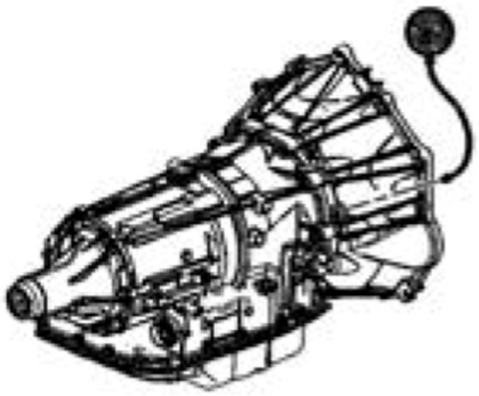
6L80/90 technical information.

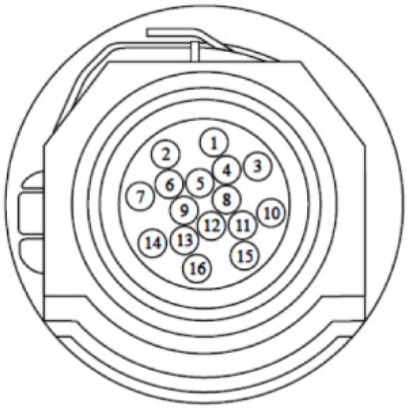


Pressure test port: passenger's side behind bell housing.

Line Pressure

Scan tool Line PC Solenoid Commanded State (kPa)	Approximate line pressure shown on pressure gage @ 1500 RPM	
	kPa	PSI
None	310-550	45-80
200	655-900	95-130
400	1100-1310	160-190
600	1520-1725	220-250
800	1860-2070	270-300
1000	1860-2070	270-300
1200	1860-2070	270-300
1400	1860-2070	270-300
1600	1860-2070	270-300
1800	1860-2070	270-300
2000	1860-2070	270-300

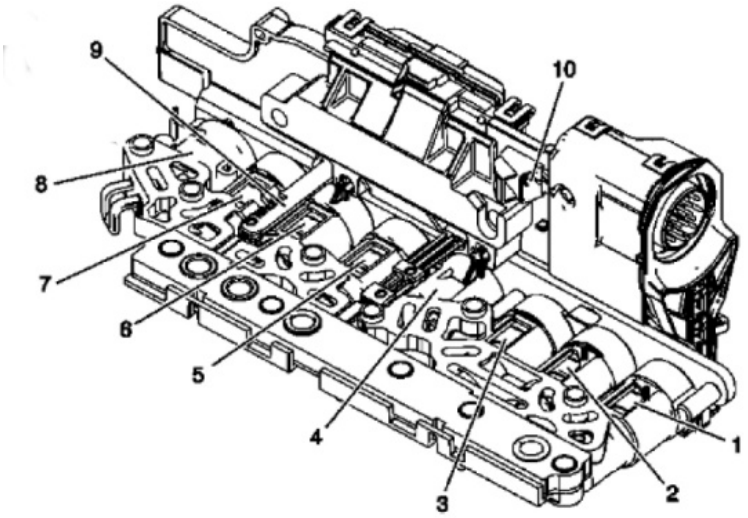
Pressure test specifications, have transmission full of fluid and warmed to operating temperatures, Use scan tool to command EPC solenoid for test. Without scan tool you will have approximately 45-80 psi at idle and upwards of 300 in gear at WOT, do not maintain WOT or transmission damage will result. Use parking and service brakes at all times, DO NOT drive vehicle with pressure gauge and scan tool attached!



Transmission terminal pin out.

1) Not used
2) Not used
3) Park-Neutral signal
4) Battery +
5) Ground-
6) Brake pedal input
7) Tap up and down switch
8) Not used
9) Acc. Power+
10) Can Hi
11) Can low
12) Run-crank power+
13) Can low2
14) Can high2
15) Replicated OSS signal
16) Not used

