transmission is hot.

If the temperature sensor circuit has a fault, code 058 or 059 will set. Code 079 will set if the transmission is operating at a high temperature for a period of time.



TRANSMISSION SENSOR – TEMPERATURE TO RESISTANCE TO VOLTAGE (approximate)

°C	°F	RESISTANCE	VOLTS
-40	-40	100544	5
-28	-21	52426	4.78
-16	10	18580	4.18
-4	23	12300	3.84
0	32	9379	3.45
7	40	7270	3.20
19	68	3520	2.56
31	86	2232	1.80
43	110	1200	1.10
55	131	858	3.25
67	145	675	2.88
79	176	333	2.24
91	194	241	1.70
103	213	154	1.28
115	239	115	.96
127	260	79	.64
139	284	60	.32
151	302	47	.00

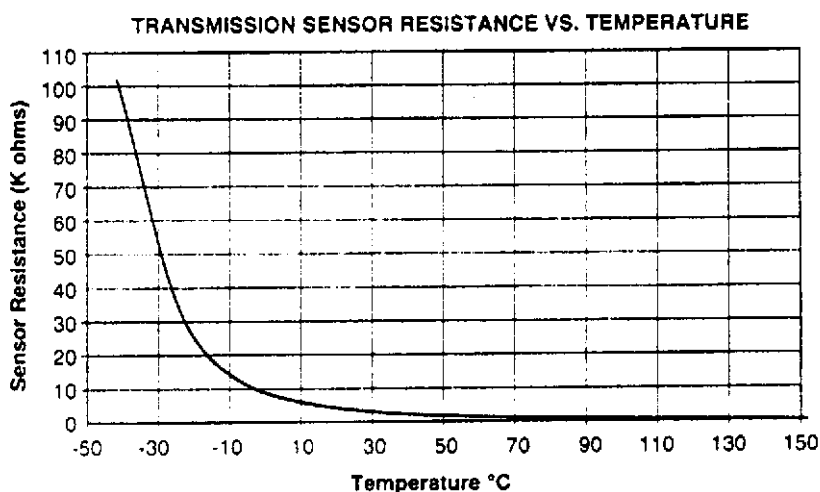


Figure 2

TRANSMISSION ELECTRICAL CONNECTOR

The transmission electrical connector is a very important part of the HYDRA-MATIC 4L60-E operating system. Anything that interferes with the electrical connection can cause the transmission to set Diagnostic Trouble Codes and/or operate incorrectly.

The following items can affect the electrical connection:

- Bent pins in the connector from rough handling during connection and disconnection
- Wires backing away from the pins or coming uncrimped (in either the transmission or vehicle wiring harness)
- Dirt contamination entering the connector when it is unconnected
- Pins in the connector backing out of the connector or pushed out during connection
- Excessive transmission fluid leaking into the connector, wicking up into the vehicle wiring harness and degrading the wire insulation *
- Water/moisture intrusion in the connector
- Low pin retention from excessive connection and disconnection of the wiring harness
- Pin corrosion from contamination

* The presence of transmission fluid in the transmission connector is not harmful in itself. The fluid only affects the vehicle harness wiring insulation if the fluid wicks up that far.

Points to remember when working with the transmission electrical connector:

- To remove the connector, squeeze the two tabs towards each other and pull straight up (See illustration).
- Carefully limit twisting or wiggling the connector during removal. This can bend pins.
- DO NOT pry the connector off with a screwdriver or other tool.
- To install the connector, first orient the pins by lining up the arrows on each half of the connector. Push the connector straight down into the transmission without twisting or angling the mating parts.
- The connector should click into place with a positive feel and/or noise.
- Whenever the transmission pass-thru connector is disconnected from the vehicle harness and the engine is running, multiple Diagnostic Trouble Codes will set. Be sure to clear these codes after re-connecting the pass-thru connector.

DTC's 59, 67 and 82 will set with key on, engine off.

DTC's 59, 66, 67, 73 and 82 will set with key on, engine on.

