

### DODGE CALIBER CVT MULTIPLE SOLENOID FAULTS

**COMPLAINT:** Some 2006 and up Dodge Caliber equipped with the CVT transmission may experience a complaint of the Check Engine Light coming on, accompanied with numerous solenoid circuit faults, such as P0962-963 Pressure Control Solenoid fault, P0966-967 Secondary Pressure Control Solenoid, P2770 Lock-Up Control Solenoid, P1723 Lock-Up Selection Solenoid, P0848 Secondary Pressure Sensor, P0712-713 Transmission Fluid Temperature , P0843 Primary Pressure Sensor. *Note:* These codes could be intermittent and may also include Stepper Motor Control issues.

**CAUSE:** The cause may be that the wiring harness leading to the case connector on the transmission is corroded and or partially disintegrated by battery acid dripping down on to the harness. Figure 1 shows the battery tray. The drain tube exits the bottom of the tray, right above the transmission wiring harness. See Figure 2 for the location of the harness and the connector at the transmission.

**CORRECTION:** To correct this problem, re-route the drain tube so it is away from the wiring harness, or purchase the new drain tube listed in service information. Repair the wiring harness as necessary. Refer to Figures 3 and 4 for terminal location and identification at the Transmission Control Module and Figure 5 for a view of the harness connector. Note: This information also includes ohm values and solenoid location as shown in Figure 6 in case the harness is good and a solenoid circuit fault is present.