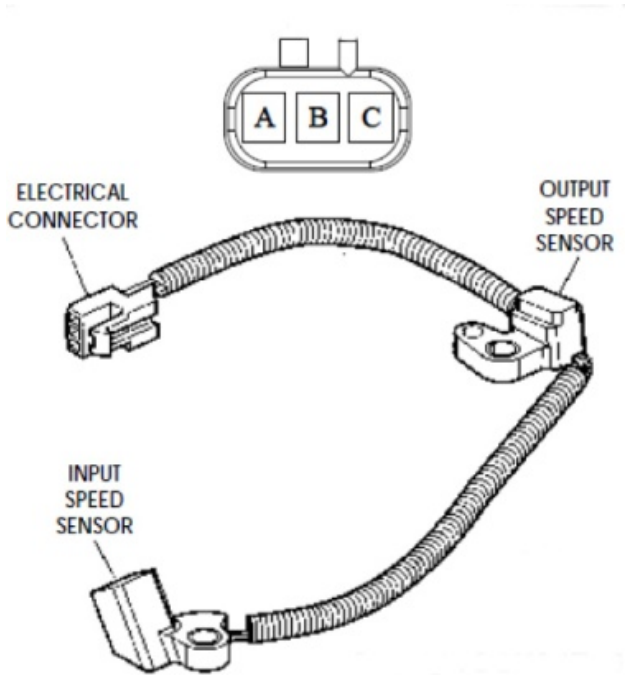
Solenoid/sensor locations:



1) PCS3 (Pressure control solenoid)
2) PCS4
3) PCS3
4) SS2 (Shift solenoid)
5) TCC solenoid
6) PCS5
7) PCS1
8) SS1
9) TFT (transmission fluid temp)
10) Input/output speed sensor connector

The TCM is internal and part of the valve body/solenoid assembly on this transmission.

Speed sensor harness and pin ID



A) Input speed signal

B) Ignition voltage+

C) Output speed signal

Applied elements

Range	Park	Reverse	Neutral	Drive						
				1st Braking	1st	2nd	3rd	4th	5th	6th
1-2-3-4 Clutch	-	-	-	Applied	Applied	Applied	Applied	Applied	-	-
3-5 Reverse Clutch	-	Applied	-	-	-	-	Applied	-	Applied	-
4-5-6 Clutch	-	-	-	-	-	-	-	Applied	Applied	Applied
2-6 Clutch	-	-	-	-	-	Applied	-	-	-	Applied
Low and Reverse Clutch	Applied*	Applied	Applied*	Applied	-	-	-	-	-	-
Low Clutch Sprag	-	-	-	Holding	Holding	-	-	-	-	-
* = Applied with NO load										

Limp or default modes (power failure) If failure occurs in 1, 2 or 3rd gears you will default to 3rd. If failure occurs in 4 5 or 6th you will default to 5th gear.

Ratios and solenoid chart

Gear	Shift SOL 1	Shift SOL 2	1-2-3-4 CL PC SOL 5 N.L.	2-6 CL PC SOL 4 N.L.	3-5 REV CL PC SOL 2 N.H.	LOW REV 4-5-6 CL PC SOL 3 N.H.	6L45 6L50Gear Ratio	6L80 6L90Gear Ratio
Park	ON	ON	OFF	OFF	OFF	ON	-	-
Reverse	ON	OFF	OFF	OFF	ON	ON	3.200	3.064
Neutral	ON	ON	OFF	OFF	OFF	ON	-	-
1st Braking	ON	ON	ON	OFF	OFF	ON	4.065	4.027
1st	OFF	ON	ON	OFF	OFF	OFF	4.065	4.027
2nd	OFF	ON	ON	ON	OFF	OFF	2.371	2.364
3rd	OFF	ON	ON	OFF	ON	OFF	1.551	1.532
4th	OFF	ON	ON	OFF	OFF	ON	1.157	1.152
5th	OFF	ON	OFF	OFF	ON	ON	0.853	0.852
6th	OFF	ON	OFF	ON	OFF	ON	0.674	0.667
For shift solenoids 1 and 2, "ON" = Solenoid Energized (Pressurized) "OFF" = Solenoid De-energized (No Pressure). For pressure control solenoids, "ON" = Pressurized, "OFF" = No Pressure								

Mode 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 = Ignition voltage LOW = 0 volts				

Fluid requirements: The only fluid that can be used in the 6L80/6l90 units is Dexron VI.

6L80/6L90 Internal Componants