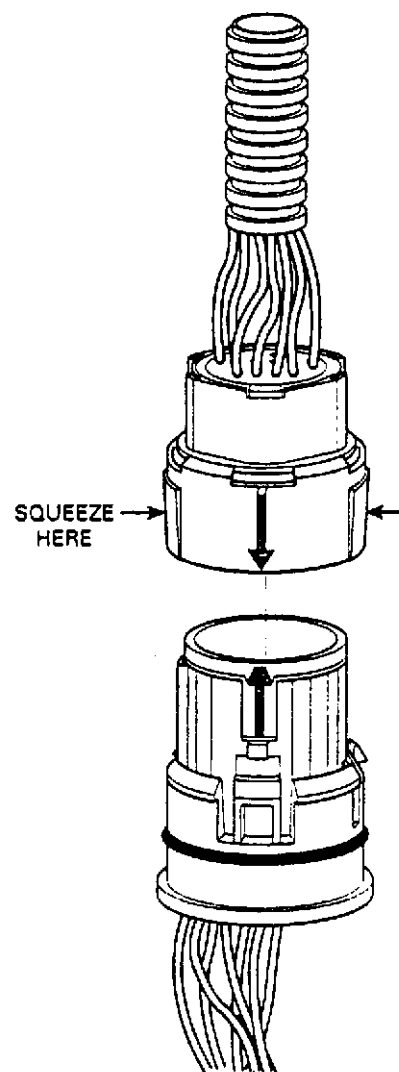


Figure 3

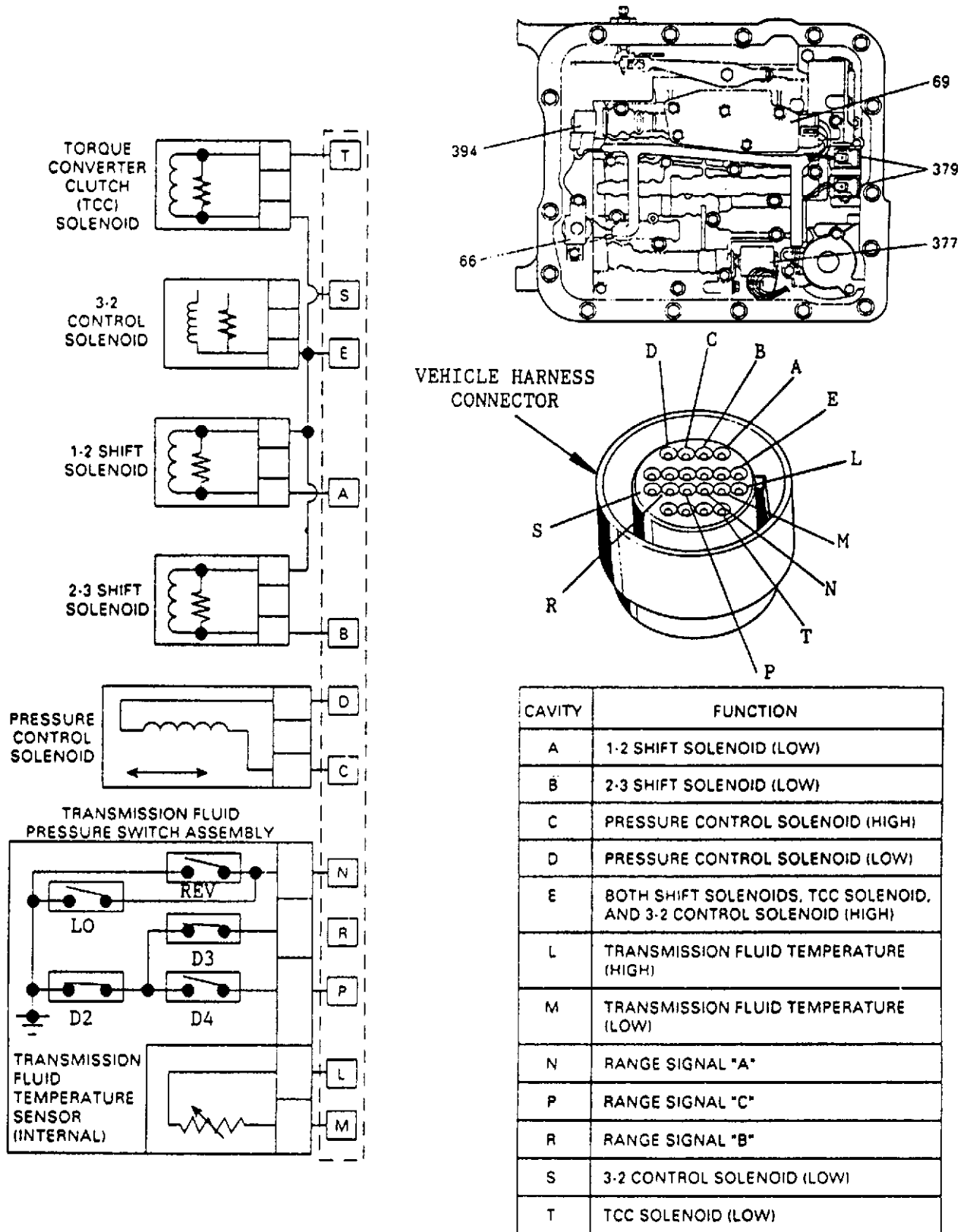
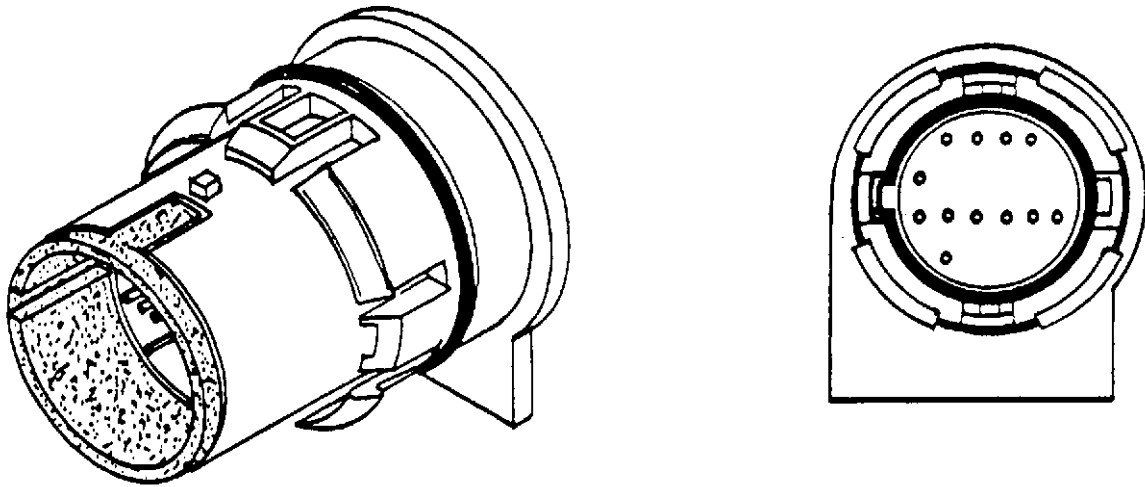


Figure 4



NOTE: THE TRANSMISSION CASE CONNECTOR AND THE LOCK-UP SOLENOID ARE INTREGAL PARTS OF THE TRANSMISSION WIRING HARNESS AND MUST BE REPLACED AS AN ASSEMBLY.