**SERVICE INFORMATION:**

BATTERY TRAY DRAIN TUBE (Dodge part #).....05054250AC

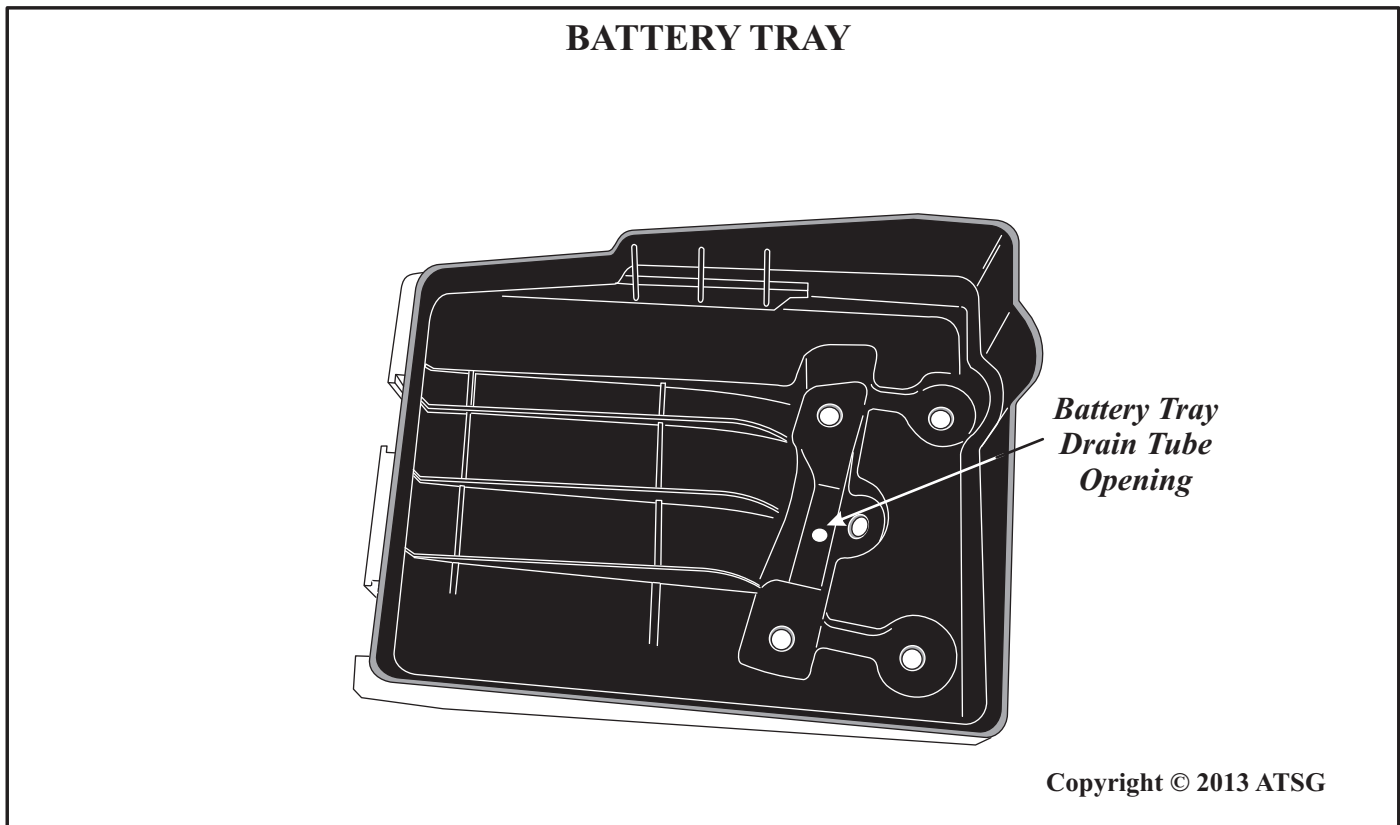
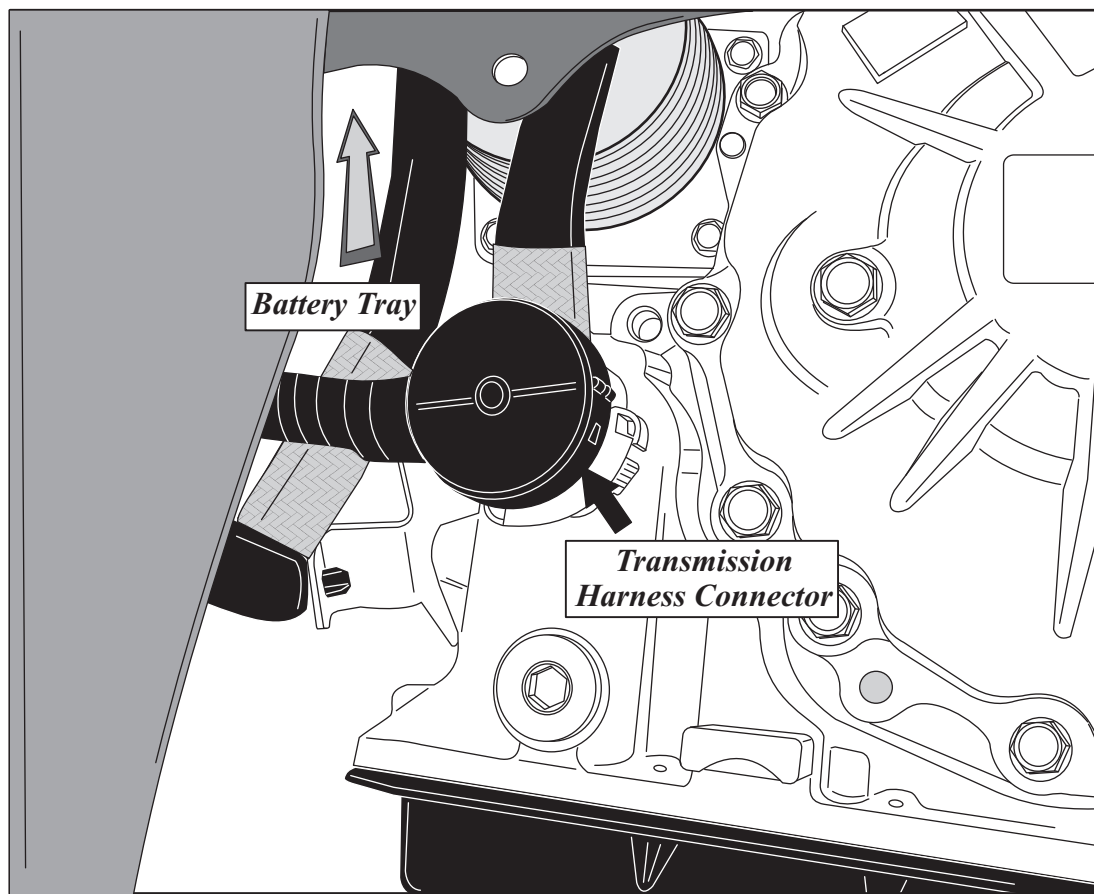


