

DTC 66 V8 PCM

3-2 CONTROL SOLENOID OR QDM 2 CIRCUIT FAULT

Circuit Description:

The 3-2 control solenoid is pulse width modulated to improve the 3-2 downshift by coordinating the apply rate of the 2-4 band with the release of hydraulic oil from the 3-4 clutch during a 3-2 downshift.

The PCM continually monitors the 3-2 control solenoid circuit for either a low or a high voltage depending on the commanded state of the circuit. When the transmission is in 1st gear the duty cycle of the solenoid is normally about 0%. When the transmission is in 2nd gear or higher, the duty cycle of the solenoid will be about 90%. When the transmission downshifts, 3-2/4-2/3-1, the duty cycle of the solenoid may be low.

For example: If the PCM commands the solenoid "ON," (90%) the voltage on that circuit should drop (approximately 0 volt) when the 3-2 control solenoid is earthed, if voltage stays up high (approximately 12 volts) for a period of time a DTC 66 will set.

If the 3-2 control solenoid is "OFF," (0%) the voltage on the circuit should remain high if the voltage drops (approximately 0 volt) for some time, than DTC 66 will set. The 3-2 control solenoid feedback line and the quad-driver 2 fault line must both detect on inappropriate voltage status on the line for 4 seconds to set DTC 66.

Test Description: Number(s) below refer to step number(s) on the diagnostic chart.

2. Diagnostic Trouble Code 66 will set if:

A commanded high duty cycle (about 90%), the 3-2 control solenoid circuit voltage is high (about 12 volts).

OR

A commanded low duty cycle (about 10%), the 3-2 control solenoid circuit voltage is low (about 0 volts).

Both conditions must be present for 4 seconds.

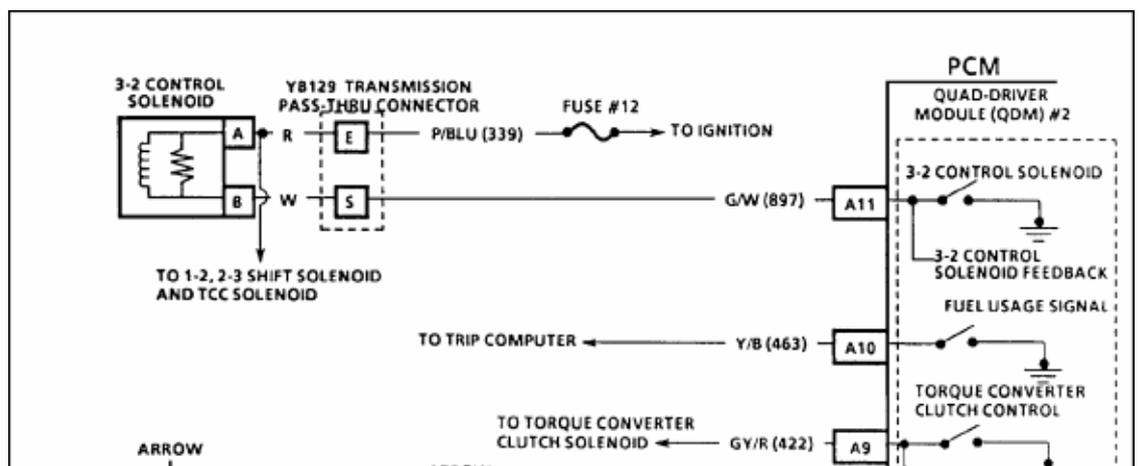
- The first portion of the test checks for a shorted transmission internal harness or 3-2 control solenoid.
- The second test verifies power supply to the 3-2 control solenoid.
- This step checks circuit 897 for a short to earth. If circuit 897 is shorted to earth the 2-4 band would be slow to apply.
- This test checks for a short to voltage on circuit 897.
- The final test verifies that circuit 897 is not open.