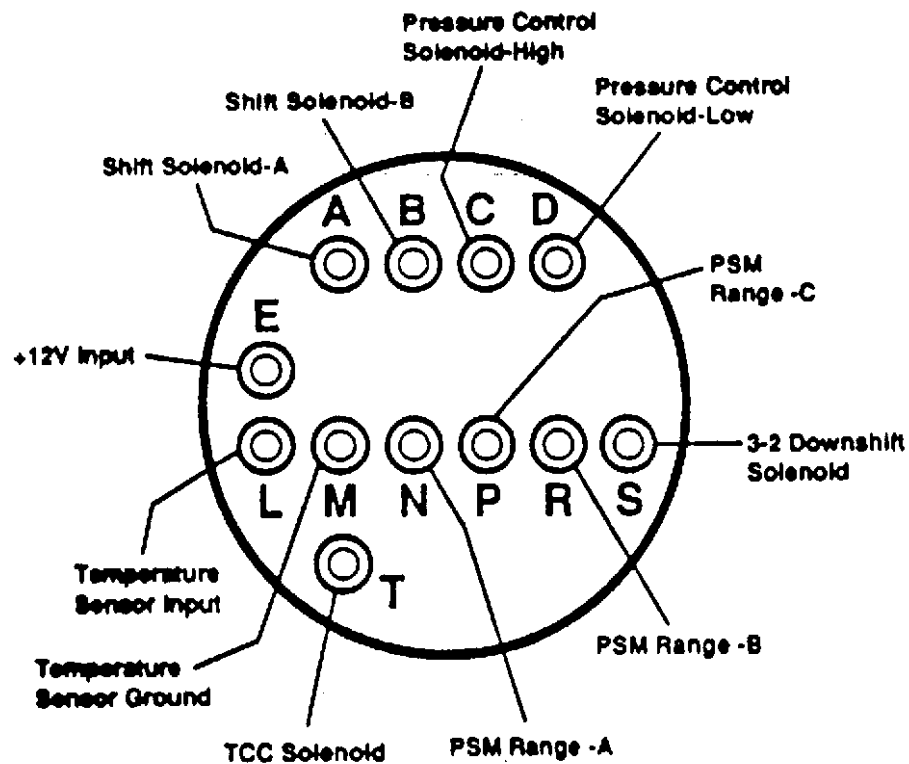


Figure 5

DIAGNOSTIC TROUBLE CODES AND DEFAULT ACTIONS

TROUBLE CODE	CODE PARAMETERS	DEFAULT ACTION
14 Engine Coolant Temp Sensor Circuit (High)	Engine coolant temp over 145°C (293°F) for 1/2 second.	<ul style="list-style-type: none"> • TCC apply cold.
15 Engine Coolant Temp Sensor Circuit (Low)	Engine coolant temp less than -33°C (-27°F) for 1/2 second.	<ul style="list-style-type: none"> • TCC apply cold.
21 Throttle Position Sensor Circuit (High)	TP voltage greater than 4.88 volts for four seconds.	<ul style="list-style-type: none"> • No TCC. • Fixed shift points. • Harsh shifts. • Maximum line pressure. • No fourth gear in hot mode.
22 Throttle Position Sensor Circuit (Low)	With engine running, TP voltage less than .06 volts for four seconds. (Diesel is less than .16 volts.)	<ul style="list-style-type: none"> • No TCC. • Fixed shift points. • Harsh shifts. • Maximum line pressure. • No fourth gear in hot mode.
24 Vehicle Speed Sensor Signal Low	In Drive or Reverse with engine speed greater than 3000 rpm, output speed is less than 250 rpm for three seconds. (MAP is 100-255 kPa, TP is 10-100%)	<ul style="list-style-type: none"> • Maximum line pressure. • Second gear only.
28 Fluid Pressure Switch Assembly Fault	PCM detects one of two "invalid" combinations of PSM signals for five seconds.	<ul style="list-style-type: none"> • No TCC. • Harsh shifts. • No fourth gear in hot mode.
37 Brake Switch Stuck "ON"	With brake on, vehicle speed is 5-20 mph for six seconds; then vehicle speed is >20 mph for six seconds. This must happen seven times.	<ul style="list-style-type: none"> • No TCC. • No fourth gear in hot mode.
38 Brake Switch Stuck "OFF"	With brake off, vehicle speed is >20 mph for six seconds, then vehicle speed is 5-20 mph for six seconds. This must happen seven times.	<ul style="list-style-type: none"> • No TCC. • No fourth gear in hot mode.
52 Long System Voltage High	Generator voltage is greater than 16 volts for 109 minutes.	<ul style="list-style-type: none"> • No TCC. • Maximum line pressure. • Third gear only.
53 System Voltage High	Generator voltage is greater than 19.5 volts for two seconds.	<ul style="list-style-type: none"> • No TCC. • Maximum line pressure. • Third gear only.
58 Transmission Fluid Temp Sensor Circuit (High)	Transmission fluid temperature is greater than 154°C (309°F) for one second.	<ul style="list-style-type: none"> • No default action.
59 Transmission Fluid Temp Sensor Circuit (Low)	Transmission fluid temperature is below -33°C (-54°F) for one second.	<ul style="list-style-type: none"> • No default action.

