Transmission Control Systems: Testing and Inspection Procedures

Static Testing - Engine OFF

Static testing procedures allow for shop testing of the transaxle in the vehicle or on the bench. Completion of these tests prove out the transaxle electronically.

RESISTANCE/CONTINUITY TESTS

CAUTION: For resistance checks, be sure that the tester solenoid select switch is set to the "Ohms Check" position or damage to the ohmmeter may result.

- Refer to the proper pinpoint test to be performed, based on the DTC displayed.
- Use a volt-ohmmeter and the Transmission Tester to perform the pinpoint tests as indicated in the workshop manual, based on the DTCs which were displayed.
- Perform repairs as indicated by the pinpoint tests. Always retest and road test the vehicle after a repair.

Solenoid	Solenoid Resistance (ohms)
SS1	12-22
SS2	12-22
TCC	12.5-19
EPC	3.7-5.92
3-2T/CCS	3.7-5.92

RESISTANCE/CONTINUITY TESTS - EPC SOLENOID

Use a volt-ohmmeter to perform the following test:

1. Set the ohmmeter to 100-200 ohm range.
2. Connect the negative lead of the ohmmeter to the EPC jack.
3. Connect the positive lead of the ohmmeter to the VPWR jack.
4. Record the resistance.
5. Refer to CD4E Transmission Application chart for values.
   If out of range refer to Pinpoint Test E.

RESISTANCE/CONTINUITY TESTS - SOLENOIDS (SS-1, SS-2, SS-3, TCC, CCS, 3-2T/CCS)

Use a volt-ohmmeter to perform the following test:

1. Set ohmmeter to 100-200 ohm range.
2. Connect the positive lead of the ohmmeter to the appropriate VPWR jack for the solenoid being tested.
3. Connect the negative lead of the ohmmeter to the appropriate solenoid (SS1, SS2, TCC, 3-2T/CCS) jack.
4. Record the resistance.
5. Refer to CD4E Transmission Application chart for values.
   If out of range, refer to the following pinpoint tests:
   - Pinpoint Test A (SS1, SS2)
   - Pinpoint Test C Torque Converter Clutch **(TCC)**.
   - Pinpoint Test G (3-2T/CCS)

RESISTANCE/CONTINUITY TESTS - TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR

Use a volt-ohmmeter to perform the following test:

1. Set ohmmeter to 1000 ohm (K) range.
2. Connect the ohmmeter positive lead to the +TFT jack.
3. Connect the ohmmeter negative lead to the -TFT jack.
4. Record the resistance. Resistance will vary with temperature.

°C	°F	Resistance (KOhms)
-40 – -20	-40 – -4	1134 – 242
-19 – -1	-3 – 31	242 – 84
0 – 20	32 – 68	84 – 41
21 – 40	69 – 104	41 – 14
41 – 70	105 – 158	14 – 5.9
71 – 90	159 – 194	5.9 – 3.1
91 – 110	195 – 230	3.1 – 1.7
111 – 130	231 – 266	1.7 – 1
131 – 150	267 – 302	1 – 0.6

5. Refer to Transmission Fluid Temperature chart for values.
   If out of range, refer to Pinpoint Test B.

RESISTANCE/CONTINUITY TESTS - TURBINE SHAFT SPEED (TSS) SENSOR

Use a volt-ohmmeter to perform the following test:

1. Set ohmmeter to 1000 ohms (K) range.
2. Connect the positive lead of the ohmmeter to the +TSS jack.
3. Connect the negative lead of the ohmmeter to the -TSS jack.
4. Record the resistance.
5. Turbine Shaft Speed **(TSS)** should be 140-290 ohms.
   If out of range, refer to Pinpoint Test F.

SOLENOID VOLTAGE TEST

1. Set the Tester Bench/Drive switch to the Bench mode.
2. Set voltmeter to 20 volt DC range.

NOTE: LED will turn green when solenoid activates and turn off when deactivated. LED will turn red if an activated solenoid/harness is shorted to BAT+. LED will remain off if an activated solenoid/harness is shorted to ground or no continuity.

3. Connect the voltmeter positive lead to the appropriate solenoid VPWR, connect voltmeter negative lead to the appropriate solenoid. Use a VOM to check for voltage across each solenoid by activating the solenoid switches. Select the appropriate solenoid with the rotary switch and depress the corresponding solenoid switch. The LED should illuminate, the voltage should change and an audible click may be heard. If LED does not illuminate, a short to ground condition exists.
4. Observe and record the values.