# DF: Vehicle Speed Circuit (VSC) Check

DF: Introduction

## DF1 DTCS P0500, P0503, P1500, P1501 AND P1502: CHECK THE VEHICLE SPEED CIRCUIT FOR INTERMITTENT CONCERNS

**Note:** The PCM detected an error in the vehicle speed information received from the ABS control module. This test step checks for the recurrence of this vehicle speed error.

- Ignition ON, engine OFF.
- Clear the DTCs.
- Gradually increase the vehicle speed to 80 km/h (50 mph).
- Coast to an idle and stop the vehicle.
- Ignition OFF.
- Ignition ON, engine OFF.
- Retrieve the continuous memory DTCs.

**Are DTCs P0500, P0503, P1500, P1501 or P1502 present?**

| Yes | No |
|---|---|
| The vehicle speed input is incorrect.<br><br>GO to DF2 . | The vehicle speed input is correct. The concern that produced the original DTC may be intermittent.<br><br>GO to DF5 . |

## DF2 CHECK THE VSC CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS

- Ignition OFF.
- PCM connector disconnected.
- Anti-Lock Brake System (ABS) connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

| ( + ) PCM Connector, Harness Side | ( - ) |
|---|---|
| VSC - Pin B29 | Ground |

**Is the voltage less than 1 V?**

| Yes | No |
|---|---|
| GO to DF3 . | GO to DF6 . |

## DF3 CHECK FOR AN OPEN VSC BETWEEN THE PCM AND THE ABS CONTROL MODULE

- Measure the resistance between:

| ( + ) PCM Connector, Harness Side | ( - ) Anti-Lock Brake System (ABS) Connector, Harness Side |
|---|---|

| | |
|---|---|
| VSC - Pin B29 | VSC - Pin 21 |

**Is the resistance less than 5 ohms?**

| Yes | No |
|---|---|
| GO to DF4 . | REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.<br><br>GO to DF7 . |

## DF4 CHECK THE VSC CIRCUIT FOR A SHORT TO GROUND IN THE HARNESS

- Measure the resistance between:

| ( + ) PCM Connector, Harness Side | ( - ) |
|---|---|
| VSC - Pin B29 | Ground |

**Is the resistance greater than 10K ohms?**

| Yes | No |
|---|---|
| REFER to the Workshop Manual Section 206-09, Vehicle Dynamic Systems to diagnose an ABS system concern. If no ABS system concern is present,<br><br>GO to DF8 . | GO to DF6 . |

## DF5 VISUAL INSPECTION

**Note:** Refer to the Wiring Diagrams Manual for harness, module, and connector locations.

- Ignition OFF.
- Visually inspect the VSC circuit harness and connectors at the PCM, ABS, and other VSC user modules for damage, loose connections, loose grounds, or incorrect routing.

**Does the visual inspection reveal a concern?**

| Yes | No |
|---|---|
| REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.<br><br>GO to DF7 . | Unable to duplicate or identify the concern at this time. REFER to the Workshop Manual Section 206-09, Vehicle Dynamic Systems to continue diagnosis of the ABS control module, speed sensors and wheel speed sensor harness circuits. |

## DF6 VERIFY IF THE VSC IS SHORTED IN THE HARNESS OR ANOTHER MODULE

- Ignition OFF.
- Determine which, if any, modules are connected to the VSC. Refer to the Wiring Diagrams Manual. If no other modules are connected to the VSC, go to the YES results in the Action To Take column.
- One at a time, disconnect the modules associated with the VSC. After disconnecting each module, test again for a short circuit. (Refer to test step that sent you here). Repeat until each associated module is disconnected or the short circuit is eliminated.

**Does the short circuit remain after all associated modules are disconnected?**

| Yes | No |
|---|---|
| REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.<br><br>GO to DF7 . | REFER to the Workshop Manual for further diagnosis of the appropriate module.<br><br>GO to DF7 . |

## DF7 VSC REPAIR VERIFICATION DRIVE CYCLE

**Note:** Warm the engine to a normal operating temperature before continuing.

**Note:** Carry out the VSC drive cycle at least 3 times as described below.

- Automatic Transmission Drive Cycle:
  - Place the transmission range selector lever in DRIVE range
  - Accelerate heavily to 56 km/h (35 mph)
  - Coast down to an idle and stop the vehicle
  - Cycle the ignition OFF and ON
- Manual Transmission Drive Cycle:
  - Accelerate moderately to 64 km/h (40 mph), while shifting from first to second gear
  - Coast down to an idle and stop the vehicle
  - Cycle the key OFF and ON
- Ignition OFF.
- Ignition ON, engine OFF.
- Retrieve the continuous memory DTCs.

**Are DTCs P0500, P0503, P1500, P1501 or P1502 present?**

| Yes | No |
|---|---|
| REFER to the Workshop Manual Section 206-09, Vehicle Dynamic Systems to continue diagnosis of the ABS control module, speed sensors and wheel speed sensor harness circuits. If these components are working properly,<br><br>GO to DF8 . | The repair has been verified. |

## DF8 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Visually inspect for:
  - pushed out pins
  - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test and verify the concern is still present.

**Is the concern still present?**

| Yes | No |
|---|---|
| INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) , Programming the VID Block for a Replacement PCM. | The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. |