Figure 6

DIAGNOSTIC TROUBLE CODES AND DEFAULT ACTIONS

TROUBLE CODE	CODE PARAMETERS	DEFAULT ACTION
66 3-2 Control Solenoid Circuit Fault	At high duty cycle, the circuit voltage high -OR- at low duty cycle the circuit voltage is low for four seconds.	<ul style="list-style-type: none"> • Third gear only
67 TCC Solenoid Circuit Fault	TCC is commanded on, but circuit is high -OR- TCC is commanded off but circuit voltage is low for two seconds.	<ul style="list-style-type: none"> • No TCC. • No fourth gear in hot mode.
69 TCC Stuck "ON"	With gear selector in a drive range, transmission in 2nd, 3rd or 4th, TP Sensor greater than 25% and TCC unlocked - slip is between -20 and 20 RPM.	<ul style="list-style-type: none"> • TCC "ON" in all gears. • Early shifts.
72 Vehicle Speed Sensor Loss	Two successive speed readings have a difference of more than 1000 RPM. (Difference must be more than 1500 RPM in P and N.)	<ul style="list-style-type: none"> • Maximum line pressure. • Second gear only.
73 Pressure Control Solenoid Current	Pressure control solenoid return amperage varies more than .16 amp from commanded amperage for one second.	<ul style="list-style-type: none"> • Harsh shifts. • Maximum line pressure.
75 System Voltage Low	System voltage is less than 7.3 V at high temps and less than 11.7 V at high temps for four seconds.	<ul style="list-style-type: none"> • No TCC. • Maximum line pressure. • Third gear only.
79 Transmission Fluid Overtemp	Transmission temp is higher than 150°C (302°F) for six seconds.	
81 2-3 Shift Solenoid Circuit Fault	2-3 Shift Solenoid is commanded "ON" by PCM but circuit voltage is high for two seconds OR 2-3 Shift Solenoid is commanded "OFF" by PCM but circuit voltage is low for two seconds.	<ul style="list-style-type: none"> • No TCC • Maximum line pressure. • Second or third gear only.
82 1-2 Shift Solenoid Circuit Fault	1-2 Shift Solenoid is commanded "ON" by PCM but circuit voltage is high for two seconds OR 1-2 Shift Solenoid is commanded "OFF" by PCM but circuit voltage is low for two seconds.	<ul style="list-style-type: none"> • Maximum line pressure. • Second or third gear only OR • First and fourth gears only.

Figure 7

1993 HYDRA-MATIC 4L60-E SHIFT SPEED CHART

ENGINE	BODY	AXLE RATIO	1-2 SHIFT +/- 250 RPM					2-3 SHIFT +/- 200 RPM					3-4 SHIFT +/- 150 RPM					4-3 +/- 100 RPM	3-2 +/- 100 RPM	2-1 +/- 100 RPM	
			TPS	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50	0-10	0-10	0-10
5.7L (L05)	C10/G	3.08		466	622	738	816	894	835	1126	1282	1495	1670	1243	1554	1981	*	*	1127	699	369
	C20/K	3.42																			
	C10/G	3.42		466	678	762	889	953	847	1228	1440	1652	1800	1270	1567	2054	*	*	1122	762	381
	C20/K	3.73																			
	C10/G	3.73		514	700	817	911	981	934	1284	1518	1705	1845	1307	1635	2101	*	*	1121	841	373
	C/K	4.10																			

ENGINE	BODY	AXLE RATIO	1-2 SHIFT +/- 250 RPM					2-3 SHIFT +/- 200 RPM					3-4 SHIFT +/- 150 RPM					4-3 +/- 100 RPM	3-2 +/- 100 RPM	2-1 +/- 100 RPM	
			TPS	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50	0-10	0-10	0-10
5.0L (L03)	C10/G	3.08		486	660	758	855	893	835	1146	1360	1632	1768	1243	1535	1943	2311	*	1126	699	369
	C20/K	3.42																			
	C10/G	3.42		510	744	893	978	957	851	1233	1446	1680	1808	1276	1574	1914	2297	*	1127	765	383
	C20/K	3.73																			
	G	3.73		560	793	910	1004	980	934	1237	1517	1704	1844	1307	1611	1914	2311	*	1120	840	373
	C/K	4.10																			

ENGINE	BODY	AXLE RATIO	1-2 SHIFT +/- 250 RPM					2-3 SHIFT +/- 200 RPM					3-4 SHIFT +/- 150 RPM					4-3 +/- 100 RPM	3-2 +/- 100 RPM	2-1 +/- 100 RPM		
			TPS	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50	0-10	0-10	0-10	
6.2L DIESEL (LH6)	C	3.08		369	369	505	582	757	757	757	893	1184	1437	1359	1359	1359	*	*	1223	679	330	
	C20/K	3.42																				
	C10	3.42		361	382	489	595	744	744	744	872	1170	1425	1340	1340	1340	*	*	1212	680	319	
	C20/K	3.73																				
	C10	3.73		373	373	467	607	747	747	747	887	1190	1424	1354	1354	1354	*	*	1214	677	326	
	C/K	4.10																				
	G	3.08		352	389	519	556	723	723	723	871	1057	1317	1298	1298	1298	*	*	1168	649	315	
		3.42		349	369	472	513	719	719	719	863	1068	1315	1294	1294	1294	*	*	1171	657	308	
		3.73		359	381	516	561	718	718	718	853	1077	1324	1302	1302	1302	*	*	1167	651	314	