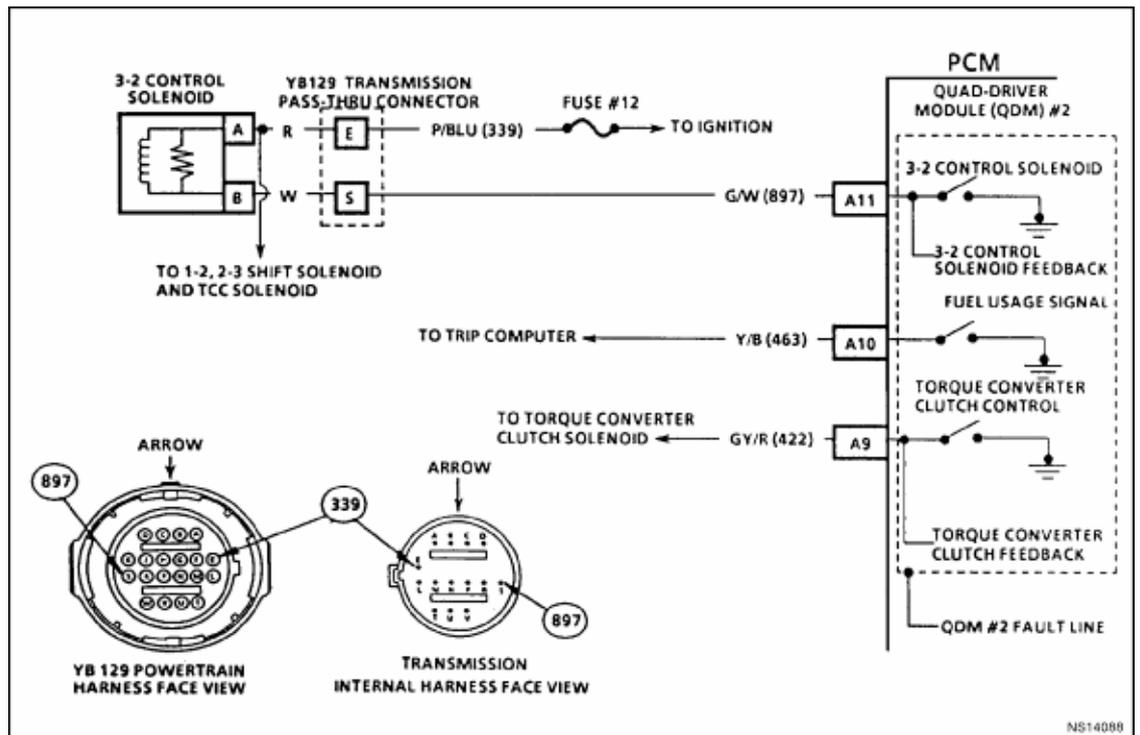
Diagnostic Aids:

Be sure to check all connections especially those at the transmission pass-thru connector.

When DTC 66 is set, the transmission will have a soft landing into 3rd gear then stay in 3rd gear only and line pressure will be high. The 3-2 control solenoid resistance should be between 9-14 ohms at 20 degrees C. The 3-2 control solenoid operates at a 50 Hertz duty cycle frequency.

Refer to "Intermittents" in Section 6C2-2C **SYMPTOMS**, in this Volume.





DTC 66 V8 PCM 3-2 CONTROL SOLENOID OR QDM 2 CIRCUIT FAULT

STEP	ACTION	VALUE	YES	NO
1.	Was the "On-Board Diagnostic" (OBD) System Check performed?		Go to Step 2	Go to OBD System Check
2.	1. Install Tech 1 "Scan" tool. 2. Ignition "ON". 3. Record then clear DTCs. 4. Ignition "OFF" for 10 seconds. 5. Start engine and idle for 10 seconds. 6. Place vehicle in "D" and accelerate to 2nd gear. 7. Did DTC 66 reset?		Go to Step 3	DTC 66 is intermittent. If no additional DTC's were stored, refer to "Diagnostic Aids" on facing page.
3.	1. Ignition "OFF". 2. Raise vehicle. 3. Disconnect transmission Pass-Thru connector. 4. Connect jumper harness J 39775 to transmission only. 5. Using ohmmeter measure resistance across harness terminals "E" and "S" at the free end of jumper harness. 6. Was ohmmeter reading within specified value?	9 to 14 ohms	Go to Step 4	If more than specified value, Go to Step 9
4.	1. Disconnect jumper harness J 39775 from transmission, and connect other end into powertrain harness.		Go to Step 5	If less than specified value, Go to Step 12
			Go to Step 5	Go to Step 13

	2. Ignition "ON".		
	3. Using DVM check for battery voltage at terminal "E" of the powertrain wiring harness.		
	4. Is battery voltage present?		
5.	1. Ignition "ON".	Go to Step 6	Go to Step 14
	2. With test light connected to +12 volts, probe powertrain wiring harness terminal "S".		
	3. Is test light "OFF"?		
6.	1. Ignition "ON".	Go to Step 7	Go Step 17
	2. With test light connected to earth, probe powertrain harness terminal "S".		
	3. Is test light "OFF"?		
7.	1. Ignition "ON".	Go to Step 8	Go to Step 15
	2. Backprobe PCM connector terminal for circuit 897 with test light connected to +12 volts.		
	3. Using Tech 1 "Scan" tool, select "FO: DATA LIST" and then "FO: ALL" does "3-2 Sol. FDBK" display "OFF"?		
8.	1. Repair open in circuit 897 or faulty connection at pass-thru connector.	Verify Repair	
	2. Is action complete ?		
9.	1. Check for faulty connection.	Verify Repair	Go to Step 10
	2. Was a faulty connection found?		
10.	1. Check for a open in transmission internal wiring harness.	Verify Repair	Go to Step 11
	2. Was a open found?		
11.	1. Replace faulty 3-2 control solenoid.	Verify Repair then go to OBD system check	
	2. Is action complete?		
12.	1. Check for a short to earth in transmission internal wiring harness.	Verify Repair	Go to Step 11
	2. Was a short to earth found?		
13.	1. Repair faulty transmission fuse F12 or short to earth in circuit 339.	Verify Repair	
	2. Is action complete?		
14.	1. Check for short to earth on circuit 897.	Verify Repair	Go to Step 16
	2. Was a fault found?		
15.	1. Check for poor connection at PCM.	Verify Repair	Go to Step 16
	2. Was a fault found?		
16.	Replace faulty PCM. Is action complete ?	Verify Repair	
17.	1. Repair short to voltage on circuit 897.	Verify Repair	
	2. Is action complete?		