

Symptom:**P-0505 IDLE AIR CONTROL MOTOR CIRCUITS**

When Monitored and Set Condition:**P-0505 IDLE AIR CONTROL MOTOR CIRCUITS**

When Monitored: At key on and battery voltage greater than 11.5 volts.

Set Condition: The PCM senses a short to ground or battery voltage on any of the four IAC driver circuits for 100 msec while the IAC motor is active.

POSSIBLE CAUSES

DTC (HEX) NOT EQUAL TO FREEZE FRAME DTC (HEX)
IAC #4 DRIVER CIRCUIT SHORTED TO GROUND
IAC MOTOR DRIVER (IAC #1) CIRCUIT OPEN
IAC MOTOR DRIVER (IAC #2) CIRCUIT OPEN
IAC MOTOR DRIVER (IAC #3) CIRCUIT OPEN
IAC MOTOR DRIVER (IAC#4) CIRCUIT OPEN
IAC MOTOR DEFECTIVE
IAC #1 DRIVER CIRCUIT SHORTED TO GROUND
IAC #1 DRIVER CKT SHORTED TO #2, #3, #4
IAC #2 DRIVER CIRCUIT SHORTED TO GROUND
IAC #2 DRIVER CKT SHORTED TO #3 OR #4
IAC #3 DRIVER CIRCUIT SHORTED TO #4
IAC #3 DRIVER CIRCUIT SHORTED TO GROUND
IAC MOTOR CIRCUIT WIRING HARNESS INTERMITTENT DEF
IAC MOTOR CIRCUIT WIRING HARNESS INTERMITTENT DEF
PCM DEF (IAC #1)
PCM DEF (IAC #2)
PCM DEF (IAC #3)
PCM DEF (IAC #4)

P-0505 IDLE AIR CONTROL MOTOR CIRCUITS — Continued

| TEST | ACTION | APPLICABILITY |
|------|---|---------------|
| 411 | Turn ignition on. With the DRB, read the DTC's. Is the DTC Specific Good Trip Counter displayed and equal to zero? Yes → Go To 414 No → Go To 412 | All |
| 412 | Determine if the DTC matches freeze frame DTC. Is DTC (Hex) equal to freeze frame DTC (Hex)? Yes → Go To 413 No → Repair the DTC with freeze frame data. | All |
| 413 | Read the Freeze Frame Data. Try to duplicate the conditions in Freeze Frame. Did the DTC specific good trips change to 0? Yes → Go To 414 No → Go To 436 | All |
| 414 | Start engine and let idle. Disconnect the IAC Connector. Note: Check connectors - Clean/repair as necessary. Using a Voltmeter, measure the voltage of the IAC Driver #1 Circuit. Was the voltage over 5.0 volts at any time? Yes → Go To 415 No → Go To 434 | All |
| 415 | Ignition Off Disconnect the IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between the IAC Driver #4 and ground. Is the resistance below 5.0 ohms? Yes → Repair the IAC #4 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A. No → Go To 416 | All |
| 416 | Start engine and let idle. Disconnect the IAC Connector. Note: Check connectors - Clean/repair as necessary. Using a Voltmeter, measure the voltage of the IAC Driver #2 Circuit. Was the voltage over 5.0 volts at any time? Yes → Go To 417 No → Go To 431 | All |

P-0505 IDLE AIR CONTROL MOTOR CIRCUITS — Continued

| TEST | ACTION | APPLICABILITY |
|------|---|---------------|
| 417 | Ignition Off Disconnect IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between IAC Driver #1 and ground. Is the resistance below 5.0 ohms? Yes → Repair the IAC #1 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A. No → Go To 418 | All |
| 418 | Ignition Off Disconnect IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between the IAC Driver #2 and ground. Is the resistance below 5.0 ohms? Yes → Repair the IAC #2 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A. No → Go To 419 | All |
| 419 | Start engine and let idle. Disconnect the IAC Connector. Note: Check connectors - Clean/repair as necessary. Using a Voltmeter, measure the voltage of the IAC Driver #3 Circuit. Was the voltage over 5.0 volts at any time? Yes → Go To 420 No → Go To 429 | All |
| 420 | Ignition Off Disconnect the IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between the IAC Driver #3 and ground. Is the resistance below 5.0 ohms? Yes → Repair the IAC #3 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A. No → Go To 421 | All |
| 421 | Start engine and let idle. Disconnect IAC Connector. Note: Check connectors - Clean/repair as necessary. Using a Voltmeter, measure the voltage of the IAC Driver #4 Circuit. Was the voltage over 5.0 volts at any time? Yes → Go To 422 No → Go To 428 | All |