ENGINE	BODY	AXLE RATIO	1-2 SHIFT +/- 250 RPM					2-3 SHIFT +/- 200 RPM					3-4 SHIFT +/- 150 RPM					4-3 +/- 100 RPM	3-2 +/- 100 RPM	2-1 +/- 100 RPM	
			TPS	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50	0-10	0-10	0-10
4.3L (L35)	M/L	3.42/3.73		566	784	928	893	915	981	1482	1656	1765	1787	1395	1918	3488	*	*	1242	588	348
	S/T	3.08/3.42		545	784	828	893	915	981	1460	1656	1765	1787	1438	2005	3488	*	*	1242	588	348
4.3L (LB4)	M/L	3.23/3.42		392	545	588	675	784	784	1111	1242	1417	1613	1395	1700	1918	*	*	1242	632	348
		3.73		479	719	937	1002	1046	850	1308	1526	1787	1940	1395	1765	1983	*	*	1242	654	348
	G	3.42/3.73		479	741	937	1002	1046	850	1329	1569	1787	1940	1395	1787	2005	*	*	1242	654	348
	S/T	3.08/3.42		436	545	588	675	784	784	1090	1220	1417	1613	1395	1678	1918	*	*	1242	654	348
	C10	3.08/3.42		479	588	654	741	784	850	1177	1308	1460	1613	1395	1678	1918	*	*	1242	654	348
		3.73/4.10		501	654	719	763	784	915	1242	1373	1526	1613	1395	1678	1918	*	*	1242	654	348

* SHIFT NOT AVAILABLE AT THIS TPS

1. ALL SPEEDS ARE GIVEN IN TRANSMISSION OUTPUT SHAFT RPM
2. SPEEDS ARE BASED ON PERCENT THROTTLE POSITION SENSOR (TPS) DATA
3. USE A TECH 1 OR OTHER SCAN TOOL TO MONITOR THIS DATA
4. ALL SHIFT SPEEDS ARE APPROXIMATE

Figure 8

HYDRA-MATIC 4L60-E LINE PRESSURE CHECK PROCEDURE

Line pressures are calibrated for two sets of gear ranges – Drive-Park-Neutral and Reverse. This allows the transmission line pressure to be appropriate for different pressure needs in different gear ranges:

<u>Gear Range</u>	<u>Line Pressure Range</u>
Drive, Park or Neutral	55 - 189 PSI
Reverse	64 - 324 PSI

Before performing a line pressure check, verify that the pressure control solenoid is receiving the correct electrical signal from the PCM:

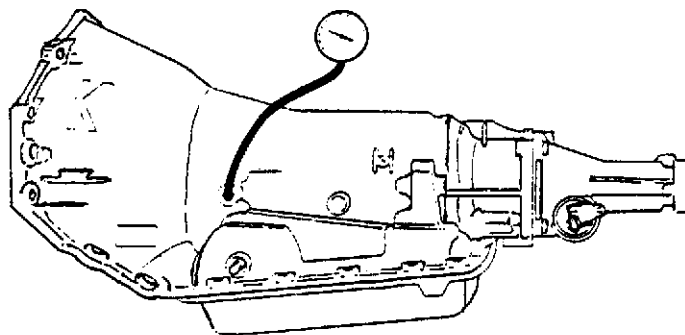
1. Install a scan tool.
2. Start the engine and set parking brake.
3. Check for a stored pressure control solenoid diagnostic trouble code, and other diagnostic trouble codes.
4. Repair vehicle if necessary.

Inspect

- Fluid level
- Manual linkage

Install or Connect

- TECH 1 Scan tool
- Oil pressure gage at line pressure tap



5. Put gear selector in Park and set the parking brake.
6. Start engine and allow it to warm up at idle.
7. Access the "PCS Control" test on the TECH 1 scan tool.
8. Increase DESIRED PCS in 0.1 Amp increments and read the corresponding line pressure on the pressure gage. (Allow pressure to stabilize for 5 seconds after each current change.)
9. Compare data to the Drive-Park-Neutral line pressure chart below.

***NOTICE** Total test running time should not exceed 2 minutes, or transmission damage could occur.

CAUTION Brakes must be applied at all times to prevent unexpected vehicle motion.

If pressure readings differ greatly from the line pressure chart, refer to the Diagnosis Charts

The TECH 1 scan tool is only able to control the pressure control solenoid in Park and Neutral with the vehicle stopped. This protects the clutches from extremely high or low pressures in Drive or Reverse ranges.

Pressure Control Solenoid Current (Amp)	Line Pressure (PSI)
0.02	170 - 190
0.10	165 - 185
0.20	160 - 180
0.30	155 - 175
0.40	148 - 168
0.50	140 - 160
0.60	130 - 145
0.70	110 - 130
0.80	90 - 115
0.90	65 - 90
0.98	55 - 65

Pressures at 1500 RPM and 66°C (150°F). Line pressure drops as temperature increases.

