

# Troubleshooting

## DTC 51, 52, 53: Pump Motor

Check the VSA MOTOR (40 A) fuse in the under-hood fuse/relay box, and reinstall the fuse if it is OK.

Is the fuse OK?

NO

Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.

YES

**Check for an open in the +B-MR circuit:**

1. Disconnect the VSA control unit 42P connector.
2. Measure the voltage between terminal No. 2 and body ground.

VSA CONTROL UNIT 42P CONNECTOR

+B-MR (WHT/BLU)



|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |
| 11 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | 21 | 23 |
| 27 | 28 | 29 | 30 | 31 | 32 | 33 | 36 | 38 | 39 |
| 40 | 41 | 42 |    |    |    |    |    |    |    |

Terminal side of female terminals

Is there battery voltage?

NO

Repair open in the wire between the VSA MOTOR (40A) fuse and the VSA control unit.

YES

**Check for an open in the M-GND circuit:**

Check for continuity between the VSA control unit 42P connector terminal No. 1 and body ground.

M-GND (BLK)



|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |
| 11 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | 21 | 23 |
| 27 | 28 | 29 | 30 | 31 | 32 | 33 | 36 | 38 | 39 |
| 40 | 41 | 42 |    |    |    |    |    |    |    |

Is there continuity?

NO

- Repair open in the wire between the VSA control unit and body ground.
- Repair poor ground (G401, G402).

YES

**Problem verification:**

1. Clear the DTC.
2. Test drive the vehicle at 12 mph (20 km/h) or more.
3. Verify the DTC.

Is DTC 51, 52 or 53 indicated?

NO

The system is OK at this time.

YES

Check for loose terminals in the VSA control unit 42P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.