Figure 1  
Automatic Transmission Service Group

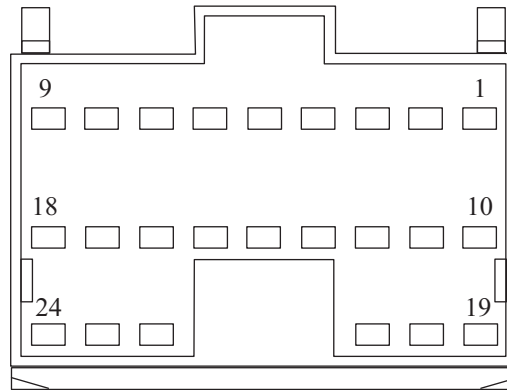
## TRANSMISSION HARNESS AND CONNECTOR LOCATION



*The Battery tray and drain tube are located above the harness leading to the Transmission Harness connector. Battery acid will typically leak down on to the harness and corrode/disintegrate the harness protective coating and the internal wiring.*

Figure 2

**TCM MODULE  
C1 CONNECTOR  
WHITE**



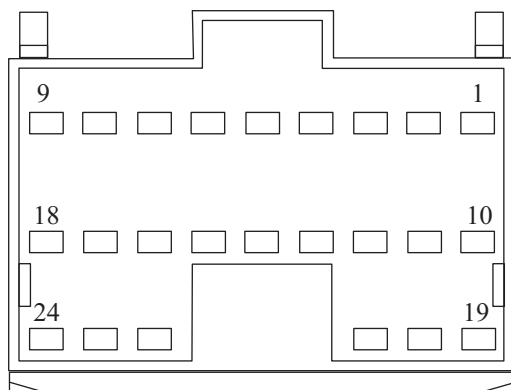
**TCM MODULE  
LOCATED NEXT  
TO BRAKE PEDAL**

TERMINAL	COLOR	FUNCTION
1	DG/LB	LINE PRESSURE CONTROL
2	YL/DB	SECONDARY PRESSURE CONTROL
3	YL/LB	TCC CONTROL
4	YL/GY	TCC ON-OFF CONTROL
5	WT/BK	CAN BUS (+)
6	WT/LB	CAN BUS (-)
7	-	-
8	-	-
9	-	-
10	YL/OR	TRANS CONTROL OUTPUT
11	LB/YL	STEP MOTOR CONTROL A
12	YL/OR	STEP MOTOR CONTROL B
13	DG/BR	CLOCK SELECT
14	YL/LG	CHIP SELECT
15	GY/YL	DATA IN/OUT SELECT
16	-	-
17	-	-
18	YL/BK	TRS T41 SIGNAL
19	YL/OR	TRANS CONTROL OUTPUT
20	YL/WT	STEP MOTOR CONTROL C
21	TN/YL	STEP MOTOR CONTROL D
22	DG/PK	TRS T42 SIGNAL
23	-	-
24	-	-