Figure 9

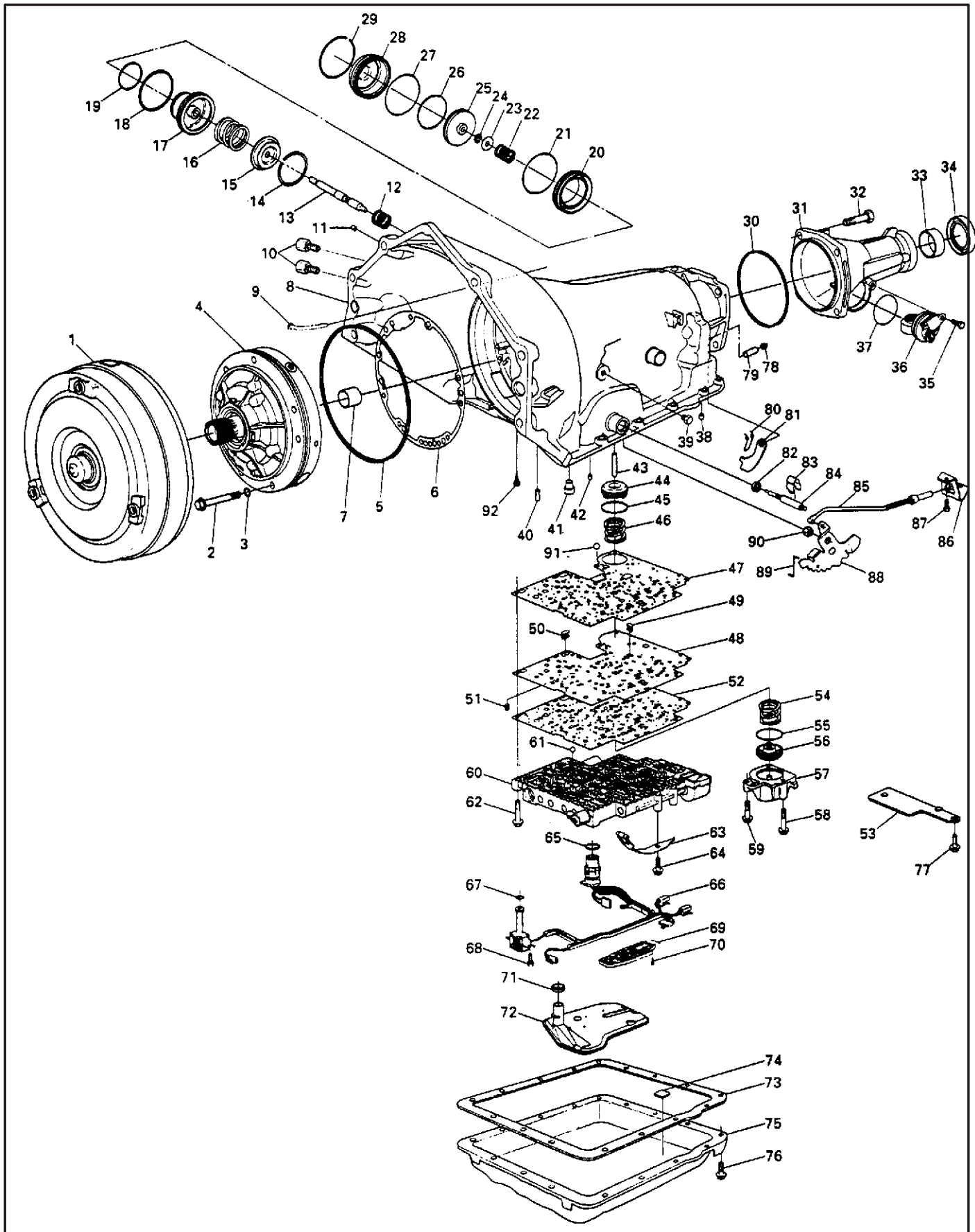


Figure 10



Technical Service Information

ILL. NO.	DESCRIPTION	ILL. NO.	DESCRIPTION
1	TORQUE CONVERTER ASSEMBLY	48	PLATE, VALVE BODY SPACER
2	BOLT, PUMP TO CASE	49	SCREEN, SHIFT SOLENOIDS
3	O-RING, PUMP TO CASE BOLT	50	SCREEN, PRESSURE CONTROL SOLENOID
4	PUMP ASSEMBLY, OIL	51	SCREEN, 3-2 CONTROL SOLENOID
5	SEAL, OIL (PUMP TO CASE)	52	GASKET, SPACER PLATE TO VALVE BODY
6	GASKET, PUMP COVER TO CASE	53	PLATE, SPACER PLATE SUPPORT
7	BUSHING, CASE	54	SPRING, 1-2 ACCUMULATOR
8	CASE, TRANSMISSION	55	RING, OIL SEAL (1-2 ACCUMULATOR)
9	VENT ASSEMBLY, TRANSMISSION	56	PISTON, 1-2 ACCUMULATOR
10	CONNECTOR, OIL COOLER PIPE	57	COVER AND PIN ASSEMBLY, 1-2 ACCUMULATOR
11	PLUG, CASE SERVO	58	BOLT, ACCUMULATOR COVER
12	SPRING, SERVO RETURN	59	BOLT, ACCUMULATOR COVER
13	PIN, 2ND APPLY PISTON	60	VALVE ASSEMBLY, CONTROL BODY
14	RING, RETAINER (2ND APPLY PISTON)	61	CHECKBALL
15	RETAINER, SERVO CUSHION SPRING	62	BOLT, VALVE BODY
16	SPRING, SERVO CUSHION	63	SPRING ASSEMBLY, MANUAL DETENT
17	PISTON, 2ND APPLY	64	BOLT, MANUAL DETENT SPRING
18	RING, OIL SEAL (2ND APPLY PISTON - OUTER)	65	SEAL, WIRING HARNESS PASS-THRU CONNECTOR O-RING
19	RING, OIL SEAL (2ND APPLY PISTON - INNER)	66	SOLENOID ASSEMBLY, WIRING HARNESS
20	HOUSING, SERVO PISTON (INNER)	67	SEAL, O-RING (SOLENOID)
21	SEAL, O-RING	68	BOLT, HEX WASHER HEAD (SOLENOID)
22	SPRING, SERVO APPLY PIN	69	SWITCH ASSEMBLY, TRANSMISSION PRESSURE