P-0505 IDLE AIR CONTROL MOTOR CIRCUITS — Continued

| TEST | ACTION | APPLICABILITY |
|------|--|---------------|
| 422 | Start Engine With the DRB in Systems Tests, perform the IAC Wiggle Test. Note: The idle speed should raise and lower with the display. Does the idle speed raise and lower properly? Yes → Go To 423 No → Go To 427 | All |
| 423 | Ignition Off Disconnect IAC Connector. Disconnect the Powertrain Control Module. Note: Check connectors - Clean/repair as necessary. Note: The following steps are checking for a short between the Driver Circuits. Using an Ohmmeter, measure the resistance between the IAC #1 Driver circuit and #2, #3, #4 Driver Circuits. Is the resistance below 5.0 ohms on any of the Drivers? Yes → Repair the IAC Driver Circuits shorted together. Perform Powertrain Verification Test VER-5A. No → Go To 424 | All |
| 424 | Ignition Off Disconnect IAC Connector. Disconnect the Powertrain Control Module. Note: Check connectors - Clean/repair as necessary. Note: The following steps are checking for a short between the Driver Circuits. Using an Ohmmeter, measure the resistance between the IAC #2 Driver circuit and #3, #4 Driver circuits. Is the resistance below 5.0 ohms on any of the Drivers? Yes → Repair the IAC Driver Circuits shorted together. Perform Powertrain Verification Test VER-5A. No → Go To 425 | All |
| 425 | Ignition Off Disconnect IAC Connector. Disconnect the Powertrain Control Module. Note: Check connectors - Clean/repair as necessary. Note: The following steps are checking for a short between the Driver Circuits. Using an Ohmmeter, measure the resistance between the IAC #3 Driver circuit and #4 Driver circuit. Is the resistance below 5.0 ohms? Yes → Repair the IAC Driver Circuits shorted together. Perform Powertrain Verification Test VER-5A. No → Go To 426 | All |

P-0505 IDLE AIR CONTROL MOTOR CIRCUITS — Continued

| TEST | ACTION | APPLICABILITY |
|------|--|---------------|
| 426 | <p>Start Engine With the DRB in Systems Tests, perform the IAC Wiggle Test. Note: The idle speed should raise and lower with the display. Wiggle the Wiring Harness from the IAC Motor to the PCM. Observe for the IAC Motor to stop operating. Did the IAC stop operating at any time?</p> <p>Yes → Repair the Harness or Connectors as necessary. Perform Powertrain Verification Test VER-5A.</p> <p>No → Go To 427</p> | All |
| 427 | <p>If there are no potential causes remaining, the Idle Air Control Motor is assumed to be defective. View repair options.</p> <p>Repair</p> <p>Replace the Idle Air Control Motor. Perform Powertrain Verification Test VER-5A.</p> | All |
| 428 | <p>Ignition Off Disconnect the IAC Motor Connector. Disconnect the PCM Connector. Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance of the IAC #4 Driver Circuit. Is the resistance below 5.0 ohms?</p> <p>Yes → Replace the Powertrain Control Module. Perform Powertrain Verification Test VER-5A.</p> <p>No → Repair the open IAC Motor Driver Control Circuit. Perform Powertrain Verification Test VER-5A.</p> | All |
| 429 | <p>Ignition Off Disconnect the IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between the IAC Driver #3 and ground. Is the resistance below 5.0 ohms?</p> <p>Yes → Repair the IAC #3 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A.</p> <p>No → Go To 430</p> | All |
| 430 | <p>Ignition Off Disconnect the IAC Motor Connector. Disconnect the PCM Connector. Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance of the IAC #3 Driver Circuit. Is the resistance below 5.0 ohms?</p> <p>Yes → Replace the Powertrain Control Module. Perform Powertrain Verification Test VER-5A.</p> <p>No → Repair the open IAC Motor Driver Control Circuit. Perform Powertrain Verification Test VER-5A.</p> | All |

P-0505 IDLE AIR CONTROL MOTOR CIRCUITS — Continued

| TEST | ACTION | APPLICABILITY |
|------|---|---------------|
| 431 | Ignition Off Disconnect IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between IAC Driver #1 and ground. Is the resistance below 5.0 ohms? Yes → Repair the IAC #1 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A. No → Go To 432 | All |
| 432 | Ignition Off Disconnect IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between the IAC Driver #2 and ground. Is the resistance below 5.0 ohms? Yes → Repair the IAC #2 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A. No → Go To 433 | All |
| 433 | Ignition Off Disconnect the IAC Motor Connector. Disconnect the PCM Connector. Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance of the IAC #2 Driver Circuit. Is the resistance below 5.0 ohms? Yes → Replace the Powertrain Control Module. Perform Powertrain Verification Test VER-5A. No → Repair the open IAC Motor Driver Control Circuit. Perform Powertrain Verification Test VER-5A. | All |
| 434 | Ignition Off Disconnect the IAC Motor Connector. Note: Check connectors - Clean/repair as necessary. Disconnect the Powertrain Control Module Connector (Black). Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance between the IAC Driver #4 and ground. Is the resistance below 5.0 ohms? Yes → Repair the IAC #4 Driver Circuit shorted to ground. Perform Powertrain Verification Test VER-5A. No → Go To 435 | All |

P-0505 IDLE AIR CONTROL MOTOR CIRCUITS — Continued

| TEST | ACTION | APPLICABILITY |
|------|--|---------------|
| 435 | Ignition Off Disconnect the IAC Motor Connector. Disconnect the PCM Connector. Note: Check connectors - Clean/repair as necessary. Using an Ohmmeter, measure the resistance of the IAC #1 Driver Circuit. Is the resistance below 5.0 ohms? Yes → Replace the Powertrain Control Module. Perform Powertrain Verification Test VER-5A. No → Repair the open IAC Motor Driver Control Circuit. Perform Powertrain Verification Test VER-5A. | All |
| 436 | Start Engine With the DRB in Systems Tests, perform the IAC Wiggle Test. Note: The idle speed should raise and lower with the display. Wiggle the Wiring Harness from the IAC Motor to the PCM. Observe for the IAC Motor to stop operating. Did the IAC stop operating at any time? Yes → Repair the Harness or Connectors as necessary. Perform Powertrain Verification Test VER-5A. No → Test Complete. | All |