*Note: Wire colors may vary*

Figure 3  
Automatic Transmission Service Group

TCM MODULE  
C2 CONNECTOR  
LIGHT GREY



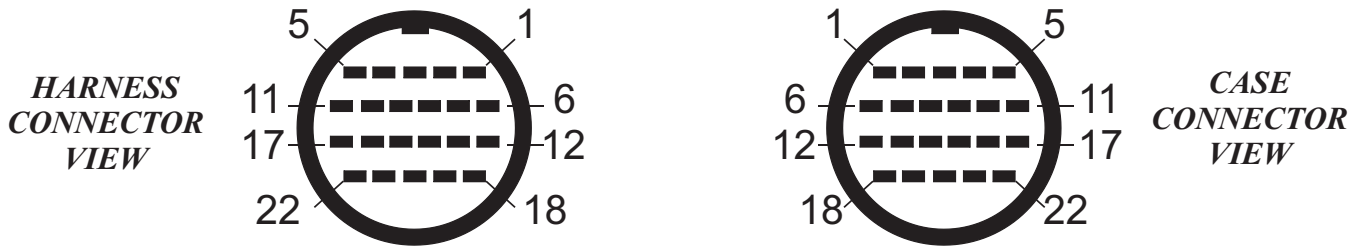
TCM MODULE  
LOCATED NEXT  
TO BRAKE PEDAL

TERMINAL	COLOR	FUNCTION
1	BL	GROUND
2	DG/LB	TRS T4 SIGNAL
3	-	-
4	RD/OR	FUSED B+
5	DG/WT	OUTPUT SPEED SIGNAL
6	-	-
7	-	-
8	-	-
9	-	-
10	DG/LG	AUTOSTICK UPSHIFT SIGNAL
11	-	-
12	YL/DG	AUTOSTICK DOWNSHIFT SIGNAL
13	PK/LB	SECONDARY PRESSURE SIGNAL
14	DG/BK	INPUT SPEED SIGNAL
15	-	-
16	-	-
17	DG/YL	PRIMARY PRESSURE SIGNAL
18	DG/TN	SENSOR GROUND
19	DG/DB	TRS T3 SIGNAL
20	DG/GY	TRS T1 SIGNAL
21	TN/DG	OSS SENSOR GROUND
22	PK	5 VOLT SUPPLY
23	RD/WT	TRANS TEMP SIGNAL
24	BK	GROUND

*Note: Wire colors may vary*

Figure 4  
Automatic Transmission Service Group

**SOLENOID RESISTANCE CHECKS**



- 1. Pressure Control Solenoid (PCS)
- 2. Secondary Pressure Control Solenoid (SPCS)
- 3. Lock-Up Control Solenoid (LCS)
- 4. Lock-up Selection Solenoid (LSS)
- 5. + For Pressure Switches and ROM
- 6. Dodge only - ground (G301) for PCS, SPCS & LCS
- 7. Secondary Pressure Sensor Signal
- 8. Stepper Motor
- 9. Stepper Motor
- 10. Stepper Motor
- 11. Stepper Motor

- 12. Not used
- 13. Not used
- 14. Not used
- 15. Not used
- 16. ROM
- 17. TFT Signal
- 18. Primary Pressure Sensor Signal
- 19. Ground Pressure Sensors, ROM, TFT
- 20. Not used
- 21. ROM
- 22. ROM