23	WASHER, SERVO APPLY PIN	70	BOLT, PRESSURE SWITCH ASSEMBLY
24	RING, RETAINER (APPLY PIN)	71	SEAL, FILTER
25	PISTON, 4TH APPLY	72	FILTER ASSEMBLY, TRANSMISSION OIL
26	RING, OIL SEAL (4TH APPLY PISTON - OUTER)	73	GASKET, TRANSMISSION OIL PAN
27	SEAL, O-RING (2-4 SERVO COVER)	74	MAGNET, CHIP COLLECTOR
28	COVER, 2-4 SERVO	75	PAN, TRANSMISSION OIL
29	RING, SERVO COVER RETAINING	76	SCREW, TRANSMISSION OIL PAN
30	SEAL, CASE EXTENSION TO CASE	77	BOLT, SPACER PLATE SUPPORT
31	EXTENSION, CASE	78	PLUG, STEEL CUP
32	BOLT, CASE EXTENSION TO CASE	79	SHAFT, PARKING BRAKE PAWL
33	BUSHING, CASE EXTENSION	80	SPRING, PARKING PAWL RETURN
34	SEAL ASSEMBLY, CASE EXTENSION OIL	81	PAWL, PARKING BRAKE
35	BOLT, SPEED SENSOR RETAINING	82	SEAL, MANUAL SHAFT
36	SPEED SENSOR, INTERNAL TRANSMISSION	83	RETAINER, MANUAL SHAFT
37	SEAL, O-RING (ITSS TO CASE EXTENSION)	84	SHAFT, MANUAL
38	PLUG, TRANSMISSION CASE (ACCUM. BLEED)	85	ACTUATOR ASSEMBLY, PARKING LOCK
39	PLUG, PRESSURE	86	BRACKET, PARKING LOCK
40	RETAINER AND BALL ASSEMBLY, 3RD ACCUM.	87	BOLT, PARKING LOCK BRACKET
41	PIN, BAND ANCHOR	88	LEVER, INSIDE DETENT
42	RETAINER AND BALL ASM. (DOUBLE ORIFICE)	89	LINK, MANUAL VALVE
43	PIN, ACCUMULATOR PISTON	90	NUT, HEX HEAD
44	PISTON, 3-4 ACCUMULATOR	91	NO. 10 CHECKBALL
45	RING, OIL SEAL (3-4 ACCUMULATOR PISTON)	92	SCREEN, TCC
46	SPRING, 3-4 ACCUMULATOR		
47	GASKET, SPACER PLATE TO CASE		

Figure 11

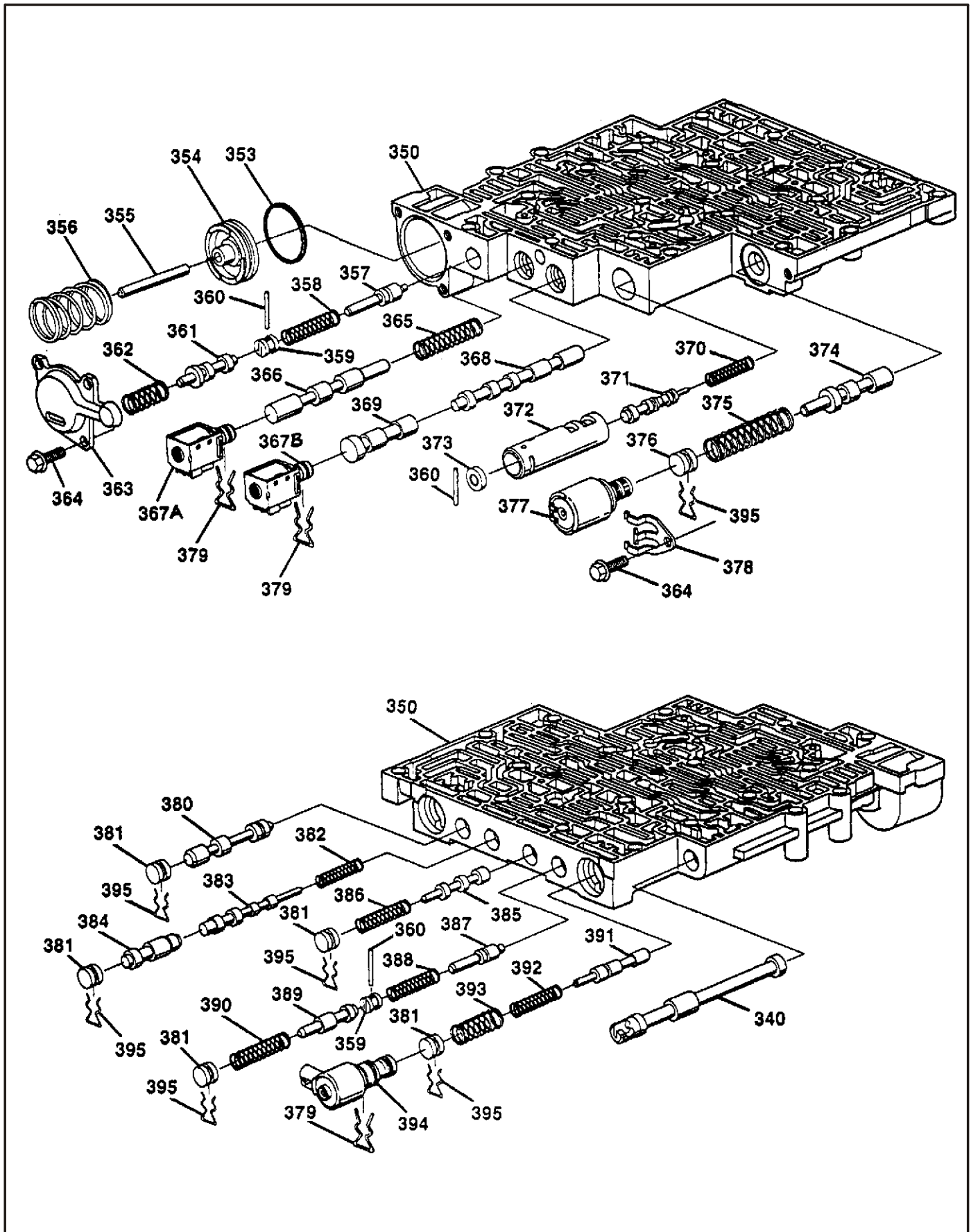


Figure 11

340 VALVE, MANUAL
350 VALVE ASSEMBLY, CONTROL BODY
353 SEAL, FORWARD ACCUMULATOR OIL
354 PISTON, FORWARD ACCUMULATOR
355 PIN, FORWARD ACCUMULATOR
356 SPRING, FORWARD ACCUMULATOR
357 VALVE, FORWARD ABUSE
358 SPRING, FORWARD ABUSE VALVE
359 PLUG, BORE
360 PIN, COILED SPRING
361 VALVE, LOW OVERRUN
362 SPRING, LOW OVERRUN VALVE
363 COVER, FORWARD ACCUMULATOR
364 BOLT, FORWARD ACCUMULATOR COVER
365 SPRING, 1-2 SHIFT VALVE
366 VALVE, 1-2 SHIFT
367A 1-2 SHIFT SOLENOID (A)
367B 2-3 SHIFT SOLENOID (B)
368 VALVE, 2-3 SHIFT
369 VALVE, 2-3 SHUTTLE
370 SPRING, 1-2 ACCUMULATOR VALVE
371 VALVE, 1-2 ACCUMULATOR
372 SLEEVE, 1-2 ACCUMULATOR VALVE
373 PLUG, BORE
374 VALVE, ACTUATOR FEED LIMIT
375 SPRING, ACTUATOR FEED LIMIT VALVE
376 PLUG, BORE
377 PRESSURE CONTROL SOLENOID
378 RETAINER, PRESSURE CONTROL SOLENOID
379 RETAINER, SOLENOID
380 VALVE, CONVERTER CLUTCH SIGNAL
381 PLUG, BORE
382 SPRING, 4-3 SEQUENCE VALVE
383 VALVE, 4-3 SEQUENCE
384 VALVE, 3-4 RELAY
385 VALVE, 3-4 SHIFT
386 SPRING, 3-4 SHIFT VALVE
387 VALVE, REVERSE ABUSE
388 SPRING, REVERSE ABUSE VALVE
389 VALVE, 3-2 DOWNSHIFT
390 SPRING, 3-2 DOWNSHIFT VALVE
391 VALVE, 3-2 CONTROL
392 SPRING, 3-2 CONTROL VALVE
393 SPRING, BORE PLUG
394 3-2 CONTROL SOLENOID
395 RETAINER, BORE PLUG

Figure 11

4L60-E COMPONENT RESISTANCE CHART

COMPONENT	TERMINAL	WIRE COLOR	PASS-THRU PIN	RESISTANCE @ 20°C	CKT #
1-2 SHIFT SOLENOID	A	RED	E *	20 - 40 Ohms	1149B
	B	GRN LT	A		1222
2-3 SHIFT SOLENOID	A	RED	E *	20 - 40 Ohms	1149A
	B	YEL	B		1223
3-2 CONTROL SOLENOID	A	RED	E *	9 - 14 Ohms	1149C
	B	WHT	S		897
PRESSURE CONTROL SOLENOID	A	PPL	C	3.5 - 8 Ohms	1228
	B	BLU LT	D		1229
TRANS TEMPERATURE SENSOR	A	BRN	L	2.9 - 4.0 kOhms	1227
	B	GRA	M		455
----- & PRESSURE SWITCH ASSEMBLY	C	PNK	N	SEE FIGURE 1	1224
	D	ORN	P		1226
	E	BLUE DK	R		1225
TCC SOLENOID	A	RED	E *	20 - 40 Ohms	1149E
	B	BLACK	T		422A

* Spliced internally to Pin E.

Figure 11