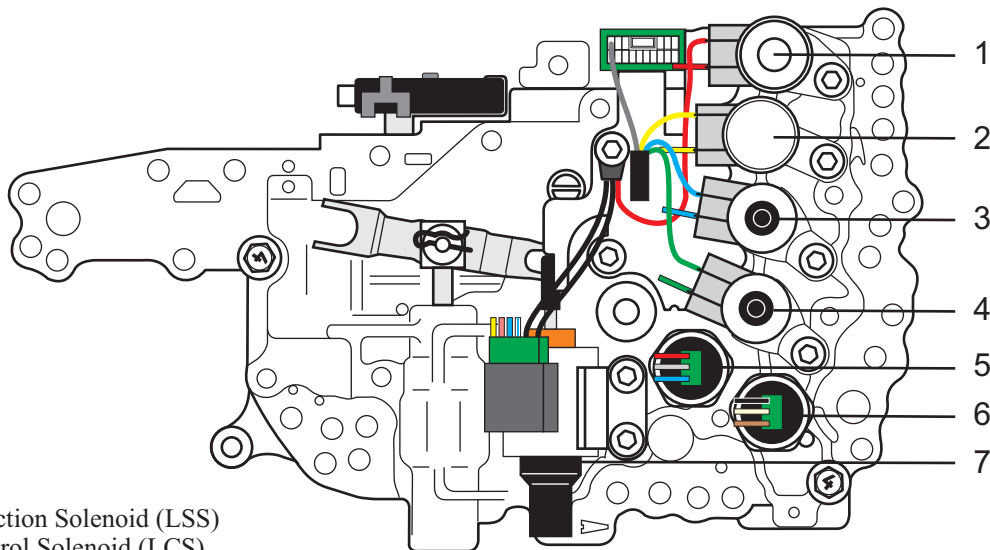
**Dodge Caliber**

- PCS - 1 & 6 = 6.5 ohms
- SPSC - 2 & 6 = 6.5 ohms
- LCS - 3 & 6 = 6.5 ohms
- LSS - 4 & Case Ground = 28 ohms

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Figure 5

**SOLENOID LOCATIONS**



- 1. Lockup Selection Solenoid (LSS)
- 2. Lockup Control Solenoid (LCS)
- 3. Secondary Pressure Control Solenoid (SPCS)
- 4. Pressure Control Solenoid (PCS)
- 5. Primary Pressure Sensor
- 6. Secondary Pressure Sensor
- 7. Ratio Control Motor

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Figure 6



SECONDARY SPEED SENSOR CODE

CVT2/JF011E/F1C1A/RE0F10A

COMPLAINT: After repairing or rebuilding a Continuously Variable Transmission used in Jeeps, Dodge, Nissan or Mitsubishi vehicles a P0721; Output Speed Sensor Performance and/or P0722; Output Speed Sensor No Signal code may set shortly after launch. If driven long enough a P0730 Incorrect Gear Ratio code may also set.

CAUSE: Various applications require one or more shims under the output speed sensor to maintain proper air gap between the sensor tip and signal gear (Figure 1). If the shim or shims are left off, or are placed between the attaching bolt and sensor, the tip of the sensor rests upon the signal gear. Once the gear is in rotation it damages the tip of the sensor and the signal is lost.

Detailed explanation:

The output rpm sensor measures the output gear integral to the output side of the secondary pulley thereby providing secondary pulley rpm readings to the TCM. This signal can also be used for an output speed signal.

The output gear on the secondary pulley drives a reduction gear assembly which in turn drives the differential ring gear. Due to a variety of applications there becomes a variety of different overall gear ratios. These ratio differences change the diameter of the output gear the sensor reads. Since the output speed sensor length remains the same in all applications, to retain the proper air gap between the tip of the sensor and the gear, a shim or shims are used under the sensor to accommodate larger diameter gears.

A gear diameter small enough where the speed sensor does not require a shim will have an approximate .040" air gap.

The next larger diameter gear would require a .040" shim under the sensor to provide that approximate .040" air gap and so on.

CORRECTION: If the shim or shims were incorrectly installed between the bolt and sensor, replace the sensor and install the shim or shims between the case and sensor.

If the shim or shims were not installed, replace the sensor and install the appropriate number of .040" shims under the output speed sensor.

If you are not certain the number of shims required, measure the distance from the highest point on the output gear to the surface area on the case where the output speed sensor bolts to.

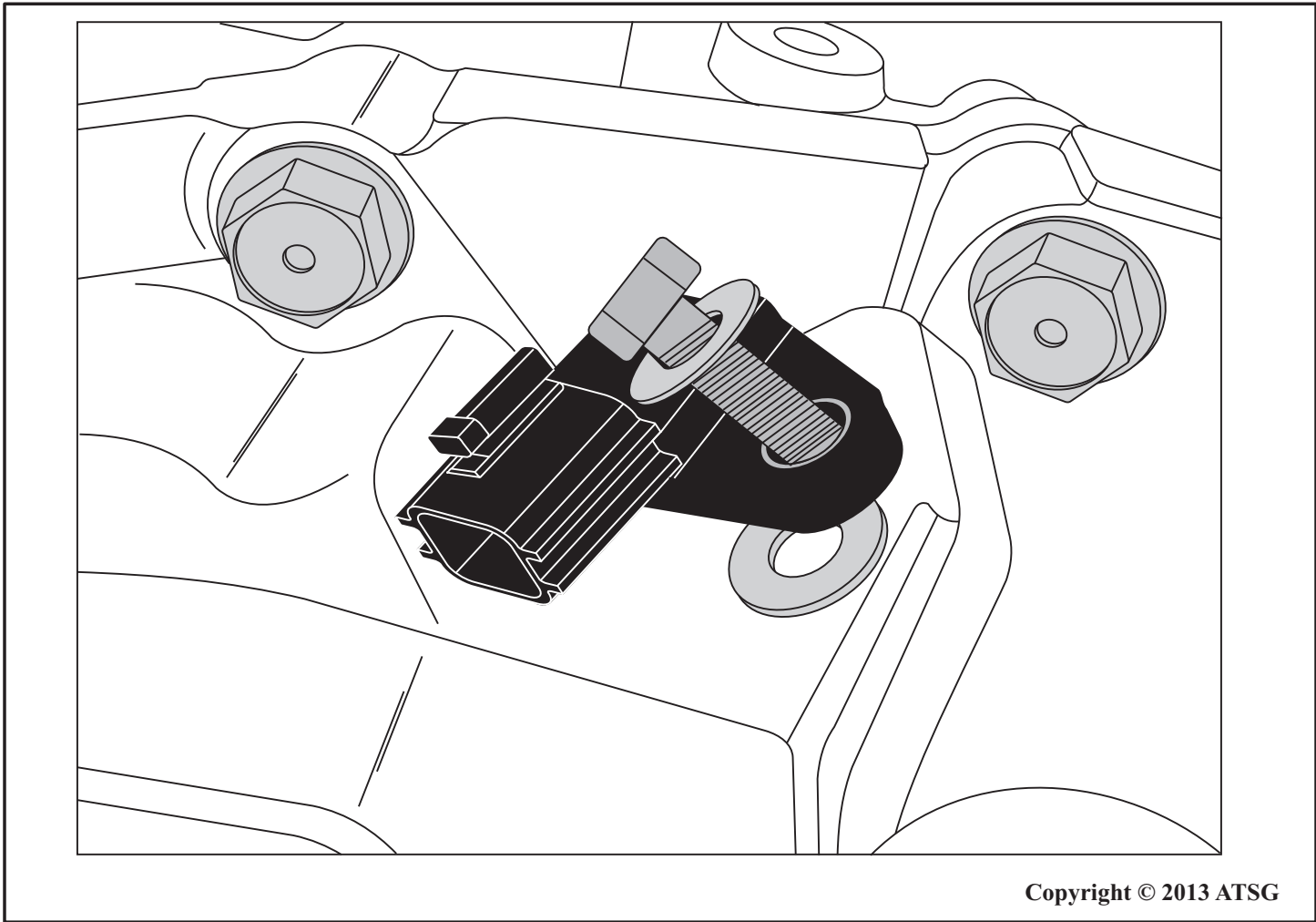
The length of the speed sensor is approximately 1.140". If the depth of the speed sensor hole measures approximately the same as the sensor length, install one .040" shim under the sensor. If it measures approximately 1.100", place two .040" shims under the sensor. If it measures approximately 1.180", no shims are required.

SERVICE INFORMATION:

Nissan part number for .040" shim.....08915-4361A

SECONDARY SPEED SENSOR CODE

CVT2/JF011E/F1C1A/RE0F10A



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*Special thanks  
to Ralph Abraham  
Alonzo's Transmissions*

Figure 1